

REGIONAL MARITIME UNIVERSITY

ACCRA GHANA

**A REVIEW OF ELECTRONIC SYSTEM AND PROCESS OF CARGO
CLEARANCE: A CASE STUDY OF THE PORT OF TEMA**

BY

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**THIS DISSERTATION IS SUBMITTED TO THE UNIVERSITY OF GHANA,
LEGON IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE
AWARD OF MA PORTS AND SHIPPING ADMINISTRATION DEGREE.**

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DECLARATION

This is to certify that this is the result of research undertaken by **LINDA NSIAH** towards the reward of the **Master of Art (M.A) degree** in the Department of **Ports and Shipping Administration**, Regional Maritime University, Ghana and has not been presented by anyone for any academic award in this or any other University. All references used have been dully acknowledged.

I bear sole responsibility for any shortcomings.

Signed

.....

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CERTIFICATION

I hereby certify that this thesis was supervised in accordance with procedures laid down by the University.

Signed

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Date

ABSTRACT

Having appreciable knowledge and understanding of the custom cargo clearance at the various ports is critical to the operational activities of shippers and freight forwarders. This study sought to examine the electronic cargo clearance procedures at the Port of Tema. The study was at the port of Tema which handles about 80% of Ghana's imports (GPHA, 2006). A mixed sampling techniques was used in sampling a total of 142 respondents for the study. The process initially sought to interview 175 respondent (95 shippers and 80 freight forwarders from an estimated population of 1200 shippers and 370 freight forwarder, and 3 officials from DIC, GCB, and GSL). A structured questionnaire and interview guides were used to sample 139 respondents consisting of 75 shippers, 64 freight forwarders who were randomly sampled, and 3 purposively sampled officials from Destination Inspection Company (DIC), Bank, and Customs division of Ghana Revenue Authority (GRA).

Results from data analysis revealed that majority of shippers (92%) were in favour of electronic cargo clearance at the Port. Majority of freight forwarders (68%) engaged in cargo clearance of goods. A sizeable number (15%) also engaged in transportation services. Also, majority of freight forwarders (84%) were in favour of electronic cargo clearance. In respect of the rationale for endorsing the electronic cargo clearance procedures, a high number of the shippers (32%) explained that it would reduce bureaucratic procedures associated with cargo clearance at the Port. Majority of the freight forwarder (34%) also explained that it would ensure efficiency of cargo clearance operations. In relation to measures to ensure effective implementation of the Ghana Community Network Services Limited (GCNet), the management officials generally proposed that shippers should get themselves acquainted with the clearance procedures and documentations and ensure that information they furnish the stakeholders is accurate to enable smooth cargo clearance process.

DEDICATION

I dedicate this work to my family who gave me the needed support to go through this program, and to my friend Mr. Nabali Bawa. Finally I dedicated this work to my late mother Miss Elizabeth Osei who was an encouragement to me.



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LIST OF ABBREVIATIONS

B2G	Your Business to Government
BOP	Balance of Payment
CEPS	Customs, Excise and Preventive Services
CR	Customs Regimes
CusDec	Customs Declaration
CusRes	Customs Response
DIC	Destination Inspection Company
DO	Delivery Order
EDI	Electronic data Interchange
E-System	Electronic System
FCVR	Final Classification and Valuation Report
FDB	Food and Drugs Board
GCMS	Ghana Customs Management Systems
GCNet	Ghana Community Network Services Limited
GHPA	Ghana Ports and Harbours Authority
GRA	Ghana Revenue Authority
GSA	Ghana Standards Authority
GSL	Ghana Gateway Services Limited
ICD	Inland Clearance Department
IDF	Import Declaration Form
IRS	Internal Revenue Service
JV	Joint Venture
KEBS	Kenya Bureau of Standards
KENTRADE	Kenya Trade Network Agency
KIA	Kotoka International Airport
KPA	Kenya Ports Authority

KRA	Kenya Revenue Authority
MDAs	Ministries, Departments and Agencies
PP	Public Private
PP JV	Public Private Joint Venture
RAM	Risk Management Module
SAD	Single Administration Documents
SMC	Supreme Military Council
SMCD	Supreme Military Council Decree
TIN	Tax Identification Number
UAC	United Africa Corporation
USAID	United States Agency for International Development
WCO	World Customs Organization
KCS	Kenya Customs Service
USD	United States Dollars
UN	United Nations
KRW	Korean Won
PGA	Participating Government Agency

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

International trade in general is considered one of the gateways to economic development of a nation. International trade helps widen the market for an economy's produce as well as making available variety of goods and services for domestic consumption, whilst generating or improving a country's foreign reserves. Transportation is a channel of linkage for all economic activities within an economy and beyond. It ensures the transfer of goods and services from one phase of production to another; through to the stage of its final consumption. According to Nesser et al (2013), expansion of the transportation industry is one of the key economic indicators of growth with its undeniable influence on sustainable development of a nation.

The international movement of goods and services has been noted to be one of the ways in which developing economies can catch up with the developed world. This is because, by means of shipping about eighty percent (80%) (UNCTAD 2012) of internationally traded goods are moved from acquisition sources to expected destination points to facilitate the production of additional goods and services, thereby serving as a catalyst in the economic growth process of the global economy.

Ports, which serve as the logistics platform for international trade, therefore perform a very crucial role. Ports usually serve as points for loading and discharging the internationally traded goods such as consumables, vehicles and equipment. As ports are moving towards electronic systems and cargo clearance processes, it is therefore imperative to review how these paperless processes facilitate or enhance clearance processes at the ports.

