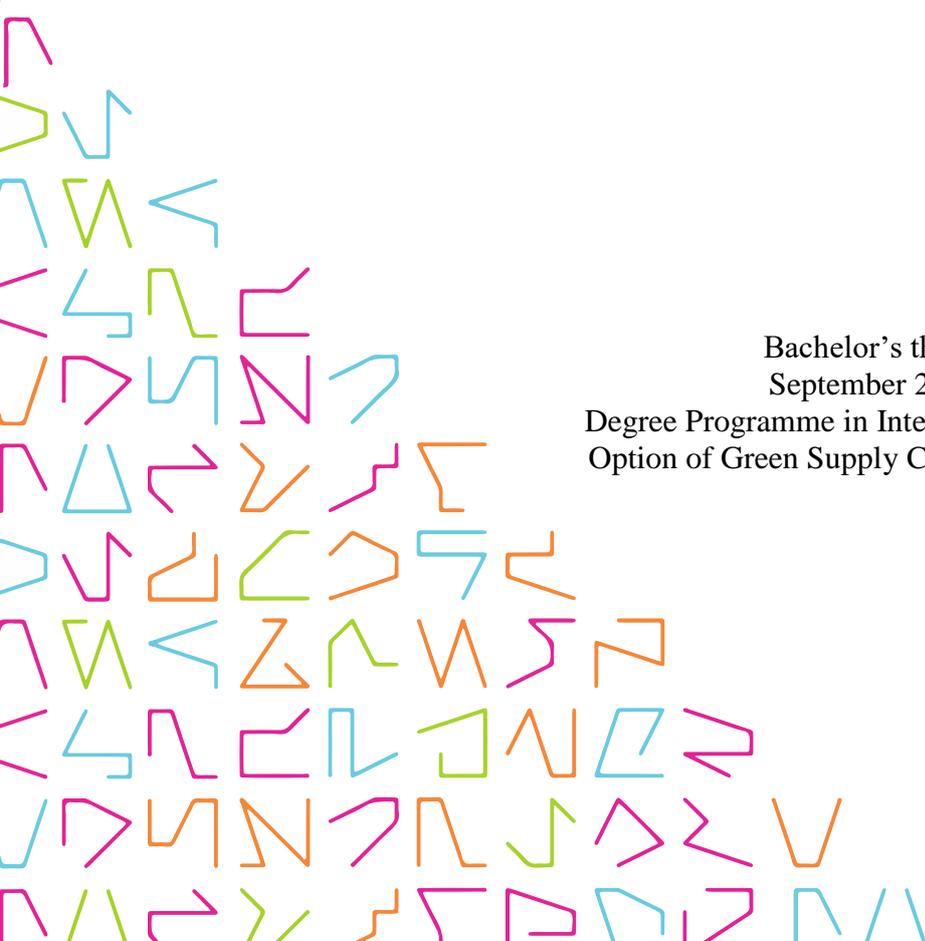


OPTIMIZING THE USAGE OF INCO- TERMS 2010

The Case of Topcon Europe Medical B.V.

Villehart Kuusamo

Bachelor's thesis
September 2017
Degree Programme in International Business
Option of Green Supply Chain Management



ABSTRACT

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The Case of Topcon Europe Medical B.V.

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Globalization has opened new markets to companies and shaped domestic trade more international. New market entries have also brought new challenges to deal with based on culture differences and legalization and restriction of destination countries. Nowadays, the way to trade has become one of the important competitive factor in global business environment. In order to unite the business between the parties International commerce term was created by International chamber of commerce. To select the most suitable Incoterm creates the basis of parties' business and provides clear rules to all the parties during the trade.

The purpose of this thesis is to help to investigate possible Incoterms 2010 and find out the most suitable Incoterms that would optimize the current operation of Topcon Europe Medical B.V. with the aim of improving the current trade between distributors and subsidiaries as well as combining Incoterms with the different payment methods and documentation to smooth synthesis. The thesis provides also guidance in the replacement of new Incoterms and increase the knowledge of delivery conditions for example how to take advantages of choosing the right Incoterm.

Theoretical part is fulfilled through the research by examining the current operation and business procedures related to four main categories; transportation, warehouse, custom documentation and payment terms and -methods. At the end of research the consequences of replacement of new Incoterms are described by using Cost and benefit analysis and calculations. These methods help to observe the requirements in order to overcome the negative outcomes of implementation. In addition improvement suggestions are introduced. Chosen solution and improvement suggestions have been examined by using cause and effect mindset and analysis. Through the research quantitative and qualitative data is utilized in order to make the research reliable and inclusive. The data is captured from the warehouse of Topcon Europe and multiple literal sources and professionals.

The findings suggest that the main challenge occurs with MEA distributors which need to be improved by selecting new Incoterm that would provide more power for Topcon Europe Medical B.V. in order to shorten the lead times as well as enhance the payment process. Besides Ex work would also be useful to upgrade more flexible solution with European distributors and subsidiaries to bring the rules closer to current operation. In order to optimize the usage of Incoterms, old Incoterms should be replaced and required organizational changes need to be taken into action.

Incoterms, implementation, custom documents, payments, transportation and warehouse

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ABBREVIATIONS AND TERMS

TAMK	Tampere University of Applied Sciences
Incoterms	International commerce terms
TE	Topcon Europe B.V.
TEM	Topcon Europe Medical B.V.
TEP	Topcon Europe Positioning B.V.
EU	European Union
MEA	Middle East and Africa
EXW	Ex Work
VAT	Value added tax
AWB	Airway bill
L/C	Letter of credit
THC	Terminal Handling Charges
EFTA	European Free Trade Association
EEA	European Economic Area

1 INTRODUCTION

Trade between countries has become more common in the 90 century, to make trade flexible and workable countries placed different rules. Globalization pushed companies to spread to other countries to reach new markets and increase the sales volume. Optical market is rapidly growing markets where the technology is in the key position and companies are trying to bring all the time new optical solution by utilizing the latest technology. Topcon Corporation is one of the large manufacture in optical industry which operates worldwide. In order to improve their sales activities in Europe, Topcon corporation established its European headquarter to focus on European subsidiaries and regional distributors. Topcon has also a regional distributor in Finland, working for Finnish distributor opened me an opportunity to apply to Topcon Europe Medical B.V.

Senior sales manager of Topcon Europe Medical B.V. impressed his dissatisfaction related to current delivery conditions and the way of supplying products to their subsidiaries and regional distributors due to unsuitable Incoterm related to the payment methods. The subsidiaries and distributors of Topcon Europe Medical B.V. are located at Europe, Middle-East, Africa, Russia and Ukraine.

During the thesis the current Incoterm is define and the effects on current operation, after clarifying the consequences, other Incoterms 2010 is researched in order to find out the most suitable Incoterms for Topcon Europe Medical B.V. and their subsidiaries and distributors with the aim of support both values and find the balance with efficiency and costs. When the Incoterms has been selected the recommendations in order to optimize the usage of new incoterms and turn it to smooth synthesis of flow of documentation and payments activities.

This thesis will provide a guidance and help in replacement of new Incoterm as well as provide thorough understanding on consequences of how different variables can change the whole process of trade meaning that one specific Incoterm would not provide any more advantages of business. The purpose of this thesis is also to find out the most suitable Incoterm for the current operation and to increase the knowledge of delivery conditions for example how to take advantages of choosing the right Incoterm.

1.1 Research question and objectives

The research questions target the main challenges of the case of Topcon Europe Medical B.V. to which the thesis needs to be answer. In order to direct the process of research to desired outcome. The research objectives has compiled to provide description of the specific steps that needs to be taken in order to achieve the goal of the research.

Research questions

1. Why does not EXW support Topcon Europe Medical's current operations
2. How Topcon would benefit other possible incoterms
3. What are the necessary requirements of implementing the new incoterm

Research objectives

1. Identify the current status of Topcon Europe Medical B.V.
2. Identify the current problems with EXW
3. Find out the most suitable incoterm
4. Identify the cost of implementing new incoterm
5. Identify the needed documentation, regulations and other requirements
6. How to organize the needed requirement in practical

1.2 Data collection and measurements

In this research, both qualitative and quantitative data are used. The qualitative data based on literature such as Incoterms guide books and online articles written by logistic and sales specialist. The qualitative data is also collected from Topcon Europe Medical's senior sales manager, order processors, logistic employees and other specialists through open interviews and meetings in which the questions has been created based on current research situation. The quantitative data is also used which based on the database of order records from Topcon Europe B.V. warehouse. The collected data is highly confidential and it is only used for this research and available for Topcon Europe Medical B.V.

Quantitative data based on customer orders from Topcon Europe B.V's system which is collected from October 2015 to October 2016. Raw data contains in total of 3662 order marks which is sorted and put in the order. Measuring and analyzing the available data is carried out by used measurement methods such as Pareto chart. This allows to identify the effect of current incoterm on transportation.

In order to find out the exact number of shipments, all cancelled orders, orders for positioning, reminders of open orders from previous weeks are removed. Thereby, all orders can be defined such as add orders and main orders. After defining all the orders, the orders from a specific customer with the same pickup dates are consolidated and add orders to main orders removed. Hereby remaining in total of 2323 shipments that has left from the warehouse.

The quality of available data is not necessary needed to test because it comes straight from Topcon Europe B.V. warehouse. However, some errors still occurs with available dates regarding to order processing because some of orders are collected earlier than warehouse has completed all the procedures such as picking and packing as well as processing in the system. As a result, a formula provides a negative value.

Due to the extent data set, a data sampling is carried out to make a data collection and measuring easier and less time consuming. Different sampling methods are tested and eventually random sampling has been used by ensuring reliable outcome of the measurements. Approximately 50 shipments are randomly selected from each month resulting a total of 150 shipments per quarter, except quarter 3, 2016, which includes more samples due to the magnitude of the number of months. Total sample size is 660 shipments.

1.3 Structure of this research

The research will first go through the current status and Incoterm in general. It explains how current Incoterm EXW works, what are the advantages and disadvantages of EXW and how the challenges occurs in different areas. After general overview of current status is given, the research describes the effect of current Incoterm in the different areas more detailed in which the current challenges are analyzed and concluded.

Then the attention moves to investigation of available Incoterms and factors concerning the requirements of new Incoterms. After identifying the required factors, Incoterms 2010 are analyzed to find out how the specific characteristics of Incoterms can be utilized in TEM with the goal of minimization of the challenges and controversies caused by current Incoterm and give commercial benefits for TEM. When the most suitable incoterms has been chosen to fulfill the requirements of operation of TEM, Incoterms has been defined

and explained more detail, for example how the incoterms contributes the current operation and what are the advantages of the incoterm in different areas.

The next section of research will concentrate the implementation of the chosen Incoterms. In this section the requirements and changes due to the replacement of EXW to new Incoterms are sifted through including the arrangement of transport and warehousing, required custom documents, payment terms and different payment methods.

In the end, the financial implications of the implementation are discussed such as division of the cost, the changes related to invoices as well as cost and benefit analysis is conducted to describe the financial advantages and cost based on the implementation. In addition, the research introduces necessary recommendations to improve the efficiency of export, eliminate cost actions and help to optimize the usage of Incoterms 2010.

2 ORGANIZATION AND INCOTERMS 2010

2.1 Topcon Corporation

Topcon Corporation is Japanese based company established in 1932 in Tokyo, Japan when the K. Hattori & Co Ltd (currently Seiko holdings Corporation) survey instrument division changed its name to Topcon Corporation in 1989. Topcon Corporation focuses on manufacture of optical instruments with the aim of quality and innovation. Over the years Topcon has grown globally to Multinational Corporation with having subsidiaries in Asia, America and Europe. Today, Topcon employs over 4000 people worldwide in 27 countries with in total of 86 affiliated companies and 10 Japanese subsidiaries and 27 overseas sales and manufacturing subsidiaries. In addition, Topcon Corporation is listed on the Tokyo Stock Exchange since 1949.

Topcon operates in three segments; positioning business, smart infrastructure business and eye-care business. Topcon positioning focus on the usage of high precise GNSS positioning technology with the goal of achieving the automatized civil engineering construction and farming. Smart infrastructure business applies the surveying technology innovation which Topcon Corporation has developed since the start of the business in the fields of infrastructure development, structural maintenance and management. In eye care business the number of eye disease has increased due to global population aging and for this growing problem, Topcon Eye care business provides advanced high technological solutions in the field of ophthalmology (Topcon Corporation 2017).

