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SALES ORDER HANDLING AND LOGISTICS PROCESSES IN  
SACHTLEBEN PORI AND DUISBURG SITES

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## SALES ORDER HANDLING AND LOGISTICS PROCESSES IN SACHTLEBEN PORI AND DUISBURG SITES

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This thesis described order handling and logistics processes in Sachtleben Pori and Duisburg sites. There were two different processes still five years after the merging and company was still expanding with new factories bought. Therefore, clear definition and explanation was needed to be able to manage integration of the new factory. The purpose of this thesis was to define and describe the order handling and logistic processes in both sites of Sachtleben.

Main focus of thesis was in order handling and logistics processes due to their importance in the process. Therefore questionnaires were sent to the sales assistants and logistics operators of both sites. Half structured questionnaires were sent via email to contact people of each factory and department and were forwarded by them to target people. Empirical part of thesis was written according to the answers received from the case company. Secondary research, also known as desk research, was conducted to build the theoretical part of the thesis.

With the result received from this thesis, Sachtleben will be able to integrate new factory to the sales order process and polish the existing processes to be as simple and lucrative as possible.

## TILAUSTEN KÄSITTELY JA LOGISTIikka PROSESSIN VAIHEET SACHTELEBENIN PORIN JA DUISBURGIN TEHTAILLA

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Tämä opinnäytetyö kuvaili tilausten käsittely- ja logistiikka prosessien vaiheita Porin ja Duisburgin tehtailla. Eri tehtailla oli viisi vuotta yhtiöiden yhdistymisen jälkeen vielä eri prosessit ja yhtiö jatkaa edelleen laajentumistaan uusien tehtaiden myötä. Siksi heille oli tärkeää saada selkeä kuvaus tehtaiden prosesseista, jotta uusi tehdas saatiin liitettyä jo olemassa oleviin prosesseihin mukaan. Tämän opinnäytetyön tarkoitus oli määrittellä ja kuvata tilausten käsittely- ja logistiikka prosessien vaiheita eri tehtailla.

Opinnäytetyön pääpaino oli tilausten käsittely- ja logistiikkaprosesseissa niiden tärkeyden takia tilausten käsittelyprosessissa. Siksi kyselyt lähetettiin myyntiassistentteille ja logistiikkaoperaattoreille molemmissa tehtaissa. Puolistrukturoitu kysely lähetettiin yhteyshenkilöiden kautta kaikille assistenteille ja operaattoreille. Empiirinen osio kirjoitettiin yllä mainittujen saatujen vastausten perusteella. Sekundaarisen tutkimuksen, toiselta nimeltään pöytätyötutkimuksen, perusteella tuotettiin teoreettinen osuus opinnäytetyöstä.

Opinnäytetyöstä saatujen tulosten perusteella Sachtleben pystyi sisäistämään uuden tehtaan prosessit mukaan jo olemassa oleviin prosesseihin ja hiomaan tilausten käsittelyprosessit niin yksinkertaisiksi ja tuottaviksi kuin on mahdollista.

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## 1 INTRODUCTION

In 2008 Sachtleben Chemie GmbH and Kemira Pigments Oy formed a joint venture to unite their forces. Therefore, there has been two different ways and tools, in other words different processes to handle incoming orders. This thesis gives a look to both of the processes and differences of those processes. Process will start from the moment Sachtleben receives the order until the payment for the product is received. The main focus of this thesis will be order handling and logistics part of the processes.

Purpose of this topic is to clarify differences in order handling processes in different factories. This will require clear table of the process flows to ease understanding of the processes. Now, Sachtleben has bought one factory more in Krefeld, Germany really close to the Duisburg factory and need for the clear information about the processes in two main factories became necessary for them to unite the processes and integrate the systems.

Author of this thesis has been working in Sachtleben during summers 2011 and 2012 for total of eight months. Summer 2011 was also included in the degree as a compulsory practical training. Author responsibilities were Customer Service and Order Management (CSO) so it was her duty to interact with the customers and insert the order information into Sachtleben systems. Therefore it was natural to take this project under work since knowledge of processes was already existing at some extend.

## 2 PURPOSE OF THE THESIS

Purpose of the thesis is to define and describe the differences in sales order handling processes in different sites of Sachtleben. Sachtleben has two factories in different countries which were emerged in 2008. Therefore the processes are still today a little different depending on the country.

The main purpose of this thesis is to make clear table of order flows in different factories and point out the differences. This will help people in Sachtleben to understand the flows and work more efficiently between factories. It will also help to integrate the new factory and its way of work to the existing ones.

Theoretical part of my thesis is based on sales order handling process from the moment of receiving the order from customer to the moment have received the payment from customer. It will be based on authors' previous studies of export procedures and existing theories about sales orders, sales planning and booking of forwarding company.

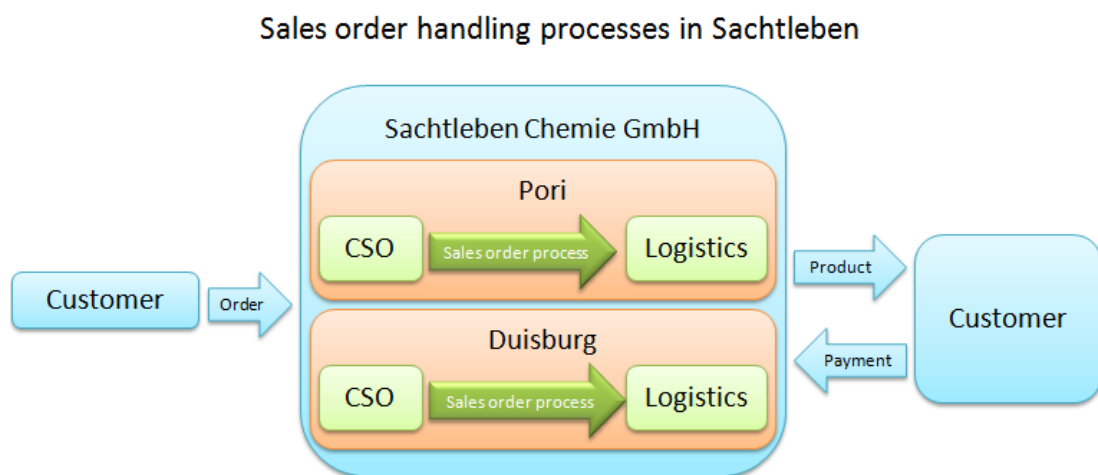


Figure 1. Conceptual frame of reference

Sachtleben has two factories, in Pori Finland and Duisburg Germany and describing the different processes is the empirical part of my thesis. Main focus on above explained order flow is on logistics due to different logistics solutions.

### 3 RESEARCH PROBLEMS

Order handling process starts from the moment Customer Service and Order management (CSO) receives the order from the customer and continues until the money from the customer has been received and can be seen in their management system in SAP. Main focus will be logistics part due to the fact it is outsourced in Duisburg Germany and inside the company in Pori Finland. Main issues are:

- What is included in sales order handling process?
- What has to be taken into consideration during this process?
- What are the differences in sales order handling processes between different factories?

This thesis is describing both of the sales order handling processes with Pori material and Duisburg material. There are small differences inside the processes, but these differences have minor influence on overall handling process so the details are left out.

This thesis will not concentrate on how long the process will take in each step or how much it will cost. Also consignment stocks and trade to USA are left out of this topic because of the different handling process. Thesis will not describe very deeply about the warehouse process either so loading and warehouse transfers are not described with details.

### 4 SACHTLEBEN

In 2008 Sachtleben Chemie GmbH and Kemira Pigments Oy formed a joint venture. Joint venture is a type of partnership in which two or more companies agree to combine their resources in order to accomplish the task. It is therefore usually only temporary situation. Requirements for a joint venture are to own and manage the venture, share profits, share losses, etc together. Both parties must contribute money,

services, or property to the venture. (Website of Investopedia 2013, Website of Taloussanommat 2013, Website of Business Law, Website of Sachtleben 2012)

Sachtleben is a leading manufacturer of specialty chemical products. It is owned by American company Rockwood holdings Inc. and it produces colorless, odorless, tasteless and harmless powder called titanium dioxide. It is used as a colorant for instance in groceries, pharmaceuticals and cosmetic industry. For more than 130 years, Sachtleben has been one of the leading manufacturers of high-quality white pigments and excels with its expertise and quality. (Website of Sachtleben 2012)

Sachtleben produces different kind of products and these products are categorized according to their main applications. The eight categories are Coating, Paper, Plastic, Ink, Pharmaceuticals/Food/Cosmetic, Active materials, Fibers and Environmental. Different factories produce different products, but products from different categories are produced in both factories. (Website of Sachtleben 2012)

Sachtleben exports its products all over the world. Turnover in 2011 was approx 835 million and about 90% of all sales comes from exported products. More than a half of its global sales come from inside the European Union. To Asia and Pacific area the sales are around 20% from whole production and about the same amount to both Americas. Also Africa and Middle East have share of 5% from global sales. (Website of Sachtleben 2012)





Picture 1. Sales offices, production plants and sales percentages of Sachtleben around the globe (Website of Sachtleben 2012)

In addition to Pori and Duisburg sites during summer 2012 Sachtleben bought a site in Krefeld which is near Duisburg site. Sachtleben has also sales offices in Shanghai, New York and in Helsinki in addition to Duisburg and Pori. Sachtleben also has 65 distributors across the world. Pori and Duisburg employs total of around 1700 personnel from which about 550 are working in Pori site. (Website of Sachtleben 2012)

## 5 EXPORTING

Exporting is a function of international trade where producing of goods and/or services are done in one country and delivered to another for sale or trade. According to website of Investopedia “Exports are one of the oldest forms of economic transfer, and occur on a large scale between nations that have fewer restrictions on trade, such as tariffs or subsidies.” On the other hand, there is at least one exception. Due to a merging of countries to an European Union it has become world's largest single market. Therefore, trade between EU countries is called intra community trade. (Website of Export help 2013, Website of Entrepreneur 2013, Website of Investopedia 2013)