The initiative of paperless clearance of goods through the Ghanaian Ports was mooted by the Customs Division of the Ghana Revenue Authority (GRA) with support from the various stakeholders such as the Ghana Port Authority. Speaking to the *Republic* on the side-line of a seminar organized by the Ghana Shippers' Authority in 2012, the Deputy Commissioner of Operations of the Customs Division of the Ghana Revenue Authority, Mr. Sam Akwasi Yankyera indicated that the electronic systems and processes of cargo clearance was meant to bring more efficiency and effectiveness to the clearance of goods at the ports by reducing malfeasance and unnecessary delays and other associated bureaucratic processes which negatively affect clearance time and other targeted objectives. He further stated that the introduction of the electronic platform of cargo clearance was meant for the use of all the stakeholders who do business at the Ghanaian ports of Tema and Takoradi

(www.ghanacedi.com)

Similarly, the Kenya Revenue Authority (KRA) and other stakeholders such as the Kenya Bureau of Standards (KEBS), Kenya Ports Authority (KPA), and the Port Health are in discussions to integrate their respective electronic systems. The stakeholders are to see to the implementation of the electronic clearance of goods by September, 2013. The Chairman of the implementing agency, Kenya Trade Network Agency (KENTRADE), Retired General Joseph Kibwana has offered some explanation to the idea of electronic systems and clearance of goods; 'Businesses will now be paperless, as a trader or a business person; you will not have to lodge any document on paper. Using your computer on the office the same document you lodge on this system, will be delivered and viewed the same way at KRA, KEBS, shipping fraternity, and transporters will have the same document appearing on their screen at the same time' (Wahito 2012, pp. 51).

The overall objective of the Kenyan project is to facilitate external trade in Kenya by reducing delays and lowering costs associated with clearance of goods at the country's borders, while maintaining the necessary controls and collection of levies, fees, duties and taxes on imports or exports¹.

There are various means of transportation through which goods are delivered or transported from one agent of production to the other via the distribution chain. Goods and services can be transported by sea, air or land. The medium of transportation is not the focus of this study. However the study focuses on the Ports and Customs practices in Ghana; the system of cargo or goods clearance at the Ghana Ports with specific attention on the electronic system and process of cargo clearance at the Port of Tema.

The transportation sector includes all manner of economic activities which are immensely affected in all aspects of the marketing process: production, distribution, consumption, and services. This leaves the importance of Ports, and for the matter African Ports undoubtedly fundamental to the core of economic growth. Ports play a fundamental role in facilitating integration amongst Africans and the international economies since maritime trade accounts for more than 90 per cent of the continent's imports and exports. Hence the need for its effective and efficient operation and possibly expansion to ensure maximum optimization of the global opportunities in trade.

The world economy according to Livingstone (2010) has been experiencing an unprecedented boom in trade prior to the last quarter of 2008. He recounted that the quantum of goods crossing

¹ Kenya Trade Network Agency (KENTRADE): Development of the Kenya Electronic Single Window System.

national borders increased exponentially as a result of the influx of new and improved ways of doing things, global integration and the emergence of containerized transport and its effect on international trade.

The discovery of oil in Ghana has left much to be desired of the maritime industry in Ghana. Much attention has turned to the Takoradi Harbour, increasing the level of economic activities at the Harbour. However, productivity at our ports has been faced with setbacks and bottlenecks which constrains the ports from efficient operation in order to yield the expected returns. The ports of Ghana with its recent technology has what it takes to achieve the desired level of efficiency in production. It is therefore empirical to examine the paperless (electronic) system of clearance to ensure effective and efficient utilization of ports operation in order ease the tension, and delays associated with customs and preventive duties, and also utilize global trade opportunities.

The study will largely focus on a review of the electronic system and process of cargo clearance at the Port of Tema. It will examine the nature of the Ghanaian customs services and procedures pertaining to the goods and cargo clearing at the ports of Ghana, specifically, the Tema Ports and Harbours Authority.

1.2 Problem Statement

There has been great concerns about the delay in clearance of goods and cargoes (long dwell time) which is mostly attributed to the paper way of clearing goods at the port in some part of the world, most port authorities have made attempts to review their cargo clearance processes in favour of electronic process of cargo clearance.

Citing the Acting Director of Port of Tema, Mr. Jacob Adorkor on the occasion of the World Customs Day that:

“The customs division of the Ghana Revenue Authority (GRA) should take measures to improve on systems designed to facilitate cargo movements at the ports. He further comments that rather than going back to the paper works (manual) system, customs administration should put measures in place to improve any flaws observed in the Electronic Data Interchange (EDI) System, the container scanning systems innovations, and the electronic surveillance” (www.ghananewsagency.com, May, 2014).

According to Asuliwonno (2011), the introduction of the Ghana Community Network (GCNet) and the Ghana Customs Management System (GCMS) in 2002 under the customs holds a great prospect in improving management of customs, and also ensuring effective and efficient port operations.

The operations of the Ghana Ports and Customs service is yet confronted with several challenges that hinders the smooth management of the ports. The management of Ghana Ports and Customs have been characterized by high and increasing volume of trade and corruption over the past decade (Asuliwonno, 2011).

Again, in line with Ghana’s vision 2020, the country sets itself the target to West Africa through trade facilitation and investment, by identifying strategies that will aid modernize certain frontline institutions like CEPS, in order to increase revenue target (CEPS, 2004). Although the electronic system of cargo clearance has improved the time taken to clear Cargo at the ports; from at least 3 days to 2 days(Asuliwonno,2011), it is yet confronted with other challenges as traders still complain about delays in the new system of cargo clearance.

The urgency of an e-system of goods and cargo clearance is however pertinent to help ease the problems and complexities associated with the manual, paper work clearing system of the Customs procedure. The purpose of the research is to find out the Ghana customs cargo clearance procedures at the Port of Tema. The research also seeks to identify the transformations the Port has gone through with respect to the decision to embark on e-system clearance processes. The research would also attempt to find out the extent to which the electronic cargo clearance process has benefited the Port and its stakeholders such as the shippers, clearing agents, Destination Inspection Companies (DICs) and the Customs Division of the Ghana Revenue Authority.

However, infrastructure lags and other factors are militating the smooth running of the e-system of cargo clearance at the ports of Ghana. In the area of infrastructure development, the GCNet Services Limited, Ghana Shippers Council, Ghana Institute of Freight Forwarders and the Ghana Ports and Harbours Authority indicated that the relatively weak infrastructure, especially the non-availability of a reliable telecommunication network at the land borders is a major setback of the system. They stated that the relatively weak infrastructural development is posing resistance to effective management of the ports. This situation is militating against the desired model state of the smooth utilization of the GCNet system. The institutions contacted also indicated that there is sluggishness on the part of the actors or the institutions to interfere with the GCNet system in addition to the introduction of complementary electronic systems for other trade agencies. This is as a result of the uniqueness of the system, financial difficulties and inadequate knowledge concerning its usage (www.ghananewsagency.com, May, 2014).