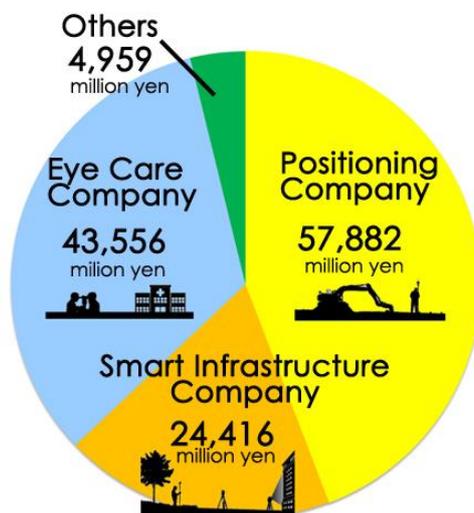


FIGURE 1. Sales composition by business domain in 2015

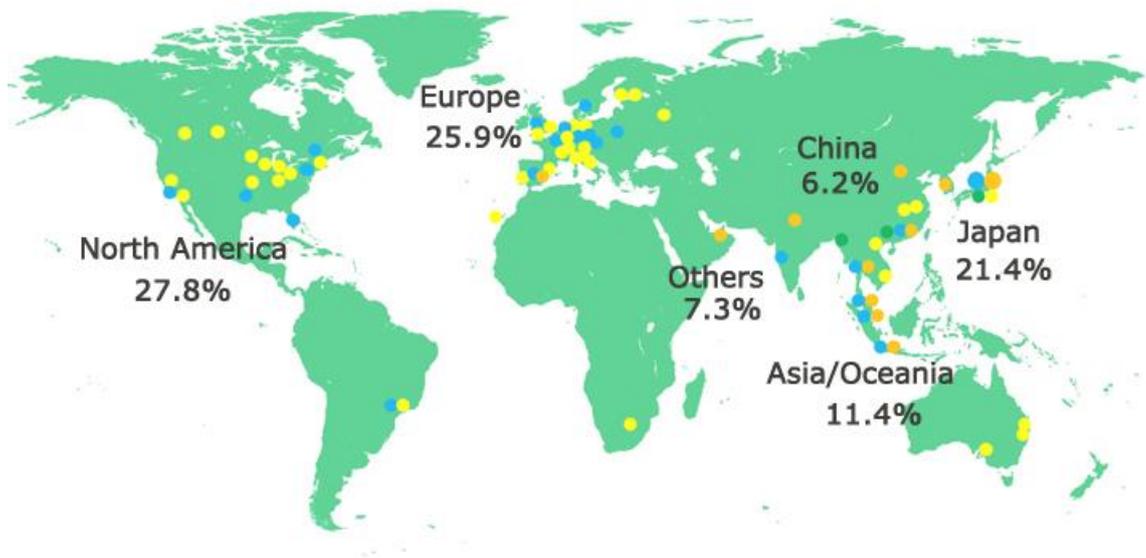


FIGURE 2. Sales by region in 2015

Net sales of Topcon corporation was recorded as 130,735 million yen at the end of fiscal year 2015 and at the same year, the overseas sales ratio of Topcon corporation was in total of 79%.

2.2 Topcon Europe Medical B.V.

Topcon Europe (TE) was established in 1970 to coordinate the sales and marketing activities of Topcon products in Europe. In 2005 Topcon Europe Medical B.V. (TEM) known as Topcon Eye care demerged as its separate business unit from Topcon Europe together with Topcon Europe Positioning (TEP). Nowadays, Topcon Europe Medical B.V. has an extensive sales network of nine subsidiaries companies and several regional distributors in Europe, Russia and Middle-East and Africa (MEA). Originally, Russia and MEA distributors were part of Topcon Corporation, but due to operational challenges related to issues with time-zones, Russia was moved to Topcon Europe Medical in 2014 and MEA distributors a year after in 2015.

The product range of Topcon Eye care is extensive by providing ophthalmic instruments for examinations, diagnosis and prognosis as well as optometric instruments for refraction and eye glass lens processing. The goal of Topcon Europe Medical B.V. is to provide first class service and the rapid response that their customers rightly expect.

Topcon Europe Medical B.V. is currently using EX Works (EXW) to complete international trade with their daughter companies and distributors. However, the Incoterm does

not really cooperate with the current operation and hence it causes challenges in terms of payments, documentation, transportation and pecuniary.

2.3 **Incoterms 2010**

Incoterms stands for international commerce terms are a series of pre-defined commercial terms for international trade which are internationally recognized standards and used worldwide in international and domestically sales of goods. The first rules was published in 1936, but the rules has been updated through the years. The latest version of Incoterms was published in 2010 by International Chamber of Commerce.

Incoterms have become the essential part of the daily language of trade which can be defined as “They have been incorporated in contracts for the sale of goods worldwide and provide rules and guidance to importers, exporters, lawyers, transporters, insurers and students of international trade.”(International Chamber of Commerce 2010.)

Due to constantly changing transport world, Incoterms 2000 was replaced with Incoterms 2010 to meet the demand of new ways of transport. Now Incoterms 2010 consist of eleven Incoterms divided into two groups; non-exclusive maritime condition and exclusive maritime conditions.

The division of Incoterms is rearranged as below (Root 2015, 15)

Non-exclusive maritime condition

To be used for carriage by road, rail, air and multimodal transport.

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

Exclusive maritime conditions

Strictly for carriage over water from port to port, including inland waterways.

FAS	Free Alongside Ship
FOB	Free On Board
CFR	Cost & Freight
CIF	Cost Insurance & Freight

To ease the description of the nature of Incoterms 2010 rules, previous classification of Incoterms based on Incoterms 2000 can be used written by Imgram. (Onistsuk 2013)

E –terms (EXW)

Seller makes available its goods at seller's premises in order for the buyer to collect. This is the minimum obligation for the seller.

F –terms (FCA, FOB, FAS)

Seller delivers the goods to a carrier appointed by the buyer. The seller will arrange and pay for delivery of goods to the carrier, but the buyer pays everything after that.

C –terms (CFR, CIF, CPT, CIP)

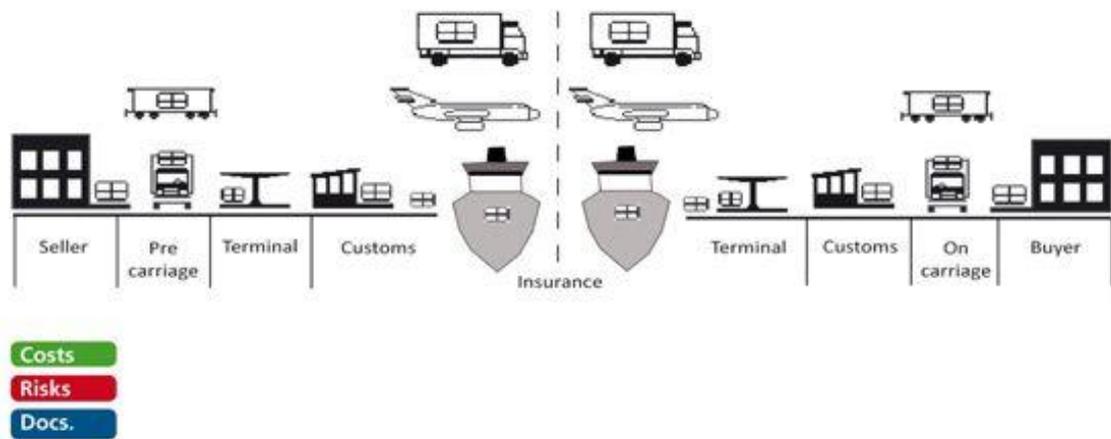
Seller has to contract for carriage, but does not assume the risk of loss or damage after the shipment

D –terms (DAT, DAP, DDP)

Seller bears all risk involved in bringing the goods to the buyer.

3 CURRENT STATUS – EX WORKS

EXW is very special Incoterm since it is the only Incoterm in which buyers (subsidiaries and distributors) bear all the responsibilities. “Ex works means that the seller delivers when he places the goods at the disposal of the buyer at the seller's premises or another named place (i.e. works, factory, warehouse, etc.) not cleared for export and not loaded on any collecting vehicle”. (International Chamber of commerce 2010a). Currently, TEM is only responsible for prepare the ordered goods in suitable package or packages and make sure it is correctly marked and numbered, after which TE placed the packages outside of warehouse and responsibilities moves to the buyer, where the shipment will be collected by the carrier.



PICTURE 1. Incoterms EXW (Global Negotiator)

Besides, EXW is a quite old-fashioned trade term and it does not apply so well to the current business environment anymore, in which companies are became more and more international and customer orientated. In the circumstances, EXW would be more suitable in domestic trade than international trade. According to Hasem el Sayegh, Order Processor of Topcon Europe B.V. (2017) due to the globalization and increase in international trade EXW will not be exist anymore in the future.

3.1 EX Works pros and cons

Table 1. below describes how the current Incoterm EXW impacts the major areas either positively or negatively as well as what the current status of the payment terms is in TEM.

TABLE 1. EX Works - Pros and cons

Aspect	Pros	Cons
	<p>No responsibilities for arrange the transport</p> <p>No need to pay the freight cost</p>	<p>Lack of control after the payment is completed (Warehouse)</p> <p>Hard to access to transport custom documents</p>
Warehouse		<p>Lack of control on transport</p> <p>Sometimes need to hold extra inventory</p> <p>Need to complete the loading process on behalf of a carrier</p>
		<p>Hard to access to documents</p> <p>Not able to proof the shipment has left from the Netherlands</p> <p>Cannot proof the tax free trade (VAT 0%) in invoicing</p>
	<p>Payment need to be paid in 30 or 60 days</p> <p>Special terms of payments such as 90 and 270 days open account</p> <p>Not able to record the sales until order has been picked up</p>	
	<p>Prepayment</p>	
	<p>Letter of credit</p> <p>L/C Does not work with EXW because payment goes via banks</p>	

3.2 Transportation

Topcon Europe Medical B.V. operates currently its pallet outbound logistic with three long-lasting transport partners; Dutch-based freight forwarder Rotra Forwarding BV, Danish logistic company DSV and Dutch logistic provider called as CTS which has delivered Topcon's eye care instruments to the UK over 15 years. All of these international logistic providers focus mainly on shipments loaded onto pallets directed to TEM's subsidiaries and regional distributors, when TEM is charge of the main carriage. TEM has selected its transport companies due to great access to the region of subsidiaries and distributors, competitiveness as well as reasonable price with providing high-quality services globally. With smaller shipments such as single parcels, TEM is operating with DHL, UPS, TNT and FedEx delivery services. (Huurman 2017)



FIGURE 3. Outbound transport partners of Topcon Europe Medical B.V.

For the seller, EXW can look the easiest and cheapest option but EXW limits strongly the responsibilities and control of international trade which can turn out to be quite problematic. According to the rules of EXW, the buyer is responsible for contracting a carriage, picking up a shipment, completing a custom clearance, insurance and other activities. Because of the lack of control on transportation it leads a lot of challenges to TEM but also to other departments. One of the biggest sufferer is Topcon Europe B.V. warehouse since the buyer is obligated to pick up the shipment TEM cannot control on time of pickup when the order leaves from the warehouse of TE and as a result uncertainty related to time of order pickups.

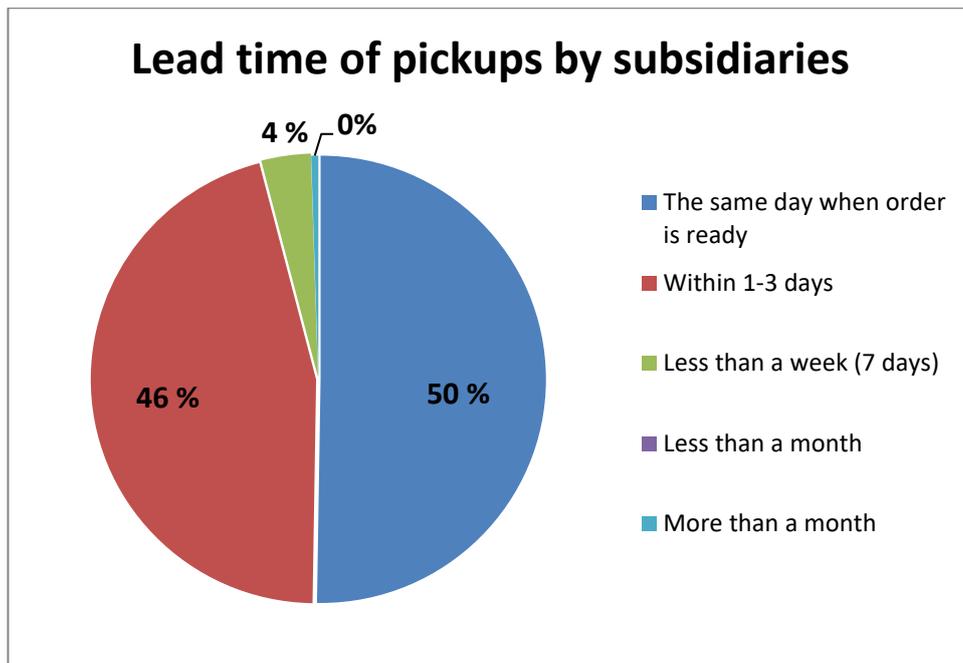


FIGURE 4. Lead time of pickups by subsidiaries

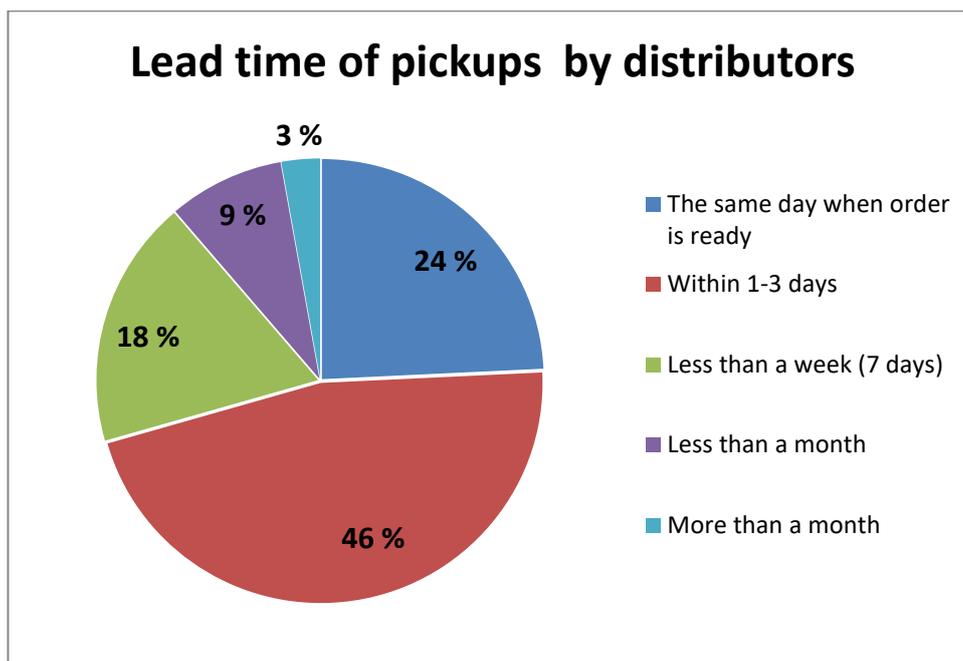


FIGURE 5. Lead time of pickups by distributors

The pie charts in figure 4 and 5 above show overall division of time used for collecting the orders from the warehouse in all quarters by subsidiaries and distributors. The lead times of pickups have been calculated as time between the warehouse has been completed the order and the order has actual been collected from the warehouse by a carrier nominated by the buyer.

