

**THE TRANSFORMATION OF INCOTERMS: THE OWNERSHIP  
TRANSFER IN INTERNATIONAL TRADING INDUSTRY**

**By**

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## Certification Page

I, Aranto Munaf (Student ID 52115617) hereby declare that the contents of this Master's Thesis are original and true, and have not been submitted at any other university or educational institution for the award of degree or diploma.

All the information derived from other published or unpublished sources has been cited and acknowledged appropriately.

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## SUMMARY

This research driven by the current business environment where enormous percentage of a country GDP contribute by export and import business activities. This export and import business is the oldest type of international trading. Since export and import is a common business even at a present time, as a parties involved in this International business activity, one among other concern is how they can ship their goods to other country destination, vice versa. The Incoterms that will be the main topic on this research will be the preferable tools that had been heavily used in this past decades. The Incoterm is a set of agreement that content relate to shipping method that become a global standard, in the purpose of achieving one understanding for the users of Incoterms. This Incoterms created by world private organization that called the International Chambers of Commerce (ICC).The writer has a Legal background which also a factor that lead the writer to write a research related to International Commercial Terms (Incoterm).

In this Thesis, writer will focus on the change within Incoterm 2010 compare to previous Incoterm 2000. There are many research paper about Incoterms, but this research will focus on different angle where the writer will establish an issue related with ownership transfer in International trading that conduct with Incoterms. The writer believe discussing at this point of view will contribute to the improvement of International trading itself in the future. New approach on Incoterms will be discuss and analyze by correlating International trading with the current technology of information and data interchange between firms. Since, 2011 there are numbers of research paper discussing about FDI technology and Electronic Document Interchange (EDI) technology with relation to ownership transfer. Even the Incoterms 2010 itself state that electronic data will have the same basis as paper document in terms of goods validation. Furthermore, it will argue how crucial it is for Incoterms to aware of this changing environment where this technology is a probable option to be set on within Incoterms. This might be the improvement for the next generation of Incoterms. Through this thesis, the writer expectation is to contribute with the improvement of Incoterms that will be used in the future.

# CHAPTER I

## INTRODUCTION

The terms *International Trade* at this present time has spread over the world where it covers most of goods distribution from one nation to another. International Trade occur when an exchange goods and services takes place across national boundaries (Nelson, Carl A. 1930). Such definition even cannot cover a wide scope that need to be cover by International trading since it's involve aspect outside of business range. Thus, current business environment somewhat enforced trading cross border (one nation to another) occur in every industry. It is clear that part of International trade dependent with foreign relation since it connect nations within business agreement, formed with the sole purpose of this international trade. Foreign relation and politics factors could bring significant result to international business or trade, which indicate its influence to global business. The changing environment occur resent year in EU, when UK vote for their removal from EU, create a big shift on EU market. This Brexit scenario will certainly affect trade terms between UK and the remaining EU highlighting the importance of a rules-based global trading system and the role of WTO (World Economic Forum, 2016).

Export and Import business activity are part of International trading, which is escalate from time to time. At present, most national economic growth are dependent to export import traffic where this type of business could possibly increase GDP in one country. The reason for both nations would trade is because they perceive an advantage (Neipert, David M. 2000). We assume where nations has finite source, and in order to reach for better prosper, trade with other nation will be

the best option. Moreover, export and import activity were the first type of foreign business operation because it requires the least commitment of, and risk to, the company's resources (Syoun, Belay 2009).

Logistic management becomes an important aspect as the effect of nationalization and globalization in this past decades, which makes Logistic management studies growth in various area (Tseng, Yunf-yu and Yue, Wen Long, 2005). With utilizing existing distribution line that corporation had, this Logistic Management leverage company production and distribution process with better efficiency. Furthermore, looking at the importance of Logistic area and how big it area within Logistic, there are multiple definition of Logistic. Such definitions are:

Logistic is the management of all activities that facilitate movement and the co-ordination of supply and demand in the creation of time and place utility (Hesket, Glaskowsky and Ivie, 1973).

Logistic is a planning, implementing, and controlling the physical flows of materials and finished goods from point of origin to point of use to meet the costumers need at a profit (Kotler, Philip ).

To conclude, Logistic management studies is crucial to prolong business life cycle by controlling every single part of process within the business. Understanding this circumstance, Logistic itself should depend on other factors since the scope of Logistic may extend.

Breaking down the Logistic equation, according to Alan Rushton, Logistic can be divided into three parts. These three parts represent Logistic management as a whole process of product creation start from procurement to shipping to end consumer. These three parts which part of logistic are Supply, Material management, and Distribution (Rushton, Alan 2006). The supply and material management covers area where the storage and flows into and through the production process. Distribution factor represent final process of production become end product to the delivery of end product to end consumer.

As part of the big picture of International trading, shipping played a big role in doing business internationally. The term “shipping” define in many different ways with. It should not be viewed from limited perspective, since it is one of the most internationalize business at present and it need to be look at wider perspective, particularly when relating with International trade (Farthing 1993). Shipping as a fundamental basis of economic growth has historical value. Adam Smith considered shipping as a source of low cost transport that could open up market<sup>1</sup>. Smith (1776) affirms the use of water transport could possibly open up broader market in every kind of industry. This water carriage could make such product be sold at low prices.

Comprehend the scope that need to be cover during business cross border, such an understanding must be accomplished. Therefore, the need of global standard for doing business cross-nation is crucial. ICC was founded in the aftermath of the First World War when there were no world system regulated trade, investment or commercial relation ( ICC, ND). The ICC as the International

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<sup>1</sup> Lun, Y.H.V.2010. Shipping and Logistic Management. Springer: London, pg. 2.

private organization take the center role for any International business activity. As a respond of the initiation of ICC in 1936, the world society started to aware the important role of ICC. Follow through the rise on demand of International trading sector, ICC establish one global standard that they hope could accommodate International trading business around the world that we known as Incoterms, the International Commercial Terms.