The Customs, Excise and Preventive Service (CEPS) and the Ghana Shippers Council have stressed on the fact that the optimal usage of the GCNet system for realisation of its full benefits has been exigent. CEPS has been unable to mainstream the activities of all actors or institutions into the GCNet system.

Also, the Clearing House Agent and the Ghana Institute of Freight Forwarders remarked the fact that whilst general clearing time of cargo has improved tremendously with the introduction of the GCNet system from 2weeks or more to a maximum of 3days, customs declaration is only at the final leg of the trade process. Meanwhile the procedures prior to customs declaration are very manual, burdensome and time wasting, as trade operators commute from one point to the other to obtain permits, inspection reports, exemption letters, among others before the clearance of freight from the port (www.ghanatradenet, July 2013).

In view of these challenges which is affecting traders' perception about the efficacy of the GCNet system even with the emergence of the electronic system (GCNet), the researcher sort to investigate the situation by reviewing the electronic system of cargo clearance in Ghana, using the port of Tema as a case study.

1.3 Objectives of Study

The main objective of this study is to examine the Customs electronic systems of clearing cargoes at the Port of Tema, in the Republic of Ghana. Specifically, the study seeks to

- i. to assess the cost savings, if any, shippers have made in relation to electronic clearance of goods at the Port
- ii. to identify the challenges, if any, shippers face in the use of electronic process of cargo clearance

- iii. to ascertain the benefits of the electronic cargo clearance process to the shippers
- iv. to recommend measures to improve the cargo clearance process at the Port

1.4 Research Questions

The study which seeks to review the system of cargo clearance at the Port of Tema is motivated by the following questions:

- i. Are there any benefits to shippers in relation to the use of electronic process of cargo clearance at the Port of Tema? If yes, what are the cost savings to the shippers?
- ii. Do shippers face challenges in clearing cargo at the Port? If yes, what are they?
- iii. What measures could be deployed to improve the cargo clearance system and process at the Port of Tema?

1.5 Significance of Study

The Port of Tema handles about eighty (80) percent of Ghana's imports (GPHA 2012). Since the Ghanaian economy is an import dependent economy, and the custom procedure is not the best, there is therefore the need for a review of the custom clearance procedures at the Port of Tema to be undertaken (GPHA, 2006).

Again, all operators in the logistic chain need to play a role in the efficient operation of the ports in order to enable the Port of Tema and for that matter ports in Ghana achieve timely delivery of goods and cargo. If agencies and operators involved in cargo clearance at the ports do not address the issue of long cargo dwell time with the needed urgency, congestion may set in, and further increase the already high cost of doing business at the ports.

The research will serve as a source of literature to those in academia and industry. The study is significant because it explores and exposes the influences of these e-system of customs process on productivity. It therefore adds to several related works and also creates a platform which will arouse some interest for further studies in this regards, serving as a source of reference for future research in the area. This study carefully examines the customs process and its link on port productivity, puts searchlights on the optimal performance of Ghanaian ports, and helps stakeholders and management of the port to actualize efficiency and optimal operation.

Also, study results or findings will sensitize ports management and policy makers on the lags in the clearance system and also give premise to the need to update the customs and preventive system to ensure optimal operation of the Ghana ports. Results from this study will also inform shippers and the Customs Division of the Ghana Revenue Authority about what they need to do in order to fully take advantage of the electronic system of cargo clearance at the Port. The findings from the study will also provide strategies for improving ton the electronic system of goods clearance, hence ensuring efficiency as well as putting the ports in a better standard to withstand global competition. Efficient operation also has a long run tendency of augmenting government revenue.

In addition, the research would serve as a learning platform for the stakeholders (such as the Ghana Ports Authority, the Customs Division of the Ghana Revenue Authority, the banks, Ministries, Departments and Agencies (MDAs, etc.) in connection with cargo clearance to deliberate on how to forge partnerships to facilitate the smooth cargo clearance at the Port. This study which is aimed at reviewing the electronic system of goods and cargo clearance at the Port of Tema and Harbour will add to the body of knowledge in different ways.

1.6 Scope and Limitation of Study

The research sought to review the Ghana customs cargo clearance procedure with respect to the Port of Tema as a case study. For the sake of the study clearance of cargoes is limited to imports of goods into Ghana via the port of Tema.

Out of an estimated population of 1200 corporate and individual shippers and 370 registered freight forwarders that operates at the port of Tema, 95 of them were randomly selected for the research. Quota sampling technique was used to select management officials of the Gateway Services Limited (GSL), a Destination Inspection Company (DIC), Ghana Commercial Bank and Customs Division of the Ghana Revenue Authority and the Regulatory Agencies.

1.7 Organisation of Study

The study, which seeks to review the electronic systems and process of cargo clearance in the Port of Tema comprises of six (5) chapters Chapter one looks at the general background of the study, the problem statement, objective of study and the significance of study. The second chapter reviews both theoretical and empirical in the study area. Chapter three underlines and explains the methodology of the study, looking at the model of estimation, pilot survey and pretesting, data collection and analysis. Chapter four deals with the descriptive and empirical analysis of the result and the last chapter concludes by summarizing the findings of the study and looks at the appropriate policy recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This Chapter focuses on the various sources of literature written in connection with cargo clearance procedures. Various sources such as text books, periodicals and magazines and the internet were used to assist the study. The Chapter begins with history of cargo clearance in Ghana.

2.1 Historical Development of Customs House Brokerage in Ghana

It is quite surprising to state that the historical development of a custom house brokerage in Ghana is more of stories from renowned customs officials like Assistance Commissioner David Ahiakpor and Sam Akwasi Yankyera than a well-documented literature (Richard Tetteh, 2010).

