INCOTERMS IN PRACTICE:
HIDDEN RISKS

Case Study

glaston

Victoria Seredyuk

Bachelor's thesis
Autumn 2017
Degree Programme in International Business
School of Business & Services

ABSTRACT

Tampereen ammattikorkeakoulu
Tampere University of Applied Sciences
Degree Programme in International Business

Victoria Seredyuk
Incoterms in Practice: Hidden Risks
Case Study Glaston Finland Oy

Bachelor's thesis 51 pages, appendices 3 pages
Autumn 2017

This bachelor’s thesis raises concerns about hidden risks when International Commerce Terms are used in practice. Incoterms users often forget about the rules imperfection in the form of limitation and complexity and do not recognize the influence of the chosen delivery term. Therefore, Incoterms are not considered as a source of hidden risks in risk management programs.

This thesis is commissioned by a Finnish company called Glaston Finland Oy to find out if Incoterms are a cause of errors in delivery projects. This project is called a case study.

Literature study and situation analysis were conducted in order to find the answer. By studying how the terms suppose to work and how they have been applied in the company, the suspicion was proved, and hidden Incoterms related risks were identified. A few suggestions on what could be done to minimize negative effect of the risks are given.

While analyzing the current situation, a mixed approach was selected to take advantage of available data and build the full picture. Statistical treatment of data by creating frequency tables and figures supported the case study via showing trends in Incoterms application.

Keywords: Incoterms, hidden risks, risk management

CONTENTS

1 INTRODUCTION 6
1.1 Case background 7
2 INCOTERMS IN THEORY & PRACTICE 9
2.1 Incoterms and International Chamber of Commerce 9
2.1.1 Incoterms® 2010 10
2.1.2 Ex Works 10
2.1.3 Free Carrier 11
2.1.4 Carriage Paid to 12
2.1.5 Carriage and Insurance Paid to 13
2.1.6 Delivered at Terminal 14
2.1.7 Delivered at Place 15
2.1.8 Delivered Duty Paid 15
2.1.9 Free Alongside Ship 16
2.1.10 Free on Board 17
2.1.11 Cost and Freight 18
2.1.12 Cost, Insurance and Freight 19
2.2 Crucial logic behind the rules 20
2.3 Incoterms in practice and common challenges 22
2.4. Risks and risk categories 25
2.4.1 People as a risk within Incoterms 27
2.4.2 Cultural risk examples 27
2.5 Risk management and mitigation strategies 29
2.6 Main points 30
3 STUDYING THE CASE GIVEN 31
3.1 Supporting questions 31
3.2 Analysis structure 31
3.2.1 Selecting and collecting appropriate data 32
3.2.2 Generating new information 33
3.2.3 Statistical treatment 34
3.3 Result estimations 34
4 CURRENT SITUATION 35
4.1 Incoterms used in delivery projects 35
4.1.1 Destinations of shipments 36
4.1.2 Correlation between used Incoterms used & destinations 37
4.2 Successful and unsuccessful projects 38

4.2.1 Correlation between number of errors and Incoterms used 39
4.2.2 Correlation between errors occurred and destination region 40
4.3 Trends & patterns discovered 41
4.4 Hidden risks found & their costs 41
4.4.1 Not receiving payments for goods sold on time (FCA) 41
4.4.2 Additional costs & responsibilities (CIF, DAP) 42
4.4.3 Delays in planned operations (FCA, CIF, DAP) 42
4.4.4 Ruining relationship with customer (DDP, DAP)......................... 43
4.4.5 “Grey zone” risk (CIF, DAP).. 43
5 MAIN POINTS ABOUT THE CURRENT SITUATION.............................. 44
6 FURTHER ACTIONS 45
6.1 Utilization of the findings 45
6.2 Risk management initiatives 45
6.2.1 Financial aspect 46
6.2.2 Internal operations.. 48
6.2.3 External operations... 49
6.2.4 Resources needed 49
7 CONCLUSION 50
APPENDICES 52
REFERENCES.. 55

GLOSSARY

APAC	Asia Pacific
CFR	Cost and Freight
CIF	Cost, Insurance and Freight
CIP	Carriage and Insurance Paid To
CPT	Carriage Paid to
CRM	Customer Relationship Management
DAP	Delivered at Place
DAT	Delivered at Terminal
DDP	Delivered Duty Paid
EMEA	Europe, Middle East and Africa
EXW	Ex Works
EVM	Expected Monetary Value
FAS	Free Alongside Ship
FCA	Free Carrier
FOB	Free on Board
ICC	International Chamber of Commerce
Incoterms®	International Commerce Terms
L/C	Letter of Credit
MEA	Middle East and Africa
MEUR	Million Euro
NAME	North America
Q	Quarter in a financial year
SAME	South America
SVP	Senior Vice President
THC	Terminal Handling Charges
UCC	Uniform Commercial Code
USA	United States of America

1 INTRODUCTION

When it comes to international trade and contracts for the sale of goods, Incoterms® by International Chamber of Commerce has become one of the essential tools, globally recognized and used by a number professionals, such as importers, exporters, lawyers, transporters, and insurers.

The terms have been in use for many decades and eventually were taken for granted. Often forgotten the influence of a three letters abbreviation in trade documents can create a variety of chaotic situations for example delays, damaged business relationships, additional expenses or just lost control over the situation.

The most considerable influence of Incoterms lays down in the area of distribution within a supply chain, which traditionally consists of three essential components, which are parties involved in a supply chain, flow of materials/goods and information flow. As a communication tool, Incoterms assist in information exchange between parties to allocate costs and risks associated with the shipping procedures involved in the project. Besides that, Incoterms function to determine the physical location of the goods during the entire shipping project. (See Appendix 1)

Even though the trade terms aim to reduce misunderstandings and illuminate confusions between traders regarding their obligations they agree on by signing a contract, it does not necessarily mean that there are no risks exist. That is awareness of hidden risks is an issue of high importance.

As risks in international trade vary continuously and cannot be erased completely, only by strategic planning they can be reduced to a certain level, so its impact is barely tangible. Risk reduction is a part of any sustainable business strategy and is a result of very many risk management processes implemented successfully.

This study aims to identify how Incoterms work in theory and practice as well as what Incoterms related risks can occur based on the case of Glaston Corporation. The key purpose of this study is to support risk management policy of the corporation, which is "balance its growth, risks and return in such a way that the reputation of the Group or its brands, the safety of employees and other persons, the value of financial, physical and intellectual assets and the environment are not negatively affected while pursuing opportunities for profitable growth". (Glaston Corporation, 2014)

The thesis contains two parts. The first part is based on literature study where books and articles are taken as a foundation for the case study, while the second part is in the form of the current situation analysis. It is essential to find out if Incoterms cause additional complications or not and what they are.

1.1 Case background

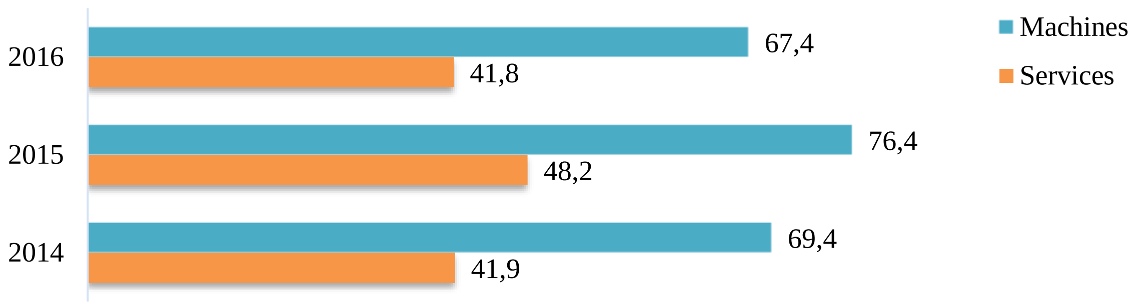
A case given is provided by a Finnish company called Glaston Finland Oy, located in Tampere. Glaston Finland belongs to Glaston Corporation, one of the leading providers of machinery, technology, and expertise in the glass processing industry recognized internationally by the logo shown in Image 1. The company operates globally, and its facilities and units are spread around Europe, Middle East, Americas, and Asia. A corporate headquarter is based in Helsinki, Finland and factories are in Tampere, Finland and Tianjin, China.

Image 1. Glaston Logo.

Glaston Finland divides its operations into two business areas, machines, and services. "Services" business provides services for glass processing machines, machine upgrades and modernizations, spare parts and tools for glass pre-processing. The business's remote monitoring and diagnostics services, as well as training and consulting, to help customers improve the efficiency of their processes.

"Machines" business offers a broad, technologically advanced range of glass processing machines for flat tempering, bending and laminating glass. The price range of Glaston's' products starts from 600 000 euros. For the past years, this business area brought most of the revenues in as clearly shown in Table 1 below. By the latest Annual Report 2016, sold machinery brought around 63% of annual income in 2016. It means that machine selling remains the main source of corporation’s revenues. (Glaston Corporation, 2016)

Table 1. Net Sales of Glaston Corp. 2014-2016 in MEUR.



Glaston separates the global market into the following sales areas: EMEA, Americas, and Asia. Every successful deal requires to prepare and complete a sales agreement. Incoterms rules 2010 are used to split obligations with customers, such as at which place the risks of cargo loss and damage is transferred from the seller to the buyer during transport operations, how transport operations costs are shared between the buyer and the seller and who provides the documents which are needed.

A shipping department of Glaston Finland, which is responsible for shipping and delivery operations, has experienced several irregularities in the machines delivery projects, wherein the result, unplanned delays in delivery operations, extra costs and unexpected responsibilities occurred. There is a suspicion that Incoterms belong to one of the sources of experienced errors, therefore an existing risk.

In Corporate Risk Management Policy, Glaston defines risk as “an uncertain event and its consequence, caused by external or internal factors, which may be either a threat or an opportunity.” (Glaston Corporation, 2014)

2 INCOTERMS IN THEORY & PRACTICE

The primary goal of this chapter is to study three key elements: “Incoterms”, “Risks” and “Risk management” by going through central concepts behind the subjects and identifying connections between them by discussing how the terms work in theory and practice. Besides that, special attention is paid to information which points out complexity and limitation of Incoterms.

2.1 Incoterms and International Chamber of Commerce

International Commerce Terms or Incoterms
® were invented by ICC or International Chamber of Commerce (See Image 2. ICC Logo), the largest business representative organization in the world, which promotes international trade and investment, protects open markets for goods and services as well as free flow of capital. The principal activities are divided into three groups: establishment of rules, disputes resolution and policy advocacy. The main idea behind the terms was to assist the progress of communication and trade between companies by specifying and defining contract obligations of buyers and sellers involved in international trade since 1936.

Image 2. ICC Logo

Sehgal describes Incoterms as “a set of trading terms that have been standardized for international trade and are widely accepted. These terms identify the respective responsibilities of the buyer and the seller for international trade, and the party responsible for bearing the costs involved. Incoterms are used with a geographical location and do not deal with the transfer of title. Incoterms are published by the ICC (International Chamber of Commerce) and have been reproduced as such.” (Sehgal, 2009)

Incoterms have developed into an international legal language used in sales transactions and shipping documents. Every abbreviation contains only three letters but has a broad meaning. By using one of the terms trading parties agree on specific responsibilities and terms in the contract, such as who takes care of necessary documentation, arranges transportation, buys insurance, how costs are shared and at which place the risks of cargo loss or damage is transferred from one to another.

2.1.1 Incoterms® 2010

Image 3. Incoterms® 2010 Logo

"Incoterms®" and the Incoterms®2010 logo are trademarks of International Chamber of Commerce.

Incoterms 2010 is the latest edition of the rules (See Image 3. Incoterms® 2010 Logo). There are eleven rules in the set, which are divided into two groups: rules for any transportation mode (EXW, FCA, CPT, CIP, DAT, DAP, DDP) and rules for sea and inland waterway transport (FOB, FAS, CIF, CFR). Below are short descriptions of all the rules in Incoterms 2010 edition created by ICC.