As shown the difference between the subsidiaries and the distributors is really transparent. The shipments directed to the subsidiaries has collected within 3 days in total of 96%. In fact, there is only one shipment which lead time is more than one week due to the size of order. All in all, the frequency of pickups by subsidiaries seems to be pretty stable and in good manner. The lead time of pickups can be also seen in appendix I. The greater fluctuation occurs in figure 5. which shows the lead times for pickups by distributors. Most of shipments are still collected within 3 days which is 70% of all the shipments left from the warehouse to the distributors. The orders collected in 4-7 days covers 18% of all the shipments, meaning that the share of the shipments collected within one week is in total of 88%. Rest of the shipments are picked up after one week or even after one month. This is still relatively large proposition (12%) in order to improve the current warehouse operation and avoid issues that cause a lot of headaches for the warehouse. Overall, based on the charts, it can be seen that there is a lot of variations regarding to the lead times between the pickups and long delays among TEM's distributors compared to subsidiaries which are obviously more problematic for TEM.

Another problem in terms of EXW is that TEM carries out sometimes the deliveries to their customers based on a request of customer, who may require TEM to transport goods by using different Incoterm such as Delivery Duty Paid (DDP), which is actually used also with warranty and repair manners. As a consequence it can cause serious financial controversy with insurance company.

Furthermore, the current prices are calculated based on EXW even though TEM would use DDP. In the case when an accident occurs during the loading or transportation, insurance company can claim that TEM is used EXW and therefore, insurance will not cover the right amount of damage.

3.3 Warehouse

Warehouse department of Topcon Europe B.V. handles the orders from both TEP and TEM units. The warehouse is important asset of TEM because it keeps stock of optical equipment, handles packaging and labelling and conducts loading activities. Through the warehouse all orders has been delivered to customers of TEM to Europe, Middle-East, Africa, Russia and Ukraine.

According to Dim Mureau, Senior Manager Logistics of Topcon Europe B.V. (2017) current mode of warehouse operation and EXW do not go hand by hand, and as a result TEM needs to take a cognizant risk in terms of damage and accidents of shipments because the warehouse needs to complete the loading process on behalf of the carrier nominated by the buyer, although the condition of EXW allows the warehouse to minimize the risks in terms of damage products or other accidents. Because of the security regulation, carriers are not allowed to enter the warehouse and TE does not allow to shippers to use the equipment owned by TE during the loading activities. This is a critical business where one mistake can appear to be really expensive because of the nature and value of the products.

Besides, EXW brings challenges to an outbound area due to the lack of control and flexibility on transport. At the moment the warehouse operation is highly depended on the carriers contracted by the buyer whose uncertainty time of pickups causes delays in order pickups which lead to the case where warehouse needs to hold extra inventory, and as consequences increase in inventory cost and limitation for available space at the outbound area.

An example of this is when the warehouse has completed an order, it has been transferred to the outbound area waiting for the pickup and hence the warehouse may accumulate several shipments in short period, if the warehouse receives new orders before the previous orders have yet been collected due to unforeseen delays.

TABLE 2. The average of unpicked shipments at the end of week

Total of the unpicked shipments (samples)	304
Total weeks	60
Average	5,0667

As shown in table 2. There is in average of 5 shipments at the outbound area at the end of every week waiting for collection. It is critical to recall that the table contains only the sample size which contains one of fifth of total number of shipments.

3.4 Custom documentation

The documents are the key parts of international trade transaction in order to complete the international trade between the parties by providing an accounting records of transaction, detailed instruction on transportation related activities.

According to EXW, the buyer is responsible for custom declaration and clearances as well as arrange documentation and thus it gives a lot of freedom for the seller. On the other hand, this means that TEM cannot assert a right to receive the custom documents and without the export documents signed by customs of exportation it can lead to several major problems related to payments and value added taxes.

Since free trade agreement (FTA) was signed by member countries of the European Union and EU internal market was established, the trade barriers were reduced and so value added tax (VAT) allows for the certainty that exports there are completely and transparently tax-free or VAT 0%. (European Commission 2017). This means that If EXW is executed entirely according to the rules, TEM would not be able to confirm a claim for VAT 0% rating in invoicing because of missing a needed export document signed by customs of exportation such as EX-A document, bill of lading or AWB.

Hereby, TEM needs to pay VAT 21% due to the lack of evidences to prove that the shipment has been left from the Netherlands and has been delivered to a target country, if custom authorities start to investigate invoices. As an outcome TEM would be obligatory to cover extra 21% of the catalogue prices and because of the value of the optical instruments, this causes large-volume payments.

Another problem occurs with letter of credit since letter of credit is fully-dependent on transport custom documents, meaning that letter of credit is inappropriate with the condition of EXW. Therefore, the buyer is charge of transport custom documents, meaning that TEM is not able to access to needed documents. Thanks to strong long-lasting relationship with European distributors, documents can be transferred between the parties when needed, but this is not a case with MEA distributors with whom business need to be done much more secured and according to the protocol through banks due to legal and culture issues.

3.5 Payment terms

TEM provides generally an open account payment term to its customers in which a payment need to be paid in 30 or 60 days after invoice date. (van der Ree 2017.)

Due to erratic and challenging economic situation in the Middle-East and Africa, TEM needs to complete the payments via banks as prepayment or letter of credit with most of its MEA distributors. These payment methods can be sometimes very time consuming processes and delays can often occur due to number of documents, volume of shipment and communication between multiple parties involved in the payment process. However, TEM has some special terms of payment with its MEA distributors for example open account payment within 90 or 270 days and documents against payment at 60 days. This is because of the regulation of target countries and the quality of relationship. In order to complete letter of credit in proper way, EXW is very challenging to execute because it is theoretically only possible if TEM has control on transport custom documents. For this reason TEM needs to be involved in the arrangement of the freight. Moreover, letter of credit offers only required the security of payment since providing the Incoterm agreed upon doesn't contradict its conditions. (Root 2015, 111)

As mentioned TEM prefers the prepayment for its MEA distributors which work perfectly as long as buyer pays the payment upon agreed dates. But the prepayment has also its own difficulties because sometimes it ties TEM to hold the "extra" inventory. Particularly in a situation, where a customer has ordered a product but for some reason the payment or the transmission of documents stretches later leading to the case, in which TE is tied to hold the order in their warehouse until the payment is completed and not able to sell it to other customers who would have urgent need for the specific product.

EXW causes also drawbacks for sales department and revenue depending on the calendar dates because sales at the end of month cannot be recorded until the order has been picked up by buyer. Normally, the shipments has been collected on Thursday and Friday. This means if the shipment dates occur to be the last two days of the month, the sales of the shipment need to be recorded to next month. Also when comparing to the subsidiaries and MEA distributors, the MEA distributors do not have fixed collection dates, and as a result no control on time of collection.

4 FINDING OUT THE SUITABLE INCOTERMS

Choosing the right Incoterm, the following factors need to be considered:

- The nature of the goods
- The means of transport
- The condition of payment
- Other requirements of company.

Topcon is producer of optical products and systems for the ophthalmic which includes lots of high technology functions and parts meaning that products are extremely fragile and valuable. Whereupon, it is important to organize the possible high-risk actions such as loading and transportation in the right way.

The products manufactured by Topcon are currently transported to their customers by multimodal transport which combines different modes of transport such as road transport, air freight and sea transport. The usage of mode of transport depends strongly on the location of customers but most of the products have been collected by trucks at Topcon Europe B.V's warehouses. The values of the usage of transport mode can be also seen in appendix 2.

For the subsidiaries and other European distributors, the products are delivered always by trucks or via delivery services because of the excellent transport connections and networks in Europe. However, the transport mode varies a lot with the distributors in which the transport modes have been divided mostly between air freight, trucks and delivery services. See figure 6.

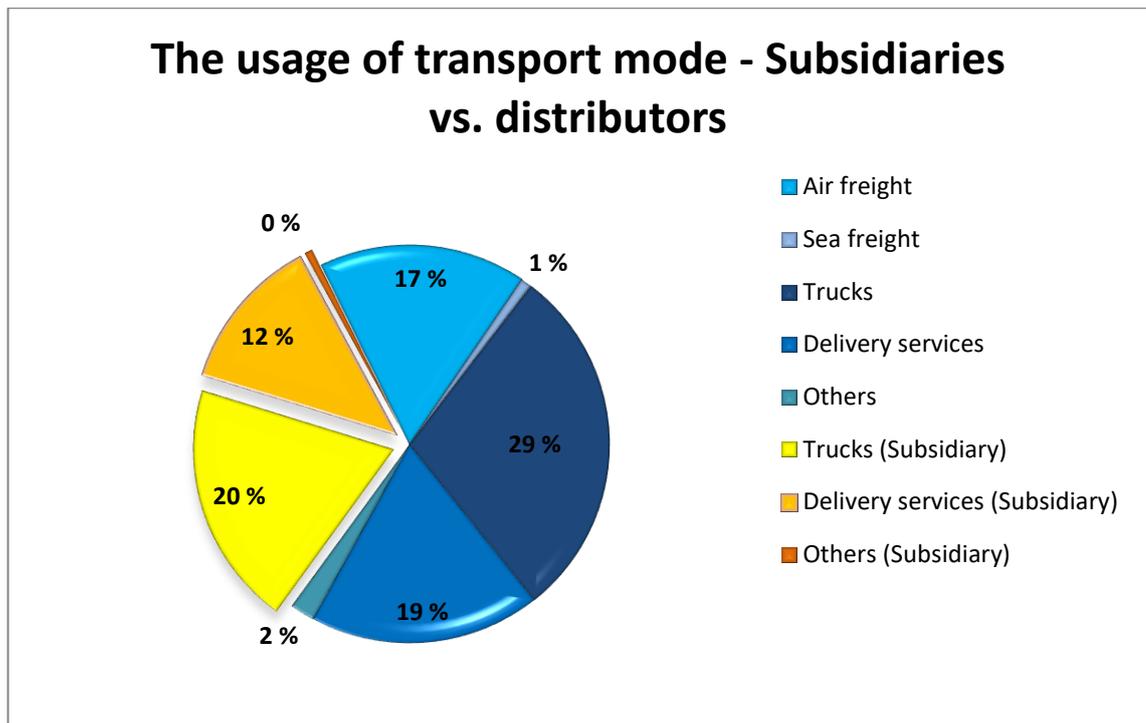


FIGURE 6. The usage of transport modes – Subsidiaries vs. distributors

In addition EU' transport policy aims continually to remove the barriers between European countries and to create joint European transport area. (European commission, 2014b.)

For MEA distributors the products are delivered either by air freight or sea transport because of long distance and long-lasting delivery by road transport which increase risks involved in the transport. The nature of the products effect strongly on the mode of transport since due to fragile and valuable character, all the optical instruments are always delivered by air freight to minimize the risk of damages, whereas furniture can be transport also via sea transport because they are more heavier, durable and less fragile than the instruments. Due to the nature of goods TEM should minimize the risk of losses and damages during main transportation, because this action involves the biggest risk of damages when the products are on the move.

Currently, TEM is struggling with distributors' delays of payments and documents, and as a result causing delays in transportation since TEM cannot control when the shipments has been collected from the warehouse. For this reason it is important to find out an Incoterm or Incoterms which would allow TEM more control on documentation and transportation with low risk and hence make outbound delivery more flexible and efficient. Taking care of loading process on behalf of carriers is also not recording to the current

Incoterm. Although TEM and their customers are supposed to use EXW, in reality they are using FCA. (Logistiikan maailma.)