Throughout history, merchants have been associated with the development of international trade. They organized the carriage of goods themselves and accompanied them in transit where they made necessary arrangement with their trading partners. Little was known that the task of accompanying the goods to their destination meant being away from business for a while and not being able to control from the base.

However, finding a trustworthy person became an arduous task for the merchants when that fact was realized. The option they thought was to find reputable people who worked along the route and knew the trade route, familiar with custom procedures and could equally carry out their transportation requirements. From these people emanated the profession of freight forwarders who usually took insurance covers to protect merchants and their own interest.

Though freight forwarding is one of the oldest professions in history, it was formally developed in Ghana in the 1990's. The operators were loosely referred to as clearing agents indicating the fact that the Ghanaian public did not have an appreciable understanding of the profession. They understood the role of the freight forwarder to mean just the business of custom clearance of goods on behalf of shippers.

When the importation of goods through the use of ships begun on a large scale in Ghana the ships used to berth at natural harbours in Prampram, James Town, Cape Coast, Keta, Ada and Sekondi. At these harbours, some individuals assisted in ferrying out the goods from the ships to shores, by so doing facilitating easy and safe delivery of goods to their importers. The work of these individuals served as a precursor to the clearing and forwarding business in Ghana.

The imposition of customs duties on imported and exported goods in 1839 by the British Government of the Gold Coast colony initiated the profession of freight forwarding in the country. By the year 1850, all goods imported into the Gold Coast attracted 0.5% duty ad-valorem (i.e. a percentage of the value of the goods imported). Added to these, export duty was also introduced and as Gold Coast international trade increased, restrictions and prohibitions were also imposed on the goods. There was the need to satisfy the international requirements to give precise description and classification of all goods that entered international trade. In order to meet all these requirements, the customs authority developed goods clearance procedures (Custom procedures), which became technical and complex.

The complex nature of the customs procedures made it very difficult for traders to perform cargo clearance duties. This led to the significant need for organizations such United Africa Corporation (UAC) to engage the services of people with specialized knowledge in custom

procedures (freight forwarders). These people were often referred to as customs clerks who worked in units called clearing departments. The increase in international trade over time meant an increase in demand for freight forwarding services. This prompted some foreign nationals to open businesses in Ghana to take advantage of the opportunities. Amongst them were Scan ship, Umarco, Palm Line and Elder Demspster line in the early 1970's. The business then attracted some Gold Coast scholars especially those at James Town in Accra to engage in the clearing and forwarding business who became known as "clearing agents". These persons formed companies and increased in number over time by the construction of the Takoradi and Tema sea ports.

Initially ,there was no legal framework and hence the reason for the increase in clearing operation till the late 1978 when a legal regime was enforced to back the operations of forwarders in the country by the Supreme Military Council (SMC). This was meant to regulate and license the operators in the industry. This was the Customs House Agent (Licensing) Decree 1978 (LI 1178). However, the licensed operators were the Custom officials.

Today, the practice extends to cover both logistics and supply chain management with some forwarders acting as contracting carriers and assuming carriers responsibility.

2.2 Import Clearance at the Seaports of Ghana

Import clearance at the seaport of Ghana go through several phases before the cargo is release to exit the port. Before a cargo or goods is declared and released to exit the ports of Ghana, it should satisfactory go through the various stages in clearing; starting from valuation of cargo, to declaration where all relevant customs documents are submitted by the importer on the

GCNet, through to the final stage of endorsement upon which final permit is given to Loading Task Force to release consignment to exit the port.

The consignments also go through verification at the Compliance Section of CEPS, release by the Shipping Agent, delivery by Ghana Ports and Harbours Authority (GPHA), and CEPS physical examination or scanning of cargo before it exits the port. Importers must appoint a licensed Customs House Agent/clearing agent (Legislative Instrument 1178 1978) with a credible reputation for the clearance of cargo at any freight station in Ghana (USAID, 2008).

The process of import clearance involves the following processes or stages

(www.borderlesswa.com, May, 2014).

i. Submission of Manifest

The first step of any import clearance process for sea and air shipments in relation to Customs operation is the submission of the Master Manifest. The Shipping agent, the Airline, or the Courier Company submits the Master Manifest electronically to Customs through the TradeNet in the form of an EDI message. After successful integration of the Manifest into GCMS, the system is then open for the acceptance of either the Declarations form the Declarants, or House Manifest from Forwarding agent (in the case of consolidation). This then proceeds with the submission of the Declaration (www.gcnet.gh.com, April 2014).

ii. Declaration

This stage of the clearance process requires importers to enter details from the Final Classification and Valuation Report (FCVR) and relevant documents related to the consignment into the Ghana Customs Management System (GCMS) / the Ghana Community Network Services Limited (GCNET). The system then validates inputs and assign a Customs

Declaration Form which is then printed by the importer. Once the validation is complete, the Declarant transmits the Declaration in the form of an EDI message also called CusDec (Customs Declaration) to TradeNet. A legal Declaration number is generated upon successful completion of all levels of the declaration validation.

Upon validation however, three possible options may engage; either declaration is rejected, validated and not selected by the Risk Assessment Module (RAM), or validated and accepted by the RAM. The GCMS validation process is performed at four levels:

- iii. Manifest Matching
- iv. Checking of Reference Codes
- v. Computation of taxes and duties
- vi. Filtering through the Selectivity Module

The GCMS reject the Declaration in cases where errors are detected during validation. In such cases, GCMS sends a response back to the Declarant listing all errors detected. The Declarant is then required to correct errors and resubmit. In the second scenario, it occurs when the GCMS RAM has found the declarations to be low risk, GCMS sends a response back to the Declarant stating that the Declaration has not been selected. This Declaration shall be processed by the Document Verification Office of Customs. Lastly, the third option occurs when GCMS RAM has found that the consignment is medium to high risk, GCMS sends a response back to the Declarant stating that the Declaration has been selected. This Declaration shall be processed by the Compliance Office of Customs. Once the validation process is complete, GCMS sends the CusRes (Customs Response) to TradeNet which in turn relays it back to the Declarant.