2.1.2 Ex Works

"**EXW** or "Ex Works" means that the seller delivers when it places the goods at the disposal of the buyer at the seller's premises or at another named place (i.e., works, factory, warehouse, etc.). The seller does not need to load the goods on any collecting vehicle, nor does it need to clear the goods for export, where such clearance is applicable." (Incoterms by ICC, 2010)

Table 2 below demonstrates a list of standard procedures needed to complete a shipment, where duties are divided by the EXW rule. EXW requires minimum responsibility from the seller and maximum from the buyer. As it is shown in the table below, the seller holds responsibility for packaging and its costs as well as risks of the loss of goods and damage before loading (pre-carriage). After that, the buyer is to take next actions at his own cost and risk.

Table 2. EXW checklist

Procedures	Costs	Risks
Packaging	Seller	Seller
Pre-carriage	Buyer	Buyer
Export customs	Buyer	Buyer
Handling: loading into the main carriage	Buyer	Buyer
Main transportation	Buyer	Buyer
Transportation insurance	Buyer	Buyer
Handling: unloading from main carriage	Buyer	Buyer
Import customs	Buyer	Buyer
Post-carriage	Buyer	Buyer

2.1.3 Free Carrier

"**FCA** or "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." (Incoterms by ICC, 2010)

Table 3 shows the allocation of responsibilities between the seller and the buyer in case FCA is used. The difference between EXW and FCA is that the seller's responsibilities increase slightly. For example, the seller is to take care for packaging, pre-carriage and export customs, while the buyer takes over once the goods reach the agreed place. However, the seller is not obliged to insure the goods during the pre-carriage stage.

Table 3. FCA checklist

Procedures	Costs	Risks
Packaging	Seller	Seller
Pre-carriage	Seller	Seller
Export customs and declaration	Seller	Seller
Handling: loading into the main carriage	Buyer	Buyer
Main transportation	Buyer	Buyer

Transportation insurance	Buyer	Buyer
Handling: unloading from main carriage	Buyer	Buyer
Import customs clearance and duties	Buyer	Buyer
Post-carriage	Buyer	Buyer

2.1.4 Carriage Paid to

"**CPT** or "Carriage Paid to" 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 that the seller must contract for and pay the costs of carriage necessary to bring the goods to the named place of destination." (Incoterms by ICC, 2010)

Table 4 describes how costs and risks are split between the traders. CPT assigns responsibilities equally between two parties, where costs and risks for packaging, pre-carriage, export customs and main carriage handling is to be taken care by the seller. While main transportation is arranged and paid by the seller but responsible for the goods is the buyer. It is important to remember that the seller is not obliged to insure goods during pre-carriage and main carriage. The buyer does the rest of procedures.

Table 4. CPT checklist

Procedures	**Costs**	**Risks**
Packaging	Seller	Seller
Pre-carriage	Seller	Seller
Export customs	Seller	Seller
Handling: loading into the main carriage	Seller	Seller
Main transportation	Seller	Buyer
Transportation insurance	Buyer	Buyer
Handling: unloading from main carriage	Buyer	Buyer
Import customs	Buyer	Buyer
Post-carriage	Buyer	Buyer

2.1.5 Carriage and Insurance Paid to

"**CIP** or "Carriage and Insurance Paid to" 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 that the seller must contract for and pay the costs of carriage necessary to bring 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. The buyer should note that under CIP the seller is required to obtain insurance only on minimum cover. Should the buyer wish to have more insurance protection, it will need either to agree as much expressly with the seller or to make its own extra insurance arrangements." (Incoterms by ICC, 2010)

Table 5 shows that the seller takes care of costs and risks related to the following procedures: packaging of the goods, export customs, pre-carriage and main carriage loading. In the same time, the buyer is responsible for arranging unloading of the goods (main carriage), complete import customs and organizing post carriage operations. Main carriage and transportation insurance (minimum cover) are held and paid by the seller. However, risks are bared by the buyer.

Table 5. CIP checklist

Procedures	**Costs**	**Risks**
Packaging	Seller	Seller
Pre-carriage (loading and transportation)	Seller	Seller
Export customs	Seller	Seller
Handling: loading into the main carriage	Seller	Seller
Main transportation	Seller	Buyer
Transportation insurance	Seller	Buyer
Handling: unloading from main carriage	Buyer	Buyer
Import customs	Buyer	Buyer
Post-carriage	Buyer	Buyer

2.1.6 Delivered at Terminal

"**DAT** or **"**Delivered at Terminal" means that the seller delivers when the goods, once unloaded from the arriving means of transport, are placed at the disposal of the buyer at a named terminal at the named port or place of destination. The terminal includes a place, whether covered or not, such as a quay, warehouse, container yard or road, rail or air cargo terminal. The seller bears all risks involved in bringing the goods to and unloading them at the terminal at the named port or place of destination." (Incoterms by ICC, 2010)

Table 6 describes splitting responsibilities regarding DAT rule. In this case, the seller acquires slightly more obligations than could by CIP. DAT requires the seller to arrange, pay and take care of risks till the goods reach a place of destination, and the buyer is to do import procedures and organize post-carriage. As the table below shows, the seller obtains more risks to bare. Another important point to mention is that purchase of transportation insurance is optional for the seller. Therefore, it is best to discuss who is to take care of it to avoid confusions.

Table 6. DAT checklist

Procedures	**Costs**	**Risks**
Packaging	Seller	Seller
Pre-carriage	Seller	Seller
Export customs	Seller	Seller
Handling: loading into the main carriage	Seller	Seller
Main transportation	Seller	Seller
Transportation insurance	Seller*	Seller*
Handling: unloading from main carriage	Seller	Seller
Import customs	Buyer	Buyer
Post-carriage	Buyer	Buyer

*optional

2.1.7 Delivered at Place

"**DAP** or "Delivered at Place" means that the seller delivers when the goods are placed at the disposal of the buyer on the arriving means of transport ready for unloading at the named place of destination. The seller bears all risks involved in bringing the goods to the named place." (Incoterms by ICC, 2010)

Table 7 explains that the seller takes 90% of responsibilities related to logistics of the goods, but import customs remains for a buyer to manage. In fact, in DAP case the seller is not obliged to insure, only should bring the goods to the agreed place.

Table 7. DAP checklist

Procedures	Costs	Risks
Packaging	Seller	Seller
Pre-carriage	Seller	Seller
Export customs	Seller	Seller
Handling: loading into the main carriage	Seller	Seller
Main transportation	Seller	Seller
Transportation insurance	Seller	Seller
Handling: unloading from main carriage	Seller	Seller
Import customs	Buyer	Buyer
Post-carriage	Seller	Seller

2.1.8 Delivered Duty Paid

"**DDP** or "Delivered Duty Paid" means that the seller delivers the goods when the goods are placed at the disposal of the buyer, cleared for import on the arriving means of transport ready for unloading at the named place of destination. The seller bears all the costs and risks involved in bringing the goods to the place of destination and has an obligation to clear the goods not only for export but also for import, to pay any duty for both export and import and to carry out all customs formalities." (Incoterms by ICC, 2010)

DDP is the term which requires maximum responsibility from the seller and minimum from the buyer. As DDP checklist in Table 8 below shows that the earlier mentioned costs and risks are on the seller. However, one nuance is that the seller is not obliged to insure, only must bring the goods at the final place of destination.

Table 8. DDP checklist

Procedures	**Costs**	**Risks**
Packaging	Seller	Seller
Pre-carriage	Seller	Seller
Export customs	Seller	Seller
Handling: loading into the main carriage	Seller	Seller
Main transportation	Seller	Seller
Transportation insurance	Seller	Seller
Handling: unloading from main carriage	Seller	Seller
Import customs	Seller	Seller
Post-carriage	Seller	Seller

2.1.9 Free Alongside Ship

"**FAS** or "Free Alongside Ship" means that the seller delivers when the goods are placed alongside the vessel (e.g., on a quay or a barge) nominated by the buyer at the named port of shipment. The risk of loss of or damage to the goods passes when the goods are alongside the ship, and the buyer bears all costs from that moment onwards." (Incoterms by ICC, 2010)

Table 9 where the seller is responsible for packing the goods, arrange pre-carriage activities and complete export customs, and the buyer takes care of the rest operations. FAS and FCA are quite similar in a way how the tasks are split is the same. The difference between these terms is that FAS main carriage happens at the port and in case of FCA, it can be an agreed place.

Table 9. FAS checklist

Procedures	Costs	Risks
Packaging	Seller	Seller
Pre-carriage	Seller	Seller
Export customs	Seller	Seller
Handling: loading into the main carriage	Buyer	Buyer
Main transportation	Buyer	Buyer
Transportation insurance	Buyer	Buyer
Handling: unloading from main carriage	Buyer	Buyer
Import customs	Buyer	Buyer
Post-carriage	Buyer	Buyer

2.1.10 Free on Board

"**FOB** or "Free on Board" means that the seller delivers the goods on board the vessel nominated by the buyer at the named port of shipment or procures the goods already so delivered. The risk of loss of or damage to the goods passes when the goods are on board the vessel, and the buyer bears all costs from that moment onwards." (Incoterms by ICC, 2010)

Table 10 below describes what responsibilities are on the seller and the buyer. It shows that the buyer's responsibility starts from the moment the goods are loaded on the vessel. The seller agrees to take care of the procedures till the mentioned before time. However, it does not mean that the seller should insure the goods.

Table 10. FOB checklist

Procedures	Costs	Risks
Packaging	Seller	Seller
Pre-carriage	Seller	Seller
Export customs	Seller	Seller
Handling: loading into the main carriage	Seller	Seller
Main transportation	Buyer	Buyer

Transportation insurance	Buyer	Buyer
Handling: unloading from main carriage	Buyer	Buyer
Import customs	Buyer	Buyer
Post-carriage	Buyer	Buyer

2.1.11 Cost and Freight

"**CFR** or "Cost and Freight" means that the seller delivers the goods on board the vessel or procures the goods already so delivered. The risk of loss of or damage to the goods passes when the goods are on board the vessel. the seller must contract for and pay the costs and freight necessary to bring the goods to the named port of destination." (Incoterms by ICC, 2010)

Table 11 below displays that the obligations are equally divided between both parties, where the seller responsible passes the responsibility of loss and damage risk to the buyer once the goods are loaded on the vessel, however, the main carriage is organized and paid by the seller. The seller is not obliged to insure the goods for pre-carriage, only should bring the goods to the vessel.

Table 11. CFR checklist

Procedures	Costs	Risks
Packaging	Seller	Seller
Pre-carriage	Seller	Seller
Export customs	Seller	Seller
Handling: loading into the main carriage	Seller	Seller
Main transportation	Seller	Buyer
Transportation insurance	Buyer	Buyer
Handling: unloading from main carriage	Buyer	Buyer
Import customs	Buyer	Buyer
Post-carriage	Buyer	Buyer

2.1.12 Cost, Insurance and Freight

"**CIF** or "Cost, Insurance and Freight" means that the seller delivers the goods on board the vessel or procures the goods already so delivered. The risk of loss of or damage to the goods passes when the goods are on board the vessel. The seller must contract for and pay the costs and freight necessary to bring the goods to the named port 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. The buyer should note that under CIF the seller is required to obtain insurance only on minimum cover. Should the buyer wish to have more insurance protection, it will need either to agree as much expressly with the seller or to make its own extra insurance arrangements." (Incoterms by ICC, 2010)

Table 12 below reflects that the seller obtains responsibility for the following: packaging, pre- and main carriages and loading as well as export customs and minimum insurance. However, risks starting from main transportation and loading to the vessel are on the buyer. The buyer can extend insurance coverage if it is needed.