In order to get a deeper view of problems related to the current lead times with distributors, Pareto Chart model is used. The model also illustrates the time of occurrence between different quarters in more detail. Briefly, the goal of the Pareto Chart is displaying discrete data by category to show cumulative impact. In the Pareto Chart below named as figure, each quarter is examined in more detailed and number of the shipments per each day are elaborated. The charts determine to acquire by accumulation of shipment in each day and the number of weeks when collected shipments have left from the warehouse. The values can be also seen as pie charts in appendix 3.

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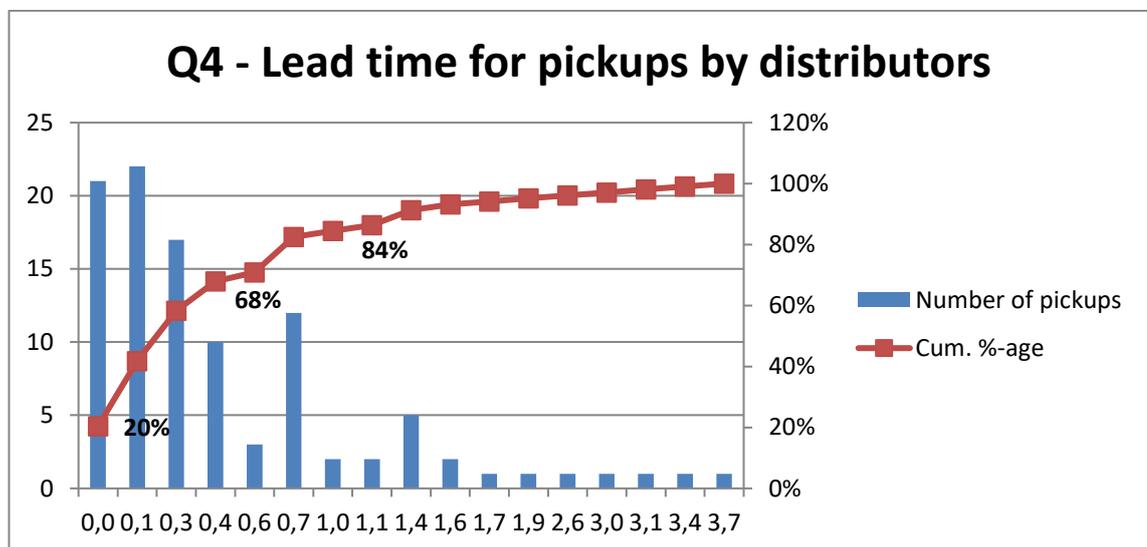


FIGURE 1. The number of pickups vs. waiting time in quarter 4 of 2015

Horizontal axis describes the number of weeks where as a vertical axis describes the number of shipments. In order to make it clearer, number of days until order is pickup is divided by 7 to change the working days into weeks. Therefore, 0.0 means that an order is picked up at the same day when it is ready for pickup at outbound area and 1.0 means 7 days or one working week.

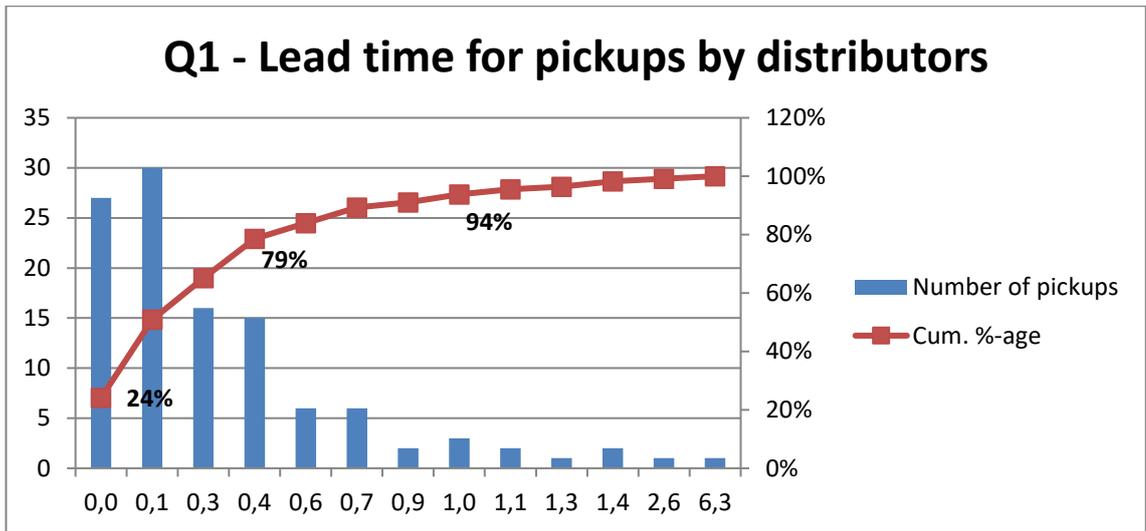


FIGURE 2. The number of pickups vs waiting time in quarter 1 of 2016

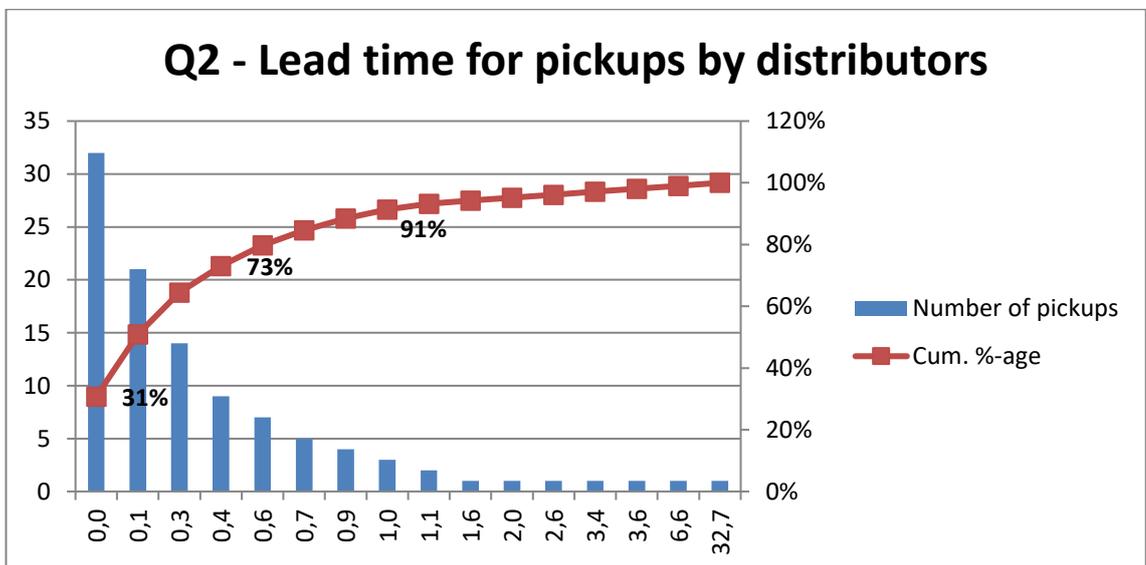


FIGURE 3. The number of pickups vs. waiting time in quarter 2 of 2016

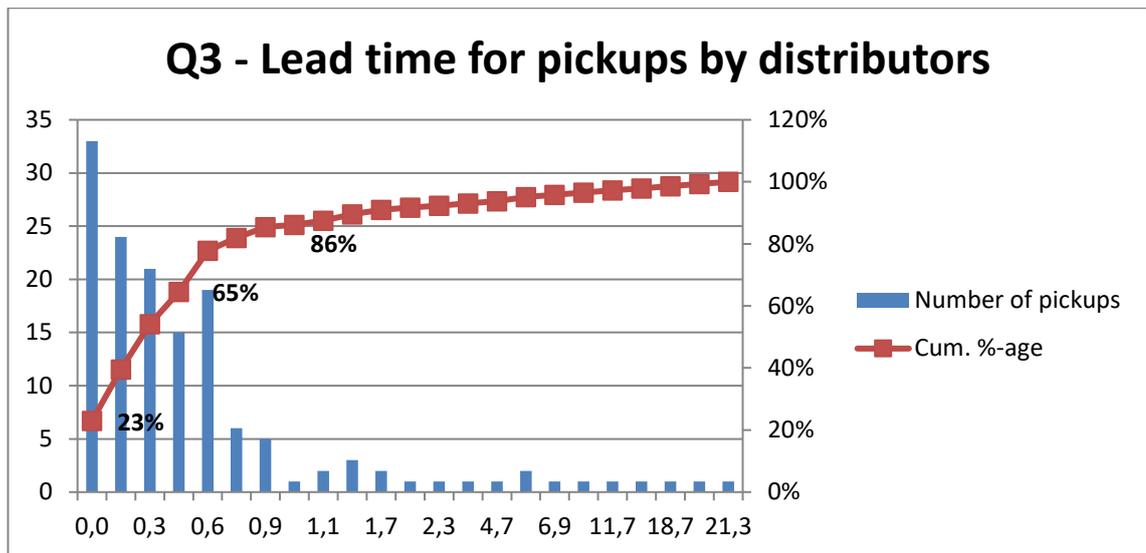


FIGURE 4. The number of pickups vs waiting weeks in quarter 3 of 2016

As shown in figures 1, 2, 3 and 4 above every quarter has superficially similar framework in which the number of shipment decrease the further the order goes. However, there is still a lot of fluctuation related to the lead times for pickups between quarters. It can be seen that pickups takes longer in quarters 3 and 4 compared to quarter 1 and 2. For example, the shipments collected within 3 days is between 65-68% in quarter 4 and 3, whereas in quarter 1 and 2 the share of pickups within 3 days is 73-79%. Besides, also over 90% of all the shipments are collected in one week whereas the shipments collected in one week during quarter 4 and 3 is around 85%. On the other hand, all the shipments are collected at the latest of 3.7 weeks during quarter 4, which is by far the shortest time compared to other quarters. The longest lead times occurs during quarter 2 and 3 where the point of pickups has lasted over 21 and 32 weeks but the number of shipments collected at the same day is relatively higher compared to the winter period during these quarters.

The figures bring up also a critical problem which occurs in all the quarters. As shown in figures 1, 2, 3 and 4 there is a lot of single shipments after one week which lead times stretch for several weeks. Although, the number of order is low, it has a great impact on the current operation since what longer the “tail” stretches that longer it occupies the space of outbound area, and as a result difficulties in handling, less flexibility and more risk of damages.

The impact of EXW can be clearly seen in the pickup lead times with distributors where a frequency range varies a lot between the shipments, and as result the pickups spread for

many different time periods by creating a great burden on the efficiency of business and warehouse operation. Most of the delays occur with MEA distributors because they have a lot of different variations in terms of payment and most of them can only carry out payments through pre-payment or letter of credit via banks obligating the transmission of documents and a lot of communication. This is one of the reason for the ‘tails’ in lead times in figures 1, 2, 3 and 4. In addition MEA distributors’ working habits differ significantly from European companies being less punctual with pickups and not following the protocol concerning the documentation.

In order to overcome the problems with payments, it would be beneficial for TEM to take care of export clearance procedures and other formalities because then TEM could have control on custom documents which are required with L/C and custom authorities in order to prove the VAT.

In addition to custom documents it would be better for TEM to arrange the transportation partly or fully themselves in order to shorten the current lead times. This would also provide the warehouse working more flexible and proactive. The most optimal situation would be that the shipment would be shipped out from the warehouse every day and out-bound area would be empty at the end of day. In addition, working with familiar freight forwarder companies, it would help to reduce unexpected problems concerning the working habits and equipment.

4.1 The requirements of new Incoterm

This chapter simply lists the main factors and features which are required while selecting new Incoterms. Summing up the requirements of new Incoterms speeds up also the process of examining the suitable Incoterms.

- Multimodal or available in any mode of transport
- Control on transport custom documents (carry out the custom clearance)
- The minimum risks of transportation due to the nature and value of the goods
- Support the current payment methods
- More control on storage
- Find a great balance between seller and buyer.

5 SELECTION OF NEW INCOTERMS

Selecting the most suitable terms of delivery, there are three important obligations that need to be taken under consideration; delivery, division of cost and transfer of risk. To find out the right Incoterm, both parties the seller and the buyer must agree equally the mentioned obligations and find a great balance between the both parties.

Table 3. below defines all Incoterms 2010 based on the classification of Incoterms 2000 as well as specifies also the code of each Incoterm. (International chamber of commerce.)

TABLE 3. Incoterm 2010 (International Chamber of Commerce)

Group E <i>Delivery</i>	Ex Work	EXW
Group F <i>Main carriage unpaid</i>	Free Carrier Free Alongside Ship Free On Board	FCA FAS FOB
Group C <i>Main carriage paid</i>	Cost and Freight Cost Insurance and Freight Carriage Paid To Carriage and Insurance Paid	CFR CIF CPT CIP
Group D <i>Arrival</i>	Delivered At Terminal Delivered At Place Delivered Duty Paid	DAT DAP DDP

All the optical products are currently delivered to the customers around the world by multimodal transport, which require Incoterms to be able for all transportation modes. This already eliminates automatically Incoterms such as FAS, FOB, CFR and CIF since these Incoterms are only suitable for sea and inland waterway transport. (Terms of delivery.)