Upon receipt of the CusRes from GCMS, the Declarant shall print the Declaration from his/her FES at his/her office. All supporting documents as indicated on the Declaration e.g. hard copies

of Bill of Lading, Invoice, Packing List, FCVR, IDF and other permits/certificates should then be attached to the Declaration ready for submission to Customs (Document Verification or Compliance). This then follows with the payment of necessary charges or duties at then Bank.

vii. Bank Payments

With the Customs Declaration Form, importer then proceed to the respective participating Bank to make payment of calculated or indicated duties and or taxes. Thus, having prepared all necessary documentation after validation of the Declaration in GCMS, the Declarant shall proceed to any of the participating banks and settle applicable duties, taxes and other charges. There are currently two GCNet participating banks - Ghana Commercial Bank and Ecobank (www.gcnet.com.gh, April 2014).

Selected branches are connected to the GCMS server and collect all Customs Duties and Taxes. The bank is networked to GCMS and will confirm payment electronically. They also send the confirmation of payment in hand copy. The confirmation of payment from the bank of all applicable duties, taxes and other charges enables the file to be further processed in GCMS. Failure from the bank to confirm payment of such charges in full will result in the file being "blocked" in GCMS.

Upon settlement, the Bank will issue a payment receipt and confirm payment electronically to GCMS. Declarant is to attach the receipt to the main documents for submission to Customs. After the Bank payment Receipt is issued, the importer or his representative proceed to the compliance and verification phase.

viii. Compliance / Verification

The importer submits hard copy of Customs Declaration Form, Bank Payment Receipt and accompanying customs documents to compliance officer. The compliance officer checks the documents and receipts for verification purposes. If the documents have mistake of omissions, the importer is made to put in a post entry to correct mistakes. When all customs documents are verified and confirmed to be in order, the declaration is forwarded to an examination officer who then inspects the consignment.

ix. Examination

In the examination room, the officer inspects the consignment and enters results in the GCMS. A hand copy is given to the officer in charge in the long room. The consignment is also inspected by an inspection i.e. BIVAC. The inspection company then issues a Final Classification and Valuation Report (FCVR) upon completion of inspection. This form is given to the officer in the long room who compares the FCVR with the Customs Declaration Form. During inspection however, refunds are made in cases where duties and taxes are overpaid by the importer or his representative. Also in situations of tax and or duties underpayment, the importer or consignee is made or required to pay the balance along with a penalty.

After this stage, additional certification, confirmation, and inspection is required for High Risk Goods. During this stage, homogeneous consignments and a limited number of heterogeneous consignments are typically scanned.

x. Endorsement

The officer in charge gives a copy of the Customs Declaration Form, and FCVR (where applicable), to the Assistant Commissioner. The Assistant Commissioner releases declaration to Chief Collector Preventive who finally submits declaration to the Loading Task Force.