Table 12. CIF checklist

Procedures	Costs	Risks
Packaging	Seller	Seller
Pre-carriage	Seller	Seller
Export customs	Seller	Seller
Handling: loading into the main carriage	Seller	Seller & Buyer
Main transportation	Seller	Buyer
Transportation insurance	Seller	Buyer
Handling: unloading from main carriage	Buyer	Buyer
Import customs	Buyer	Buyer
Post-carriage	Buyer	Buyer

In my conclusion, the terms provide a considerable assistance in international trade. However, there is no assurance that no additional issues would occur due to the imperfection of the rules. In my conclusion, it is essential to point out limitations of the rules by agreeing with D.L. Gardner (former SVP USA of DHL Global Forwarding) that the scope of Incoterms is limited to matters relating to the rights and obligations of the parties to the contract of sale with respect to delivery of the goods sold. Expressed tactically, Incoterms deal with the identification of the physical location in the supply chain where risk of loss and damage to the goods and obligations for transportation, customs and related costs shift from the seller to buyer" (Gardner, 2012)

2.2 Crucial logic behind the rules

Specific terms have special meaning within Incoterms. "Delivery" is the point in the transaction where the risk of loss or damage to the goods is transferred from the seller to the buyer. "Arrival" is the point named in the Incoterm to which carriage has been paid. "Free" means that the seller has an obligation to deliver the goods to a named place for transfer to a carrier. "Carrier" is any person who, in a contract of carriage, undertakes to perform or to procure the performance of transport by rail, road, air, sea, inland waterway or by a combination of such modes. "Freight" is firm that makes or assists in the making of shipping arrangements. "The terminal" is any place, whether covered or not, such as a dock, warehouse, container yard or road, rail or air cargo terminal. "To clear for export" is to file shipper's export declaration and get export permit. (August, Mayer, & Bixby, 2013)

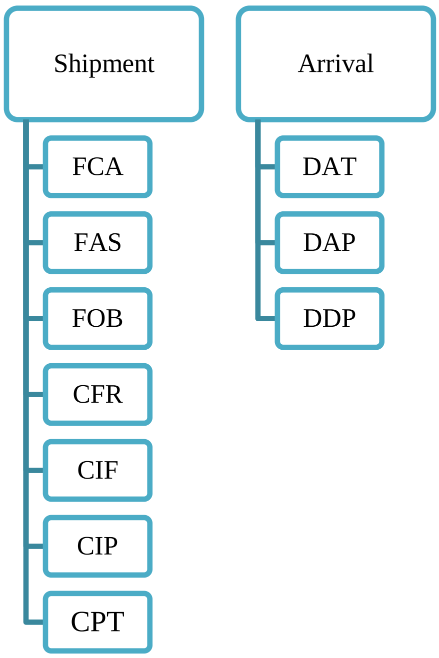


Figure 1. Shipment and Arrival rules.

Incoterms also can be split by purpose into these two groups: "Shipment contract" and "Arrival contract" illustrated in Figure 1. As Gardner explains, in a shipment contract, "the seller's obligation is always completed in the country of export, shipping costs up to a named point at destination depend on the term and responsibility for handling the goods over to a carrier for shipment in a country of export". While in an arrival contract, "the seller is responsible for the risk and loss or damage to the goods up to a named point at the destination, as well as must always pay transportation costs up to a named point". (Gardner, 2012)

Image 4 Image 4below shows a summary of the rules, where seller’s obligations are marked in orange, buyer’s in blue and exclamation point is used to indicate the point of passing the risk of loss and damage.

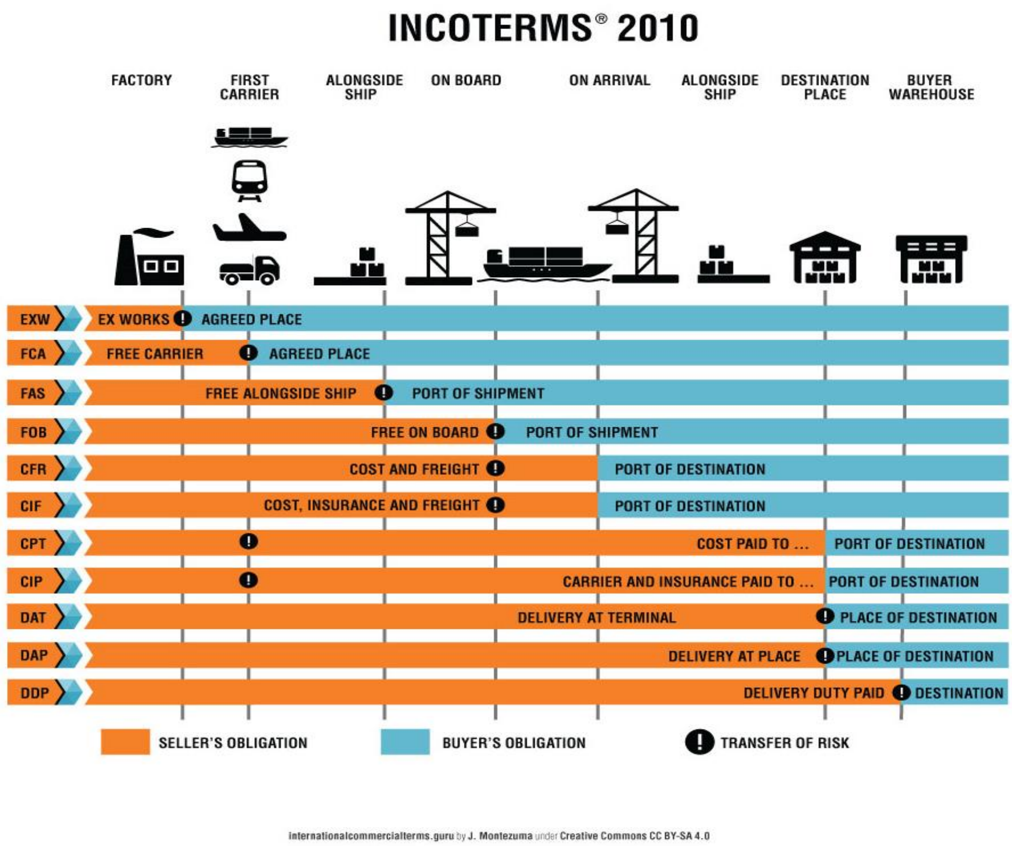


Image 4. Incoterms 2010 explained

(Montezuma, J. under Creative Commons CC BY-SA 4.0, 2017)

There the difference between shipment and arrival is easy to spot. In shipment contracts, transfer of risk from the seller to the buyer ends in the home country at the points such as “factory”, “first carrier”, “alongside ship” and “on board”. Meanwhile, in contracts of arrival, the transfer of risk takes place at “place of destination” and “buyer warehouse”, meaning it is a country of import.

All in all, it is difficult not to agree with Walters’s words: “The precise selection of the right Incoterm is a critical decision for the specific trade on extended supply chains with many hidden risks”. (Walters, 2007)

2.3 Incoterms in practice and common challenges

Incoterms may seem very clear in theory. However, applying them in practice without a considerable level of expertise can lead to a variety of challenges, resulting extra business resources to be used: financial in the form of money, human in the way of human labor, physical as facilities and vehicles and time to time intellectual such as a partnership). Mantissa E-learning company gives ten examples of the most common mistakes made by importers and exporters via the platform Incoterms explained.

> *"Use of a traditional sea and inland waterway only rules for containerized goods, instead of the all transport modes rule"* (E-learning, 2017)

Three out of four Incoterms meant for sea and inland waterway are not recommended to be used for container traffic. They are FOB, CFR, and CIF. When the goods are at the cargo terminal, their physical location remains in the country of departure. However, their international journey has begun because they are on the way to be loaded. In these cases, the terminal acts as the agent of the shipping line. Therefore, it is better if risks transfer to the buyer at the terminal, not once the goods are on the vessel, meaning that FOB to be replaced by FCA, CFR to CPT and CIF to CIP.

> *"Making assumptions about passing of title to the goods, based on the Incoterms rule"* (E-learning, 2017)

Title transfer and risks transfer are two different subjects. There is a difference between who is responsible for the goods on the move and who owns the goods. Incoterms define risks transfer, but not title transfer. Title transfer, as well as, payment terms and remedies for breach of contract are to be covered separately in a sales agreement.

> *"Failure to specify the port/place with sufficient precision, e.g. FCA Chicago, which could refer to many places within a wide area"* (E-learning, 2017)

The named port/place plays a huge role when it comes to logistics. Therefore, it is very important to state it with enough precision to avoid any misunderstandings: more precise - then better. Example: FCA seller's facility, Vehmaistenkatu 5, 33730 Tampere. Changing the name at the last minute can lead straight to delays in errors in delivery. Not to mention, some places can share one name and belong to different countries, such as port of Cartagena in Colombia and port of Cartagena in Spain.

"Use of CIP or CIF without checking whether the level of insurance in force matches the requirements of the commercial contract – these Incoterms rules only require a minimal level of cover, which may be inadequate" (E-learning, 2017)

The appropriate level of insurance is essential when it comes to protecting high-value cargoes. In these situations, it makes sense to expand insurance coverage. Minimum Insurance Cover Calculation:

$$\text{Total Value} = \text{Value of goods} + \text{Freight Cost} + \text{Insurance Cost}$$
$$\text{Minimum insurance cover} = \text{Total Value} \times 110\%$$

For example, the products price is 5 000 EUR, delivery costs are 2 000 EUR and insurance price is 250 EUR. Then minimum insurance cover is 7 975 EUR.

"Attempting to use DDP without thinking through whether the seller can undertake all the necessary formalities in the buyer's country, e.g. paying GST or VAT"

"Attempting to use EXW without thinking through the implications of the buyer being required to complete export procedures – in many countries it will be necessary for the exporter to communicate with the authorities in a number of different ways" (E-learning, 2017)

Import/Export formalities and requirements vary a country to country. It is the reason why it is important to evaluate possible challenges before taking actions. Some countries have unique procedures, which must be followed. For example, to succeed in importing goods to European Union countries from any other country, the products should meet European Union standards and CE labels should be put on the goods. CE marking proves that your product has been assessed and meets safety, health and environmental protection requirements set in EU. Some countries ask to introduce unique documents. For example, USA requires custom bonds, while the UK asks to have a deferment account.

“Where there is more than one carrier, failure to think through the implications of the risk transferring on taking in charge by the first carrier – from the buyer’s perspective, this may turn out to be a small haulage company in another country, so redress may be difficult in the event of loss or damage” (E-learning, 2017)

One more party in the supply chain can become a problem indeed. Therefore, it is vital to choose the right partner, who is trusted. A possible solution can be a preference for known service suppliers By doing that probability of lost goods or unpaid refunds and compensations decreases.

“Failure to establish how terminal handling charges (THC) are going to be treated at the point of arrival. Carriers’ practices vary a good deal here. Some carriers absorb THC’s and include them in their freight charges; however, others do not” (E-learning, 2017)

Terminal handling charges are done by the terminal operator and can be executed before departure or at the destination. The rules say, “when THC’s are the responsibility of the seller, the buyer should not be charged again for the same service”. However, making sure and double check is the way how such failure can be prevented.

“Where payment is with a letter of credit or a documentary collection, failure to align the Incoterms rule with the security requirements or the requirements of the banks” (E-learning, 2017)

Letter of credit or L/C is a document provided by issuing bank (represents the buyer) to advising bank (represents the seller) as a guarantee, which promises the seller to get paid for the goods sold and the buyer to get the goods delivered according to the contract. Once the goods are delivered, payment is made. A fundamental principle of L/C is that the seller shows an evidence of completed obligations in the form of a bill of lading or a substitute. Bill of lading serves as evidence of goods delivery. F-group, C-group, and D-group require different approaches when it comes to the letter of credits and payment collection procedure. In case of FCA, FOB or FAS, the seller should provide a document which can be a substitute for a bill of lading. It can be a certificate which states that goods are available and ready for loading at agreed place or a document proving that the buyer has failed to organize transportation as agreed or a forwarder's certificate of receipt. "Delivery" (see definition in Paragraph 2.2) makes CIP, CIF, CFR and CPT work best with L/C because the carrier provides the seller a bill of landing which proves that delivery will be handled by the carrier and the freight has been paid. However, one problem can arise in case of CIP if the container is not loaded, then the seller should deal with an insurance claim, even though CIP is designed to avoid such problems. DDP, DAT, and DAP work slightly differently. If L/C requires a bill of lading, then the seller can get paid before the goods are the set obligations are met, due to the fact "delivery" takes place upon completion of the mail carriage not arrival at the named place. However, if L/C calls to show arrival receipt, then the risk of the seller is not paid come in case if the buyer declines the goods. There are very many nuances; therefore carefulness is very important. (Mantissa E-learning, 2017)

> *"When DAT or DAP is used with a "post-clearance" delivery point, failure to think through the liaison required between the carrier and the customs authorities – can lead to delays and extra costs"* (E-learning, 2017)

When it comes to international trade papers, the accuracy of documentation is necessary due to necessity of going through customs. Extra attention is to be paid when a transaction involves third parties. However, in countries such as the USA, forwarders are not allowed to complete customs clearance, and the importer must be registered. Otherwise, the customs procedures cannot be completed. Such can cause problems and therefore delays.