As a form of globalization related to international business or trade, ICC create a world standard for International business practices called the International Commercial term or rather it known as Incoterm. The use of Incoterm in general is to reduces the risk of the lack of any information or knowledge about common business practices in respective countries which could lead to a misunderstanding and disputes between business parties<sup>2</sup>. This is the main purpose of Incoterm that has a center role in International trading to prevent any misunderstanding and disputes between parties. ICC found the necessity of creating world standard for international business practices that involving shipping agreement to help both business parties reach one understanding.

The first version of Incoterm was released in 1936, letter on it revised 8<sup>th</sup> times until the form that we know at present, which is Incoterm 2010. At the time when it first version introduce by ICC, Incoterm focused on commodity trading and fixed the important delivery points at the ship's side or the moment when the goods passed ship. The condition above are commonly used at the time and known as FOB, CFR and CIF (Ramberg, Jan 2010). Furthermore, through the changing environment of global business, the ICC tried to adjust and adapt methods that regulated within

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<sup>2</sup> <http://www.inboundlogistics.com/cms/article/understanding-incoterms/>

Incoterm jurisdiction by revised it. Thus, we could draw a conclusion that each revision of Incoterm was based on the business trend or habit at the present time.

In this Master Thesis, writer intent to limit his research for International trade since the term “International Trade” might cover a wider scope. This research would analyze International trade from its shipping method that conduct by Incoterm (International Commercial Terms) with comparing new regulation in Incoterm 2010 and Incoterm 2000. Thus, any change occur in new regulation might indicate new export and import behavior at recent years which cause Incoterm 2000 need to be revised. This master thesis also will analyze several key factors that contribute to completion of shipping method arranged with Incoterm. Such factors might also indicate decision making by firms to choose one shipping method rather than the other.

## CHAPTER II

### LITERATURE REVIEW

#### II.I Logistic and Distribution

The area studies of Logistic are broad and it has many different definitions. Donald F. Wood (2002) define logistic as to organized movement of the goods, services, and could possibly, people. The term logistic used before in military organization for defining the processes to supply combat and troops support. In trade industry, logistic cover the physical movement of goods or services between one or more parties within supply chain system (Wood, Donald F 2002). The U.S. based Council of Logistic Management defines logistics as the process of “planning, implementing, and controlling the physical and information flows concerned with the materials and final goods from point of origin to point of usage.”<sup>3</sup>

Most related research and literature at present today states that the following are logistic function, even though many corporation do not include all of them under logistic framework:

“Customer service; demand forecasting; documentation flow; handling returns; inter-plant movement; inventory management (inbound, plant, and outbound); parts/service support; materials handling; order processing; plant and ware house site selection; production scheduling; protective packaging; purchasing; salvage scrap disposal; traffic management; and warehouse and distribution center management.”<sup>4</sup>

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<sup>3</sup> Council of Logistics Management website: <http://www.clml.org>

<sup>4</sup> Encyclopedia Britanica (1993), Chicago, Encyclopedia Britanica, Inc., Vol. 28, pp. 878-882

Related research from Alan Rushton and Phil Croucher (2006) introduce the framework of Total Logistic Concept (TLC) which purpose to treat wide elements that comes under the broad category of distribution and logistics as one single integrated system. The understanding for this Total Logistic Concept is important particularly at the stage of planning for each segment of distribution and logistics (Rushton, Alan & Croucher, Phill 2006).

The discussion relate to Logistic Management in this paper will focus on Distribution phase looking from the overall logistic management. As mention earlier the Introduction chapter, Distribution is a part of logistic management (Rushton, Alan 2006), which represent final process of production become end product to delivery of end product to end consumer. Although, distribution is a partial process from logistic management, the distribution part where its determine the process moving the end product into the consumer premise, its relate research growth that lead to wider perspective for distribution sector.

This research paper will further discuss distribution as a part of Incoterms segment into two categories. The writer will look at Distribution within Incoterm jurisdiction into Physical Distribution and Ownership Distribution or ownership transfer. These two terms are the crucial factors on Incoterms that decide when the goods will change its possession from seller to buyer. This event surely will associate with other things such cost, insurance and risk of loss. For this matter, the research will mainly focusing on ownership transfer that is consider as a beneficial factor for International trading industry.

### **II.I.I Ownership Transfer**

The term Ownership Distribution limitedly used to relate the distribution of goods in the framework of International trade. Most the research had been done by many scholars, tend to used ownership transfer or transfer of ownership. Some of the research for ownership transfer had been related to RADIO FREQUENCY IDENTIFIER (RFID). Nan Li (2015) define about SROT or as refer as Shared RFID Ownership Transfer. The SROT theory contain into two phases, which are ownership verification and ownership transfer. At the first stage, the current owners or first owners alongside with the candidate (new) owners prove their ownership of the tag and the new owners verify the ownership proof. If the flow of verification is success, thereafter both parties request for ownership transfer at the next phase. At the phase of completion of second phase, the previous owner loosing the ability for further communication of the tag thereafter (Li, Nan 2015). The concept of SROT introduced by Van Deursen, T (2009), contains three elements within: secure ownership, exclusive ownership, and secure ownership transfer.

The approach of ownership transfer utilizing RADIO FREQUENCY IDENTIFIER (RFID) technology can be modeled by using a Trusted Third Party (TTP) model or two-party model (Saito, J 2005). On the TTP model, both current owner and candidate owner entrusted one external party to supervise during the whole process of ownership transfer. Unfortunately, the TTP model require the third party or external party to be available during the ownership transfer process, that could interact with the owner and tag (Molnar, Tag 2005). In that matter, the TTP model oblige the third party to always presence and supervise during multiple time of ownership transfer. Looking at the issue here, Nan Li (2015) adopted an extended two-party model that does not require any third party or TTP during the ownership transfer process.