Currently, TEM is using EXW while carrying out trade with their customers although the current operation is actually more Free Carrier (FCA). Thereby, transferring EXW to FCA would be a fluent and logical solution. This will match better the current operation such as loading process and moreover, TEM has more control on transport custom documents and transportation since TEM is responsible for export custom formalities and arrange pre-carriage to the named place such as freight forwarder' warehouse when needed.

Also important aspect of selecting the new Incoterm is who bear risks of transport activities due to the nature of the good, this is also supported by FCA.

Regarding to the challenges with payment terms and especially, with the document-based payment methods, the most suitable Incoterm would be C- and D-group, in which the seller is responsible for contracting the carriage and obtaining the needed transport documentations for the customs and banks. Being fully responsible for the custom transport documents helps also TEM to eliminate the challenges with value added taxes.

The choice between C- and D-group based on the risks of transport and transit documents. In the C-group the seller is responsible for preparation of transport documents, conducting custom clearance and arranging the transportation and the costs related to the transportation, but the buyer bears all the risk of transportation. In D-group, the seller is responsible for arrange the carriage as well as bear all the costs and risks included in carriage (Root 2015, 23). Furthermore, one major difference between C- and D-rules regarding to the letter of credit is a vital transit document known as bill of lading that will evidence that seller has paid a freight and serves as a receipt for the goods that has been taken charge by carrier who release the goods of the holder of bill of lading at their destination. This will evidence that the goods has been arrived to the customer. (The Incoterm rules and letter of credit)

Thereby, it would be better to use C-group and Incoterms such as CPT and CIP to avoid the risks of transportation. These Incoterms are also suitable particularly in a situation where the customers want or need to conduct payments by letter of credit. Also mentioned Incoterms would allow TEM access fully to custom transport documents.

Related to the question, who should arrange transportation the seller or the buyer. The main principle states the responsibility of organize the transportation should belong only either the seller or the buyer. This would be the most efficient as well as economic solution and this is particularly the case with the seller, because of better understanding of international transport. However, it is understandable that both the seller and the buyer want to prevent unexpected consequences in the country of the other party. (Jimenez 2008, 226)

Therefore using FCA, TEM can decide is the pickup arranged at the seller's premises or terminal of freight forwarder, which facilitates the customers to collect and deliver the

shipment faster and hence minimizing used time in the country of the seller or deliver . It is also important to note that the buyer bears all risks after the shipment is hand over the carrier contracted by buyer. Using the CPT and CIP, the scenario would be the same but the other way around. Topcon contract the carriage and deliver the shipment until the place of the destination country such as port or airport, where the shipment will be handed over the carrier nominated by the buyer. Organizing the international transport outside EU would be more efficient and economical if it takes care by the seller. TEM would also receive another advantages of being responsible for the international transport for example, TEM “can consolidate shipments and serve multiple customers in the country or the region of destination at once which leads to reduction of the freight cost as well as it can align and control the pickup dates with the production planning” (Matflient 2011, 169) Under the transport contract governed by its own national law (whether or not in conjunction with international transport convention) with clauses preventing claims should be the consignee be in default when receiving the shipment.”(Matflient 2011, 169) Furthermore, “from the buyer’s point of view, the freight cost may be also a lower compared to the international transport is arranged by himself or herself”. (Matflient 2011, 169) Proposed Incoterms are defined and justified more specifically further onward.

5.1 Incoterm Free Carrier (FCA)

Briefly, Free Carrier means that the seller delivers the goods to the carrier or another person nominated by the buyer at the seller's premises or another named place. The parties are well advised to specify as clearly as possible the point within the named place of delivery, as the risk passes to the buyer at that point. (International chamber of commerce 2010b.) This means that TEM would be responsible either load the goods onto truck at Topcon warehouse or arrange pre-carriage from the warehouse to the named place such as freight forwarder's terminal, air-port or other transport hub. In fact, this makes the Incoterm really flexible and that is why, the named place of delivery needs to be marked extremely carefully. Responsibility of transport as well as risk related to transport transfer from the seller to the buyer when the shipment is loaded onto the carrier such as truck or other vehicle at the named place. Besides, the buyer is responsible for arranging the transport insurance.

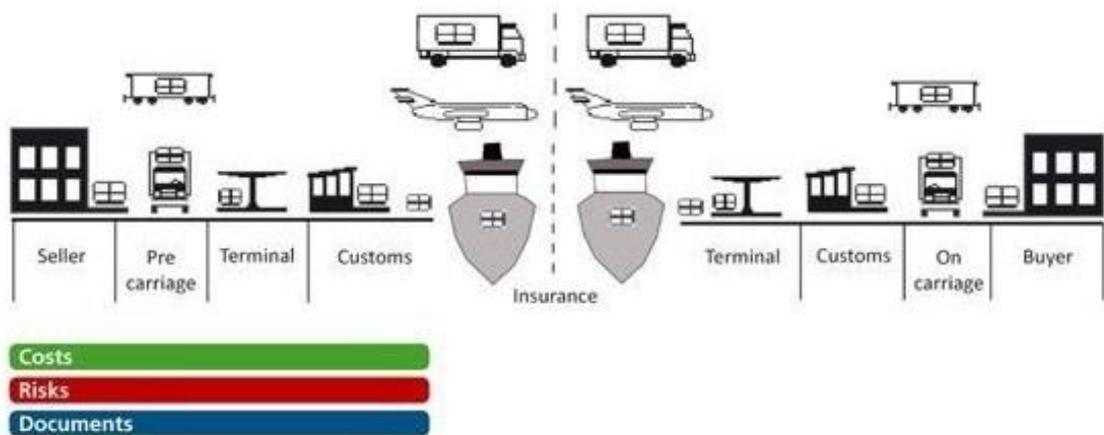


FIGURE 7. Incoterm FCA (Global negotiator)

Figure 7. shows the rules of Incoterm FCA and the point of transfer the responsibilities in terms of costs, risk and custom documents. On the top of picture different steps in supply chain are described which are involved in moving the shipment from the seller to the buyer.

Due to the company policy of TE, carriers are not allowed to use the available equipment themselves or enter to the warehouse where the goods are stored (Mureau 2017.) In this kind of situation, FCA is strongly recommended to be used over EXW. (Root 2015, 37) According to the rules of FCA, the seller is responsible for loading and export formalities

which allows TEM to avoid the possible conflicts with insurance companies in the case of accident on loading process and better access to important custom documents such as EUR.1, EX-A and waybill. Having more control on custom documents allows TEM to prove that the goods has left from the Netherlands which eliminates also the costly risk related to value added tax as long as TEM knows the destination of delivery and has their own custom documents. (Incotermsexplained.)

FCA provides also more power related to the point of pickup, which has caused lot of challenges for TEM. Incoterm FCA can be seen as a upgraded version of EXW which suits well also to international trade, therefore FCA would be recommended especially with reliable customers such as subsidiaries and European distributors, who collect the orders within 3 days or complete their payments with open account in 30 or 60 days because the payment method does not obligate the large number of documents. FCA would also be a good choice with spare parts when the transport based on delivery services in order to minimize the division of responsibilities for small shipments.

FCA provides also possibility to sale manager to record the sales in the right time, since TEM is able to arrange a pre carriage to their freight forwarder warehouse, hence the goods can leave from the warehouse at the right moment. The same solution can be used also with delayed pickups to release more space, bring more flexibility and enhance cubic utilization at outbound area.

This requires good communication between TEM and the buyers. TEM needs to inform the buyer when the shipment is ready for the shipping and arrives the named place as well as shipping instructions. Whereas, the buyer needs to inform TEM about the point of pickup time and delivery address.

Besides, regarding the payment methods such as Letter of credit, document against payment and prepayment, FCA Incoterm is not the most optimal choice for them. FCA obligates only the specific documents based on the export custom formalities and pre carriage documents but it does not provide the documents of main carriage, which may be required to complete the payment. On the other hand, the seller is also entitled to obtain and the buyer is obligated to provide information to the seller for purpose of handling the formalities. Related to this entitlement, the advantage of TEM is its long relationship with its subsidiaries and some of the distributors, which enables to TEM access easier to

custom documents from its customers. In particular, European distributors are more reliable compared to MEA distributors. That is why, building relationship with MEA distributors needs still to be strengthened to improve the flow of trade.

5.2 Incoterm Carriage Paid To (CPT)

Another suitable Incoterm that supports the current operation would be Carriage Paid To (CPT) agreed place of destination. This is also supported by experts of logistics of Topcon Europe B.V. “Small businesses need something that is convenient for buyer, but at the same time mitigates costs and risk to the buyer.”(Onistsuk 2013.) This sums up the nature of the C –terms of the Incoterms and it is usually the best option for medium and small sized businesses.

CPT Incoterm can be defined as “the seller is responsible for deliver the goods to a carrier or to another person nominated by the seller, at a place mutually agreed upon by the buyer and seller, and that the seller pays the freight charges to transport the goods to the specific destination.” (Investopedia). CPT determines also that the risk of damage or loss of the shipment transfer from the seller to the buyer as soon as the shipment has been delivered to the carrier (Investopedia). Meaning that risk transfer to the buyer when the goods has been loaded into truck which takes place at seller’s premises or outside of Topcon Europe B.V. warehouse. So if the shipment carrying vessel encounters an accident, it is the buyer responsibility to arrange the adequate insurance beforehand to cover the possible risks.

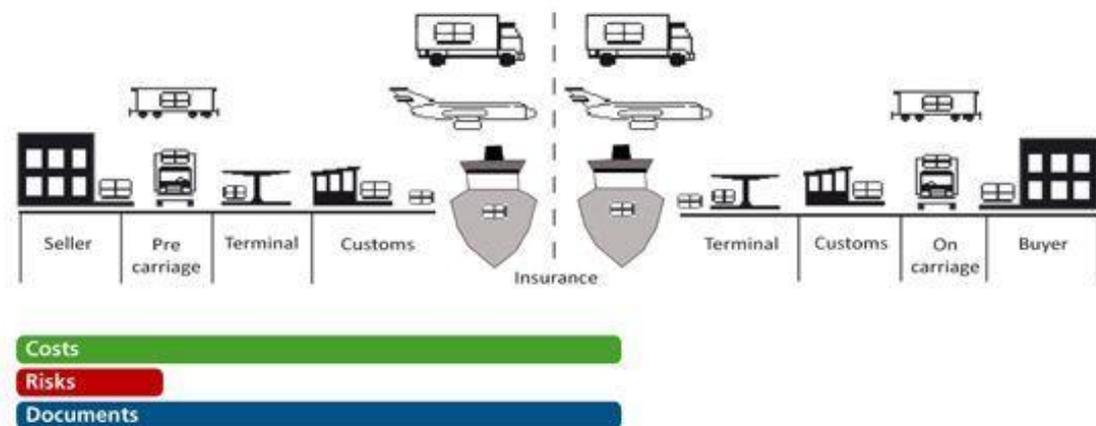


FIGURE 8. Incoterm CPT (Global negotiator)

CPT Incoterm provides TEM the control on the transportation and direct access to transport custom documents due to the responsibility of main freight and export custom formalities. Thereby, TEM is able to minimize the risk of penalties and other sanctions concerning to VAT and prove the goods have left from the Netherlands to custom authorities. In addition CPT helps TEM to avoid the loading conflicts related to insurances and

limits the current lead times, since most of the orders that wait several weeks for pickup at outbound area come from MEA distributors.

CPT is a great Incoterm especially when carrying trade outside the EU with MEA distributors due to full control on custom documents and transportation to creating a situation in which document-based payment methods are possible and workable to conduct in order to complete the payments such as prepayment, letter of credit and documents against payments.

In addition CPT also justifies the seller to choose the transport mode and routes that have been used. This is really important issue because the shipments directed to MEA countries are only transported by air freight or sea transport, depending on the type of products. Besides, CPT supports the above-mentioned transport modes because the Incoterm describes clearly the point when costs and responsibilities transfer to the buyer. This takes its place at unloading the shipment from the main carrier for example at airport or port of destination country.

The responsibility of arrange the carriage contributes also current warehouse operation for example creating more control on storage and outbound area, which is one of the biggest sufferer at the moment due to the condition of EXW (Mureau 2017.) When TEM is able to decide the time of transport the shipments and how to complete the transport it increase the efficiency and functionality of warehouse since the warehouse is easier to keep track on outbound shipments and avoid overload situations. Being responsible for transport removes also the difficulties with the sales recording. Now Sales manager of TEM would be able to record the sales to invoicing at the end of month and improve the results in stock markets.

CPT is also preferable Incoterm when dealing with container transport. In particular, transport the good to overseas to MEA countries the container transport is mostly used either on air or sea transport. The critical point to notice in container transport is the point of transmission of cost and risk. This depends on type of shipment since With full container load (FCL) the buyer bears the risks regarding to transport from the point the goods have been loaded into container mostly on the premises of seller, whereas with less than container load (LCL), buyer is responsible for transport risk when the goods have been delivered to the warehouse named by the seller where the goods are bundled. Containers

are often delivered from the place of departure to the place of destination. (Root 2015, 51).