After studying common challenges and mistakes described above, a solid evidence of complexity and limitation of Incoterms in practice is formed. Therefore, Incoterms are suspected as a source of hidden risks.

2.4. Risks and risk categories

Business Dictionary states that a risk in business is "the probability of loss inherent in an organization's operations and environment" by (Business Dictionary, 2017)

There are various types of risks in international trade, such as buyer's insolvency/credit risk (inability to provide a full payment for a good or a service by agreed deadline), buyer's acceptance risk (goods delivered, but unaccepted by buyer), knowledge inadequacy (lack of necessarily knowledge of actual situation and potential risks), seller's performance risk (failure in executing agreed responsibilities), documentation risk (fail in meeting necessary documentation requirements), economic risk (poor economic conditions), cultural risk (lack of knowledge and/or experience in local culture), legal risk (uncertainty in legal proceedings), foreign exchange risk (risk of losing money due to currencies instability), interest rate risk, political/sovereign risk (unfavorable political environment) and transit risk (loss or damage of goods on the way).

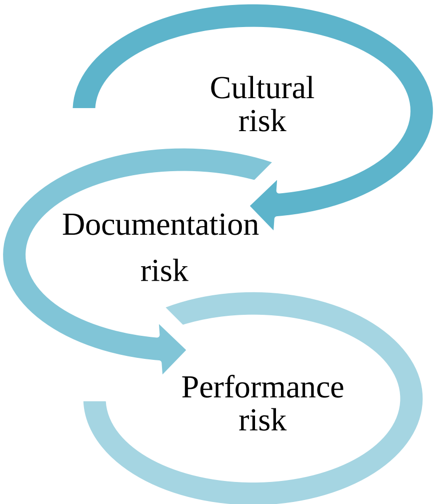


Figure 2. Connection between risks

I believe, it is considerably important to notice the connection between cultural, documentation and performance risks, because these three components are related to each other. As Figure 2 shows, cultural, documentation and performance risks are connected tight. Sufficient completion of delivery project is not possible without accurate prepared documentation. Therefore, the previous cannot be reached without mutual understanding and agreement. This is how cultural risk leads to documentation risk, and performance risk is a result of documentation risk.

As said before, misinterpretation is a starting point of occurring errors. What does "misinterpretation" mean? Oxford Dictionary defines misinterpretation as "the action of interpreting something wrongly". (Oxford Dictionaries, 2017) Misinterpretation is the result of miscommunication between a message sender and a message receiver. There is no guarantee that the receiver interprets the message in the same way as the sender intended. The conclusion of such event is that people can miscommunicate and misinterpret.

2.4.1 People as a risk within Incoterms

As mentioned above, Incoterms rules were designed to reduce lack of misunderstanding and support communication between parties involved in shipping procedures and processes. It goes without doubts that the terms have become a communication tool between the parties.

At legal briefings Herbert Smith Freehills (business legal services), Leary J. and Bell L, state “While Incoterms have been enormously helpful and resulted in grated understanding and standardization in domestic and international trade, there is a risk that users will develop a false sense of security”. (Leary & Bell, 2016)

The risk is purely based on misinterpretation or so-called failed communication between persons. Very often People are not recognized as a risk or a source of risks. Therefore, no actions are planned in risk management operations to prevent such situations. However, “People as a risk” or in other words “cultural risk” has a more significant role in risk management and quality control than expected. It is the reason why it should be paid more attention.

2.4.2 Cultural risk examples

It is a well-known fact that ways of doing business can vary from country to country. For example, in India, charges are calculated by taking the value of the goods against CIF, while in South Africa the FOB value is used. It is very common for India and South Africa to use mentioned above Incoterms, even though they are not appropriate for the mode of transport chosen. This is the main reason why all the related costs and risks must be discussed to clarify obligations of every party.

FOB and FAC are often misread in the USA due to mixing up Incoterms with UCC terms. UCC stands for United States Federal Uniform Commercial Code, which also covers commercial contracts and terms and conditions of shipment and delivery. The problem is that some of UCC expressions have the same three-letter abbreviations as Incoterms have, but their meanings and requirements are different because terms of UCC and Incoterms do not reflect each other. (Uniform Commercial Code, 2002)

ICC has ninety-four branches worldwide. Image 5 illustrates countries where ICC National Chambers were established to lead companies and business associations locally. National committees shape ICC policies and alert their governments regarding international business concerns. 92 National Chambers promote using Incoterms and provide appropriate training in native languages. It means that expertise in using the terms is probably higher in a country with National Chamber than without.

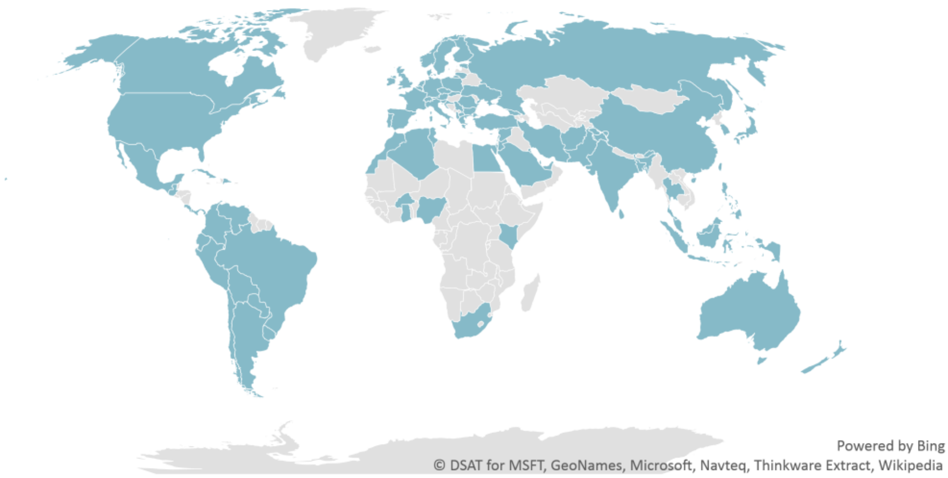


Image 5. Countries. ICC National Chambers

Africa as an emerging region has a less number of national chambers of ICC. I suggest that the rate of its application is lower than in the rest areas, such as EMEA, Americas, and Asia.

Culture is not only about different countries, languages, and traditions as it usually relates. Many definitions of culture exist, however, culture as "a set of patterns of human activity within a community or social group and the symbolic structures that give such activity significance" seems most appropriate to the case meaning that there are way more cultures than countries or nationalities. (Wikipedia, 2017)

Just a group of professionals inside one field of industry can be called a specific culture without any doubt. Therefore, Incoterms can be interpreted in one way by importers and in another by sales managers due to differences in professional jargons.

Besides that, Incoterms definitions as rules are written in legal language by using professional vocabulary which builds one more barrier towards a perfect understanding of the terms.

2.5 Risk management and mitigation strategies

Risk management is a process of identifying, monitoring and managing potential risks to reduce the possible negative impact. The process consists of five steps, which are presented in the Figure 3.

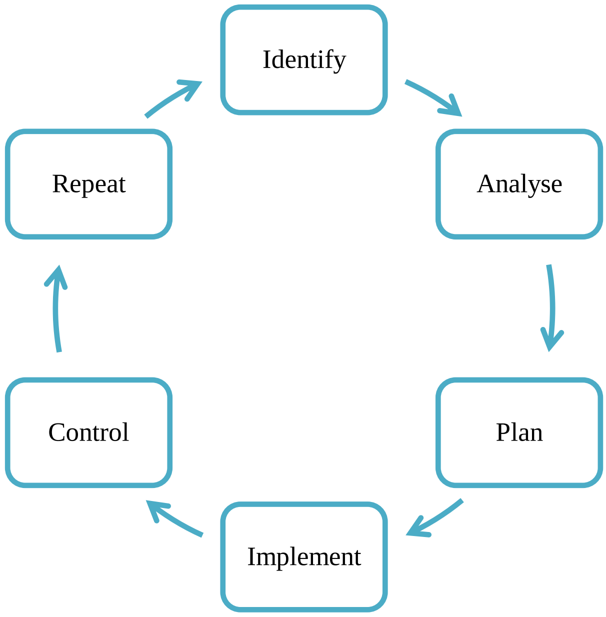


Figure 3. Risk management process

The first step is "Identify" which aims to detect and recognize a possible risk in advance. The step number two is called "Analyze", meaning to determine risk drivers and measure its probability and its impact. The next step is "Plan", it is the time when possible mitigations are found and resources needed are identified, after that first actions towards planned as well as a risk reduction schedule created. There are four risk mitigation strategies exist. They are risk acceptance, risk avoidance, risk limitation and risk transference. It means that a risk can be accepted, avoided, limited and transferred to another party. Risk limitation is the most common management strategy used by businesses. Once the mitigation strategy is defined and planning is completed, "Implementation" stage comes next, when planned actions are executed. “Track & Control” step is to monitor and review the efficiency, as well as to reprioritize and re-plan measures if necessary. The last step is to repeat steps 1-5, again and again, to improve further. (PLAYBOOK Training Series, 2013)

2.6 Main points

In a nutshell, ICC Incoterms are a group of eleven standardized abbreviations created to serve as a communication instrument between professionals of different fields involved in international trade transactions.

Most of literature and articles reviewed to prepare this theoretical foundation, discuss only the bright side of the terms, however, every coin has two sides. The main discovery is based on a fact that Incoterms have a weak point.

The terms require certain expertise due to their complexity and limitations to show the best efficiency. These challenges create a risk of misinterpretation and misunderstanding. Hence Incoterms should not be taken for granted by users, as well as the users should be considered as one of the Incoterms related risks, therefore included to risk management programs.

3 STUDYING THE CASE GIVEN

This chapter explains how the current situation analysis is conducted by telling about analysis structure, data origin, selection criteria, methods used and steps taken.

3.1 Supporting questions

As stated before, the main idea behind this thesis is to find out answers to the main question, which is "What are the hidden Incoterms related risks Glaston acquires once a sales agreement is signed?" Due to complexity of the question, the following sub-questions are to support the investigation.

1. What Incoterms are used by the company?
    a. What is the frequency of used ones?
2. Are there any patterns or trends noticed?
    a. Does a sales area have an impact on the preferred rule?
3. Are all the projects "successful"?
    a. How many projects were "unsuccessful"?
    b. What part of the projects have errors?
    c. Are there any trends or patterns?
4. What made projects "unsuccessful"?
    a. Why do these reasons matter and should be considered in the future?

3.2 Analysis structure

This analysis conducted consists of four main parts illustrated in Image 3 below. The first part is oriented on data definition and data collection. The second step is focused on data transformation and generation of new data by analyzing collected information. The third is about creating statistics. And the fourth is to define the current situation with conclusions based on statistics.

Figure 4. Main components of the analysis

A combination of quantitative and qualitative methods or so-called mixed approach was used due to its advantage of using the whole range of data available or collected. In this analysis, a qualitative approach was used to facilitate quantitative part of the study by generating new background information on the context based on existing data. Quantitative approach was used to build frequency and relative frequency to fulfill the current situation picture. After that, a qualitative method was applied again to explain anomalies within the current situation and develop conclusions of the entire analysis. (Hughes, 2014)

3.2.1 Selecting and collecting appropriate data

Data for this analysis is collected by retrieving suitable pieces of available information from a secondary data source, which happened to be an excel status report on the completed and ongoing delivery projects. "Secondary data source" means that the report taken as a source was created for an entirely different purpose, which assists in monitoring accounts receivable in particular case. However, the dataset has useful pieces of information which are needed to go further within particular research. Selection criteria for a project to be selected are: a delivery project should be completed during two past financial years, cargo should be glass processing machinery products, equipment should to be assembled in at Glaston Finland facilities in Tampere. Therefore, a departure point is Tampere. In the result, the following information is obtained: project code, sales area, country, the delivery term (Incoterm + location) and approximate loading date. Table 13 illustrates the way how selected/collected information looks.