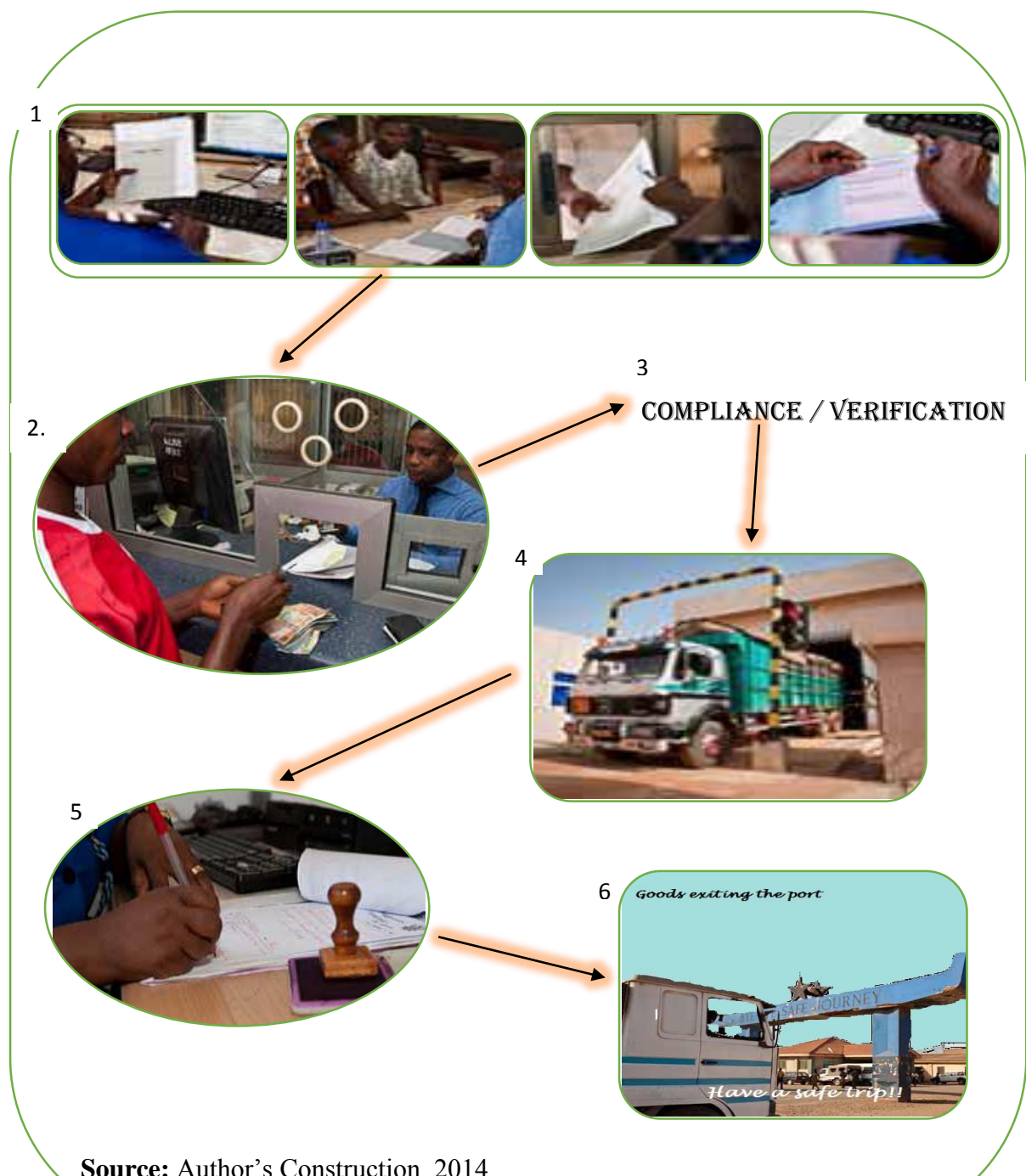
xi. Release / Clearance

After all these above mentioned processes have been satisfactorily carried out, and all valuation, payments, examinations, and confirmation and permits have been granted, and declaration submitted to the Loading Task Force, the Task Force then releases goods to last gate for exit. In the case of non-selected Declarations, Clearance of the consignment takes place immediately after submission of the hard copy of the Customs Declaration with all supporting documents to the Document Verification Officer. If the Declaration is selected for Compliance, clearance can only take place after successful physical examination. This process involved in import clearance at the ports as explained above is pictorially illustrated in Figure 2.1, whilst a more general approach is presented in Figure 2.2 below.

The Ghana Shippers' Authority published on their website (www.ghanashippers.gov), in relation to the custom clearance procedures at Ghana's sea ports. The procedures are outlined below;

1. Appointment of accredited clearing agent to oversee the cargo clearance from the Port
2. Submission of documents to the designated Destination Inspection Company. The documents required to be submitted to the DIC include the Invoice, Import Declaration Form (IDF), Packing List and a copy of the Bill of Lading (on or before arrival of vessel) to enable them process the Final Classification and Valuation Report (FCVR).
3. The importer is then required to pick up the Final Classification and Valuation Report (FCVR) from the Destination Inspection Company (DIC).

4. If the shipper is an importer of a used vehicle, the Bill of Lading, Certificate of Title should be submitted to the Customs Division of the Ghana Revenue Authority for the determination of value.
5. Tax Identification Number (TIN) should be obtained from the Internal Revenue Service (IRS) if the shipper is importing for the first time.



Source: Author's Construction, 2014

Figure 2.1: Import Clearance Process at the Port

6. Submission of declaration electronically to Customs through the GCNet Computer Front-end. The shipper is required to ensure that all the fields on the declaration are completed with accurate data.
7. The shippers is also required to print out the Response from the GCNet Computer Front-end and effect payment of appropriate duty and taxes at either Ghana Commercial Bank or ECOBANK.
8. The bank payment receipts, Bill of Lading, Invoice, IDF, and FCVR should then be submitted to the designated Customs Compliance Officer in the Long Room for Verification.
9. The following documents should then be submitted to the Shipping Line/Agent: a hard copy of the declaration, original bill of lading, bank receipts and all the other relevant documents as well as a completed Delivery Order (DO) for either first or final release, as the case may be.
10. The importer is then required to deposit green copy of DO, hard copies of declaration and bank receipts with the Ghana Ports and Harbours Authority (GPHA) Revenue or other Freight Stations as appropriate, for assessment and payment of handling charges.
11. Thereafter, the importer is supposed to deposit the green copy of the DO with GPHA operations or the appropriate Freight Station for the container to be dropped within 24 hours at the designated bay for physical examination (if required), after which the Customs allows delivery.
12. The shipper then needs to arrange a truck to convey cargo from the port/freight station.
13. Waybill will then be issued by the appropriate freight station upon presentation of green copy of DO, hard copy of declaration and bank payment receipts.
14. The shipper is then required to present declaration and accompanying documents with the cargo to CEPS at the exit for final clearance. Freight Station security also checks

the waybill covering the goods. The Ghana Shippers Authority encourages shippers to make all documents available to the Police, CEPS or National Security, only on request, for inspection after exiting the freight station.

However, some consignments are scanned before final release to exit the ports. The scanning is option is outlined as follows;

- i. If the container is to be scanned, then the shipper is required to deposit the declaration, DO and the Interchange (evidence of dropping container on the truck) at the Customs Office within the Scanning Area.
- ii. The importer is then required to pick up scan number (Appointment Sheet) from the Scan Operations office and wait for his turn.
- iii. Appointment Sheet is then presented to the Check-In Agent at the entrance of the scanner.
- iv. Confirmation of final clearance of container after the scan at the CEPS Office.

2.3 Import Clearance Document Requirement and High Risk Goods

From the above explained process or phases involved in the import clearance at the seaports of Ghana, it is clear that there involve some customs documents and other relevant documents.

The documents required in the import clearance process include the following:

- i. Invoice from supplier
- ii. Packing List
- iii. Customs Declaration Form
- iv. Final Classification and Valuation Report (FCVR)
- v. Bank Payment Receipt
- vi. Relevant Permits

Also in the clearance process, some goods are considered ‘High Risk Good’ and for that matter require inspection and certification from either CEPS laboratory or Standards Board. These goods include food products, electrical appliances, electrical cables, toys, LPG Cylinder and accessories, petroleum products, chemical and allied products, arms and ammunition, vehicle spare parts, industrial machinery, pharmaceuticals, cosmetics and medical devices, building materials, used goods (second-hand clothing), motor vehicle batteries, pyrotechnic products, machetes/cutlass, among others.

2.4 Challenges of Cargo Clearance in Ghana

The United States Agency for International Development (USAID 2010) examines some of the challenges that confront import cargo clearance which are outlined below. The major challenge militating against efficient and effective cargo clearance process is that of delay. The causes of delay and other related bottlenecks as researched by the USAID are detailed below;

1. Importers and/or agents contribute to clearance delays because they often provide incorrect, inaccurate, and even untruthful documents and information to Destination Inspection Companies (DICs) and Ghana Customs.
2. Delay in approval of FCVR by DICs
Clearance delays are caused because designated Destination Inspection Company is approving Final Classification and Valuation Reports (“FCVRs”)
3. Clearance delays are caused because Ghana Customs has a compliance/verification process which duplicates much of the designated DIC’s work.
4. Clearance delays are caused because of congestion at the ports which affects flow of cargo traffic and clearance times.