In symmetric key based single owner ownership transfer protocols, the owner shares an authentication key with the tag. According to Nan Li and Yi Mu (2015), in multi-owner scenario, among owners that have been validate, they share an authentication key with the tag, while they found some new securities issues:

1. Collusion attack: A common solution for multi-owner ownership transfer is that owners share the same key with the tag. In this situation, such dishonest owners could use the knowledge of the key to change the secret of tag without other owners' approval or with the agreement.
2. Key size: To withstand with collusion attack in the extend two-party model, each owner can share a separate key with the tag. Unfortunately, the number of keys to be stored on the tag could impose for the tag.
3. Computational capacity: An alternative solution to collusion attacks is to adopt public key cryptography, which allows the key to be accumulated into a constant size. But the demerits for this solution is too heavy to passive tags.
4. Corruption attack: Most passive tags are not tamper-resistant. A powerful attacker can read the state of a tag (Samyde D. 2002) & (Weingart S.H. 2000). It is particularly a problem if only the symmetric key cryptography is applied.

Furthermore, similar research by Biplob R. Ray (2016) relating ownership transfer of goods with RFID tag in Internet of Things (IoT) in a secure manner. Internet of Things frameworks consist of pools of globally distributed object. The identification of each goods needs to be done separately

in IoT in order to collect and locate specific information on an object from the pools. Thus, each good in the IoT pool needs to be attached and represented by a unique identification. Moreover, the unique identification leads the IoT system to connect, interact, and cooperate between global objects to achieve a dynamic global information network ( Sicari, S 2015), (Jenq-Shiou L. 2014), and ( Ray, B.R. 2016). Z. Degan (2014) recognizes RFID technology as an attractive solution to address objects' unique identification that fits for IoT since it has several strengths such as recognition speed, non-line-of-sight operation, capability to identify many objects in one read as well as networking capability.

In the IoT framework, it is stated clearly that objects in the global network may be owned by multiple parties at different points in time (Jenq-Shiou, L 2014), (Ray, B.R. 2016), (Perera, C 2015), (Al-Faqih, A.E 2013). On the current framework, the IoT faces some problems, for example the Radio Frequency Identifier (RFID) technology in IoT does not validate an ownership transfer request. Even though much work has been done to give protection and namelessness of RFID frameworks, the safe possession exchange convention has just as of late gotten consideration from the examination group. For the most part, existing secure possession exchange conventions can be comprehensively isolated as those that either depend on a Trusted Third Party (TTP) (Zhou and Yoon 2012) or a plan that does not depend on TTP (Liu and Chen 2012). In TTP-based methodologies, secure proprietorship exchange is accomplished in light of a mutual mystery which is approved by a Trusted Third Party (TTP). While without TTP, mystery data should be consulted between the RFID labels, the present proprietors and the new proprietors

Related work that had been done Saito, Imamoto, and Sakurai (2005) by proposed a RFID proprietorship move convention in the two-party demonstrate, where the convention accepts the present proprietor and the new proprietor who plays a possession exchange amusement with the tag. The correspondence amongst proprietor and tag is accepted in a retrogressive channel (Weiss and Sarma 2003). In any case, this suspicion is flawed in that the enemy can listen in the direct in an adequate short range (Saito, Imamoto, and Sakurai 2005). Another two-party proprietorship exchange convention, in light of (Song and Mitchell 2008), was presented by Song (2008). The convention plans to fulfill protection and security prerequisites of proprietorship exchange. It diminishes the cost of label's calculation and label's non-unpredictable memory. Shockingly, a few assaults were discovered (van Deursen and Radomirovic 2008). What's more, once a tag is traded off, its protection and security are completely broken.

This strengthen the assumption where RFID technology are necessary in ownership transfer of goods or object, where in certain point there will be a transition point to what we call ownership transfer. The RFID technology proof to be dependable to accommodate, at the same time as a tools of evidence from verification phase into transfer phase. Moreover, the current research of for ownership transfer cannot accommodate all possible ownership transfer scenarios such as one to one, one to many, many to one and many to many (Ray, B.R & Zhou, W 2012). Applying a separate protocols to each scenario above will certainly need a high cost, a waste of resource, and does not match with IoT frame work since it will increase the complexity of large scale distribution (Ray, Biplob R. 2016).

Summarizing all recent research that relate with the ownership transfer that use a media of electronic system, it is still face a challenge ahead. Look at the overall framework offer by this electronic means of communication system like RFID tag, security within the system is the main problem. Considering International trading business usually involve high investment, applying electronic means of communication for a transition phase like ownership transfer might not appropriate yet. Nevertheless, the research of ownership transfer with utilizing technology such RFID tag will help businesses in trading and shipping sector to extend its lifecycles.

## **II.II Shipping for International Trade**

The term shipping in business field is used in many different interpretations. Shipping could means ships and seaborne business. For others, shipping could refer to any mode of transport that transfer goods from departure point to destination point (Lun, Y.H.V. 2010). According to Lun, this shipping business industries nowadays moving towards the economics of scale in term of operation, the development of network based management, and the adoption of technology to improve efficiency and effectiveness. This turn to conclusion that shipping business model are shifting into a more complex model than before.

Furthermore, Yuan. Z (2016) mentions that shipping management is the most crucial method for long-distance container transportation for international trading business. At present, 85% of International trading activities is carried out utilizing ships or vessel (Yuan, Z. 2016). Continuing, Christiansen have summarized several of Operations research problem arising in maritime transportation, including ship design, liner network design, ship routing and scheduling, speed selection, environmental routing, ship loading, and ship management (Christiansen 2007).

Christiansen research was more focus on the field of ship routing and scheduling. But for Yuan main research is focusing on ship management that includes crew scheduling, maintenance scheduling, and spare part management.