Exporting has had a growing significance in Finnish national economy. Since Finnish markets are relatively small, it is very important to have strong exporting knowledge. Majority of Finnish exporting is intra community trade inside EU area. In 2010, biggest share from total exporting value of Finland was metal, machinery and transportation industry with 33,6 % leaving chemical industry into a third place with share of 19,8 %. (Melin 2011, 10-12)

Exporting is complex procedure that requires a lot of knowledge of the documents needed in the operation. Many of the trade terms are mentioned in the export documentation and therefore it is important to understand the meaning of different terms and documents themselves. (Henderson 2009)

## 6 ORDER HANDLING PROCESS

### 6.1 Supply chain management

Supply chain is defined by Alan E. Branch as the sequence of events in a goods flow, which adds value to the value of specific good. These events may include conversion, assembling and/or disassembling and movements and placements. The global supply chain is crossing boundaries and linking the procurement, manufacturer and marketplace with the distribution. (Branch 2009, 2)

Factors that are driving the logistics are focused on companies trying to become more competitive and cost effective and to be able to provide customers added value in the supply chain. Global supply chain management embraces the logistics operator's task to ensure the goods saleable quality and safe and cost-effective transportation. Main task for the supply chain personnel is to monitor the incoming orders and production of the goods and adapting the production to match demand. Key benefits of supply chain management are the reduced inventory levels, improved visibility of all costs and improved delivery time and clearer responsibility. (Branch 2009, 13, 91)

Logistics management on the other hand, is the part of the supply chain management that plan, implement and controls the efficient, effective forward and reverses flow and storage of goods and related information between the point of origin and the point of consumption in order to meet customers' requirements. The largest costs to the companies are the transportation costs; therefore, logistics activities have also a major impact on countries society and economy. These logistics activities include transportation warehousing, inventory, information technology and above mentioned production or operation management (supply chain management). (Grant 2012, 2, 6)

## 6.2 Demand and supply planning

Sales budget is an operating plan for a period expressed in terms of selling prices and sales volume for each class of product or service. Starting point in budgeting is the preparation of a sales budget, since sales volume influences nearly all the other items. (Website of All Business 2013)

Demand and supply planning is done in order to enable companies to match supply and demand as profitably as possible. Demand planning, which is the same as forecasting, is a key requirement to create profitable match between those two. Historic sales data with information from Product Managers, Account Managers, Sales Managers and Sales Representatives leads to a more accurate and consultative sales forecast. Purpose of the demand planning is to improve decisions affecting the demand accuracy. All decisions, in the whole supply chain, should be based on accepted customer orders and planned sales forecasts. (Website of Open Texts 2013, Stadtler & Kilger 2005, 138)

Forecasting can be done with three different types according to Paul Murphy and Donald Wood in Contemporary Logistics. These types are Judgmental forecasting, time series forecasting and cause and effect forecasting. Judgmental forecasting is done as the name says by judgment or intuition. This is used when there is limited or no historical data available for use. This type includes surveys and analog technique for instance. Time series forecasting signifies that future demand is solely dependent on the past demand. This basically means that if sales were increased this year by

X%, the same increase percentage can be expected next year. Cause- and- effect forecasting assumes that at least one factor is related to demand. Effect of this relationship can be used to estimate the future demand. (Murphy & Wood 2011, 131-132)

Supply planning extends the demand forecasts to the fulfillment phase. Inventory is controlled by the supply and it is designed to be moved and stocked to be able to satisfy future demand. Goal of supply planning is to match the supply and demand and therefore achieve the financial and service objectives. (Website of Demand Caster 2013, Website of SCM Focus 2013)

### 6.3 Order handling

Order handling process starts with first touch of the customer via customer service. Customer service is an important part of the business. It can be used to differentiate company from its rivals, enhance its profitability and obtain the competitive advantage. It can also mean different things to different people. According to David Grant in Logistics Management, one useful definition is: "...a process which takes place between the buyer, seller and a third party." This basically signifies that all the information exchanges between the parties are counted as a customer service. (Grant 2012, 16)

In basic customer service, the focus is typically on the operational side of the logistics and ensuring that the company is capable of providing seven rights to the customers. These seven rights are right amount of the right product at the right time at the right place in the right condition at the right price with the right information. Basically ensuring everything is just as the customer requested. If this is accomplished, company can therefore provide good service reliability. (Bowersox, Closs & Bixby Cooper 2007, 50, 52)

A purchase order is a legal agreement between the seller and buyer. With the purchase order and the order confirmation usually send after receiving of the order, buyer is committed to receive the goods/services and to pay for them. Seller on the other

hand is committing to deliver the goods as customer wanted. The orders should include a lot of information needed to perform the work properly. Following information is needed for successful delivery of products:

- *Purchase order number.* This information makes the order unique and easy to recognize. It is also good to indicate also that it is a “Purchase order” as the title of the document. PO number is used as the contract number since the offer and purchase order are usually the only legal documents between the business partners.
- *Date of issue/ delivery date.* This is important to specify so that both parties know when this order was received and for tracking and determining the delivery date. It also specifies the urgency of the order.
- *Page numbers as X/X.* This is good to include in case of multi-page orders, so that if pages went missing between the parties. Page numbering indicates the missing pages clearly.
- *Contact information of the seller and buyer.* This should include Company names, addresses, phone numbers, emails, contact person information. It is also good for buyer to include website address at least when ordering first time so seller can get information about you easily.
- *Ship-to address/ bill-to address.* In case delivery address is different than the invoicing address, it is always good to indicate both addresses clearly.
- *Item details.* This should include item numbers if existing, color/size, description, quantity, unit and total cost of the order with and without VAT and shipping charges clearly mentioned if not included in the sales price.
- *Customer PO number.* In case buyer is trading company, importer or agent handling PO for some other company.
- *Quality expectations.* In case customer request special quality specifications. (For instance, low quality- high quality goods, produced by ISO standards, etc.).
- *Delivery terms.* Clarify how and where customer wants goods to be delivered.
- *Payment terms.* Identify in detail correctly how and when the invoice will be paid. (Website of Quality wars 2013, Website of General Business Help 2013)

## 6.4 Trading terms and conditions

Since the purchase order needs to include so many different things and a lot of information, there are different standards used to make everything easier to be indicated. Following chapter will describe couple of methods used to indicate needed information about the delivery terms and payment methods.

### 6.4.1 Incoterms® 2010

Term incoterm comes from International Commercial Terms which means that the rules are internationally recognized and accepted standards. They are used worldwide in international and domestic contracts for the sale of goods. By standardization of the terms, business is made easier for all and they help traders to avoid costly misunderstandings by clarifying the tasks, costs and risks involved in the delivery of goods from sellers to buyers. Incoterms are updated roughly every ten years. Newest version is Incoterms 2010. There are similar terms in Northern Europe and also in America. Northern European terms are called Combiterms and in America they are using terms called Raft (Revised American Foreign Trade Definitions). (Website of ICC 2012, Melin 2011, 56)

Incoterms 2010 (appendix 1) are bound to different transportation modes. Different transportation modes are sea freight, train, truck, airfreight and combination transportations. Destination should be written after below mentioned Incoterms abbreviations, like for example DAP Duisburg. Sea transportation terms are

- FAS (Free Alongside Ship)
- FOB (Free On Board)
- CFR (Cost and freight) and
- CIF (Cost, Insurance and Freight) (Selin 2009, 152-153. Melin 2011, 56-58, 61- 74)

Other terms can be used with any mode of transportation. These terms are:

- EXW (Ex works)
- FCA (Free Carrier)

- CPT (Carriage Paid To)
- CIP (Carriage and Insurance Paid To)
- DAT (Delivered At Terminal)
- DAP (Delivered At Place)
- DDP (Delivered Duty Paid) (Selin 2009, 152-153. Melin 2011, 56-58, 61- 74)

#### 6.4.2 Methods and terms of payment

Company dealing with foreign trade should consider payment methods and terms carefully. It is an essential part of negotiations. Reasons affecting the decision of the term and method are trust between partners, competition, traditional trade methods, desire to eliminate environment and buyer related risks and local legislation. (Melin 2011, 120)

When company is deciding which payment terms to use, they should take into consideration following:

- Speed and certainty of the payment method
- Trustworthiness and identifiably of the buyer
- Seller or buyers position in the current markets
- Traditions and business manners of the field of business
- Subject of the trade: consumer goods or equity goods
- Financing opportunities of the parties
- Financing impact of different methods
- Allocation of the expenses
- Knowledge of the payment methods
- Geography, distance and currency regulations
- Political and financial situation of the countries (Melin 2011, 120)

Foreign trade payment methods are for example cheque, payment order, documents against payment and documentary credit. Cheque and payment order are open, direct and the simplest payment methods. These require trust between parties because there is not requirements set for the banks. Bank is only middleman for the money and do

not take any documentation into possession. This is called clean payment. Collection and documentary credit are documental methods. (Selin 2009, 145, Melin 2011, 121)

Cheque or payment order should be used only when partners know each other well and trust each others. Cheque is not used as much as the payment order, but can be still found somewhere over the world. Payment order, on the other hand, equates domestic money transfer and is widely used in international business. With the payment order, it is often required to indicate payment term. (Selin 2009, 145)

Options for the payment terms are as many as there are people and businesses in the world. Usually payment terms are constructed as number of days and then indicated from which moment the counting starts. For example 30 days net from the date of the invoice. If the company has a good and reliable customer, they can offer longer time such as 45 days net or 60 days net. Sometimes there is also added discount percentage which means that if company is able to pay the invoice for example within 10 days from the date of the invoice, they can get 2 % discount. On the other hand, if customer is new or unreliable, company can demand cash in advance or payment in advance. This means payment has to be totally done before and can be seen in sellers account before goods are delivered to the customer. (Selin 2009, 145)

Collection letter, or in the other words Documentary Collection, is a method used when the seller wants to make sure the customer cannot get the material or material documents before payment is received. This is used usually when the partnership has just started and trust is not yet established or if the customer has payment problems. (Selin 2009, 145, Website of Aktia Bank 2013)