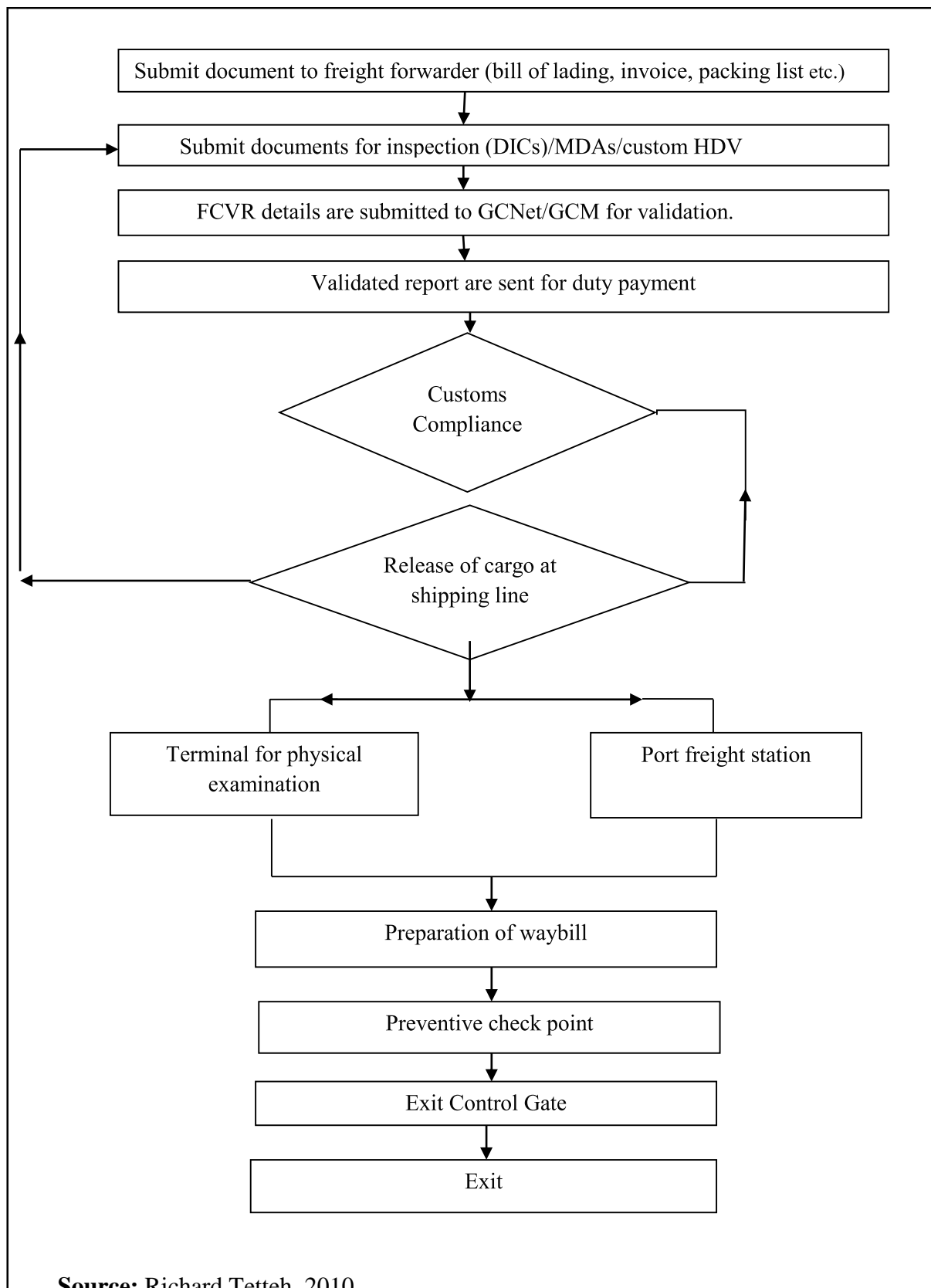
5. Expedited processes are not used even for lower risk merchandise and/or importers/agents.
6. The Customs Division of the Ghana Revenue Authority does not own a national valuation and classification database.
7. Clearance delays are occurring because of physical examination of imported cargoes.

2.5 Ghana Community Network Services Limited (GCNET)

The introduction of the GCNet electronic clearance system in September 2003 was a welcome development for shippers and custom house agents alike, as it cut down the clearing time substantially and allowed for on-line exchange of trade information. The Ghana Shippers' Authority has taken adequate measures to ensure that shippers are well informed about the demands and the requirements of the customs clearance system and procedures involved.

Ghana Community Network Services Limited (GCNet) is an Information and Communication Technology solution provider based in Ghana that fosters trade development and facilitation in the country. The company has integrated an electronic system using cutting edge technology that links all trade operations, revenue agencies, and regulatory bodies through a "Single Window" System. This technology has earned the company a moniker of a "B2G Company"² (www.cyberoam.com: GCNet Ghana Case Study, January 2014).

² "B2G" means "Your Business to Government"



Source: Richard Tetteh, 2010

Figure 2.2: General Clearance Procedure in Ghana

It is a Public Private Joint Venture (PP JV) formed in November 2000 with a specific mandate to provide an Electronic Data Interchange³ (EDI) service and a computerised Customs Management System (Ofori, 2012) which had the first live customs declaration processed in November 2002(WCO, Brussels: 22nd Jan, 2009). The GCNet which allows for lodging and exchange of data and standardized information to fulfil all regulatory requirements with a single administrative document for all Customs Regimes (CR) was established as a result of the slow, expensive and cumbersome paper work (manual) clearance procedures and also as a result of government's desire to facilitate trade in making Ghana the trade and investment hub in the West Africa sub-region (WCO⁴, Brussels: 2009).