Thus, all the above perspectives from various scholars indicate the fast growth in shipping market, which become tools for International trading business. The same thing with shipping in Incoterms, such international trading practices affected Incoterms to developed more and need to be revised gradually in order to accommodate International Shipping environment at present time. From time to time, the Incoterm as a set of term or guidance for shipping cross boarding (internationally) or domestically had been revised for 8 times, until the latest version which is Incoterm 2010.

### **II.III Ocean Carriers**

The discussion that relate to shipping area cannot be separate with the introduction and understanding about carries or more often refer to ocean carriers. There are three fundamental type of ocean carriers according to Donald F. Wood (2002): private fleets; tramps chartered or lease vessels); and liner carriers. The private fleet type of carriers is ocean carriers that owned by the company that manufactured the goods itself, this means that one certain company owned an in house carriers to ship their goods to destination point. A good fit example for this is oil companies and lumber companies which they need to control both the availability of carriage and the cost thereof and also to insure the right specification of ship could provide their specific needs. In order to do so, this type of business need to own their ships and operate a large fleet of specialized ships (Wood, Donald F. 2002).

The tramps chartered purpose is to provide a convenient and economical means to transport goods that require cross-ocean movement (Lun, Y.H.V. 2010). One of the key characteristic of tramp ship or carriers that can distinguish it from other type of vessels is the flexibility in the sea transport to satisfy the needs of world trade and seek for cargoes all across the world (Kendal and Buckley 2001). This means that a tramp ship do not have a fix itinerary for delivering goods from one ports to another ports and use mainly carriers dry cargo in bulk. Bulk cargoes can be classified into two: dry bulk and liquid bulk. For liquid bulk, it is usually serve by the sector of tanker ship. The usual goods or product that transfer by tanker ships are liquid and gas such Liquefied Petroleum Gas (LPG) or Liquefied Natural Gas (LNG) which refers to LPG carriers or LNG carriers.

There are several factors that could distinguish clearly between tanker ship and dry bulk vessel. For example the process of loading and discharging of tankers are pumps and pipes, which are not use in the tramp (Lun, Y.H.V. 2010). Moreover, the different physical size between tankers and dry bulk vessels. If we relate it to economic scale of theory, the bigger a ship is for transporting goods the lower it become for unit cost. Lun (2010) mention that in general tanker ships are larger than bulk vessels. According to Metaxas (1971), Tanker ships was one of the very first type of shipping to make use of the important concept to improve operation efficiency.

The last one is a Liner carrier. The framework of Liner shipping is to satisfy the demand for regular transport under which cargoes are transported through regular routes and with the regular schedules. In general this Liner carriers serve under a fix itinerary and with a regular basis in term of ports and route. Liner carriers operate according to a schedule of ports of loading and discharge,

following the officials' itinerary or schedule with set condition of carriage. The Liner carriers operate similar with a trains of international seaborne trade (Farthing and Brownringg 1997), with the cargoes made up of a large number of different consignments from different shippers. Liner cargoes usually consist of manufactured goods or partly manufactured goods. The majority of liner cargoes are carried with container. Containerization seems to have become a certain compulsory requirement for every ports, since the stipulation of container facilities is considered to be one of the prerequisites for success in the new shipping business environment (Notteboom 2002).

Looking at this extensive research about shipping and ocean carriers, provide us understanding about how important it is for enhancing global business economy. Shipping hold an important role in International trading industry as the major backbone for one of International business methods of trading. Further, the characteristic of shipping and international trading is a cross-board business rather than domestic business, a internationalize standard should be make. Here, is where ICC as International private organization play their role to fulfill the needs of such standardization. As a result, Incoterms established since 1936 and had been through several revision to answer the changing environment of International trading and shipping business.

## **CHAPTER III**

### **Research Methodology**

The methodology that use in this master thesis is a qualitative analysis. The research will compare two different set of terms (Incoterm) as the main source of this research. The two different set of terms here will be analyze, and guided with the previous the previous theory relate that present in literature review. This Thesis research methodology using Qualitative Comparative Analysis (QCA). QCA's home base is comparative sociology/comparative politics, where there is a strong tradition of case-oriented work alongside an extensive and growing body of quantitative cross-national research (CC Ragin 2008).

#### **III.I Purpose of Research**

By analyzing the change within Incoterms itself, we might look at the environment of International trading where shipping is the main industry. As the research in shipping industry extend in the past years indicate the growth in shipping industry. As the result of this research paper will hopefully give a better understanding the factors that lead to the change in International trading, specifically shipping. The result of this research also criticizes merit and demerit within new Incoterms 2010. Moreover, the research might hopefully propose new value that could be used in the future Incoterms that might fit with present time business situation.

### **III.II Research Objective**

This Thesis research would identified several factor, such as:

1. What are the factors for Incoterm 2000 to be revised to Incoterm 2010? What is the reason to be revised?
2. How present business activities will, directly or indirectly, influence-shipping method regulated by Incoterms to change?

### **III.III Research Hypothesis**

Following the research objective that has been clarify above, there are several result which expect by writer. This hypothesis is based on assumption of writer. Such hypotheses are:

1. Application of some terms may lead to the misunderstanding and confusion, where the newest Incoterms expect to resolve this certain issue.
2. The growth of Technology directly contributes with the shipping Industry, which leads to the revision of Incoterms.

## **CHAPTER IV**

### **FINDINGS AND DISCUSSION**

#### **IV.I Introduction**

This Introduction section on Chapter IV will clarify the change from Incoterm 2000 in to Incoterm 2010. Such adding new terms or method, merge several terms into one new term, the usage of electronic document in new Incoterms will be state in this section. The main purpose is to give a foundation regarding what new value introduce in the new Incoterms 2010. Studying about what change and what are remain the same will hopefully help to understand the habit or trend in International trading that relate to shipping. Thus, any factors that lead to the revision of Incoterms will be state in the next sub-chapter about analysis and discussion.