Documentary credit (D/C) is the safest of the payment methods. D/C requires also the most work from the payment methods, but it ensures both parties and shows good payment ability from the buyer. There are many D/C types, for instance revocable D/C, confirmed D/C and transferable D/C. Each type has its own features and can be matched to sellers and/or buyers needs. (Selin 2009, 147- 148)



## 7 LOGISTICS

### 7.1 Logistic operations

Logistics is an important concept especially in commerce. Preparations for delivery should be done well beforehand. Following subjects are to be noticed:

1. Financing and insurance preparations
2. Special delivery documents
3. Possible arrival of opening letter for Documentary credit (D/C)
4. Organizing the transportation
5. Taking into consideration the company's own regulations (Sakki 2009, 16, Selin 2009, 141)

Financing and insurance preparations include for example applications for insurances. Special delivery documents include for instance special documents needed by Finnish or foreign customs for specific product. These products can be for example dangerous goods and weapons. (Selin 2009, 141)

After arrival of order, it is important to check the terms and correct the possible mistakes to be able to avoid possible misunderstandings. As mentioned before, different transportation modes are sea freight, train, truck, airfreight, combination transportations and with small deliveries courier services. When selecting the right mode of transportation following things should be taken into consideration:

- Product quantity and weight
- Pallet size and weight
- Transportation space and freight basis
- Destination country and address
- Transportation route and speed
- Characteristics of the product and possible specialties (breaking, molding, etc)
- Value of the product
- Delivery time
- Quality of customer service

- Reliability of the transportation and monitoring possibilities (Selin 2009, 141-142, 186, Melin 2011, 194)

Organizing the transportation has to be done well before loading date and logistics operator should provide following information to the forwarding agency:

- Product
- Quantity
- Weight
- Package type
- Loading and delivery date
- Loading and delivery address (Selin 2009, 141-142)

It is also important that communication inside the company flows without interruption. Warehouse has to know for example what to pack, when and where. Someone should also supervise the loading and check if the delivery was on time on right place. Information flow between different stages of the order handling is crucial especially if the logistics department is outsourced. Outsourcing is a practice used by company to reduce costs by transferring portions of work to outside suppliers rather than completing it internally. These firms offering logistic services are called logistics service providers (LSP). (Selin 2009, 142, Deepen 2007, 19)

## 7.2 Transportation

*Sea freight* traffic has three transportation modes: retrieval freight, line freight, and contractual traffic. Retrieval freight means that the vessel transports the cargo between harbors without any regular timetable. Major share of the world's merchant marine is using this type of retrieval freight. Customer can rent either the whole ship or only a part of it for its cargo; therefore it is divided to either overall freight or section freight. (Melin 2011, 197)

Line freight means that the vessel is strolling between certain harbors as it is beforehand verified. With this system the shipping companies are usually collaborating

which is narrowing down the competition between companies. Collaboration is based on certain contracts, but either of the parties can fairly easily make changes for the customers. (Melin 2011, 197-198)

In contractual freight the parties are settling the terms of the collaboration. With contractual freight the cargo amounts are major and usually it is mass produced goods such as oil and carbon transports. (Melin 2011, 198)

**Truck transportation** has grown a lot during the couple last decades. Vehicles have developed technically and its versatile accessibility and bigger capacities have increased its performance. Modes of truck transportation are charter transportation and line transportation. The charter transportation is ordered by customer to deliver from door to door as customer has indicated. Line transportation is driven regularly according to the timetables between two places. (Melin 2011, 210)

**Train transportation** is safe, trustful and environment friendly mode of transportation. However, the problems with the trains are few number and possible far location of receiving train stations. It is also bound to strict timetables. Traffic to certain countries can be restricted and/or time consuming if the width of the railroad track is not the same. (Melin 2011, 215)

**Air transportation** is fast and reliable; it got few stops along the way, wide destination network and advantage for user to be able to use cheaper packing materials. Down point for the air freight is the high transportation fees. With the high value or light products it's a reasonable method of transport. (Melin 2011, 218)

**Combination transportation** means that more than one method of transportation is used. With regularized transportation unit sizes, the meaning of combined transport has increased. Combined transport is the best suitable for the long distance deliveries exceeding over 500 km. (Melin 2011, 218)

**Courier transportations** or express freight service can be used for document deliveries or usually small deliveries such as samples etc. Courier takes care of the package

from the front door of your company until the package has reached the destination. (Melin 2011, 222-223)

***Booking of transportation*** means requesting space and equipment on vessel for cargo which is to be transported. The company in a need of transportation, sends a transportation booking order to the transportation service provider, including all the agreed terms and conditions. Transportation service provider will send back the confirmation of the order and usually also transportation details. (Website of Logisuite 2013, Website of Es Work Place 2013)

### 7.3 Export customs clearance

Finnish custom is a part of European Union customs. Custom authority assists internal safety especially for consumer and the nature by monitoring imported products. This monitoring is mainly conducted with electronic documents. (Melin 2011, 246-247, Website of Tulli 2013)

In direct exporting company has a foreign middleman which can be for example importer, wholesale business or representative. The middleman is either distributing the product forward to end customer or is only in the middle with information flow. Products can be delivered directly to the customer. In direct exporting departure and exit country from the EU is the same. Exporter delivers export declaration electronically to customs authority and approval or disapproval notification is send back. Normally after approval exporter receives goods transfer notice and all the attachments such as EAD (Export Accompanying Document). Exit country's custom authority confirms the departure and departure notice is send to the exporter. Immediate exporting, on the other hand, means that company is selling directly to the end customer in a foreign country. This requires strong exporting knowledge and a lot of marketing resources from the company. (Selin 2009, 23-24, Melin 2011, 276)

Export procedure starts in indirect exporting when producing country sends goods outside EU through another member country. Customs procedure is the same as in direct exporting until EAD is presented with the goods at the exit site. After this cus-

toms authority at the other member country retrieves the export declaration information with the MRN number (Movement Reference Number) and confirms the information. Producing country receives the notification of departure automatically. Custom sends the notice back to the exporter like in the direct exporting. (Melin 2011, 94, 276-277)

EDI clearance (Electronic Data Interchange) is used more and more for electronic data transfer between export and import companies, forwarding agency and customs clearance authorities etc. It consists of three modules: data content, method of presentation and data transfer. EDI allows information to move quicker in a standardized electrical format from place to another, which can be located far from one another. This improves the speed of the customs clearance procedures for example. (Melin 2011, 107, Website of Tulli 2013)

Intrastat declaration is used to gather electronically information about transactions between member countries of European Union. Intrastat declaration includes sales of goods, all commercial import and export, but service business is not included. Obligation to report applies for businesses practicing importing valued more than 275 000 Euros and exporting 500 000 Euros. Declaration is given in both importing and exporting countries. (Selin 2009, 206. Melin 2011, 108)

Trade from EU countries to third countries is mostly without restrictions, but certain products are carefully monitored and restricted by authorities. Restricted products are, for instance, certain groceries, endangered species, museum artifacts, high technology products and weapons. To be able to export these outside EU company needs to apply for license or permit from business and industry ministry's business section. However, export licenses are not required in every country outside EU. This should be checked before exporting. (Selin 2009, 219-220)

#### 7.4 Export documents

The main documents needed in selling company's products are usually following:

- Commercial invoice

- Delivery note
- T2L document
- Certificate of origin
- CMR
- Bill of Lading
- Packing list
- Certificate of Analysis
- Certificate of Insurance
- Import license
- Other certificates (Selin 2004, 204-216)

**Commercial invoice** is the most important document of all. It defines all the details of the transaction. It should include, for example buyers VAT number, terms of contract, seller and buyer names and contact information and it should be done according to each receiver country's regulations. (Selin 2004, 204, 215)

**Delivery note** is a document which is issued by the seller. This document is delivered with the goods, specifying type and quantity of the goods. If order quantity is, for some reason, divided into two deliveries, delivery note gives an overview of what has been sent to them with this delivery. Signed copy of the delivery note is returned to the seller as a proof of delivery. (Website of Venture Line 2013, Website of US Legal 2013, Website of E-conomic 2013)

**T2L document** is used when goods are transported via third country or international sea area to another EU country. Instead of T2L document, companies can use also other approved document to prove community status of the goods. T2L is not needed if forwarding agencies have approved permission for its regular route. (Selin 2009, 205, Website of Tulli 2013)

**Certificates of origin (CoO)** are mainly divided in two different forms. EUR 1 form is to be used when the goods value more than 6 000 Euros. EUR 2 is used when the value of the goods is less than 6 000 Euros or with the sales with Turkey for example. Mostly EUR 2 form is used only with post deliveries. In some countries certifi-

cate of origin licensed by chamber of commerce is also needed and this can be applied from local chamber of commerce. (Selin 2009, 216-217)

**CMR** comes from French name of “Convention relative au contrat de transport international de marchandises par route”. Translated in to English it means “Convention on the Contract for the International Carriage of Goods by Road”. It is a convention done in 1956 regarding the international truck transportation of goods. Based on that convention, truck transportation document CMR was created and is used as a standardized document for truck transportation. (Website of United Nations Economic Commission for Europe, FINTRA 2004, 43)

With the sea freight one of the most important transportation documents is the **Bill of Lading (B/L)**. It is used as receipt and documents products and quantities shipped. B/L process starts when the customer books transportation space from the vessel. Booking note is created from the space reservation and is valid as a pre contract. When the goods are delivered to the forwarder, they weight and check the packages. After that chief officer creates the mate’s receipt which includes the information about the weight and the condition of the package. With this information the Bill of Lading is created and it is a receipt of received goods. There are several different B/L types to match different needs. (Melin 2011, 202-203, Bowersox etc. 2007, 208)

**Packing list** is a shipping document created by the seller and it is delivered with the goods usually in an attached pouch or inside the package. It should include information about the content of the package for the buyer and the third parties involved in the transportation (transport agencies and government authorities) to help everyone to handle package correctly. Also quantity, item description and weight of the content should be included. (Website of E-conomic 2013)