Table 13. Excel extract retrieved data example

Project code	Area	Country	Incoterm	Loading Date
ABC	EMEA	Sweden	DAP Stockholm	31.12.2016

A sample of 106 delivery projects is created out of all delivery projects between 2015-2017. The selection is done with the focus on glass processing machines assembled in Finland and shipped from Tampere. The main reason behind is to examine shipping projects of high-value products only. These products make a group of the most expensive equipment provided by the company, meaning that every error in delivery can require a greater level of resources.

3.2.2 Generating new information

Two financial years are taken into consideration to focus on recently completed projects,. Figure 5 below shows what quarters are taken.

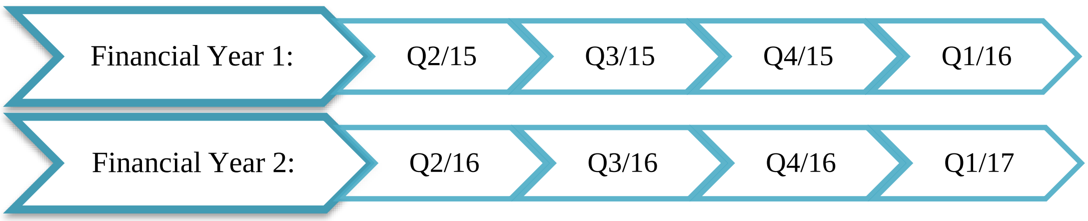


Figure 5. Financial Quarters taken

“Q” or “financial quarter” stands for a three-month period at the end of which public traded companies are to report on their earnings and other business performance measures. Q1: January, February, March; Q2: April, May, June; Q3: July, August, September, Q4: October, November, and December.

The financial quarters are determined based on the approximate loading dates given. For example, as Table 14 below illustrates, 31.12.2016 loading date is transformed into Q4/16.

In order to discover more tendencies related to geographical locations, it was decided to break EMEA, Americas and Asia into “sales regions”, which are Europe, SAME, NAME, Africa, Asia and APAC. Sales Area and Country related information made it possible to determine sales regions. As Table 14 displays, EMEA Sales Area and country Sweden, indicated Europe as a region.

Table 14. Data transformation example

Project code	Area	Region	Country	Incoterm	Loading Date	Q
ABC	EMEA	Europe	Sweden	DAP Stockholm	31.12.2016	Q4/16

3.2.3 Statistical treatment

The data transformation resulted seven variables: project code, sales area, region, country, delivery term (Incoterm), approximate loading date and financial quarter.

To facilitate comparison and see relationships data classification method is used. H. Secrist describes classification as: “the process of arranging data into sequences and groups according to their common characteristics, or separating them into different but related parts”. (Jain, 2016) In this analysis, the data were classified by regions, Incoterm applies and project performance. Next, the relationships between those are studied.

After that frequency tables are created where frequency (number of occurred events in experiment study) and relative frequency (% of occurred events) were calculated, which is shown in Appendix 2 and Appendix 3. Then statistical results are showed via different figures.

3.3 Result estimations

The first estimation is that a few terms are used more often than the others due to certain reasons. The second is that there is a certain percentage of errors. Therefore, existing risks cause “irregularities”, a cause of an error occurred during a delivery project. Therefore, it is believed that an unsuccessful project can point to the hidden or apparent experienced risk as well as can be used as evidence to prove that the risk exists. Unsuccessfulness of a project is to be measured by identifying irregularity or anomaly. The estimation is that Incoterms bring additional risks which cause complications if not used right”.

4 CURRENT SITUATION

The main idea behind investigating current situation is to understand how the company applies Incoterms in practice and to identify existing patterns, “particular way in which something is done, is organized, or happens” (Cambridge Dictionary, which can provide hints where to look further.

4.1 Incoterms used in delivery projects

Many interesting findings have been discovered during the analysis conducted.

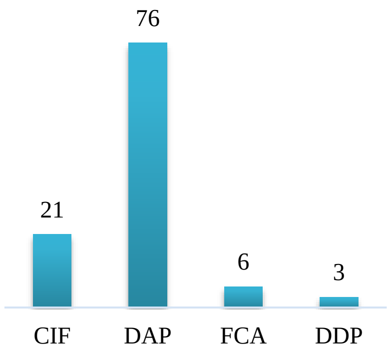


Figure 6. Frequency of Incoterms used

To start with, Figure 6 shows what Incoterms are used during two financial years between Q2/15 and Q1/17. As the chart illustrates, only four terms out of eleven are used during two financial years. They are DDP, DAP, CIF, and FCA. In total, 106 delivery projects were done. Therefore, 106 is a total number of Incoterms used.

As Figure 7 shows, most of the goods were delivered by using DAP or to be precise 72% of the company’s freight. Roughly, one fourth or 20% of products are sold by CIF. The least of shipments were done by using DDP twice and FCA six times, 5% and 3% respectively.

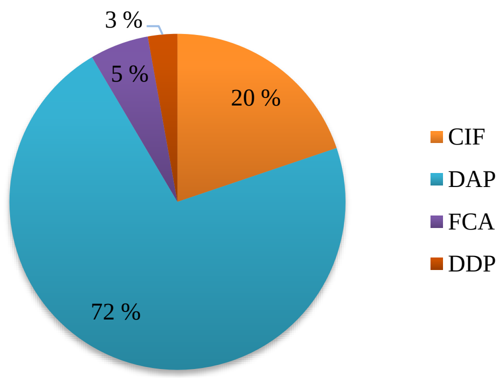


Figure 7. Relative Frequency of Incoterms used

Based on the facts mentioned above, a first pattern is identified. Trend: taking maximum control to avoid unexpected risks by using DAP.

4.1.1 Destinations of shipments

Image 6 below illustrates what the final destinations of the shipments are. The countries where the products were delivered during the financial years are marked in color.

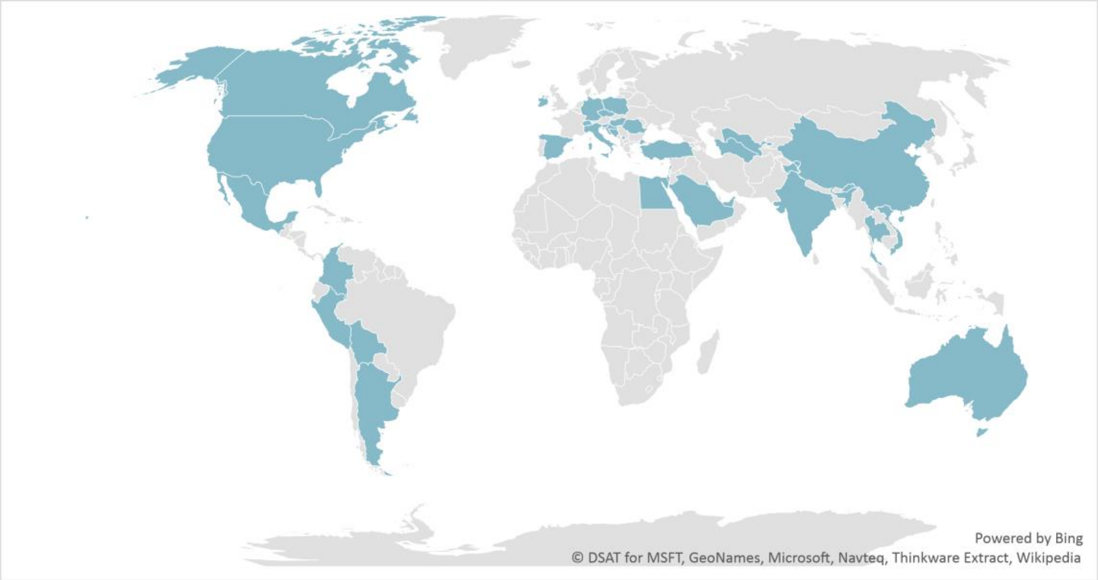


Image 6. Shipment destinations

According to Figure 8 which illustrates the distribution of shipments by region, the most active market areas are Europe (38%), NAME (32%) and Middle East (10%) and the least is Africa (2%).

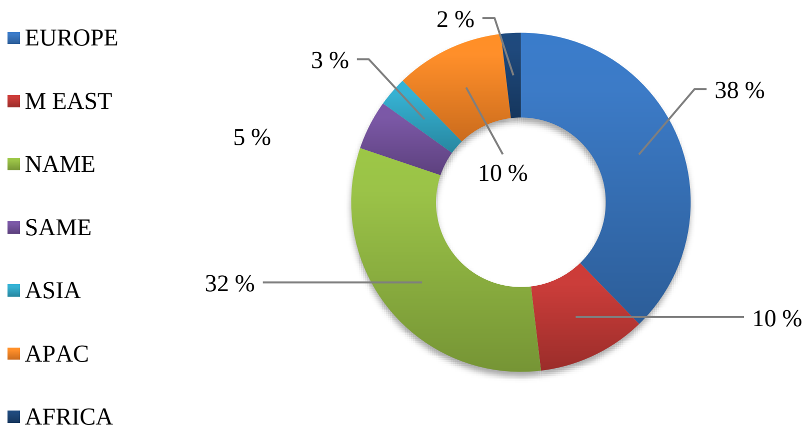


Figure 8. Distribution of shipments by region

In total EMEA receives more than 50% of company's products assembled by Glaston in Finland, while Asia and APAC have 11%. The reason might be that the corporation has a factory in China, which can provide machinery to Asian clients.

Pattern: DAP is used only in "familiar" regions to avoid uncertainties on the spot.

4.1.2 Correlation between used Incoterms used & destinations

Figure 9 below demonstrates a correlation between used Incoterm and Regions. It has two axes; vertical axis determines how many times Incoterms were used while horizontal shows regions' names. Incoterms are illustrated in colors, where DDP is marked as orange, DAP as dark blue, CIF as light blue and FCA as green.

The table gives a possibility to see how many deliveries were completed in every region and by what term sold products were shipped. Clearly, DAP is the most used Incoterm in Europe and NAME while CIF is the one in the Middle East. When it comes to the SAME region, deliveries were equally shipped by two terms: DAP and FCA used twice.

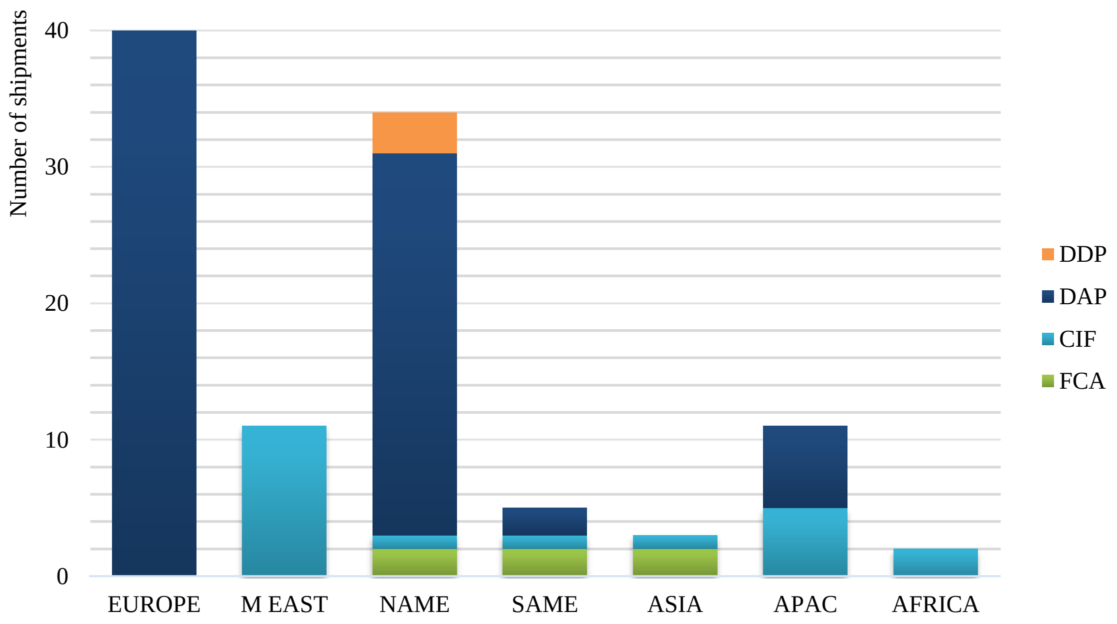


Figure 9. Correlation between sales regions and applied Incoterms

Customers from APAC countries received the goods by DAP and CIF, but FCA and CIF are the terms used when shipping to ASIA. The region of AFRICA is served via CIF only.