#### **IV.II DAT (Delivered at Terminal)**

The DAT (Delivered at Terminal) is another term in Incoterms 2010 that substitute the DEQ term from Incoterms 2000. Delivery at Terminal means that delivery occur at the time seller placed the goods at the disposal of the buyer on the arriving means of transport ready for unloading at the named place of destination. All the risk that associates with bringing the goods to the name place wills all is bare by seller.

Delivered a Terminal (DAT) is a term use when the deliveries occur at the time Sellers finish unloading the goods from the arriving means of transport and placed on Buyers disposal at the named place or name terminal. The word “Terminal” on the understanding of DAT is include any place such as a quay, warehouse,

container yard or road, or air cargo terminal. The risks will be covered all by sellers, which are contain all risk involved in shipping the goods from departure point to arrival point and unloaded it at the terminal at the named port or placed of destination. The clearance for exporting the goods from departure port need to be cleared by seller, that makes the cost for export clearance need to be bear by sellers. Under DAT, sellers have no obligation to finish the import clearance such pay any import duty, or carry out any import costumes formalities.

Delivered Ex Quay (DEQ) is the term use for the condition where seller finishes delivery when the goods placed at the disposal of the buyer not cleared for import clearance on the quay at the named port of destination. The seller has the obligation to discharging the goods on the quay and any risk or cost thereto will be bear by seller. Quay in this term refers to port of destination or arrival point.

Now looking at the DAT and DEQ, both terms have similarity in terms of the risk and cost. Under both terms, looking at seller perspective, the sellers' will accomplished the role up to ship the goods to arriving point. Any further duty relates to import clearance will not be under seller obligation. These work the same with the risk and cost that will be transferred to buyer thereto. The main factor that distinguishes between DEQ and DAT is the place where delivery took place. The DAT term as a substitute of DEQ considers much more flexible in term of the place where delivery occur. Since the completion of delivery by seller determine the timing for ownership to be transfer from seller to buyer, wide variety of place consider being more preferable. The comparison between both terms will be further state in the discussion sub-chapter.

#### **IV.I.II DAP (Delivered at Place)**

The DAP (Delivered at Place) is one of two new terms that Incoterms 2010 introduce, substitute 3 terms from previous Incoterms. This DAP has similar function with others 3 terms that had been substitute in

Incoterms 2000 which are DAF, DDU, and DES terms. The DAP method use for any type or mode of transportation and could be use where more than one mode of transport employed.

The Delivered at Place is a term use where delivery considers reaches completion when sellers placed the goods at the disposal of the buyers on the arriving means of transport ready for unloading at the named place of destination. Under this term, need to be reminded that seller bear all risk associates with bringing the goods to the named place.

The “D” group in Incoterm represents arrival point where the sellers obliged to deliver the goods from seller premise and delivered the goods until the arrival point. Now, the situation where the tittle will be transfer from seller to buyer, the obligation of seller which seller need to comply, and any other further risk that need to be bare by seller are vary dependent to which “D” term that both parties agreed to use before. The previous Incoterm 2000 introduce four different methods in the group “D” where all four of them had been change and merge it into two. The three terms of group “D” which are DAF, DES and DDU had been revised in Incoterm 2010 and merge into one term, DAP.

The first term in “D” group in Incoterm 2000 is DAF that stand for Delivered at Frontier which refer to the condition where the seller reach delivery completion at the point the goods are placed at the disposal of the buyers on the arriving means of transport not unloaded, cleared for export, but not cleared for import at the named point and place at the frontier, but before the customs border of the adjoining country. Delivered at Frontier (DAF) is the term in Incoterm 2000 use giving the condition where the seller must provide the goods an the commercial invoice, or its equivalent electronic message, as approval or validation with the contract of sales and any other evidence of conformity which may be required by the contract.

The second term in “D” group in Incoterm 2000 is Delivery Duty Unpaid (DDU), is the term use given the condition where seller recognize to fulfill the delivery when the goods placed at the disposal of buyer, or at that of another person named by the buyer, or any arriving means of transport not unloaded, at the named place destination. Under DDU term, the seller has no obligation to work on the goods custom clearances for import and unloaded from any means of transport at destination point. The risk and cost that need to be bear by seller will comply only until the seller finish ship the goods and arrived in buyer disposal. Further risk and cost thereafter should be bare by buyer including the clearance for import and unloading the goods from any means of transport in destination point.

The last term of ”D” group that substitute by DAP is DES, stand for Delivery Ex Ship, which refer to the term use when seller finish the obligation of delivery at the time goods place at the disposal of the buyer on board the ship not cleared for import at the named port of destination. Under DES term, the risk and cost associate with bringing the goods from departure point to destination point, up until the port will be bare by seller. The risk and cost of course not include the cost of custom clearance for import and any further cost thereafter. Furthermore, under DES term, seller obligation is up to ship the goods to arrival point, which means unloading the goods at arriving port will not be seller obligation.

#### **IV.I.III Electronic Communication**

Before, under the Incoterms 2000, parties within agreement use conventional document, which called the bill of lading. The bill of lading most heavily uses, and as the fact the only acceptable documented that need to be presented under the CFR and CIF terms. There are three main purpose of the bill of lading document, which is:

- a) As a proof of delivery of the goods on board the vessel;
- b) As the evidence of the contract of carriage; and

- c) As a mean of transferring rights to the goods in transit to another party by the transfer of the paper document.

Any other type of documents other than the bill of lading will eventually accomplished the first two of the above purpose when shipping goods. Unfortunately this will not control the delivery of the goods at destination point or enable buyer to sell the goods in transit by surrendering paper document to his buyer. In this situation, the title or ownership for these goods cannot be transferred to the next owner (buyer) by using other than bill of lading. Using only one media for ownership transfer eventually will limit the scope of business in shipping industry. The problem where bill of lading is required to be presented to the carrier at destination point for buyer to possess the goods is what make it difficult for any electronic media to become an option for validation of ownership.