**Certificate of analysis (CoA)** is an official document that provides all the required information about particular material. It includes results of scientific tests on product listing the chemicals, etc. and the quantities of them in the product. It gives the end user proof that material is fit for their purpose. It is to certify the quality and purity of the goods. (Website of Logical Standards 2013, Website of The Law Dictionary 2013, Website of Cambridge Dictionaries 2013)

***Certificate of Insurance (CoI)*** is a document issued by companies to brokers/agents. Usually it is issued on export covers for individual shipments, but submitted in monthly batches. Certificate of Insurance is used to verify the existence of insurance coverage under specific conditions granted to listed individuals. (Branch 2006, 269, Website of Investopedia 2013)

***Import license*** can be defined as administrative procedure which means that usually government of the import country requires more information than regular custom documentation before importation of the product will take place. According to the Website of WTO (World Trade Organization) import licensing is required, for instance, in Russia, Indonesia, Brazil and Argentina. (Website of World Trade Organization)

There are many ***other certificates*** for different countries. As an example of those certificates, for instance living organisms, such as wood products and plants need Phytosanitary Certificate which is granted in Finland by Evira. ISPM 15 standard is very well taken into use in many countries which has cut out the obligation to provide Phytosanitary Certificate. (Melin 2011, 103)

## 8 RESEARCH METHODS

Theoretical data of the thesis is collected from the books, articles and internet. This basically means that reference information used in this thesis was already existing data and therefore thesis is done as secondary research, or in other words desk research. (Website of Marketing Donut 2013)

In empirical part of the thesis data is collected by sending half structured questionnaires via email to the responsible people in Duisburg and Pori. Contact person in each site will guide author to the right people and will provide necessary information. This research is qualitative due to the fact that there are not enough people working to be able to manage quantitative research. Qualitative research is a scien-



tific research method which aims at understanding of the subject, its characteristics and meaning in overall comprehensive way. Also previous knowledge from Pori process is used due to the fact that author has been working there for two summers. (Website of Jyväskylä University 2013)

## 9 ORDER HANDLING PROCESSES IN SACHTLEBEN

### 9.1 Research questionnaire structure

A half structured questionnaires is formed according to the above learned theories and previous experience from the case company (see appendix 2 and 3). According to that information received from company workers, empirical part of the thesis is written. If there are any questions raised from the author side from the answers, author has opportunity to address extra questions via phone or email to clear misunderstandings and to get accurate description of the processes.

Questionnaires will be send to the contact person, mainly on managerial level, of Order Handling and Logistics people. Those people forward the questionnaires inside the company to all the order handling and Logistics people. Questionnaires are send to logistics and order handling people in Pori and Duisburg since the main focus of this thesis is to clear the process especially for the Order Handling and Logistics part.

Total number of received answers was 25. It was distributed as 20 from Sales Assistants and 5 from Logistics department. Out of 25 answers received, only 6 were from Pori, divided as two from Sales Assistants and 4 from logistics. Duisburg, on the other hand, had 19 answers total and 18 of them were from Sales Assistants and only one from the logistics. (See table 2.) Therefore CSO part of the process description is more reliable.

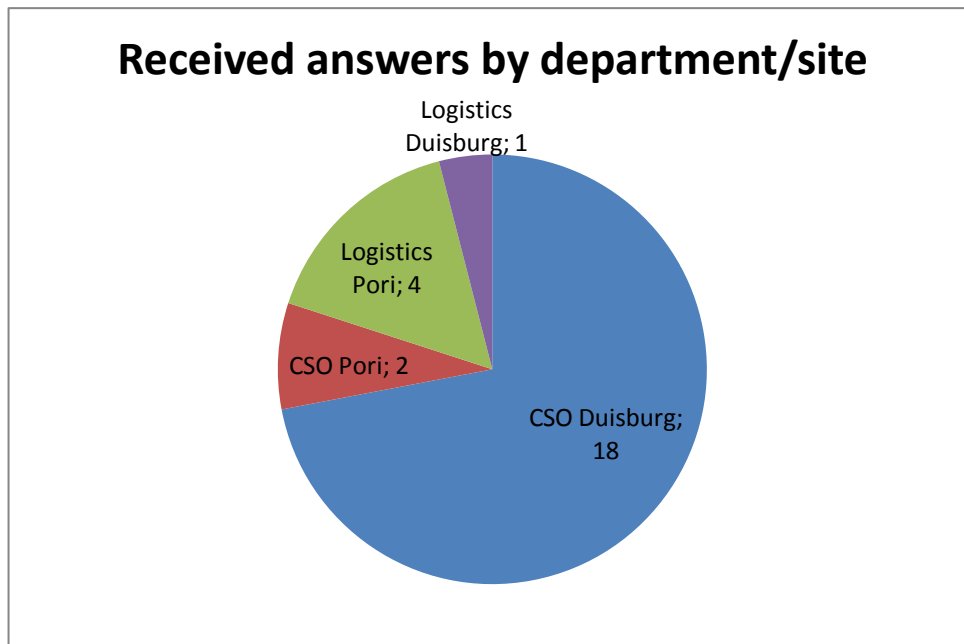


Figure 2. Answer distribution according to the site and department

## 9.2 Pori Finland Process

In this thesis, the order handling process is agreed to start in the moment Sales assistants receive the order from the customer usually to their email. Since for example warehouse, sales managers and credit controlling were excluded from the detailed process description, in this thesis following chapter will focus only for the main part of the process. This means only customer service and order management, planning and logistics operations are included. Whole process description charts can be found from appendix 4 and 5.

Colors of the charts indicate the importance of the step in relation to this thesis. Blue steps are the ones with minor significance to this thesis and to sales order handling process. Those steps are not described in detail in this thesis. Orange color signifies that it is important part of the sales order handling process, but is also not described with details. Red color means that the step is very important and will be included in the detailed process description. This does not, however, apply to payment step at the end of the process chart.

### 9.2.1 Customer service and order management

CSO (Customer Service and Order management) is located both in Pori and in Duisburg and their responsibilities are mixed so that Pori CSO can be responsible also for Duisburg material and the other way around. This means for example that CSO department in Pori can be handling also sales orders for material produced Duisburg. In the CSO organization in Pori plant, the customer sales areas are divided according to the countries and by the products. For instance all the Latin America coating and ink customer sales orders are handled by one person and Finland and Baltic sales orders are handled by other.

Process description starts after the order is received as step 2 in the Table 3 below. Sales assistant puts the required information to their enterprise resource planning system called SAP and clarifies with the customer if there are any unclear points in the order.

After the information is in SAP, CSO needs to have confirmation from planning department that the requested material is available at the requested time as per step 3. With Pori material confirmation is received via SAP. When confirmation is received, the CSO can send the official Order Confirmation (OC) to the customer. In case of advance or Documentary Credit payment method, Sales Assistant will send the Proforma invoice to the customer so that customer can open the D/C.

In some cases, the customer has overdue invoices, but they are ordering more. In this case the CSO is required to keep track of the payments and remind customer about the overdue invoice. Usually only after receiving the payment for the overdue invoice, which is informed by the credit controllers, the next delivery can be organized. This procedure applies also when customer is required to pay in advance.

There are several other responsibilities Sales assistants are required to do in different cases. For example, in case of the advance payment, Sales assistants are to check for the payment arrival from the SAP, which contains customer account information controlled by finance department, and to inform about arrival to the customer and for instance logistics operators on the site for order to be handled. Finance department is

also informing Sales assistants about the arrival of the payment. Informing the customer is done by the sales assistants because for example customer might have advance payment as a payment term and FCA as delivery terms so it means customer needs to wait until money has arrived for them to arrange pick up for the goods. Since the payment term is advance payment, also logistics operators are not allowed to arrange delivery for the goods before payment has arrived. There are also other differing steps in case the customer is totally new or for instance if already existing customer is asking for the product pre-sample. Sometimes also Proforma invoice is needed and CSO is responsible for creating it for the customer. These situations do not have any big effect on overall order handling processes.

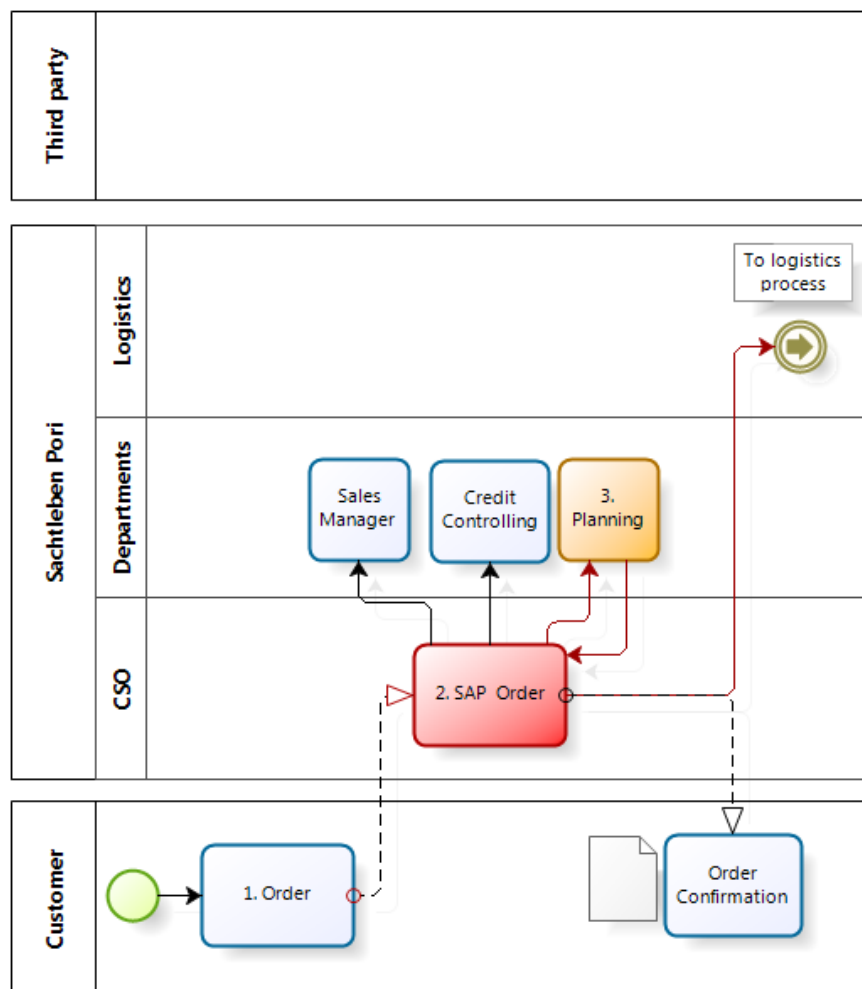


Figure 3. Process description Pori CSO

### 9.2.2 Planning

The main task of planning is to provide right material at the right time. Therefore they are planning the production schedules of Pori site for the future and checking the availability of the materials. To get the most accurate estimates of the future needs they are constantly processing sales estimates from the Sales managers, placed order information and ordering behavior of the customers.