Besides, CPT provides additional benefits to transportation. When TEM is obligated to arrange the main carriage, it is able to choose the freight forwarder, whom they know and trust. Also working closely with the chosen freight forwarder includes a lot of other advantages such as additional expertise about transportation, transport and custom documents as well as guide Topcon Europe B.V with the best routings and modes of transport. Close relationship between the seller and the freight forwarder impact also positively on warehouse operation. Reason for this is that warehouse and its staff are familiar with the working matters of forwarder and their truck drivers as well as equipment they are using. (Trubits 2010).

5.3 Incoterm Carriage and Insurance Paid (CIP)

Carriage and Insurance Paid (CIP) to named place of delivery means that the seller delivers the goods to the carrier or another person nominated by the seller at an agreed place (if any such place is agreed between parties) and the seller must contract for and pay the costs of carriage to transport the goods to the named place of destination. The seller also contracts for insurance cover against the buyer's risk of loss of or damage to the goods during the carriage but the buyer should note that under CIP the seller is required to obtain insurance only on minimum cover. The minimal insurance covers the invoice amount plus 10%. (Root 2015, 60).

Overall, Incoterm CIP is pretty similar with CPT, except the seller is responsible for insure the carriage on behalf of the buyer. The seller contracts the insurance with reputable insurance company from the place of departure to the agreed place of destination such as airport at the destination country or customer warehouse or other terminal.

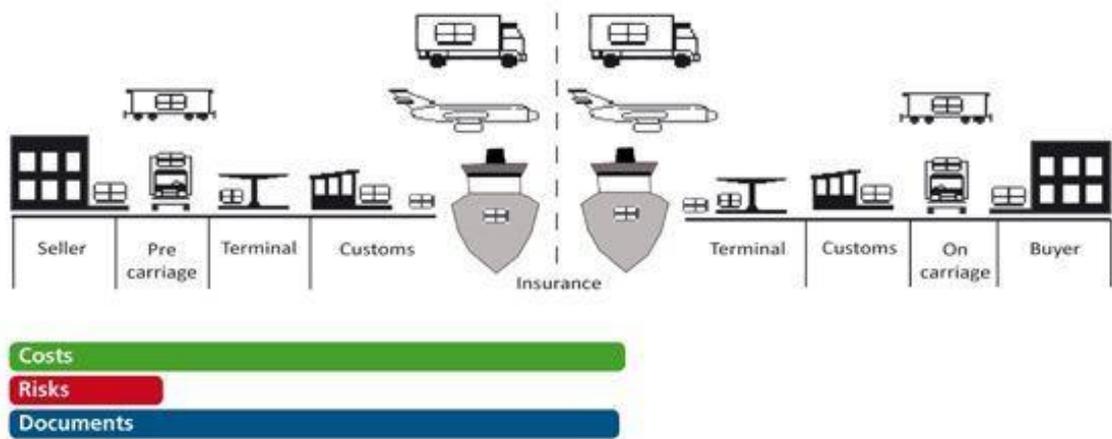


FIGURE 9. Incoterms CIP (Global negotiator)

As mentioned, under CIP the seller is required to obtain insurance, including minimum cover against; shortages, breakage, scratches, stains, fire damage and general average. However, the insurance is often taken as in broad terms in order to insure as many external causes as possible. If the buyer requires special risk coverage in case of war, strikes and riots the seller shall provide insurance also for those risk at the buyers' expenses. (International chamber of commerce) This occurs especially in specific countries mostly in Middle-East and Africa where civil unrest is often happened.

It is still good to remember although the seller is responsible for arranging the freight insurance at its own expenses, buyer is still responsible for all risk on transport. The risk transfer from the seller to the buyer when the goods are loaded onto the first carrier at Topcon Europe B.V warehouse. In fact, the type of shipment influence on the point of transfer. With Full container load (FCL) the buyer bears the risks regarding to transport from the point the goods have been loaded into container mostly at seller premises, whereas less than container load (LCL), buyer is responsible for transport risk when the goods have been delivered to the warehouse named by the seller where the goods are bundled. Also the seller need to inform the buyer the exact time of the departure of transport, because this enables the buyer to arrange its own insurance for the goods in time.

Due to the nature of products and unstable circumstance in specific countries, CIP would be a good choice in terms of securing the possible loss of or damage to the goods during the carriage. CIP would also be an appropriate solution if the customer requires the seller to arrange the insurance, in fact this is often the case with MEA distributors. CPI makes

it clear as well, who is responsible for insuring the carriage and enables the parties to avoid misunderstanding about the responsibility. Besides, including the insurance for the goods, parties are able to limit the impact of risks and avoid financial losses as well as create win-win situation.

Such as CPT, Incoterm CIP also reconcile with container transport. In container transport, containers are often delivered from the place of departure to the place of destination. Containers can be handed over to carrier at any place and they can transported in any mode of transport. (Logistiikan maailma)

5.4 Division of the cost within Incoterms

Total overview of the division of costs involved in trade activities between TEM and their customers by using introduced Incoterms which are described in the tables below, see table 4, 5 and 6. The trade costs consist of the cost of loading, freight, terminal handling charger (THC), unloading and transport insurances as well as taxes. The division of cost fluctuate depending on the used Incoterm.

TABLE 4. The division of the cost within FCA Incoterm (Root 2015, 98)

Incoterm	Loading	Freight	THC	Unloading	Transport insurance	Taxes
FCA	Seller	Buyer	N/A	Buyer	No obligation	Buyer

According to FCA, see table 4. TEM would only be charged of the loading cost which is currently included in selling price. In the case that TEM decides to start to charge customers the loading cost, it would be advisable to specify the loading cost separately on the invoice to avoid misconception.

In CPT and CIP the seller is responsible for complete the cost of transport to a named place of destination. The division of the cost between CPT and CIP is largely identical, see table 5 and 6.

TABLE 5. The division of the cost within CPT Incoterm (Root 2015, 98)

Incoterm	Loading	Freight	THC	Unloa- ding	Transport insurance	Taxes
CPT	Seller	Seller	No obli- gation	Contract	Contract	Buyer

Using Incoterm CPT TEM pays only the cost of loading and freight only if the contract of carriage does not obligate the seller to pay THC and unloading. Regarding to insurance, the seller is obligated to insure when using CIF and CIP, otherwise there is no obligation. (Root 2015, 61.) Terminal handling charges cause often lot of confusion between the parties and as a result it is often indiscriminately charges to both parties. To prevent this incorrect mode of operation Incoterms pay lots of attention to this issue. Usually THC is charged as a part of freight rate which means the buyer is receiving the bills but THC can also been added to the freight tariff such as unloading charges. Buyer is responsible for taking care of taxes. Cost of discharging is often part of the freight costs but with CPT and CIP, the contract of carriage can co-determine who is responsible to pay the cost of discharging. (Root 2015, 23.)

TABLE 6. The division of the cost within CIP Incoterm (Root 2015, 98)

Incoterm	Loading	Freight	THC	Unloa- ding	Transport insurance	Taxes
CIP	Seller	Seller	Seller	Contract	Contract	Buyer

The only difference between CPT and CIP is the responsibility of the cost of insurance also known as cargo insurance which belongs to the seller when using CIP. The cost of cargo insurance based on the weight and the value.

6 IMPLEMENTATION

6.1 Transportation

Implementing new Incoterms such as FCA, CPT and CIP, TEM will be responsible for arranging pre-carriage to a named place and main carriage by contracting a freight forwarder for international carriage to a named place of destination. This will impact on the current product movement because of organizing the transportation it requires various activities that needs to be considered with freight forwarder such as booking for a cargo, establishing a transport contract and arrange the documentation, making detailed shipping instructions, organize the pre- or main transport. (UNESCE 2012.)

The implementation of FCA does not require significant investments related to transportation. If the pickup is agreed to carry out at seller's premises, TEM needs only assign freight forwarder to conduct export declaration and handle export documents to TEM as well as take care of current loading process. This would be suitable choice with subsidiaries and reliable distributors which pick up their shipments in the short period for example at the same day or at least within 3 days. Therefore, TEM is responsible for prepare the products in suitable packages with correctly marked and numbered, after which warehouse workers load the pallet(s) onto the truck.

In the case of delays with pickups or the need of recording the sales urgently, TEM can arrange the pre carriage and delivers the shipment to buyer's freight forwarder premises. Thereby sales can be recorded and the shipment waiting for the pickup does not occupy available space at outbound area.

Instead of the rule of FCA, TEM is responsible for contract a freight forwarder to complete the main carriage. This will requires TEM to carry out the negotiation with different freight forwarders regarding to the services and freight rates in order to find out the most suitable freight forwarders to specific customer which meets the values of TEM. CPT and CIP are great Incoterms because they impart clearly the point of transmission of responsibilities such as unloading the shipments from the aircraft or vessel. Therefore, TEM is able to transport the shipment until the port or airport of country of destination where import custom formalities pass to the local distributor and as a consequence, TEM avoids expensive custom procedures with local authorities. CPT and CIP would be a great choice

with distributors which complete payments with document-based payment methods or have a long lead times with pickups.

To give better understanding and guidance of price rates based on road transport, table 7 below describes the price rates in 2013 offered by DSV road B.V to Topcon Scandinavia subsidiary and states overview of the prices in relation to the weight of pallet. The prices in table 7 based on Incoterm delivery duty unpaid (DDU) and stated with VAT 0%. The prices have already increased three times so currently the prices are more expensive.

TABLE 7. DSV price rates in 2013 (DSV transport)

Topcon Scandinavia AB SE-431 53 Moelndal						
Weight of pallet			EUR	BLOK	LDM	Rates in EUR (2013)
1	-	30 kg				39,00
31	-	100 kg				50,00
101	-	200 kg				69,00
201	-	300 kg				94,00
301	-	400 kg	½ (80*60)		0,2	120,00
401	-	500 kg				146,00
501	-	600 kg				170,00
601	-	700 kg				192,00
701	-	800 kg	1		0,4	213,00
801	-	900 kg				235,00
901	-	1.000 kg		1	0,5	257,00

6.2 Transport cost

The replacement of EXW will obviously increase freight cost due to increase in responsibility of transport activities. In particular, when CPT and CIP are used TEM takes care of loading activities, export custom formalities and main carriage to the named place of destination. Increase in freight cost needs to take into account in invoicing as well as in sales formalities. The change of Incoterm requires TEM to adjust new freight cost onto current invoicing which freight forwarder will charge from TEM. Freight cost based on the price rates of specific Incoterm offered by freight forwarder. Price rates are calculated based on certain Incoterm and variables such as mode of transport, dimension and weight of shipment and the country of destination. It is also important to remember that freight cost needs to be stated also separately from the total price in order to avoid misunderstandings.

The freight charges need to be charge from customers together with total price of sale. With FCA freight cost stays same expect TEM charges export declaration but If TEM organizes pre carriage to freight forwarder premises or other terminal, the freight rates in domestic cargo needs to take into consideration in invoicing.

An example of export price with FCA based on example 1.

Pickup at the seller's premises

Total item net value + export custom formalities

$$€ 13101.00 + € 25 = € 13126.60$$

Pre carriage to freight forwarder warehouse

Total item net value + export custom formalities+ pre carriage

$$€ 13101.00 + € 25 + € 300 = € 13426$$

CPT and CIP

Freight cost based on negotiated price rates between TEM and freight forwarder and export custom formalities.

Freight cost can based on road freight, air freight or sea freight

An example of export price with CPT based on example 1.

Total item net value + export custom formalities + freight cost

$$€ 13100.00 + € 1211.60 = € 14312.60$$

EXAMPLE 1. Structure of the cost of air transportation by using CPT

Shipper: Topcon Europe Medical B.V
 Consignee: Union Bancaire Commerce (Bank)
 Customer: Monitor Medical System (Tunis)
 Freight Forwarder: KWE

Nature of goods: Ophthalmic instruments

Pcs. 1

Gross weight 102.00 kg Incoterm: CPT

Volume weight 228.80 kg MOT: AIR

CHG weight 229.00 kg Payment: Prepaid

Origin AMS

Destination TUN

Invoice details	Amount	Currency	Tax code
Freight charge:	893.10	EUR	NLZEROEU
Pick up charge: Other charges	300.00	EUR	NLZEROEU
Airline cargo screening fee:			
Other charges	18.50	EUR	NLZEROEU

VAT Percentage 0%

Non-taxable 0.00 EUR

Taxable 1,211.60 EUR

Net amount 1,211.60 EUR

VAT 0.00 EUR

Grand total 1,211.60 EUR

Invoice number 420A100382

Partial delivery

1 PLT 9 boxes

Gross weight: 102kg

Ophthalmic instruments	11 pcs	13101, 00	EUR
Total item net value		13101, 00	EUR
Total Freight		1211, 60	EUR
Total		14312, 60	EUR

In example 1. the total of cost of air transportation by carrying out an international trade between TEM and Tunis distributor, Monitor medical system, under CPT is described. The payment method such as prepaid has been used in this trade which is one of the available option to carry out the transaction with Middle East customers which can be also seen in this case that the consignee is a bank named as Union Bancaire Commerce on behalf of Monitor medical system.