Although electronic communication also included in Incoterm 2000, it was not heavily use during past decade. Previous Incoterms rules have specified those documents that could be replaced by EDI messages. At the time when Incoterm 2010 publishes it's introduced the use of Electronic Document. Incoterms 2010 define electronic means of communication has the same validation as a paper document, as long as both parties agree or where customary. This new procedure using electronic communication or document facilitates the evolution of new electronic procedure throughout the lifetime of the Incoterms 2010 rule. The Electronic Document Interchange (EDI) was used for commerce for the purpose of reducing paper base document in commercial activity. Electronic Document Interchange (EDI) is an exchange of structured data in electronic media direct from one computer system to another computer. The data through EDI will be transferred between two parties, usually a supplier and a costumer. At the case of Incoterms EDI will be shared among sellers and buyers.

According to Data Interchange Plc. (2012) “The two parties are known as trading partners. The most common trading partner relationship is that of supplier and customer. Sometimes there may be a different relationship, such as that of seller and buyer, payee and invoice, or supplier and carrier. Each trading partner may play different roles during the business process”. Thus, Incoterms 2010 state the use of Electronic communication such EDI introduced in Incoterm 2000 will be equal as validation or approval with paper document.

#### **IV.II Analysis and Discussion**

On this sub chapter, the writer will identify the factors that affect to the Incoterm revision. Such advancement of technology in logistic and distribution industry lead to the whole industry framework to change. Understanding the changing inside Incoterm will help us to analyze what change had been occur on this recent business situation. The revision of Incoterm might indicate the previous Incoterm could not accommodate or cover the shipping business itself anymore. Such inefficiency in the previous method or terms also could affect the reason behind these revisions. Furthermore, we need to see Incoterm in a more specific and narrow perspective since it is part of the overall sales mechanism. This means, Incoterm does not include the overall sales agreement between sellers and buyers. The Incoterms is a tool which International trader uses mostly to create one understanding for what method that both parties in the agreement will use.

#### **IV.II.III Reason behind the revision of Incoterms 2000 to Incoterms 2010**

Looking at the transformation of Incoterms 2010, there are several revision on the term section. For example the new term that had been introduced above, the new term on “D” group DAT and DAP substituting the old terms in Incoterm 2000. The discussion here is finding the basis of revising the four terms in the group “D”. The assumption here is that flexibility holding the key for this term to change. The flexibility here

relate to where the delivery took place, which further determine where the ownership, cost, and risk will be pass to buyer. Since “D” group in Incoterm is a destination or arrival term, which lead to the destination point as the place where delivery occur. The wide range of area will result in variety of specific agreed place in destination point might confuse parties to arrange what type of “D” group may fit with some situation Numerous of “D” term in previous Incoterm has slightly differences with each other that can bring confusion and misunderstanding.

Taken example comparing the term DEQ in previous Incoterm with the new term DAT in the new Incoterms. Under DEQ term, the place where delivery occurs is state as “quay” which is refers to port of destination port of destination point. At the time the goods arrive at port of destination the risk and cost will be transfer to buyer. Nevertheless, the obligation to cover Import clearance will be bare by seller although the ownership has been pass into buyer. The DAT term in Incoterms 2010, allow sellers and buyers to choose any specific place consider as a “Terminal” in Incoterms. The terminal could means Quay as in DEQ term, a warehouse, container yard or road, and air cargo terminal. With the DEQ method, the shipping allow only for waterway carriage, where under DAT term it allow parties to set up carriage with any means of transport mode. What need to underline here, both terms require sellers to deliver the goods until the destination point where they don’t have to comply for transporting the goods from the port into the buyer premise. This means seller obligation in both terms will stop right after they finish unloading the goods from the vessel to the terminal or any other mention place in the port.

In addition, the amount of term that had been use in previous Incoterm will lead to the confusion to the parties. The DAF, DDU and DES under group”D” terms cover similar obligation from seller perspective. Looking at the point of where the risk and cost will transfer from seller to buyer, the DAF require seller to



be present for the purpose of supervising in multiple process. Therefore, the idea to increase the speed and efficiency in transferring goods and the title of the goods will not be fully accomplished.

In the Trust Third Party (TTP) scenario for ownership transfer, there might face some security issues for the shared encrypted key that used for sharing information. The shared RFID technology framework in TTP model is both parties in the agreement (sellers and buyers) trusting the third party to create an encrypt key with the tag for both sellers and buyers can communicate and shared information regarding the goods. Here, sellers and buyers each get the encrypt key with the tag for the same specific goods, and only through this encrypt key with the tag they can communicate with the purpose like transfer the ownership. This could lead to the condition of dishonest party in the agreement try to utilize the encrypt key with the tag and change it for their own purpose. Moreover, the third party hold all the information inside the key and may lead with the misbehaviors where the third party can change the encrypt key and stole the information.

Usually RFID tag need to be scan in order to fulfil verification process, where the trust third party need to be present at the time of verification since they are the only party other than sellers than buyer who can interact with the tag. In this scenario, the carrier need to stay in contact with the trust third party in order to finish the verification process of the goods. Thereafter, the goods will be ship into the destination point agreed. The process continued to the ownership transfer, where again the trusted third party need to be present in order to interact with the RFID tag for verification. The trusted third party need to verify whether the container that arrive are the same with the one ship from the departure point. Afterwards the RFID tag will be use for the ownership transfer process. If the process success, buyer will be consider as the sole owner of the goods, and the consequence is the seller will lose the ability to access the information relate with the goods.

Above are the common scenario for distribution of the goods where there are more than one owners of the goods and involving third party. On the framework of Incoterms here, the point of transition where the goods need to be verify and the title transfer to the next owner will vary depend on the terms chose by sellers and buyers. For example. EXW (Ex-Works) terms that imply the minimum obligation of sellers where sellers need to make the goods available on the sellers premise (warehouse) without any obligation to load it to the first carrier. For EXW the transition time for validation and verification would be at the time goods are available for the carrier to load it to their transportation. But in case of EXW term since the transition time is near to the seller premise, the TTP model won't be necessary and suitable since the ownership will be transfer as soon as the goods ready to be load to the first carrier. Need to be remind, on the case where multiple carrier available on the option of terms and are set up as a carrier on the agreement, this will make several place where the goods need to be verify by thrust third party. Which means the movement of the goods is limit with the continues presence of the third party.