After the CSO has placed the order information to the SAP the information can be seen in SAP in delivery list. Here the planner can see all the placed orders including the products names and quantities. From there they can plan and check the availabilities for different orders in chronological order.

When the availability has been checked, planner puts the information to SAP for others to see as step 3 in table 3 above. There are three different markings for different situations. First situation is that planner already can see that material is not available on given time. In this case, planner puts certain marking in SAP and order handling personnel can arrange the change of delivery date with customer. Second marking tells that material is supposed to be available at the requested time, but if the order is placed like 8 months forward, it is impossible to say it for sure. In this case, planner puts different marking to indicate that the delivery is supposed leave at the time planned. Third scenario is that planner knows immediately that the material is available and can give permission for transport to be organized and the goods to be loaded. This is usually the situation for the deliveries to be delivered as soon as possible.

### 9.2.3 Logistic operators

Logistics Operators in Pori factory are working under Sachtleben unlike in Duisburg. Logistics Operators geographical customer sales areas are divided differently than in CSO department. The Logistics Operators' responsibility starts when the order information is in SAP as step 4 in Tables 4 and 5 below. There is a difference in the way of handling orders according to their transportation method.

With *sea transportation*, which is referred as a container orders, the Logistics Operator starts with booking of transportation space. They give the transportation company all the necessary order information and, on the other hand, update the transportation information to the order in SAP as per step 6. After all the information is added to the SAP, Logistics Operators print the delivery note and provides it to the warehouse in order for them to be preparing for the loading. This is step 7 in the Table 4 below.

In some parts of the world there are some rules and regulations restricting the importing to that country. For instance in Brazil and Argentina it is required for customer first to provided special import license number, applied by them according to the Order Confirmation received, before the goods can be shipped to delivery country. Therefore Logistics Operator cannot book the shipment before the license number is received.

After the goods are loaded, the Logistics Operator provides forwarding instructions to the forwarder, Bill of Lading (B/L) information to the Shipping Company, issues the invoice and as per step 8, makes the customs clearance. With the received information the Shipping Company provides B/L draft to be approved. Since the B/L is one of the most important export documents, it is important step for Logistics Operator to check the authenticity of the information. When Shipping Company has received the approval for the B/L from the Logistics Operator, they create the original B/L and provide it to the Logistics Operator, who will create the rest of the needed document, which are packing list, Certificate of Analysis, insurance policy and possible other certificates depending on the customer needs and country.

Other documents that are usually needed are Certificate of Origin which is provided by the Chamber of Commerce. Sometimes also Shipping Company, health department of the state or forwarder can provide some of the needed documents in addition to regular documentation package. When all the needed documents are received and created the Logistics Operator checks the authenticity of all documents and sends all the original documents to the customer, agent or bank according to the Purchase Order. Checking and creating the documentation is included in the step 9 of the Table 4.

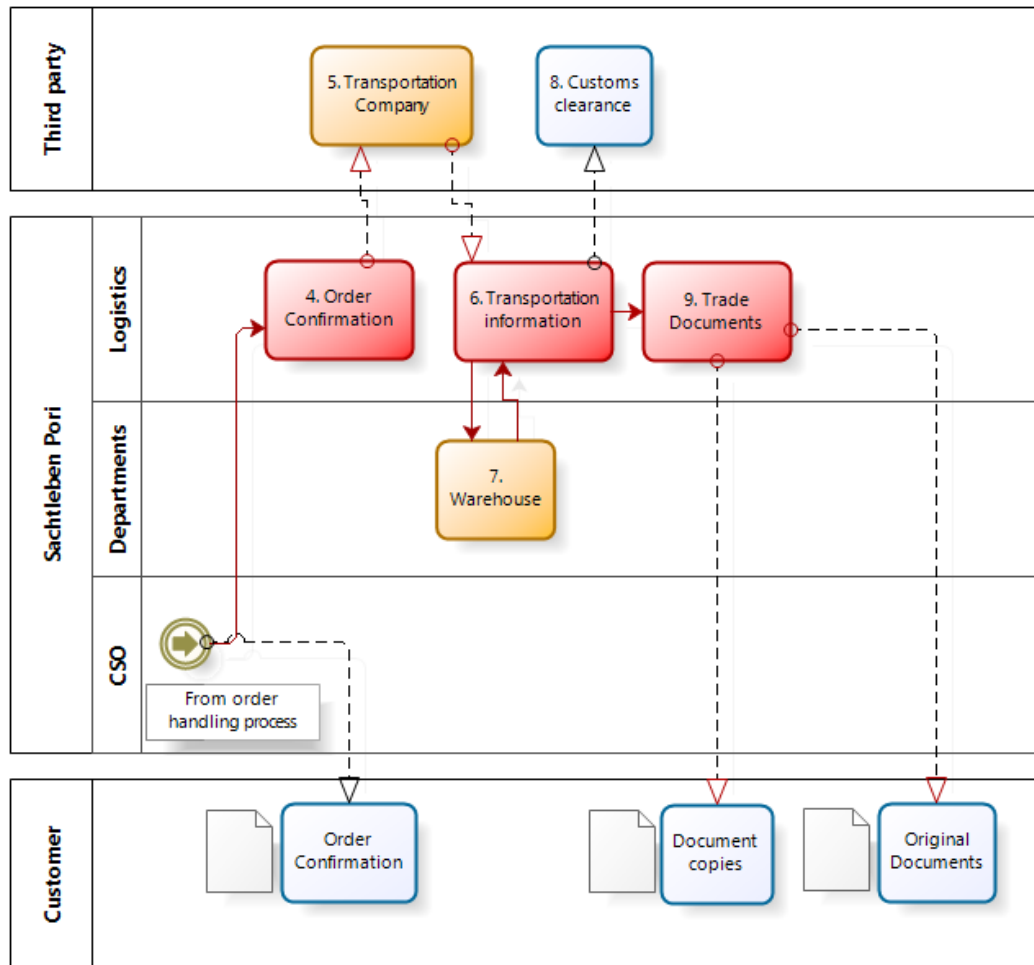


Figure 4. Process description Pori logistics for container order

With the *truck deliveries* the procedure is a bit different. This difference is due to practical reasons. Part of Logistics is located inside the warehouse near loading areas in order for them to easily provide required documents to the truck driver. After the Order is in SAP and confirmation of the material availability is received from the planning department, the first Logistics Operator books the transportation and provides the loading instructions to the warehouse as per steps 4-6 in Table 5 below. After this, the order is transferred to another Logistics Operator, who is responsible for the documents as per step 9. This person will take care of the transport and transport costs in SAP, issue the invoice and CMR. After the truck driver has left, Logistics

operator will send the original signed CMR to the transportation company and sends the export documents to the customer by post.

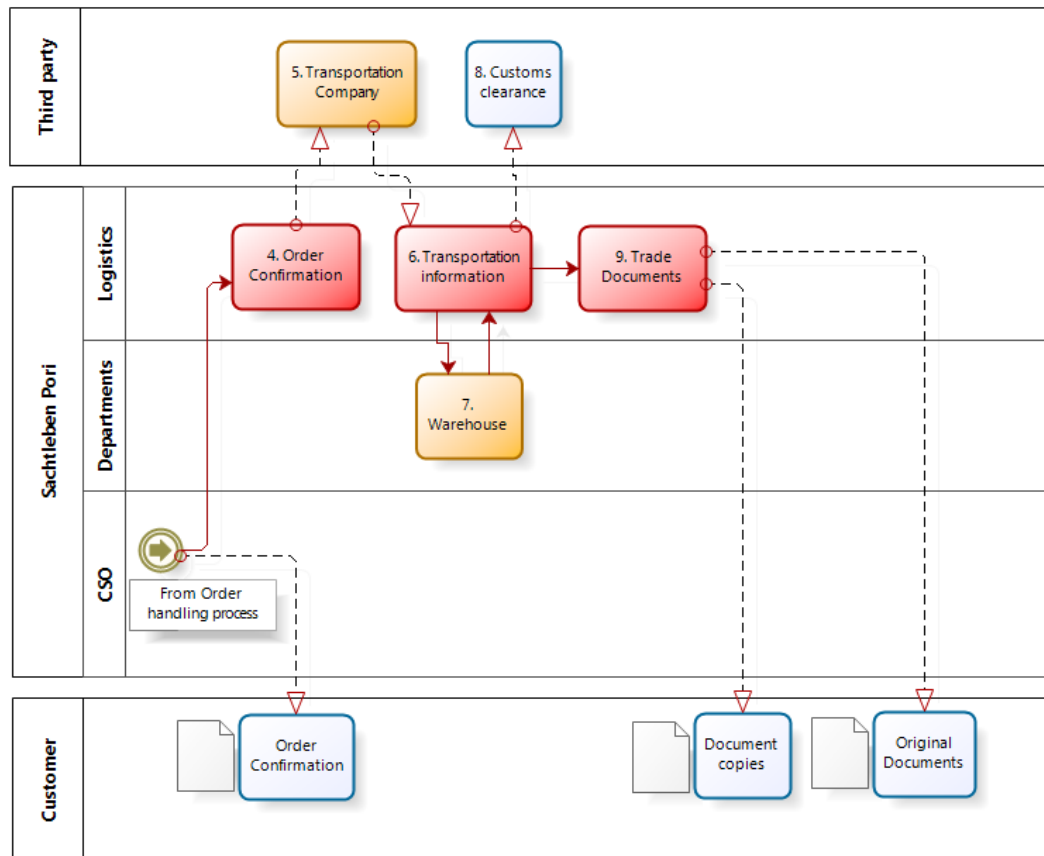


Figure 5. Process description Pori logistics for truck deliveries

### 9.3 Duisburg Germany Process

In Duisburg process there is one chapter more than in Pori process. Credit controlling is included in Duisburg process since the direct customers of Sachtleben are customers of Duisburg plant and Pori is seen as a production plant which means it is an internal customer to Duisburg plant. Despite its location the process is still the same for Duisburg and Pori people as they are handling the credit controlling for both sites. Therefore it is only described once.