4.2 Successful and unsuccessful projects

As explained before all the projects of the sample are divided into two groups: "successful" and "unsuccessful" projects to measure irregularities and errors. Successful projects are lean completed delivery projects, and unsuccessful are those where a problem arose. Below two figures (Figure 9 and Figure 10) are explaining how many times projects ended up successful or unsuccessful.

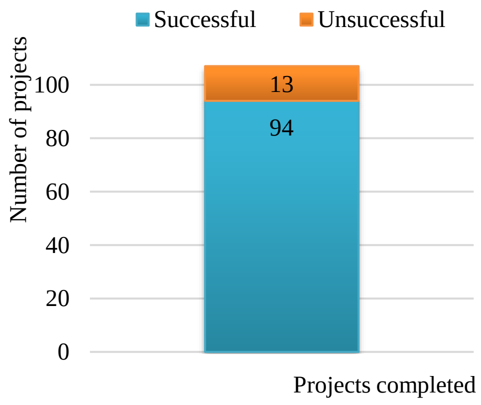


Figure 10. Frequency of projects: successful vs unsuccessful.

Figure 10 shows frequency of successful and unsuccessful delivery projects, where success is marked in orange and blue respectively. As it clearly stands out, the rate of success prevails. However, errors remain present, where out of all the projects within a sample, 94 have been completed successfully, and only 12 experienced errors.

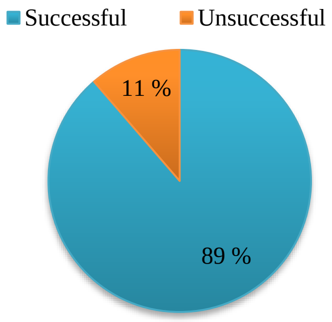


Figure 11. Frequency (%).

Figure 11 illustrates frequency of unsuccessful delivery projects shows, where only 11% out of 100% were counted as unsuccessful. On the one hand, such rate is considered as quite low. On the other hand, it means that there is room for improvement.

4.2.1 Correlation between number of errors and Incoterms used

In order to find out if Incoterms lead to errors during delivery project implementation phase, the relation between used rules and arisen errors is investigated. Below, Figure 12 displays how many projects were recognized as unsuccessful with in one delivery term group. As it was found out, the company uses FCA, CIF, DAP and DDP as delivery terms out of entire range of existing rules (eleven in total).

The following actualities were noticed. The first is that all the projects completed by using DDP have not shown any satisfactory results. The second is that almost 25% or one-fourth of CIF delivery projects did not succeed. The third is that more one-third of FCA projects experienced complications. And the last, DAP deliveries stand out by showing a minimum rate of errors, just 4%, only 3 out of 77 projects in total.

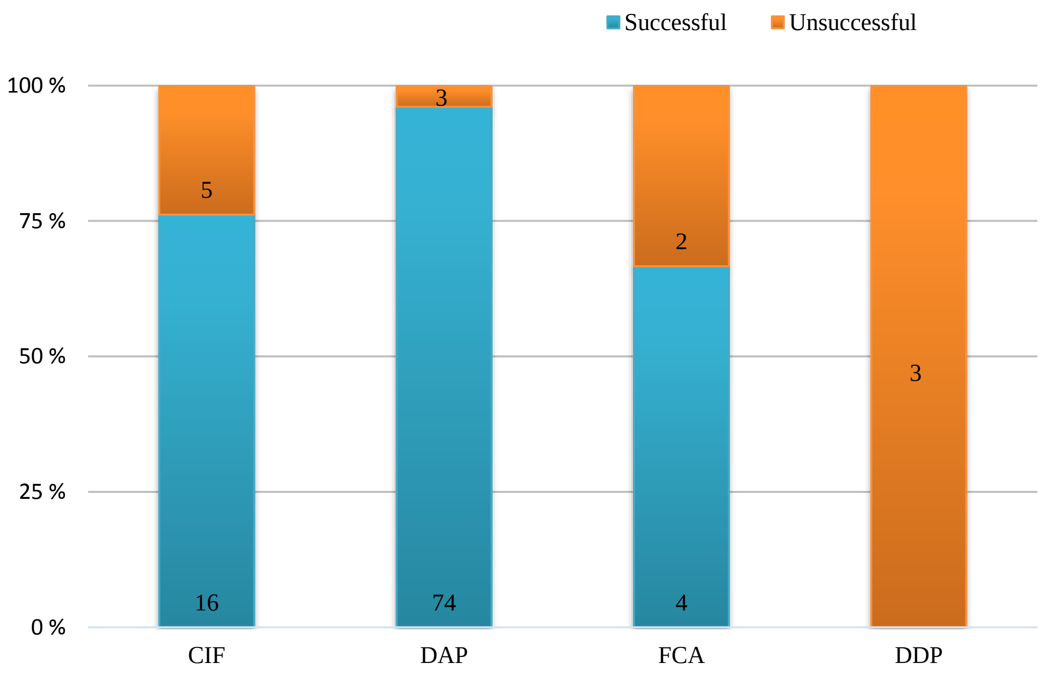


Figure 12. Frequency of successful and unsuccessful projects by Incoterms used.

DDP is a delivery term which does not work as expected in the company projects, therefore, should be replaced by a different delivery term, for example DAP.

4.2.2 Correlation between errors occurred and destination region

SAME, NAME, The Middle East and APAC are destination regions where the company had experienced complications. Errors in delivery projects to destinations in SAME regions happened three times, NAME four times, the Middle East four times and APAC only once.

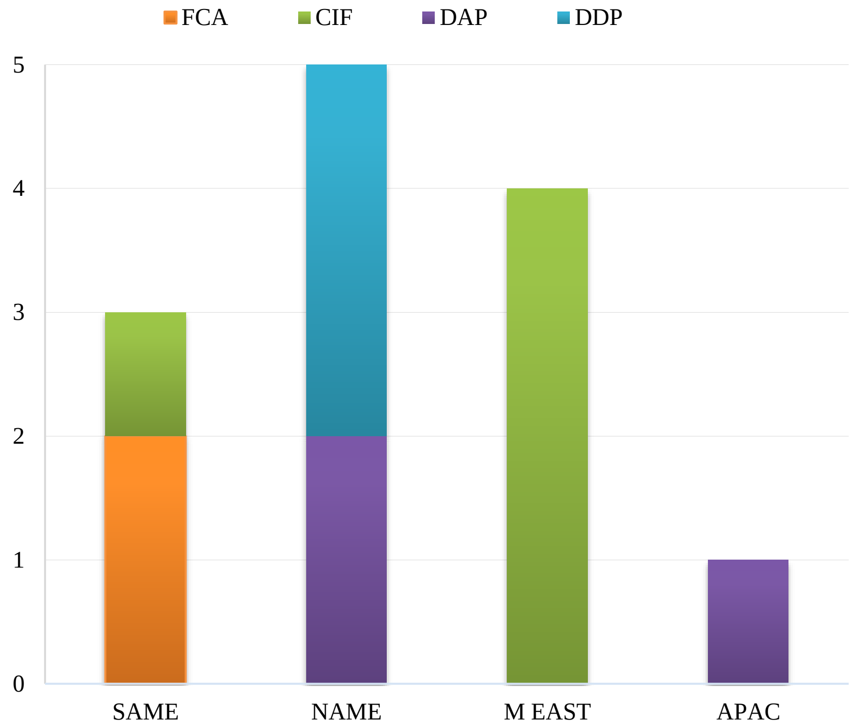


Figure 13. Correlation between regions and used Incoterms.

Figure 13 proves that there is a certain relationship between regions, where errors have occurred and Incoterms used. For example, deliveries by FCA failed to show success in the SAME region. CIF rule did not work well in the Middle East repetitively, and once is SAME. In NAME; DAP and DDP tend to cause errors. DAP did not show success in APAC once. Therefore, deliveries to Europe were completed smoothly. As the chart shows, there are no error records for Europe, Asia and Africa. The reason for that is that Asian customers are often served by the office in China, since there are another production facilities. AFRICA makes only 2% of sales during two financial years.

4.3 Trends & patterns discovered

During the statistical analysis, several trends are discovered. Firstly, only four terms out of eleven are currently in use. DAP is happened to be the most applied delivery term and used mostly for shipments to Europe and North America. These regions are the most active markets (70%) as created statistics showed. DAP deliveries usually completed without errors when shipping to European countries. However, a few errors happened when exporting to North America. Secondly, CIF is mostly used when there is need to deliver goods to the Middle East and Africa. Most of the errors in CIF delivery projects happened when dealing with customers from the region of Middle East. Surprisingly, there were no unfortunate outcomes when delivering to Africa. FCA rule is rarely used for deliveries to Americas and Asia. A few complications arose when dealing with clients from South America. DDP is the rule which was applied the least. Unfortunately, every project experienced errors.

4.4 Hidden risks found & their costs

During analyzing unsuccessful projects, a few hidden risks were found, which are unreceived payments for goods on time, bearing extra costs plus taking additional responsibilities and delays in planned operations, as well as damaged relationship with clients.

4.4.1 Not receiving payments for goods sold on time (FCA)

As a publicly traded company, Glaston should prepare Quarterly Earnings Report. Such report is used by investors to determine the financial health of the organization. Based on it, the decision is made to invest in the company or not. Since average price per product is quite high, postponing any income payment can have some impact on the income statement and balance sheet. Incoterms have an effect on this via L/C because payment by L/C is provided once the seller completes all promised delivery requirements.

In such cases, the cost to be paid is lost time for the seller and the buyer. Depending on the project revenue, the corporation financial performance of one quarter can be appeared lower than it is. However, the delayed revenue will be recognized in the following quarter.

4.4.2 Additional costs & responsibilities (CIF, DAP)

Taking over costs or responsibilities, which are meant for the buyer. For example, demurrages and detentions at ports or warehouses, the fees charged as a penalty for being late to load or unload cargos to/from a shipping vessel (72 hours given), charges for undue transport equipment (over 48 hours) respectively. In case of CIF and DAP rules, such costs should be paid by the buyer, because the buyer has failed to unload the goods or return transport equipment. However, there is a risk that the penalties are not paid and fees are asked to pay for the second involved party, which happens to be the seller.

During studying the case, errors in CIF and DAP delivery projects led to increased number of working hours. In a few cases, there was a need to open a credit line.

4.4.3 Delays in planned operations (FCA, CIF, DAP)

Very many factors can cause delays. For example, unpaid demurrages or detentions cause delays in the next operations such as the installation of the sold goods at the site of the buyer. The installation process requires a team of specific people to travel to the buyer's country and work at the buyer's facilities. Therefore, it is critical to have the team and the goods at the right place at the same time.

Delays can be caused by the seller, the buyer and the agent if there is one involved. If the first one is responsible for the delays, then the compensation is paid by the seller. If the buyer caused a delay, then the company tries to charge the buyer. The agent actions should not be underestimated because it is the person in between trading parties. If the agent is delaying responses, then all the caused delays are to be carried by the customer and the agent. Example: a few detention charges can turn out into overrun freight costs up to 100%.

4.4.4 Ruining relationship with customer (DDP, DAP)

Misunderstandings based on misinterpretations are capable of ruining business relationships as well as business deals. In average, around 50 deals are made per year, and it can take up to a year to sign a contract of sale. It means that even one customer matters.

To save business relationships from breaking entirely, the company provided complimentary upgrades for the purchased machines. However, compensations are usually paid if the company is running late on scheduled operations.

4.4.5 “Grey zone” risk (CIF, DAP)

Insurance plays an important role when talking about moving goods from one country to another, especially when a value of the cargo is considered high. When using some Incoterms such as CIF, CPT and CFR the responsibility of the products during the entire transportation is held by the seller and the buyer. The seller is responsible for those goods until agreed point determined by Incoterm chosen. After that, the buyer takes over and carrying the risks on himself. Once the goods are damaged in transit, it is challenging to say when exactly it could happen, because the cargo is not checked during the travel time. However, a place, where the damage occurred, will determine who is responsible for the goods. This information is crucial when claiming for a refund from the insurance company.