Since most of the terms in Incoterms involve with the parties need to set up multiple mode of carrier, it will increase the multiple time of presence for third party itself. In FOB as the most common use terms in the world, the sellers need to set up the first carrier, transport it to the port, take care of export clearance and load the goods into the vessel. As we see in the FOB scenario, other than sellers and buyer, the FOB involve two carrier, the first carrier who transport the goods from sellers premise to the port, and the shipper that will distribute the goods from departure port into the destination port. With the situation given in FOB term, the third party need at least to be present at the time first carrier come to pick up the goods for verification of specific goods, and the second verification comes when the goods arrive at the port to be load into the vessel. Thereafter, the tittle will be transfer from seller to the buyers after the goods finish load on board the vessel. Afterwards, the buyers will acknowledge as the sole owner of the goods and seller will not have the ability to access the RFID tag from there.

Compare with the conventional methods where paper base document apply in the whole distribution method in Incoterms, the electronic means of message such EDI and RFID will benefit both parties in the agreement for rapid information exchange and efficiency. Both sellers and buyer can directly exchange any information regarding the goods using encrypt key with the tag. The conformity of specific goods in each point where it has to be verify is faster. The sellers or buyers in this case also does not need to supervise directly every time the verification time proceed. In this case they can save up labor cost to placing agent in the point where's the verifications need to take place. If we applied the conventional process, during the transition time where goods is moving there are several time where sellers or buyers need to on hand supervise or to be presence during this process. The electronic means of communication will break through this problem where sellers and buyers can confirm the movement of the goods each time they reach transition point or time. Here, the transition time or place means at the time when the goods will be handed to other party like carrier. The transition point could also means terminal or port where goods need to be handed to other party like shipper.

Although, Incoterms 2010 had introduce the use of electronic media which is EDI that could breakthrough limitation upon ownership transfer, the Radio Frequency Identifier (RFID) might be a better solution that can be used for future Incoterms. With the use of electronic media such RFID and EDI, it will reduce the utility of paper document and accelerate the procedure of ownership transfer in shipping industry. With utilizing such electronic means of message, the process of changing information will be faster than using paper document like the bill of lading where it's heavily used in the past decades. The ICC need to strictly state the function of electronic means of document to be equal as paper document in the process of goods distribution, specifically at the transition point where's title transfer from seller to buyer. Any other parties that directly involve of the handling of goods distribution should be remind where electronic means of communication or document applicable for ownership transfer thereafter. Otherwise, the problem that faced

in Incoterms 2000 where EDI had been established and set as applicable means of document cannot appropriately used.

Now the issues that always arise for transfer of ownership using electronic means like RFID tag is when the owners facing with an attack to the encrypt key. The encrypt key with the tag in RFID scenario of ownership transfer is the single crucial factor where every flow of information regarding the goods can be verify only with the key. Collusion attack could occur where one of the owners has bad intention to corrupt and change the encrypt key. Since the key is the only way for owners to access information about goods and exchange the information with other party, losing the ability to gain encrypt key lead to the losing the goods itself. The other problem is regarding to the size of information that one key could store. Since RFID tag technology require encrypt key which need a memory, its capability will limit with the size of memory one key could hold.

The Electronic Document Interchange (EDI) framework allows sellers and buyer to exchange the data regarding the goods during the period of shipping. The first step is both seller and buyer agreed on set EDI as their electronic communication method. Afterwards, they will create a key which hold a function of creating a link system between sellers and buyers to allow both parties to communicate and exchange all data relate with the goods. Through this key, both sellers and buyers could exchange any information and document regarding the flow of goods such as invoice and any other relate document. Now, the invoice that generate from EDI communication will have the same power of verification as bill of lading in the Incoterms scenario. The Electronic Document Interchange (EDI) will help the carriage party to confirm the arriving goods to the carriage transport before loaded the goods on board. The same flow will applies between the carriage and buyers. At the time the goods reach the place where it becomes the full obligation of buyers,

The demerits of applying this technology either Electronic Document Interchange (EDI) or Radio Frequency Identifier (RFID) tag is that both of them require firms to invest a lot of money. The other problem that have mention earlier is relate with security issue. Both method as an electronic means of communication require computer system which might fragile with viruses attack, malware, any hacking activity, and others. The problem is where both EDI and RFID tag has the “key” as their center system to encrypt and decrypt information, any tendency of attacks to the key will lead to the losing control of the whole system. This of course will make the outcome where other outside party gain any disclose information that is not supposed to be seen to any others and sellers and buyers.

On the other hands, applying electronic means of communication in Incoterms as the substitute of paper document will benefits in the long run. For Incoterms where it run in the distribution industry that growth and change over time, Incoterms should adjust its scope to where the shipping industry will move further. The recent phenomenon this past years where big companies try to change their business model by utilizing Internet data basis. The numerous number of E-commerce type of business imply now data exchange with electronic means of communication consider to be more efficient and faster compare with conventional process where data exchange use paper base as the only media. Since purchase order, shipping order and any other activity that include in the whole supply chain system now move towards electronic base where data exchange through computer system, Incoterms where’s framework is part of supply chain management could also apply the same methods for electronic means of data communication.

The ICC might already consider it for the revision for the next Incoterms to come. Looking at the fast growth market in E-Commerce, the logistics and distribution sector will be run in aside with electronic systems. Writer personal suggestion is that ICC need to fully embrace the use of electronics means of communication as the substitute of paper base document. The role of ICC as the International private organization has a center role in the business trading world for set the standard in trading environment. With the clear framework in the future Incoterms for EDI or RFID tag or any other electronic means of communication set as method for the ownership transfer and physical movement of the goods, this will hope lead to the high utilization of electronic means of communication. Hereafter, electronic means of communication will commonly use replacing paper document that makes global shipping and International trading business model also shift into the same framework used in the future Incoterms.