Other subjects are same as in Pori, process starts with the Customer service and order management, continues through planning and credit controlling departments to the logistics operators. Whole process description chart can be found from appendix 6.

### 9.3.1 Customer service and order management

Sales assistant responsibilities are divided similarly to the Pori Sales assistants' responsibilities. Customer sales areas are divided by the countries and products, but there is also different allocation of responsibilities. One difference is the differing distribution of customer sales areas/ product categories. In Duisburg, there are more different responsibility areas compared to the Pori Plant due to a bigger share of assistants. When in Pori, CSO are mainly responsible for same market segments, but with different geographical sales areas, in Duisburg there are personnel with responsibility for whole market segment or key account all around the world.

Customer service process for Duisburg products is mainly the same than it is with Pori material. Order is received via email, fax or phone and Sales Assistants puts the information in SAP as per steps 1 and 2 in Table 6 below. Next step (step 3) is also the availability request from planning. Sales Assistant is required to take a screen shot from the first page of the order which shows all the necessary information and sends it via email to the responsible person in planning department who is in charge of planning for that particular material. After confirmation is received via email the Sales Assistant can send the Order Confirmation or in some cases the Proforma invoice to the customer. With pick up cases (FCA) the warehouse location of the material is also to be informed by the planner, as there are several warehouses located near the factory. Order Confirmations with Duisburg material are usually send to the customer directly from the SAP system. Therefore Sales Assistants do not need to send separate email with confirmation as an attachment to the customer.

In case of the D/C, CSO will first check the availability of the material and send the Proforma invoice to the customer. After that, Sales Assistant will check the D/C draft received from the customer. After the accepted D/C is received from the bank, Sales Assistant will update the order information accordingly and send the Order Confir-

mation to the requested receiver which can be for example direct customer, bank or agent.

With the Duisburg material, since the logistics was outsourced, the B/L draft was send to the Sales Assistants in order for them to check the authenticity of the B/L information. After the sales assistant who is responsible for this delivery has checked the B/L, original is send to the another CSO who is responsible only for documents and not for specific customer sales areas. This is step 9 and it is included in Table 7 in page 38. This person is responsible for the accuracy of the documents, collecting all necessary documents, printing of Certificate of Analysis (CoA) and sending of all the original paper copies after control to the bank, agents or customer by courier. After everything is done, copy of the documents and courier number is also send to the CSO, responsible for the customer sales area, via email. When the delivery is done and all the documents are created and received, customer sales area responsible will send the scanned copies and courier number via email to the customer or agent.

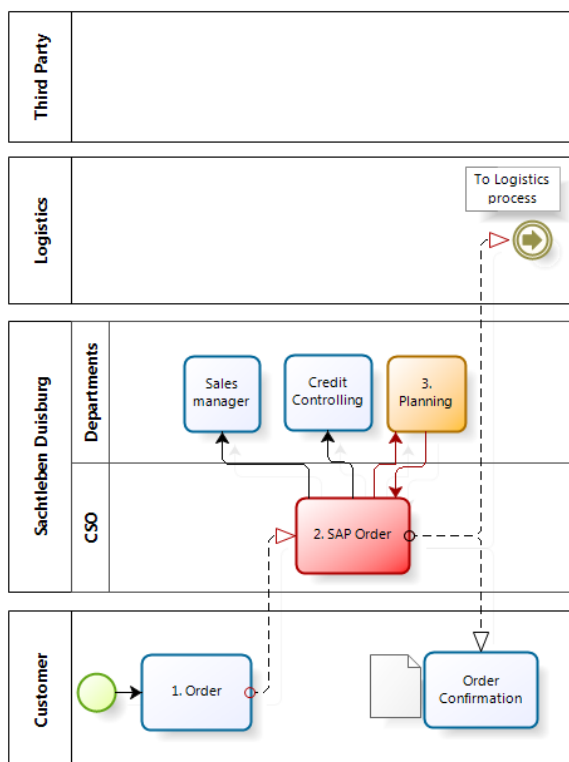


Figure 6. Process description Duisburg CSO

### 9.3.2 Planning

Material requirements planning (MRP) department in Duisburg is responsible for production planning, product release and packaging planning of Duisburg site products according to the estimations of various people. For instance sales managers and production department are doing estimations with their knowledge and information which are used by planning department. Planning department is creating annual production plans and monthly production plans including packaging, quantity, etc. As they receive all the material availability requests which give them the needed information to do forecasts, they also have to check if the special material requirements of the customer are filled with that specific batch of product. Sometimes customer might need a material which does not need to meet all the product standards and requirements of the product description. This means that they accept batch of material which is out of a standard specification. Sometimes customer might need the better quality product and this is part of the planning departments' responsibilities to check the material suitability for the customer needs. Sachtleben also has a quite many warehouses scattered in Duisburg and vicinity. With the cases when customer will arrange the transportation (FCA, Incoterms 2010), planning department is also responsible to inform the right warehouse location to the Sales Assistant who will inform the customer.

Planning department in Duisburg receive material availability request via email from Sales Assistants. Sales assistants take picture of the first page of the order and send it to the planning department for information. From the picture in the email sales planner can check order number, material, quantity and all the other relevant information and check the availability. With the information they can check the availability and inform responsible Sales Assistants by replying to the email and explaining the situation as per step 3 in Table 6. above. For example if material is available at the requested date, the response is material is available. If, on the other hand, delivery date need to be changed, planning department can reply by saying material is available XX date where planning is suggesting a new delivery date more suitable for the production situation.

### 9.3.3 Credit controlling

The part of the Credit Controller tasks, which is directly in contact with order handling processes, are mainly checking the advance payments and they are also responsible of collection of the overdue payments. Usually CSO is in contact with Credit controllers with the advance payment situations or with overdue invoices.

In case of the advance payment, CSO is informing the credit controllers with the shared Exel file about the Proforma Invoice information. This file contains information about the currency, amount, order number, customer name and number etc. With this information, they can easily connect the order numbers with the payments and responsible CSO to the customer if the payment is missing for example order number. They can also easily inform the right CSO about the receiving of the payment so they can start to move forward with the delivery.

### 9.3.4 Logistic operators

The area of responsibility in Logistics department is divided a bit differently than in CSO. Logistics department divide responsibilities also according to the transportation mode.

In Duisburg the Logistic Operators are working under a name of transportation service provider company. Logistic department is therefore outsourced. Process starts with the material availability checking. After the confirmation for material they book the slot from the warehouse for the loading of the material. Transportation service provider does not own any means of transportation itself so it needs to book the transportation from the transportation company. After the transportation confirmation is received from the transportation company, Logistics operator will provide the information also to the SAP. These were steps 4-7 in Table 7 below. Before and also after the delivery, all the needed documentation is issued by the Logistics Operator and send to the Sales Assistant document responsible as per step 9. This documentation includes Invoice, customs documents, movement certificate, packing list, certificate of origin (CoO) and insurance certificate (CoI).

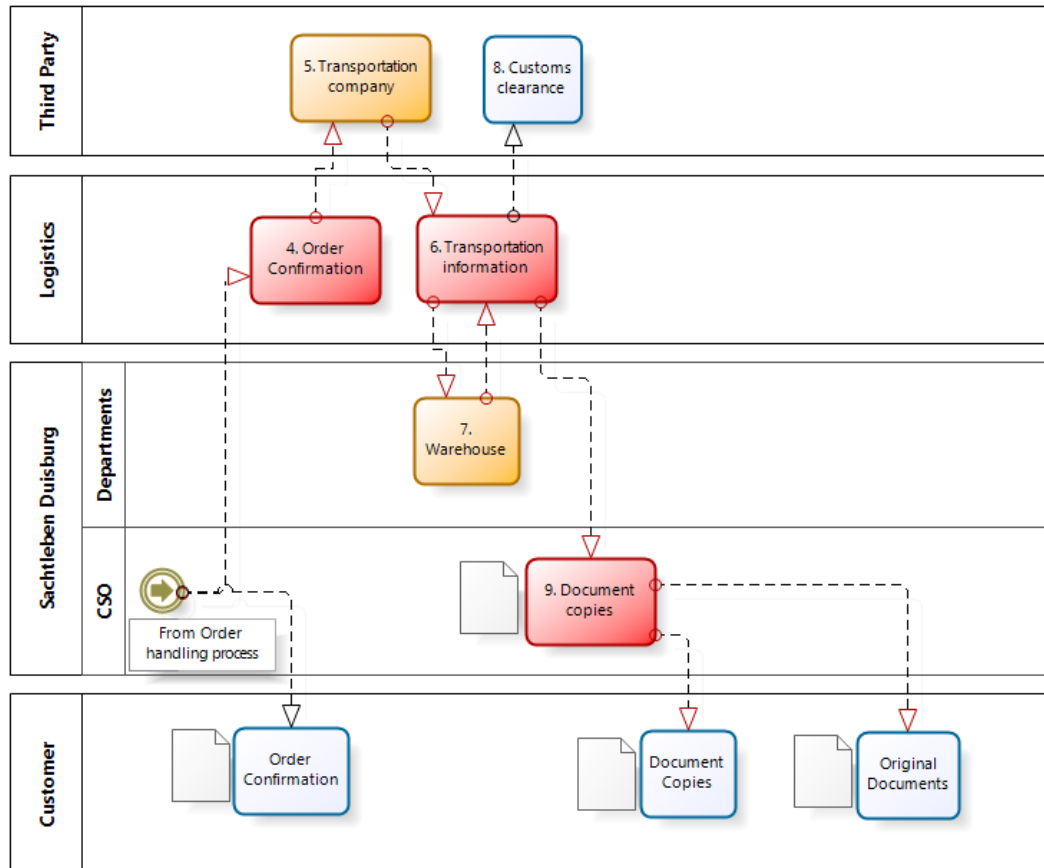


Figure 7. Process description Duisburg logistics

#### 9.4 Differences in order handling process

Although merging of the two companies was already five years ago, there are still many, usually small differences in the order handling processes. One difference is the material availability check from planning department. It is experienced as an arduous way to take print screen and send it to planning department. As emails are in general the communication tool between seller and a buyer, internal communication is requested to be via other tools if possible.