As shown in example 1. the cost of air transport is built of freight charge and additional charges such as pick up charge and airline cargo screening fee. Freight cost is built of the volume and weight of shipment, which are defined as a gross weight equal 102.00kg and volume weight equal 228.80kg. Volume weight is rounded up, and as a result chargeable weight is 229.00 kg. The calculation of freight charge is explained later in this chapter.

Regarding to additional charges, the pickup charge is derived from road transport in which the shipment is picked up at Topcon Europe warehouse and transported to Schiphol Airport, Amsterdam, organized by freight forwarder, KWE. The price of pick up charge € 300.00 based on the price rate of KWE and can be negotiated in future. There is also other charges due to carrier such as airline cargo screening fee, which is in total of € 18.50 and it is also involved in grand total. Screening fee is carried out in order to ensure safe freight and find the possible dangerous substances in cargo. (Topcon Europe Holding B.V. 2017).

To arrange the transportation from Topcon Europe B.V warehouse via Schiphol airport to Tunis Carthage Airport cost in total of € 1,211.60. In which freight charge is calculated by chargeable weight times price rate resulting in total of € 893.19

$$(CHG\ weight)\ 229.0kg \times (rate)\ 3.90 = \text{€ } 893.10$$

Other charges based on the pricing set by freight forwarder KWE.

In the end of example total freight cost has been added to total item net value of the order placed by Monitor medical System. It is also good to noticed that the items are sold with VAT 0% to their customers as an export medical goods. Meaning that using CPT Inco-term TEM is able to control the custom documents and to prove the VAT zero rating if needed.

Besides, an issue which cannot be seen is that which item is in which box. To avoid problems and delays with customs, TEM would be reasonably to added extra information about the location of the items so that items are easier to track into the right boxes.

6.3 Custom transport documents

New Incoterms that obligate more responsibilities for the seller in terms of custom formalities and transportation will obviously bring more work load with documentation. Currently freight forwarder complete export declaration and custom formalities on behalf of TEM by requiring TEM to provide needed information related to custom transport documents and carefully filled shipping instructions. Furthermore, export custom formalities and documents differ significantly between EU and non-EU countries, in particular when exporting outside the EU where the requirements of custom formalities and documents depend a lot of the country of destination.

In addition to apply FCA with subsidiaries and reliable distributors, it would also be recommended to use FCA when the export takes its place between EU member countries. This is also called EU's internal market where the trucks can move flexible from one country to another as general rule by complete export declaration and provide commercial invoice and CMR. Overall, EU's internal market custom formalities are really limited and therefore the custom clearance is not required.

In spite of free movement across national borders, the importance of CMR should not forget. CMR must be always assigned since it proves to customs the validity of shipment and govern the responsibilities and liabilities of the parties to a contract for the carriage of goods by road internationally. (Lamazares) CMR needs to include following information: The name and address of the consigner, the carrier and the consignee, description of the product and weight of the shipment.

Instead of being part of EU, some of European countries are a part of European free trade association (EFTA) such as Switzerland, Norway, Iceland and Liechtenstein. These countries obligates a little bit more procedures during the export custom formalities. From the EFTA countries, Norway, Iceland and Liechtenstein is part of EEA agreement which constitutes the EFTA and EU free trade regime. Under EEA agreement Norway, Iceland and Liechtenstein can participate in the EU's internal market on equal terms with other EU member states. Only exception is Switzerland where the cooperation and developing relationship with EU and European countries based on bilateral agreement. In addition to standard documents EFTA countries requires also custom clearance with various declarations such as cargo declaration, declaration of dutiable value, entry summary declaration. Another requirements are EUR 1. Certificate, certificate of Non-preferential origin and register of business enterprises. The requirements can vary greatly between the countries of destination.

More work load related to documentation occurs with CPT and CIP, where TEM organizes export custom formalities and contract the international carriage. These Incoterms are mainly focused on MEA customers and distributors with long pickup lead times. Dealing with non-EU countries which are not part of EEA agreement, such as Switzerland, Russia and MEA countries, they requires additional evidence of the goods such as ATR, EX-A and Certificate of origin. Besides, when using CPT and CIP Incoterms shipping bills such as airway bill or Bill of lading is required which evidence that the goods has shipped via air or sea freight to the destination country of distributors. This documents are mostly conducted by freight forwarders.

The main documents involved in custom clearance

- *Purchase order from the buyer*
- *International commercial invoice*
- *Packing list*
- *Transport documents (CMR, CIM)*
- *Shipping bill (Bill of lading or AWB)*
- *Certificate of origin (Seldom inside EU).*
- *T2L (EU-origin of goods if exported to EU member countries fully or partly by sea*
- *ATR (export document in Turkey)*
- *EUR.1 (Preferential trade, focus on Mediterranean countries)*
- *EX-A (prove a shipment has left European territory)*
- *ATA(for temporary export and import, only used in exhibitions)*

Regarding the payments methods, CPT and CIP enable the usage of document-based payment methods in which the bank issued by the buyer makes the payment to beneficiary against the required documents stated in letter of credit. A freight forwarder contracted by TEM takes care of required documents and deliver them to an advising bank. The advising bank delivers the required documents to an issuing bank which release the money.

Relevant transport documents

- CMR (road transport)
- Bill of Lading (sea transport)
- Airway bill (air freight)
- CIM (Railway)
- Multimodal bill of lading.

Other documents to be presented

- Commercial invoice
- Packing list
- Shipping instruction
- Delivery note
- Certificate of origin
- Cargo insurance certificate.

In order to clarify documentation processes with different Incoterms, the basic scenarios based on the current situation with EXW and possible scenarios with FCA, CPT and CIP are described.

Please, notice that scenarios are not always same due to the difference of background of customers and working habits.

Current document process with EXW (MEA countries)

Freight forwarder contracted by the buyer arrange all the shipping documents and carries out the custom formalities. The freight forwarder contact to TEM about needed documents, who also agree time of collection.

TEM provides only standard documents such as CMR, packing list and Pro forma invoice to freight forwarder who can collect the goods based on the given information by TEM. The process varies a lot between customers and their freight forwarder due to required documents and information which leads to intensive communication between parties consisting of emails and telephone calls as well as reminders to collect the shipments. Depending on how well parties cooperate together that shorter the process will be but in the worst case process can last entire week.

After shipment is picked up from the warehouse, TEM needs to provide original invoice for the freight forwarder to ship the goods out of the Netherlands. This adds one more task to transaction, meaning that TEM needs to deal with two invoices; pro forma invoice and original invoice.

Documentation process with CPT and CIP (MEA countries)

With CPT and CIP the first step is to negotiate the most competitive freight forwarder to carry out the trade for the specific customers including the negotiations about the freight rates which also need to be accepted by the buyer. This means that it requires communication with the buyers to find out the balance between parties regarding to freight cost and used freight forwarders.

The biggest change with CPT is the responsibilities which change the nature of documentation. TEM needs to provide required shipping and required custom documents in addition to other documents for example EUR. 1, cargo insurance, certificate of origin, T2L. TEM is also responsible for contract a freight forwarder who usually organize transport documents such as the airway bill or bill of lading. The process requires also to conduct the exchange related to the draft of instructions with the buyer, who check the information either by approved them or requiring modification due to wrong information. This can create extra proceedings due to monitoring and correcting the documents.

After all needed information are correct and check by the both parties, TEM is able to deliver the goods to named place of destination where the buyer takes over the responsibilities. In addition to increased paper work, CPT requires also more monitoring through process including more communication with freight forwarder and the buyer in order to stay aware of the shipment. The responsibilities increase also administration work which needs to carry out the invoice of the shipment and combine the freight cost to invoices.

Documentation process with FCA (non-MEA countries)

The documentation process with European countries remains largely the same when replacing EXW to FCA.

TEM provides the standard documents which enable to a freight forwarder contracted by the buyer to pick up the goods, where the buyer takes care of custom and transportation cost. The most significant difference occurs with export custom formalities which a freight forwarder contracted by TEM carries out behalf of TEM. Freight forwarder direct to the custom documents back to TEM and charge TEM about the custom formalities. This leads also to the advantages of the ownership of documentation in which TEM receives the important custom document such as EX-A which enables to prove the goods has left from the Netherlands.

Average price per export declaration is € 20-25. This will be lower depending on the number of export transaction in a yearly basis. (Boonstoppel 2017.)

Due to the responsibility of export custom formalities TEM needs to contact the freight forwarder to clear the goods and to the freight forwarder contracted by the buyer when to collect the shipments.

Summarizing the document process with FCA and CPT, it surely requires more work load related to contacting to freight forwarder and customers, monitoring the documentation process and administrative proceedings. These two Incoterms have also one common factor which is the export custom formalities including the export declaration and export custom documents. And as a result freight forwarder contracted by TEM provide the export documents signed by custom such as EUR 1. And EX-A back to TEM and thereby TEM is able to obtain VAT zero rating by proving the goods has left from the Netherlands.

6.4 Cost and benefit analysis

Table 8. below describes all the costs which are the results of the implementation of new Incoterms and all the benefits or advantages which are positive outcomes from the implementation.

TABLE 8. Costs versus benefits

Cost	Benefit
Freight cost	No controversy due to Incoterms (loading process)
Contract carriage and arrange transportation <i>The negotiation with freight forwarder</i> <i>The Price rates</i>	More control on transportation <i>More flexible and organized warehouse and outbound area</i>
Arrange documentation and monitoring the shipments (time consumption)	Able to carry out document-based payment methods
Time consumption due to communication between parties	The possibility to record the sales in the right month
Insurance cost with CIP (minimum 10%)	Shorter lead times
More export custom formalities	Closer cooperation with transport companies
	Evidence for VAT zero rating

Cost Benefit analysis (CBA) can be defined as following “an analytical tool for judging the economic advantages and disadvantages of an investment decision by assessing its costs and benefits in order to assess the welfare change attributable to it”. (European Commission, 2014a, 15.)

Implementing the new Incoterms and change of responsibilities will bring new costs for TEM, especially arrangements of transportation requires to contract a freight forwarder to complete custom formalities and main a carriage. Final freight cost will base on the price rates of freight forwarders. The price rates based on the negotiation between TEM and freight forwarders. The negotiated prices must be also reasonable for the customers of TEM. See example of freight cost in transport cost (p. 40-41).

One of the most spectacular cost will be the consumption of time which mainly reflects to the order processors and the sales department when dealing with MEA customers. This is because TEM needs to organize the documentation related to transportation, payment methods and custom formalities. A large amount of activities will bring the order processors more monitoring and communication with customers and freight forwarders, and as a result more emails, follow ups and administrative work. Unfortunately, the increased work in process time is really hard to determine due to different background of customers, document requirements, effectiveness of communication, time used for creating the documentation and possible changes made by customer. On the top of that there is also no data about time of order processing, which makes determines even more difficult.

On the other hand, TEM has a lot of experience and knowledge in complete shipping documents because TEM has already complete shipments to their customers with request Incoterms which obligates TEM to carry out the documentation. This will save time in training and learning process. In the case that TEM is not able to manage the amount of documentation with arranged changes with the order processors, TEM may need to hire labor to help in documentation.

Salary for order processor assistance

Gross salary: € 3000 per month x 13.96 months (incl. holiday allowances) = € 41 880 per year

In addition TEM is also responsible for insurance cost when CIP Incoterm is used. The insurance requires to obtain only the minimum coverage by including an invoice amount plus 10%.

Insurance with minimum coverage 10%

€ 15 000 total price on invoice + € 1 500 = € 16 500 incl. insurance

On the other hand the responsibilities of arrange transportation and documentation include abundantly economic advantages. New Incoterms re-determine the responsibilities of operation, meaning that there will not be any more controversy in loading process. This will minimize all possible conflicts with insurance companies as well as carrier contracted by buyer, and as a result the possibility to cover possible costly damages by insurance company.

The Increase in control on transportation leads obviously to shorten lead times, and as a result decrease in the inventory cost and speed up the product flow, in particular with the shipments directed to MEA distributors. This also helps Topcon Europe B.V warehouse to avoid overload situation at outbound area and makes the warehouse operation more efficient. The responsibility of arrange transport custom documents would allow TEM to get hands on the important document that are required with document-based payment methods such as letter of credit and prepayment. It would also speed up the payment processes and the transmission of document between parties. In addition, it would also help TEM to prove VAT zero rating and the goods has been left from the Netherlands, which would minimize possible pecuniary consequences, for example, a penalty equal to 21% of total sales in one year or long investigation of trade operation.

Also the high monetary benefit takes place in terms of sales recording, since TEM can now decide when the order leaves from the warehouse, and as a result it would not be any more dependent on fixed pickup dates. Therefore, the sales manager is able to record the sales at the right time. This allows TEM to achieve the monthly targets and create better results in the financial statement at the end of fiscal year which is important for TEM because Topcon is a listed company and it is relevant to increase the result and market value in order to entice more investors.