## **CHAPTER V**

### **CONCLUSION**

In this chapter, the research question will be re-state following with the research hypothesis. All the analysis and discussion will be summarize into one chapter. This part also gives assessment for overall framework of Incoterms about merit and demerit in the revision.

Base on the issues state earlier, the revision of Incoterms is affected by the trend of International business at present time, or at least several years before the revision. Since the International Chamber of Commerce (ICC) recognizes there are certain needs from the users (seller and/or buyer), they renewed the Incoterm each decade to meet the need of International trader. This will be the foundation of such revision every time. But is the reason behind revision of Incoterms 2000 into Incoterms 2010? Since Incoterm since 20<sup>th</sup> century use as a guideline for shipping method across the world, revealing the answer of this reason will clarify the shift in International trading in global environment.

As state in previous chapter, the new Incoterms 2010 introduce two new methods of shipping. They (ICC) erase four terms in pervious Incoterms and replace it with two. If we look it further, the transformation that brought into the new Incoterms is an incremental improvement since both new methods does not build from zero. Both terms in Incoterms 2010 that replacing the four terms before has a similar feature inside. Under Incoterm 2010, DAF, DDU and DES terms of group “D” had been merge into one and become the term that we know as DAP in the new Incoterms. The DAP methods try to simplifies all three terms before and make it into one framework where seller and buyer could agree at a specific point to determine where the delivery take place. The same

thing what the new terms DAT try to achieve. DAT as the replacement of previous term DEQ anticipate the possibility where delivery may occur in different place at arriving point.

The other issue arise is about how much technology advancement will bring impact in to the mechanism of Incoterms. The Electronic Document Interchange (EDI) introduce early in previous Incoterm. But it could not tackle the problem for transferring ownership that lead to the inability of buyer to possess the goods. Now the ICC clearly state through Incoterm 2010 any means of electronic communication such EDI will have the same legal basis as a prove or validation of the goods. With this, it can break through the problem from past years where ownership transfer cannot be done by electronic means. The paper document has limitation that makes process of validation and transfer of ownership become slowly. What EDI and any other means of electronic invoice intend to achieve is to accelerate this process.

Before Electronic Document Interchange (EDI) recognize to be the same legal power for validation or evidence of ownership and entitle of the goods, the EDI system in Incoterms 2000 also provide the similar function for paper document replacement. Although the electronic means of communication and document can be used as the proof of delivery of the goods and as the evidence for the contract of the carriage, EDI unable to exchange the function of ownership transfer to another party. Unlike the paper document like bill of lading that most commonly used during the period of Incoterms 2000, electronic means of communication was not heavily used. On top of that, even the carrier party in the shipping industry recognize bill of lading as the only document for ownership transfer. In the case where electronic communication use without any attach paper document such bill of lading, the carrier will not pass on the goods to the buyer.

Regarding the option for electronic communication, based on a research, the writer find it the Radio Frequency Identifier (RFID) technology could suitable to be use in the process of this

ownership transfer. The Incoterms of course only bind two parties within, which are sellers and buyer. Considering this, the two-modeled Shared RFID might correspond with the circumstance where there are two parties in the agreement holding the same information of the goods. Although, the normal Trust Third Party that apply mainly for ownership protocol could also be used by involving other party in the Incoterms framework. The Incoterms will still bind only two party inside the agreement, but it can state inside the terms where TTP model where applicable can be set on during the period where goods are distributed to the destination point.

On the process of this research paper been doing, there might be on the processing of transforming Incoterms 2010 that always been done gradually. Looking at the fact it was done every decade to answer market needs, the current Incoterms 2010 is the answer from issues arise before 2010, and hope to tackle all the problem in the future. But since the International trading, specifically shipping industry grow rapidly from time to time, the current Incoterms might in fact consider an outdated model. If we relating with the current studies in Literature review, most of the ownership transfer process using RFID technology mostly were from above 2010. Which means the latest Incoterms may leave a room of improvement to fit in with the current technology, if we talking about ownership transfer process.

One of the main issue that been discuss and analyze in this research paper is about the ownership transfer in Incoterms. Now at this point looking at the official Incoterms provide in the ICC official website, there is no clear statement of whether Incoterms also encompass ownership transfer. There is one article that clarify one of the area which is not cover by Incoterms is determine the ownership or transfer of tittle to the goods.<sup>5</sup> Here, writer personal opinion proposes such clearance of ownership transfer need to be clarified. Since ownership transfer eventually lead to event as

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<sup>5</sup> <https://www.searates.com/reference/incoterms/>

transfer of risk and cost, both sellers and buyers within the agreement can benefit from understanding the condition where and when the ownership will be transfer.

The revision also includes the classification of inland and waterline carrier. There are some of the terms in Incoterms 2010 that allowed for any type of distribution method. On the contrary, there are few of them, which restricted with only waterway carrier. This classification purpose is to state at the early beginning to both seller and buyer which type of carriers is available or not available.

To conclude this research, the Incoterms transformation will be affect by the trend of trading business on the present time. The International Chambers of Commerce as the organization that made the Incoterms will surely customize it to respond with customer needs. What the ICC needs to look at before formulating the new Incoterm is case by case scenario where users face some issues when using the Incoterms. The other point is the extensive research that relate to logistic management and distribution at the present is moving to Internet database. During this past decade, conventional market transform gradually into Internet base market or what we know as E-Commerce. This phenomenon signifies the current technology allows business sector to shift into such condition. The same case with the framework for distribution inside the Incoterms that can extend with utilizing technology. Acknowledgement for electronic means of communication where it has the same power with paper document as a proof implies the Incoterms moving to the right direction.

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