The biggest difference within CSO responsibilities is with the Sales Assistant responsible only for documentation. Since this person is handling all kind of documents, it adds one more CSO to the process also. Therefore order is handed by a

CSO to another one. This distribution decreased information amount every CSO need to know by heart by setting only one to deal with them. Although this CSO is handling the documentation mainly, checking of the B/L draft is still part of the main CSO responsibilities who is adding order information to the SAP. In Pori, B/L draft checking is responsibility of the Logistics Operator.

Similar difference, as the one extra step caused by the Sales Assistant responsible for documents, can be found from Pori site in Logistics department. When the transportation is booked, Logistics Operator hands over the responsibility to another Logistics Operator who is responsible mainly for documentation and distribution of them. It's an extra step in the process

Biggest difference in the order handling process is the return of responsibility back to CSO department in Duisburg from the logistics operators. In Pori plant, the Logistics Operators are handling the documentation all the way to the end, but with Duisburg materials, the responsibility to check the authenticity of the BL and to create some of the documents comes back to CSO department.

## 10 CONCLUSION

Sales order handling process includes several different steps inside the company in order to go through successful customer service. Process starts after order is received from the customer by the Sales assistant. Their job is to make sure everything is agreed with customer and included in the order confirmation, on internal enterprise resource planning system called SAP, for rest of the company to work with. After Sales assistant has put the order information to SAP the logistic operator will take over. They will make sure transportation to the customer is done according to the order information and according to all law and regulation of the importer and exporter country. In the middle of their part also warehouse make sure right material goes to the right customer with correct packaging. After goods are loaded logistics operator will issue the needed documentation according to the received order information.

When all the documents and goods are received by the customer the process is complete.

There were some differences between the factories although the companies merged in 2008 already. The biggest differences were in logistics part of the processes. In Duisburg site one of the differences was the different way of handling the trade documentation as this was mostly taken care by one member of CSO department. In Pori, this is taken care by the logistics operator responsible for transportations to that specific country.

Similar kind of difference occurs also in Pori. In Pori, there are logistics operators who are taking care of the documentation of the truck transport deliveries. After first logistics operator has booked the transportation, the second logistics operator starts working with documentation in order to give all the necessary documentation to the truck driver after loading.

## 11 RECOMMENDATIONS

According to the received feedback from the company, the only request from the personnel itself was that the material availability requests from the planning department were to be unified. Suggestion was to use internal system such as SAP without involving emails back and forth. As it has been last five years like this, there is most likely a reason behind different processes. As a recommendation I would suggest to unify the processes as much as possible. If similar system as in Pori is not possible, Sachtleben should search for some other tool for instance to ease up the material availability requests for Sales and Planning departments point of view.

To be able to unify processes within Sales and logistics department might be too big of a task to do as it does not have big difference process in mind. One example of possible change in this situation is to change one CSO member who is currently only handling documents to take over similar scope of work as colleagues. This can be key account, material group or geographical customer sales areas. On the other hand,

other CSOs will get also documentation to their daily job description. This solution would eliminate one extra step from the processes in Duisburg, but on the other hand, will not require major changes on the process point of view.

One possible change to do in order to improve the processes is to internalize the logistics in Duisburg. This step was actually initiated during writing process of this thesis. As Sachtleben bought the new factory in Krefeld, they discovered that Krefeld had its own logistics department. With this information it was decided to use that asset and internalize the logistics again and terminate the contract with the current transportation service provider company. Now logistics integration is ongoing and the near future probably holds many changes to the allocation of tasks. Main goal should be unifying the processes in three present factories of Sachtleben. Best solution might be small changes to either of the factories.

## 12 FINAL WORDS

As one of the most controversial subjects was the material availability requests, suggestion is that this subject could be handed over, for example, for student as a thesis subject as it is suitable and very interesting topic to investigate. By using students company is also able to concentrate on other, possibly more important things.

As it has been a quite long time since the topic of the thesis was given, there has already been and will be within relatively short period of time, some changes with the responsibilities. Factory of Krefeld has already started to be integrated to the systems and responsibilities. This, in the end, made writing a bit difficult as people were already working in a different way than what was asked for. For example it became very difficult to get answers from transportation service provider company to questionnaires at the end as the process has already started shift more to the side of internal logistics. As this thesis was constructed on outsourced logistics, some of the answers had to be cut out leaving only one answer to work with from transportation service provider company in Duisburg.



Although this thesis was finalized later than expected, this thesis will have high significance to the company. This information can be used for the unification of all three processes including the new Krefeld process. Although the outsourced logistics is not valid anymore, this information can be used to implement the same tasks to a new logistics department inside the company.

Process of writing this thesis deepened the knowledge of transportation especially. After working for two summers in the company as a Sales Assistant, quite extensive knowledge of that part of the process was already gained. On the other hand, logistics part of the process was not very well known so it was something to look forward to learn more on. There were so many terms on that part of the process which was heard from the logistics operators in the corridors during summers, but was not certain of their meaning. During this process of thesis writing, the logistics process and terms it includes, has finally become clearer. This will be helpful in the future as next job might be in transportation field of business.

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**DELIVERY TERMS INCOTERMS® 2010**

***EXW, Ex Works (named place)*** means that seller's responsibilities are at minimum. Seller fulfills his duty by placing the goods to seller's own premises, such as warehouse or factory for buyer to be able to pick up the delivery. Seller is not obligated to load the goods to the vehicle. Buyer is responsible for instance all the documents and expenses. Seller is only required to provide commercial invoice and safety declarations.

***FCA, Free Carrier (named place)*** means that seller delivers the cleared goods to a named place for forwarder by the buyer. Seller should provide commercial invoice and all the other possible documents to the buyer. Named place defines loading and unloading responsibilities between the seller and the buyer. If delivery is conducted in the seller's premises the seller is responsible for loading. If the loading is conducted somewhere else, the seller is not responsible for unloading from the pre carriage. Buyer is responsible for all the expenses, forwarding and customs clearance.

***CPT, Carriage paid to (named destination place)*** means that the seller makes an agreement with the forwarder, makes customs clearance, provide all the needed documents, delivers the goods to a named place, pays the transportation. Buyer is responsible for the risk of damage and all the expenses after the cargo has been transferred to the buyer. Buyer needs to do the import clearance.

***CIP, Carriage and Insurance Paid to (named place)*** means that seller makes an agreement with the forwarder, pays the forwarding expenses, delivers the goods to a named place. In addition, seller needs to provide insurance and pay the expenses for the cargo for the buyer. Seller should also make a customs clearance and provide all the needed documents. Risk of damage is transferred to the buyer at the named delivery place.

***DAT, Delivered At Terminal (named place)*** means that seller has delivered the goods to a named terminal at agreed date and time for the buyer to continue. Termi-

nal usually means for example dock, warehouse, container yard or road-, train- or air terminal. Seller is responsible for the risk and expenses until the goods are delivered. Buyer is responsible for the expenses after seller has hand over the goods. These expenses can be for instance customs fees, taxes and other expenses related to the import process.

***DAP, Delivered At Place (named place of destination)*** means that seller delivers the goods to the named place of destination without import clearance for buyer to unload it. Seller is responsible for all the expenses and risks during the transportation excluding the destination country's possible import clearances and duties Buyer is responsible for the expenses after seller has handed over the goods, including the unloading from the sellers' transportation vehicle and its costs.

***DDP, Delivered Duty Paid (named place of destination)*** means that the seller delivers the goods duties paid to the buyer to unload cargo at the named place of destination. Seller is responsible for all the expenses during the transportation including the possible duty on destination country. It is buyers' responsibility to unload the cargo. DDP includes maximum responsibility for the seller as the EXW represents the minimum responsibilities.

***FAS, Free Alongside Ship (named port of shipment)*** means that the seller has to deliver the goods next to a ship for buyer to be able to load it. Seller is responsible for the risks and expenses of the goods until the named port of shipment. Seller is also responsible for the export clearances. Buyer is responsible for the risks and expenses from the moment seller has placed the goods to a named port of shipment. Buyer is responsible for the agreement with the forwarder, forwarding expenses and import and export expenses.

***FOB, Free On Board (named port of shipment)*** means that seller delivers the goods on board to the named ship. Seller is responsible for the damages until the goods are on board. Buyer is responsible for all the expenses and risks after that moment. Seller should clear the goods for export and pay the possible duties. Buyer is responsible for the agreement with the forwarder, load and pay the cargo, do the import clearances and pay the unloading expenses.