If any part of the goods is lost or damaged, then the installation process and its schedule are affected and therefore delayed. The delay costs a lot and involves the following: salary for a waiting period and stay for the installation team which is sent from Finland to assemble the sold machines, the cost of ordering and shipping a spare part from the factory. And if the insurance company does not compensate the damage or loss, the final cost is enormous.

5 MAIN POINTS ABOUT THE CURRENT SITUATION

The current situation analysis showed that hidden risks exist while using Incoterms in international trade projects, they appeared when chosen delivery term caused additional errors. The following delivery terms did not work in the following countries:

- DAP in USA and Australia;
- DDP in USA;
- CIF in Brazil, UAE, Kuwait and Israel;
- FCA in Bolivia and Argentina.

If these rules are going to be considered in the future for deliveries in the same areas, they are to be avoided or used more carefully than others. The hidden risks brought negative impacts repetitively in the following regions: North America (DDP), South America (FCA) and Middle East (CIF).

In the same time, some Incoterms succeeded as follows:

- DAP in European countries, USA, Mexico, Canada, Colombia and Australia;
- CIF in Canada, Australia, Turkey, India, Vietnam, China, Thailand, India and Peru, Saudi Arabia and Lebanon;
- FCA in projects with customers from Mexico, Canada, Germany and Uzbekistan.

It means that the choice of Incoterms was right and no problems occurred. Therefore, there is no need to change.

The hidden risks found are “not receiving payments for goods sold”, “additional costs & responsibilities”, “delays in planned operations”, “ruining the relationship with customer” and “grey zone” risk. They have undesirable outcomes such as lower financial performance in the quarterly earnings report, increase in personnel working hours, opened credit lines, overrun in freight costs, given away compensations, delayed installation processes, idle installation team staying abroad.

Due to listed damaging outcomes, such hidden Incoterm related risks should be recognized and taken into consideration. In order to manage these risks, risk mitigation strategies should be built.

6 FURTHER ACTIONS

This chapter is concentrated on how the results of the conducted analysis are to be utilized in the nearest future and what risk management suggestions can be considered to start creating mitigation strategies to minimize the hidden risks impacts.

6.1 Utilization of the findings

The results found during the current situation analysis were presented to Glaston officials to show the progress of the project. The feedback was positive. During the feedback meeting, it was decided to create a “Do’s & Don’ts Package” for Glaston Sales Team, where recommendations based on the conclusions are listed and explained in short.

The package will serve as a guide and focus will be on three key elements:

- Do’s: advice on the “working” Incoterm in a region;
- Don’ts: list of experienced mistakes and advice on alternatives;
- Motivation: potential cost of error.

What is the reason why a such tool will be prepared for the sales team? Because the sales persons agree on Incoterm with clients during negotiations. The sales team has a direct impact on what will be the chosen delivery term. There is hope that such tool can support the right choice of the delivery term. Therefore, the probability of similar error happening again is lower. However, in my own opinion, the tool should be introduced to everyone who is involved in international sale transactions, such as sales persons, shipping department employees, project managers, etc.

6.2 Risk management initiatives

The primary goal of risk management process is to minimize undesirable impacts of identified risks. It is possible via a solid strategy and consistent actions. Figure 14. below shows short-term and long-term risk mitigation strategies and steps included in each.

If there is a plan prepared in advance and it is followed when risks occur, it is possible to measure efficiency of prepared strategy. Therefore, weak points can be improved if once identified. This way, the response actions can be enhanced and long-term effectiveness can be reached.

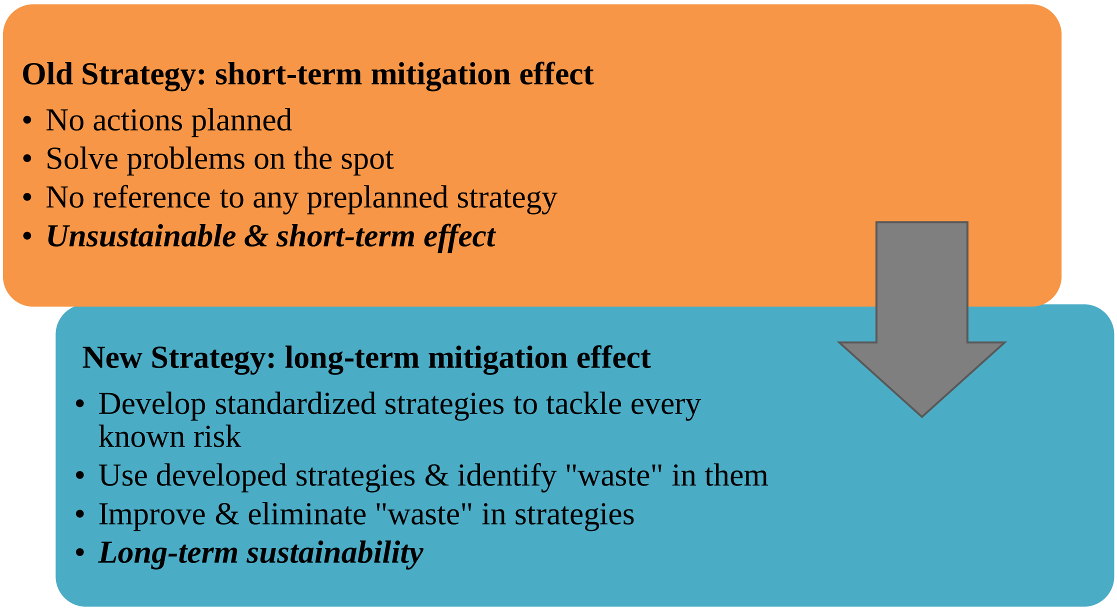


Figure 14. Action Plan Strategy

There are a few ideas how to start building standardized actions and develop New Strategy towards long-term mitigation effect. In further sub-chapters, several possible steps to take financially, internally and externally are described shortly.

6.2.1 Financial aspect

The starting point of improving the current situation is to be aware of the risks and reflect them in the budget by establishing a contingency fund. A risk contingency fund is a calculated amount of money set aside project budget and is meant to manage “known unknowns” during project implementation. The “known unknowns” are hidden risks which were identified, but it is not known whether they will happen or not. Such fund supports financial stability of project outcome by setting higher costs estimation.

A contingency fund is often confused with management reserve. The difference between those is that the fund is used for identified risks, while the reserve is meant for unidentified risks. Usually, the contingency fund is an estimated amount of money while management reserve is counted as a percentage of the project cost. The fund is based on risk management plan and used by project managers once known risks have materialized without top management approval. Meanwhile, management reserve is used for unpredicted uncertainties and requires approval from above. Due to the fact that project managers have authority to use a contingency fund, the lead time of reaction on ongoing risk is shorter. Therefore, the impact of risk can be reduced. By separating two types of risks (identified and unidentified), it is easier to access the risks and measure their impacts. Besides that, if a contingency fund and management reserve are used at the same time then the financial protection is stronger. Below is the formula how to calculate a project budget:

$$\text{Project Budget } = \text{Cost Baseline} + \text{Management Reserve}$$

where

$$\text{Cost Baseline } = \text{Cost Estimate} + \text{Contingency Fund}$$

Therefore,

$$\text{Project Budget} = (\text{Cost Estimate} + \text{Contigency Fund}) + \text{Management Reserve}$$

The contingency fund can be calculated via Expected Monetary Value (EVM), where only two components are needed, they are probability of the risk and an estimate of how much the risk can cost if it happens.

The formula to calculate monetary value of risk is

$$\text{EMV} = \text{P} \times \text{I}$$

where P is probability in percentages, and I is impact in euros or another currency.

Here is an example of calculation project budget by using the formula mentioned above. Figure 15 displays three risks which can occur during the project #1025. Risk A has probability 50% and impact 25000 EUR, Risk B has a chance to happen of 20%, and impact 5000 EUR and Risk C has probability 75% and impact 40000 EUR.

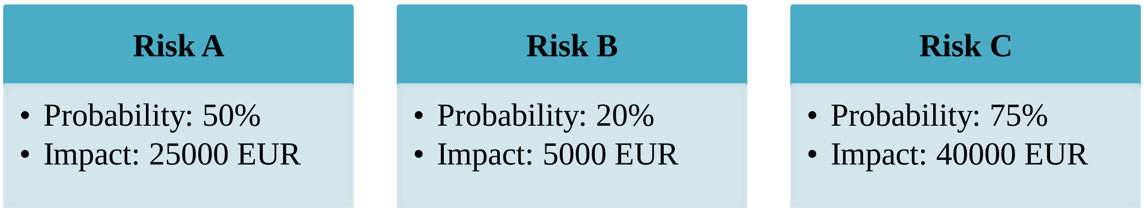


Figure 15. Example of Risks

In order to create a contingency fund for the project #1025, it is needed to calculate how much each risk require to have prepared. For that the following calculations are done:

$$0.5 \times 25000 \; = 12\ 500 \text{ EUR}$$

$$0.2 \times 5000 \; = 1\ 000 \text{ EUR}$$

$$0.75 \times 40000 \; = 30\ 000 \text{ EUR}$$

After that, all should be summarized as follows

$$12\ 500 + 1000 + 30\ 000 \; = 43\ 500 \text{ EUR}$$

EMV can be applied to calculate adaptation to a project schedule by using the same formula. However, the impact will be measured in time, for example, days.

EMV has its limitations. The model works more efficient for projects with many risks rather than a few. Unfortunately, it cannot serve significantly in projects where all the risks have a high probability.

6.2.2 Internal operations

Any change towards the current situation should start internally. Firstly, strategies for tackling the known risks should be established. Secondly, when choosing the right delivery term for upcoming projects, avoiding repetition of old mistakes and trying out new options which seem promising are important.

Apart from "Do's & Don'ts Package" known-risks oriented training for sales team could be arranged to improve the processes. Any modification is considered as a change, and this is the reason why change management tools should be involved. The most important is to motivate the employees who are in sales and delivery projects, because of their direct impact on project performance.

6.2.3 External operations

During the process of negotiation, it will not harm to go through every detail regarding the delivery by using the short list of all upcoming procedures (Example: Table 5. CIP checklist), to keep both parties on the same page. Incoterms suggest 11 terms, where costs and risks are allocated between trading parties. However, sometimes none of them can suit perfectly. The Incoterm chosen can be adjusted in the contract by adding a place to fill in "exceptions" if needed. Another adjustment is to use "region tailored clauses", which give more attention to "culture" of doing business.

6.2.4 Resources needed

Three departments should cooperate to implement actions explained above; they are Human Resources, Legal Department, and Finance Department. HR department is to act as an organizer of training, while legal staff as an expert in law to make changes to the contract. The finance department should be involved in project budgeting changes in case they are needed.

7 CONCLUSION

As mentioned in the introduction part, Incoterms have been in use for several decades and eventually, were taken for granted by the people involved in international trade transactions. However, the case study conducted has led to one more discovery. Incoterms in theory and Incoterms in practice are two different things. It is one of the reasons why Incoterms users misinterpret and make mistakes when selecting a delivery term to be used.

This thesis aimed to find out answers to the main question, “What are the hidden Incoterms related risks Glaston acquires once a sales agreement is signed?”. The main idea behind this project was to find out if Incoterms bring additional or hidden risks for Glaston Finland Oy during the process of products delivery, due to arisen suspicion in shipping department. Hidden risks identification supports the corporate risk management policy, which decribed as “balance its growth, risks and return in such a way that the reputation of the Group or its brands, the safety of employees and other persons, the value of financial, physical and intellectual assets and the environment are not negatively affected while pursuing opportunities for profitable growth” (Glaston Corporation, 2014).

In the literature study conducted, the primary goal was to understand how Incoterms are supposed to serve in theory. It was found that the terms are complex, as well as they have their own limitations. Because of that, the misinterpretation of the rules is a common event when it comes to applying Incoterms in practice.