7 DEVELOPMENT SUGGESTIONS

The aim is to apply considered Incoterms to TEM operation as well as possible in order to improve order management, facilitate payment formalities and decrease work in process time with documentation, and as a result shorten the lead times and create financial advantages. Considered recommendation has been introduced below.

7.1 Reorganize the order processors

To decrease work in process time and optimize the increased paperwork to make the paperwork process more efficient, reorganize the responsibilities and task to order processor can be applied.

Current order management line-up consists of 4 personnel; 3 order processors, who are responsible for European customers and 1 order processor, who is responsible for MEA customers. The most time-consuming paperwork occurs with MEA customers which brings a lot of uncontrolled paperwork for the order processor when a trade is conducted with EXW. Therefore, TEM could be reasonable to merge the customers and reorganizes tasks as well as bring the workflow with warehouse closer to service department as well as possible.

An example of split front and back office in which one order processor focuses on transport custom documents, keep contact in freight forwarder and push them to collect the goods in time, and arrange loans and Chamber of Commerce documents. The rest of the order processors focus on the order entry and the information flow with the customers without focusing on specific customers. This helps to even workload between the order processors. Besides, in the time, when subsidiaries start to implement SAP system, one of the order processor from order entry is able to get off to support subsidiaries with the implementation without causing large problems to order entry.

7.2 Utilization of Topcon logistic department

To minimize the workload of documentation, Logistic department of Topcon Europe B.V could take more responsibility of shipping documents. This enables to order processors to focus more on customer service and payment formalities when TEM does not need to

organize all the transport documents. This requires negotiation between the management of TE, TEM and TEP and possible approval of management of TE to carry out the documentation on behalf of TEM and TEP. It would also be necessary to establish a new logistic team of TE to carry out documentation.

Besides, when implementing new Incoterms, in particular CPT and CIP, TEM should implement new functions to current SAP system, which would measure time of order processing from the point of order is received, up to the point when order is ready for shipping. The function could also be applied to measure how much time is used for order processing at TE warehouse. New functions of SAP system would enable TEM to monitor how much time is used for documentation and complete the orders as well as enable TEM improve the current process in the future.

7.3 Uniform current custom documents

Due to the varying background of business partners who have their own business habits and languages. To maintain smooth international trade, it is vital to have every party on the same page with information on documents and delivery terms. Therefore all information related to Incoterms, shipping and destinations needs to be named carefully and clearly in order to avoid misunderstandings as well as minimize risk of delays and other possible challenges.

For example TEM could make some little changes to current documents such as CMR and packing list. Because of international trade it would be smart to translate current CMR in English instead of having CMR in Dutch because Dutch language is not universal language outside of Benelux. Another issue relates to a packing list which is required in custom clearance. Currently packing list describes only a name of instrument, amount of pallet and boxes but the packing list does not allocate which instrument is in which box or pallet. This can lead further proceedings and complains due to delays with shipments and insufficient filled document.

7.4 Loading and warehouse charges

Currently, TEM organizes some activities for free of charge such as loading and warehousing, of which TEM could take a financial benefit.

Loading charges would be beneficial for TEM since loading process is applied to fit the policy of TE which is strongly against EXW and may cause financial losses due to the conflicts with insurance companies. Therefore, it looks pointless to predispose TEM to possible financial losses without receiving any extra value. Loading charges should be involved in selling prices and stated also separately on invoice.

Another charge related to current warehouse activities. In the case if the pickup is agreed to be collected at the seller premises and for some reason, the time of pickup delays several days. TEM should start to charge their customers about warehousing, because delays occupy the available space at outbound area and create extra handling. In order to implement warehouse charges TEM needs to create clear instructions for pickup and state the expiration date of free storage. With FCA the warehouse charges would concern only the subsidiaries and reliable distributors. The warehousing charges would enable TEM to push their customers more to collect the goods faster from the warehouse and help to minimize the occurrence of the tails originated from the delayed pickups. All in all, both activities would also bring extra income for TEM. The amount of loading and warehouse charges as well as instructions need to be negotiated within management of TEM, but it is also important to involve the voice of customers in the result of negotiations.

7.5 Incoterm and export guidance by FEDENEX

Implementation of new Incoterm is really substantial action which needs to be organized carefully and with high focus in order to prevent possible false measures and decisions, since Incoterms affect widely on the entire business operations. This would obviously raise a question in which Evofedenex is able to help with.

TEM is a member of Evofedenex, non-profit federation which provides a lot of knowledge of various subjects such as export formalities, Incoterms, custom documents, restriction and culture differences for free of charge. Evofenedex organizes also trainings and lectures for the important activities as well as networks different companies to share their knowledge of the certain interest. Hence the benefits are clearly greater than the cost. However, for deeper knowledge, Evofenedex provides their services against the payment. All in all, it could be useful for TEM to utilize the services offered by Evofenedex in order to optimize the usage of Incoterm. (van Naamen 2017.)

7.6 Requirements in nutshell

This chapter recaps all the features that need to be considered in terms of evade the current challenges. The chapter also finalized all the requirements of optimizing the new Incoterms in order to get maximum output. This summary can be used also as a checklist during the implementation of new Incoterms.

Replace Ex work to Free Carrier (FCA)

- Support loading process, low risk and cost but more control on documents and transportation
- Avoid possible conflicts with insurance companies regarding to responsibilities

Negotiation with freight forwarder about new price rates based on new Incoterms

- Export custom formalities and carriage
- Select several freight forwarders

Execute Incoterms CPT or CIP with MEA distributors

- Enable to carry out document-based payment methods
- Control on important transport custom documents e.g. EX-A helps to prove VAT 0%

Strengthen relationship with MEA distributors

- More efficient trade with MEA distributors

Improve current documentation

- CMR in English
- Locate the items to right boxes in packing list
- Implement new functions to SAP system to collect data of order process time

More control on transportation

- Shorten lead times, control on important transport custom documents
- Enable record the sales
- Flexible warehouse

Consulting for implementation of new Incoterms (if needed)

- Free guidance from Evofenedex
- More personal consulting against payment

Approach closer to logistic department of TE

- Request support for documentation
- Solve loading process and personal training for loading proceedings

Re-organize the order processor line-up

- Merge the customers
- Divide tasks: documentation and order entry

Additional charges

- Loading charges
 - Warehousing charges
-

8 CONCLUSION

As originally intended outcome of the research was to find out and justify new suitable Incoterms for TEM over current Incoterm EXW and come up the requirements and recommendation how to integrate choice incoterm to current operation and payment formalities.

Research also acknowledged that the replacement of current Incoterm brought up new challenges due to the change of nature of order entry by increasing the work load connected to documentation, communication and monitoring between order processors and the customers, and as a result making document process more time consuming. This required TEM to make operative changes in order to optimize the new Incoterms and receive the best possible outcome. Also research lacks of costs related to time consumption in document process. In fact, this was really hard to determine in current situation where time regarding to complete an order was not recorded and time was relatively diverse variable which varied widely depending on the customer and requirement level.

Currently, the challenges originated from EXW did not only limit to payment methods, but the effect on Incoterm was much more extensive where the challenges linked to other section by creating domino effect between the activities of TEM and TE. For example, discrepancy in payment methods, lack of control over documentation, delays in pickups and payments and possible financial conflicts with insurance due to controversial activity. To overcome the challenges and promote TEM commerce, Incoterms 2010 has been analyzed and the most suitable Incoterms were introduced and the impacts of the Incoterms related to payment formalities, transportation, documentation and pecuniary issues were specified in detail.

To optimize the usage of Incoterms, FCA and CPT and CIP needed to target different customer groups in order to fulfill the requirements of smooth trade. FCA would be the most optimal Incoterm for subsidiaries and distributors who completed the payments with open account and picked up the order within 3 working days. Whereas CPT and CIP would be more suitable for the distributors who required more security for payments and documentation. Both Incoterms provides TEM more control on transportation and documentation which enables to carry out the delivery when the sales need to be recorded urgently and enables payment methods such as L/C, prepayment or document against

payment safely and properly. With FCA TEM could arrange pre carriage to buyer's freight forwarder premises or with CPT the main carriage to the place of destination which enables the recording the sales on time.

It would also be necessary for TEM to make operational changes in order to optimize the usage of Incoterms and decrease the amount of documentation. One of the main changes is to reorganize the line-up of order processors to divide work load evenly. It would also be preferable for TEM to work closer with logistic department of TE and negotiate possibilities to take over the arrangement of documentation in order to be more sales focused and move logistic formalities partly to the logistic department.

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APPENDICES

Appendix 1. Lead times for pickups between subsidiaries and distributors

All samples	
Lead time between the order is ready to be collected and order is actual collected (days)	The number of days
The same day when order is ready	212
Within 1-3 days	304
Less than a week (7 days)	91
Less than a month	39
More than a month	14
Total	660

Subsidiaries		
Lead time between the order is ready to be collected and order is actual collected (days)	The number of days	Avg of weight
The same day when order is ready	99	356
Within 1-3 days	90	363
Less than a week (7 days)	7	332
Less than a month	0	
More than a month	1	1
Total	197	

Distributors		
Lead time between the order is ready to be collected and order is actual collected (days)	The number of days	Avg of weight
The same day when order is ready	113	359
Within 1-3 days	214	365
Less than a week (7 days)	84	358
Less than a month	39	361
More than a month	13	358
Total	463	

Appendix 2. The usage of mode of transport between subsidiaries and distributors

The usage of transport mode	
Subsidiaries	
Air freight	0
Sea freight	0
Trucks	528
Delivery services	329
Others	17
Total	874

The usage of transport mode	
Distributors	
Air freight	445
Sea freight	23
Trucks	770
Delivery services	497
Others	53
Total	1788

The usage of transport mode	
Subsidiaries vs. distributors	
Air freight	445
Sea freight	23
Trucks	770
Delivery services	497
Others	53
Trucks (Subsidiary)	528
Delivery services (Subsidiary)	329
Others (Subsidiary)	17
Total	2662

Appendix 3. Lead times of pickups by distributors per quarter

Quarter 4 - Distributors	
Lead time between the order is ready to be collected and order is actual collected (days)	The number of days
The same day when order is ready	21
Within 1-3 days	49
Less than a week (7 days)	17
Less than a month	16
More than a month	0
Total	103

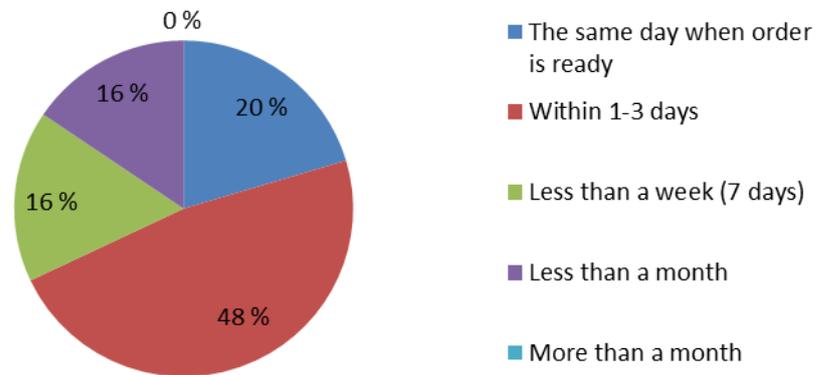
Quarter 1 - Distributors	
Lead time between the order is ready to be collected and order is actual collected (days)	The number of days
The same day when order is ready	27
Within 1-3 days	61
Less than a week (7 days)	17
Less than a month	6
More than a month	1
Total	112

Quarter 2 - Distributors	
Lead time between the order is ready to be collected and order is actual collected (days)	The number of days
The same day when order is ready	32
Within 1-3 days	44
Less than a week (7 days)	19
Less than a month	7
More than a month	2
Total	104

Quarter 3 - Distributors	
Lead time between the order is ready to be collected and order is actual collected (days)	The number of days
The same day when order is ready	33
Within 1-3 days	60
Less than a week (7 days)	31
Less than a month	10
More than a month	10
Total	144

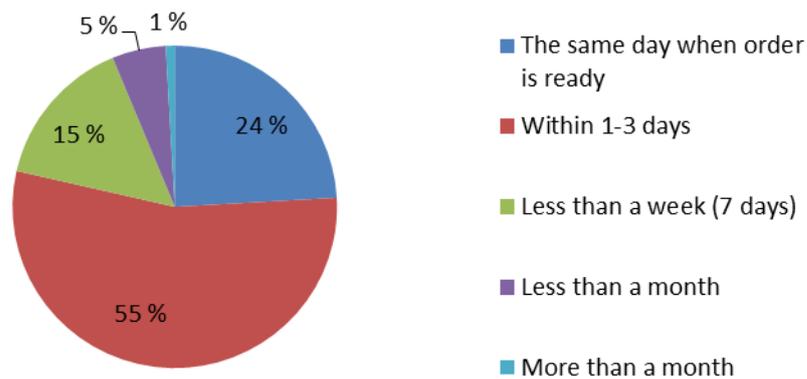
Quarter 4

Oct. 2015-Dec.2015



Quarter 1

Jan. 2016-Apr. 2016



Quarter 2

Apr. 2016 - Jul. 2016