***CFR, Cost and Freight (named port of destination)*** means that the seller delivers the goods to the ship at the named port. Seller is obligated to arrange agreement with the forwarder, pay the sea freight expenses to the named port of destination and do the export clearance. Buyer is, on the other hand, responsible for the risks and extra expenses after the goods are delivered to the ship. Buyer also need to make the import clearances.

***CIF, Cost, Insurance and Freight (named port of destination)*** means that seller delivers the goods to a ship in a named loading harbor. Seller is obligated to pay the sea freight, but the risk of damage and all the costs after sellers' delivery is transferred to buyer when the goods are on the ship. Seller also has to provide insurance for the cargo until destination port and make the export clearance. Buyer is responsible for the impost clearance.

**QUESTIONNAIRE FOR SACHTLEBEN COMPANY ORDER HANDLING  
PEOPLE**

1. Please write your name and site so that I can address possible further questions to the right people.
2. Which geographical/customer sales area do you handle? What are the main transportation modes, used in your sales area?
3. Do you handle Documentary Credit? If yes, what are the main steps that you are responsible?
4. After receiving the order you put the information to SAP and contact planning for the product availability. What are your main working steps? For example what is the moment you put information to SAP, when you possible contact customer, planning, etc. (Please note that information on subjects that matters in whole order handling process are important.)
5. What export or order confirmation do you documents you provide for the customer? Any special requirements by the country?
6. Do you have any suggestions how to improve your present order handling process?

You are free to write your any further comments/questions here

Thank you for your time!

**QUESTIONNAIRE FOR SACHTLEBEN COMPANY LOGISTICS PEOPLE**

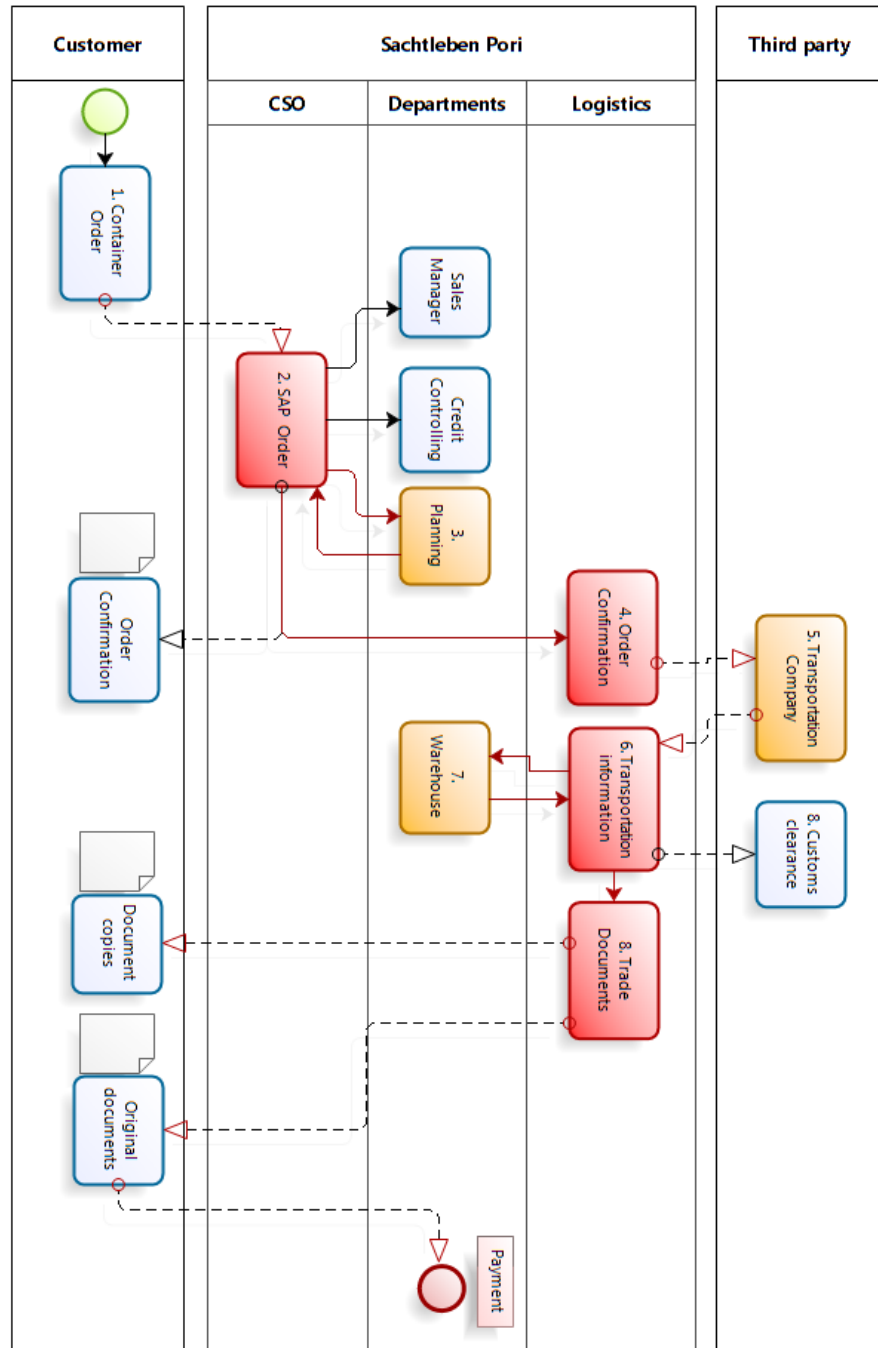
1. Please write your name and site/company so that I can address possible further questions to the right people.
2. Which geographical/customer sales area do you handle? What are the main transportation modes, used in your sales area?
3. Do you handle Documentary Credit? If yes, what are the main steps that you are responsible?
4. Briefly describe logical order process of your part of order procession from the moment your responsibility starts from the moment you have done your work. What is the moment you put information to SAP, when you contact the transportation company and/or customs? (Please note that only relevant steps of order handling process are important. I do not need any specialties about your own working methods.)
5. About the export documents. What export documents have you created by yourself? Which documents come from outside of the company? (for instance from chamber of commerce) Any special requirements by the country?
7. Do you have any suggestions how to improve your present order handling/logistics process?

You are free to write your any further comments /questions here

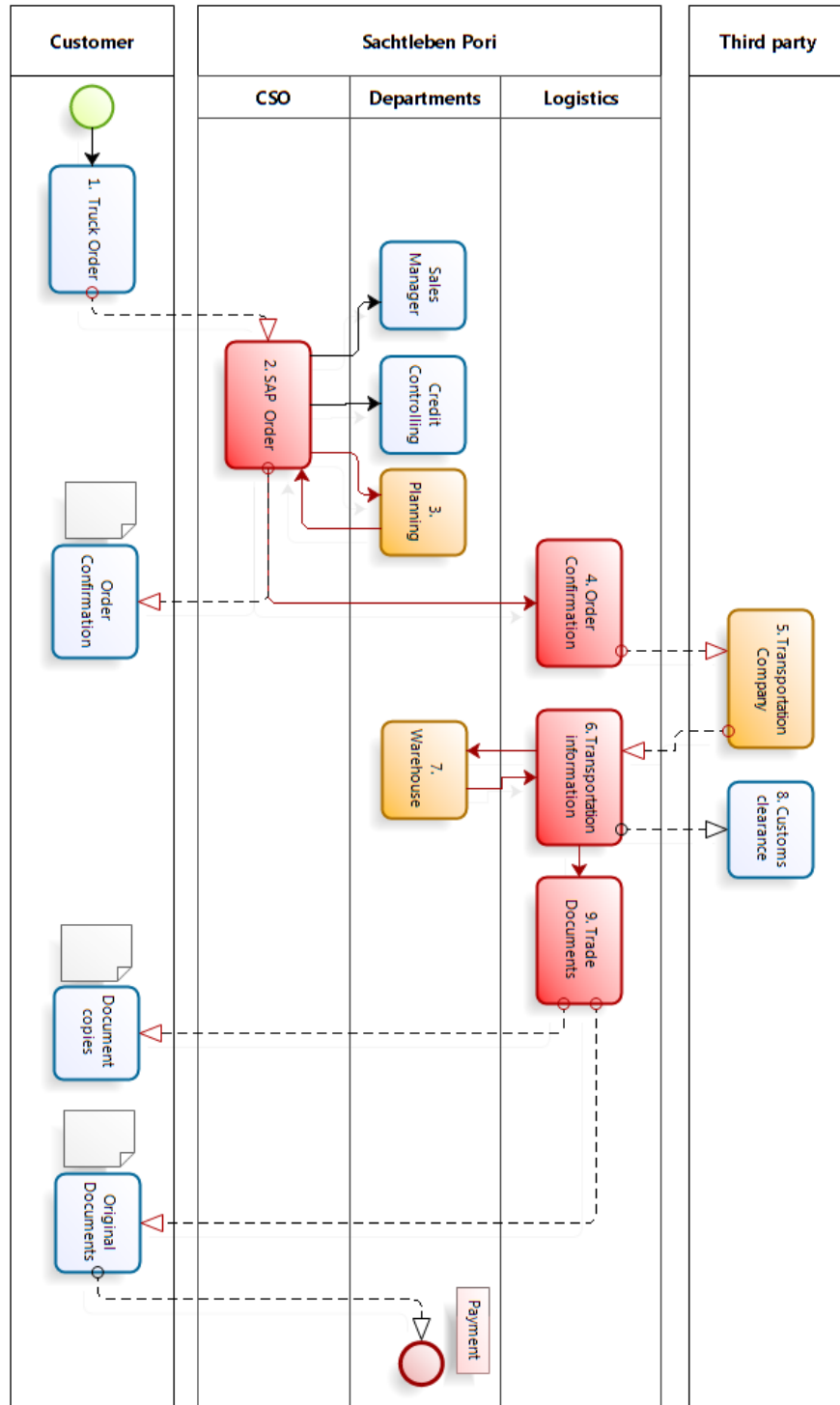
Thank you for your time!



PROCESS CHART PORI CONTAINER



PROCESS CHART PORI TRUCK



PROCESS CHART DUISBURG