The current situation analysis showed how the rules were applied in Glaston during the recent financial years. The company tends to use only four terms out of eleven, where DAP is the most applied and the most successful delivery term for delivery projects in European countries. CIF is the second used term, but deliveries to Middle East countries often have errors, while FCA and DDP are applied quite rare and usually bring in complications. Based on the analysis it is not advisable to apply DAP in the USA and Australia and DDP in the USA. CIF did not work in Brazil, UAE, Kuwait and Israel while FCA in Bolivia and Argentina. However, DAP has been successful in European countries, the USA, Mexico, Canada, Colombia and Australia. CIF worked well in Canada, Australia, Turkey, India, Vietnam, China, Thailand, India and Peru, Saudi Arabia and

Lebanon. FCA did not cause errors in projects with customers from Mexico, Canada, Germany and Uzbekistan

The hidden Incoterms related risks were found based on the errors reviewed in unsuccessful projects. They happened to be the following: unpaid revenue, additional responsibilities, unplanned costs, delays in scheduled operations, losing a client and "grey" zone challenges. Unfortunately, risks listed above do not generate positive outcomes. Such risks have their costs in the form of expenses, lost time and ruined business relationship. The starting point of mitigating these effects, the risks should be acknowledged internally and externally.

Some suggestions were introduced on how to start building "risk tackling strategies" based on the case given. Firstly, as discussed in subchapter 6.1, the results will be utilized to build a "Do's & Don'ts Package", which will give several tips and hints on Incoterms application. It will be introduced to those, who take a part in international trade transactions in the company. Secondly, there are several risk mitigation initiatives were suggested in subchapter 6.2, which are the following: contingency fund, in-house training, and a few sections to be added into the current sales agreement, which is "exceptions box" and "region tailored clauses". It is believed that such ideas will support risk management policy and improve the application of the rules internally and externally.

The further studies and investigations are to be done to shape the most appropriate strategies to mitigate the risks found, and the most suitable ways of implementation are to be explored separately. Research questions for those are:

1. What are all possible ways of tackling Incoterms related risks occurring in Glaston's projects?
2. What is the most efficient way of mitigating Incoterms related risks occurring in Glaston's projects?
3. What is the best implementation strategy for incorporating new mitigation strategies in the company?

I would like to believe, that one day Incoterms will be used more efficiently and it will support and develop global supply chains and international trade.

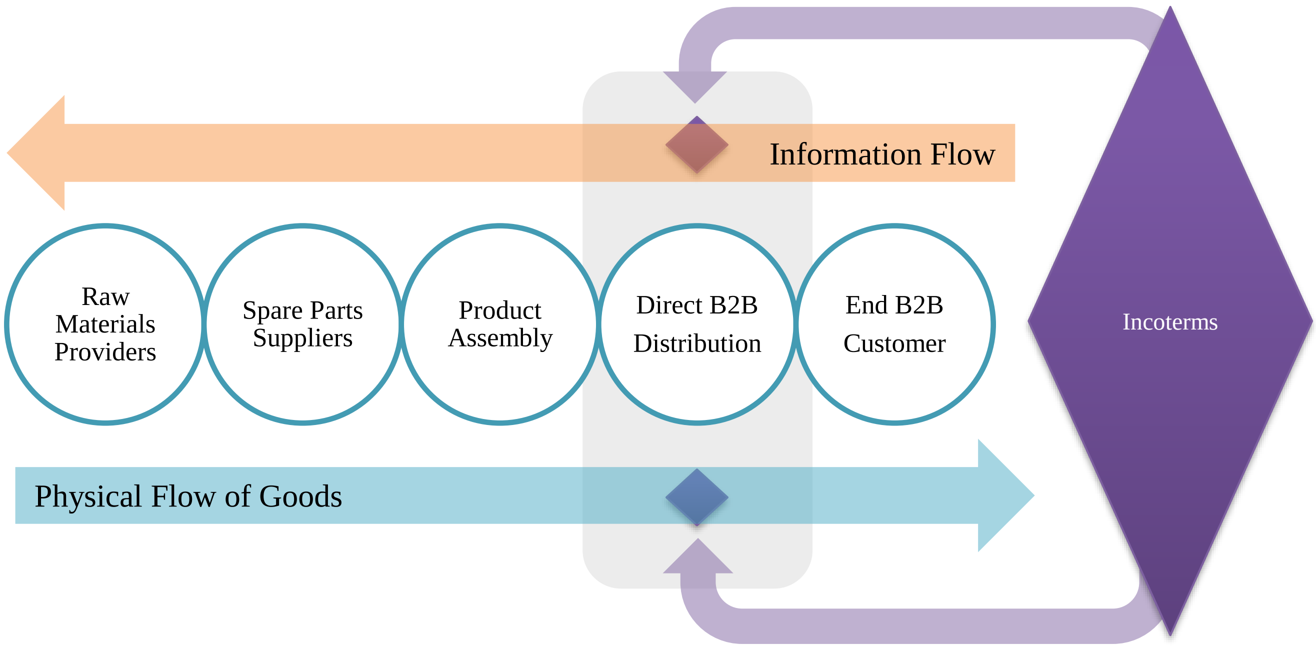
APPENDICES

Appendix 1. Areas of supply chain affected by Incoterms.

The figure below demonstrates the point of Incoterms influence, which is in the area of distribution within Traditional Supply Chain, which consists of three essential components are:

1. parties involved in a supply chain;
2. flow of materials/goods;
3. information flow.

As a communication tool, Incoterms assist in information exchange between parties to allocate costs and risks associated with the shipping procedures involved in the project. Moreover, Incoterms determine the physical location of the goods during the entire shipping project.



Appendix 1. Figure 1. Areas affected by Incoterms.

Appendix 2. Frequency and Frequency Tables. Incoterms in use.

Statistical treatment of the collected data was conducted in Excel. Frequency and Relative Frequency were calculated by using the formulas below. In the result, the tables shown below were used as foundation material for figures to describe the current situation. The way how the data sheet looks like was shown in Table 14.

To count how many times every Incoterm was used the "Frequency Formula" was used and to calculate frequency in percentage "Relative Frequency Formula" was applied.

$$\text{Frequency per Area} = \text{COUNTIF (Area; Area Name)}$$

$$\text{Relative Frequency} = \frac{\text{Frequency per Area}}{\text{Total}}$$

The calculations resulted the frequency tables showed below.

Area Name	Frequency	Frequency %
EUROPE	40	38 %
M EAST	11	10 %
NAME	34	32 %
SAME	5	5 %
ASIA	3	3 %
APAC	11	10 %
AFRICA	2	2 %
Total	106	

Appendix 2. Table 1. Frequency of Incoterms used per area.

Term	Frequency	Frequency %
CIF	21	19,8 %
DAP	76	71,7 %
FCA	6	5,7 %
DDP	3	2,8 %
	106	

Appendix 2. Table 2. Frequency and relative frequency of Incoterms used.

	Frequency				
Area	Total	FCA	CIF	DAP	DDP
EUROPE	40	0	0	40	0
M EAST	11	0	11	0	0
NAME	34	2	1	28	3
SAME	5	2	1	2	0
ASIA	3	2	1	0	0
APAC	11	0	5	6	0
AFRICA	2	0	2	0	0
	106				

Appendix 2. Table 3. Frequency per area and Incoterm used.

Appendix 3. Frequency and Frequency Tables. Errors in delivery projects.

A number of how many times each rule was used was based on calculations shown in Appendix 2. Frequency of Unsuccessful projects were given. Therefore, the number of Successful Projects was calculated based on the formula below:

$$\text{Frequency Total} = \text{Successful Projects} + \text{Unsuccessful Projects}$$

Therefore,

$$\text{Successful Project} = \text{Frequency Total} - \text{Unsuccessful Projects}$$

Then,

$$\text{Errors Frequency \%} = \frac{\text{Unsuccessful Project per Incoterm}}{\text{Frequency Total}}$$

Results:

Term	Frequency of use	Successful	Unsuccessful	Errors Frequency %
CIF	21	16	5	24 %
DAP	77	74	3	4 %
FCA	6	4	2	33 %
DDP	2	0	3	100 %
Total	106	94	13	

Appendix 3. Table 1. Errors frequency % per Incoterm used.

Appendix 3. Table 2 was built to show numbers of errors occurred in delivery projects grouped by Incoterm used and its relation to Area where the goods were shipped.

	Errors in projects				
Area	Total	FCA	CIF	DAP	DDP
SAME	3	2	1		
NAME	5			2	3
M EAST	4		4		
APAC	1			1	

Appendix 3. Table 2. Matrix: Incoterms used in Areas where errors occurred.

REFERENCES

August, R., Mayer, D., Bixby, M. 2013. International Business Law: text, cases, and readings 6th edition. Harlow: Pearson.

Business Dictionary by WebFinance Inc. 2017. Business Risk. Accessed 01.09.2017 from http://www.businessdictionary.com/definition/business-risk.html

Business Dictionary by WebFinance Inc. 2017. Demurrage. Accessed 01.10.2017 from http://www.businessdictionary.com/definition/demurrage.html

E-learning by Mantissa Ltd. 2017. Ten common mistakes in using the Incoterms rules. Accessed 05.09.2017 from https://www.incotermsexplained.com/the-incoterms-rules/common-mistakes

Gardner, D. L. 2012. How to Use International Trade Terms for Competitive Advantage & Financial Gain.

Glaston Corporation. 2014. Risk Management Policy. Group Legal.

Glaston Corporation. 2016. Glaston Annual Review 2016.

Hughes, C. 2014. Qualitative and Quantitative Approaches to Social Research. University of Warwick, Department of Sociology. Accessed 09.10.2017 from https://www2.warwick.ac.uk/fac/soc/sociology/staff/hughes/researchprocess/quantitative_and_qualitative_approaches.docx

International Chamber of Commerce. 2017. National Committees. Accessed 20.10.2017 from https://iccwbo.org/about-us/global-network/regional-offices/

Incoterms by ICC. 2010. Incoterms rules 2010. Accessed 03.10.2017 from https://iccwbo.org/resources-for-business/incoterms-rules/incoterms-rules-2010

Investopedia. 2017. Quarterly Earnings Report. Accessed 15.10.2017http://www.investopedia.com/terms/e/earningsreport.asp

Jain, D. 2016. Statistics for Economics. New Delhi: New Saraswati House India Pvt. Ltd.

Leary, J., Bell, L. Herbert Smith Freehills. 2016. Vital Tips to Avoid Risk When Using Incoterms 2010 in Commodity Sales Contracts. Accessed 16.09.2017. https://www.herbertsmithfreehills.com/latest-thinking/using-incoterms%C2%AE-2010-in-commodity-sales-contracts

Mantissa E-learning. (2017). The Incoterms rules & letters of credit. Accessed 15.09.2017 from Incoterms Explained: https://www.incotermsexplained.com/incoterms-2010-rules-letters-credit/

Montezuma, J. under Creative Commons CC BY-SA 4.0. 2017. Incoterms. Accessed 5.10.2017 from International Commercial Terms Guru: https://internationalcommercialterms.guru/

Oxford Dictionaries. 201. Misinterpretation. Oxford University Press. Accessed 1.10.2017 from bhttps://en.oxforddictionaries.com/definition/misinterpretation

PLAYBOOK Training Series. 2013. PLAYBOOK Training Series: Project Risk Management: How in New Product Development. Accessed 02.08.2017 https://www.slideshare.net/TeamRelayHQ/c6-project-riskhow?qid=1e90d08f-f8d4-478e-a326-131b3397be29&v=&b=&from_search=20

Sehgal, V. 2009. Enterprise Supply Chain Management: Integrating Best in Class Processes. Hoboken, New Jersey, USA: John Wiley & Sons, Inc.

Shrivastava, N. K. 2014. A model to develop and use risk contingency reserve. Paper presented at PMI® Global Congress 2014—North America, Phoenix, AZ. Newtown Square, PA: Project Management Institute. Accessed 20.10.2017 from https://www.pmi.org/learning/library/model-risk-contingency-reserve-9310

Legal Information Institute, Cornell Law School. 2002. Uniform Commercial Code. Accessed 01.10.2017 from https://www.law.cornell.edu/ucc

Walters, D. 2007. Global Logistics: New Directions in Supply Chain Management 5th ed. London: Kogan Page Publishers.

Wikipedia The Free Encyclopedia. 2017. Outline of culture. Accessed 04.10.2017 from https://en.wikipedia.org/wiki/Outline_of_culture