The GCNet has been operational in Ghana since December 2003, with an innovative solution designed to facilitate a fast and effective processing of cargo clearance related operations, and consists of two complementary systems; the TradeNet and the Ghana Customs Management System (GCMS)

i. The Ghana TradeNet

The TradeNet is an EDI platform that allows transmission of electronic messages between trade operators and Customs on one hand and other regulatory bodies on the other. It is the platform that enables Ghana Customs Management System (GCMS) to share data with the various parties involved in the processing of trade documents and customs clearance.

³ The EDI is defined as the exchange of structures data between two or more computers using international standard message format

⁴ World Customs Organization.

ii. The Ghana Customs Management System (GCMS)

The Ghana Customs Management System (GCMS) is an automated system for processing all customs operation and activities. The GCMS is intended to make available to the Ghana Customs, Excise and Preventive Service (CEPS) a fully integrated computerized system for the processing and management of Customs Declarations and other relevant activities. It is also designed to work in an EDI environment, where Manifest and Single Administrative Documents (SADs) or Customs Declarations are electronically received and automatically processed (www.gcnet.gh, March 2013). Figure 2.3 below shows how the GCNet system is designed.

2.5.1 Objective of GCNet

In line with the mission and objectives of GCNet, it has implemented a seamless electronic system using cutting edge technology that links all trade operators, revenue agencies, and regulatory bodies through a "Single Window" system. The current set up contrasts sharply with the pre-GCNet situation when trade operators had to shuttle from one agency to the other whilst processing their trade and Customs transactions. The pre-GCNet situation is as illustrated in Figure 2.3 below:

According to Ofori Jonathan, the TradeNet Manager in his presentation on "Best practices presentation by GCNet, 2013", the GCNet was established for the following key objectives:

i. To facilitate trade and clearance of goods through customs in a secured manner.

This objective basically is to improve the speed of customs clearance and thereby accelerating the international business which will lead to long term port efficiency, hence higher contribution to maritime business and productivity which then transcends into economic growth.

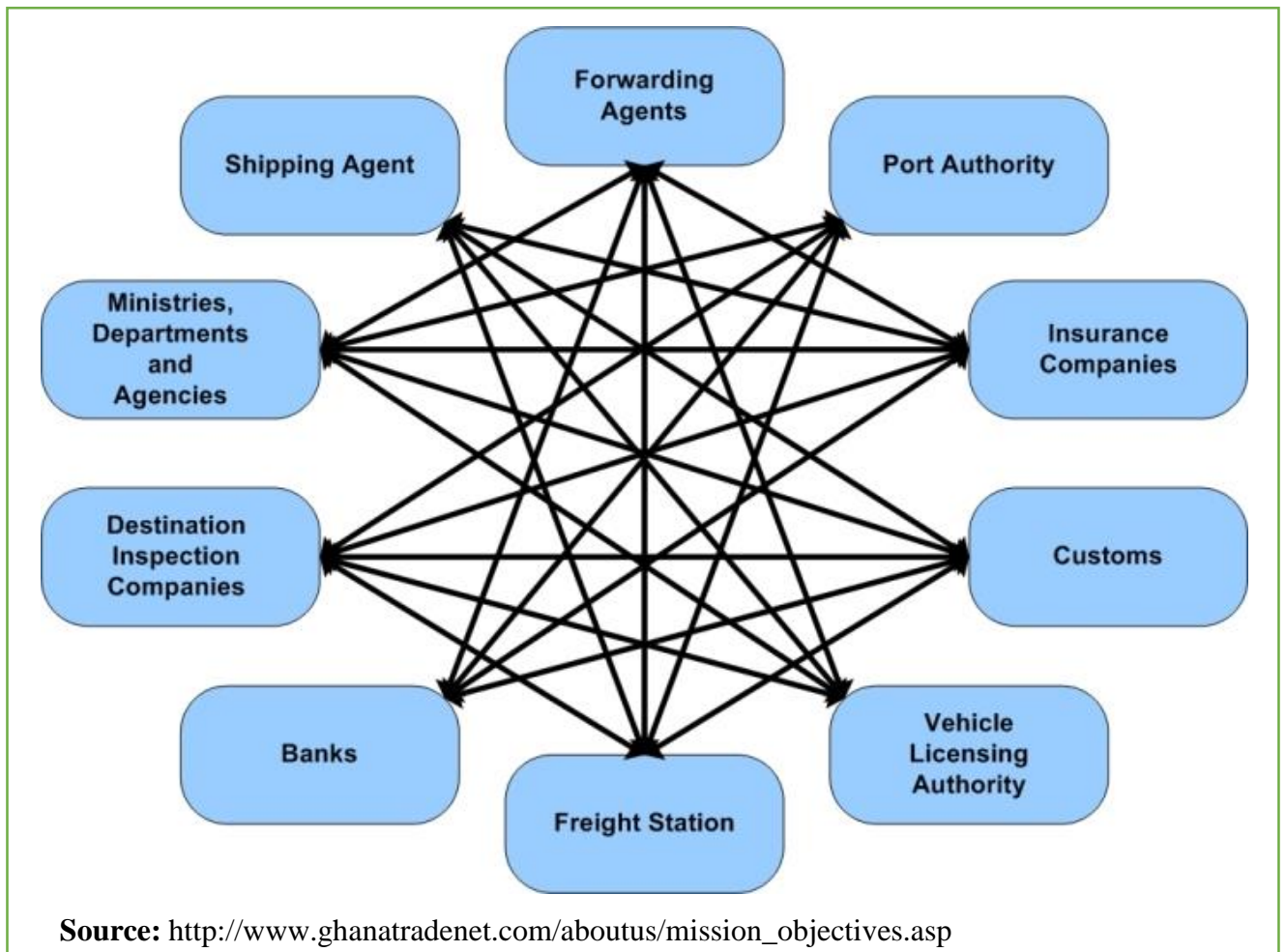


Figure 2.3: Pre-GCNet Situation

ii. To enhance mobilization of trade related revenue for government.

The GCNet system is expected to protect government revenue from shipping and maritime operations. The system provides a strict and corrupt free platform that captures and stores all trade transactions (duties and tax payments, cargoes cleared, etc.) on a single window system that is less corrupt compared to the manual system.

iii. Reduce Malpractices associated with import and export trade

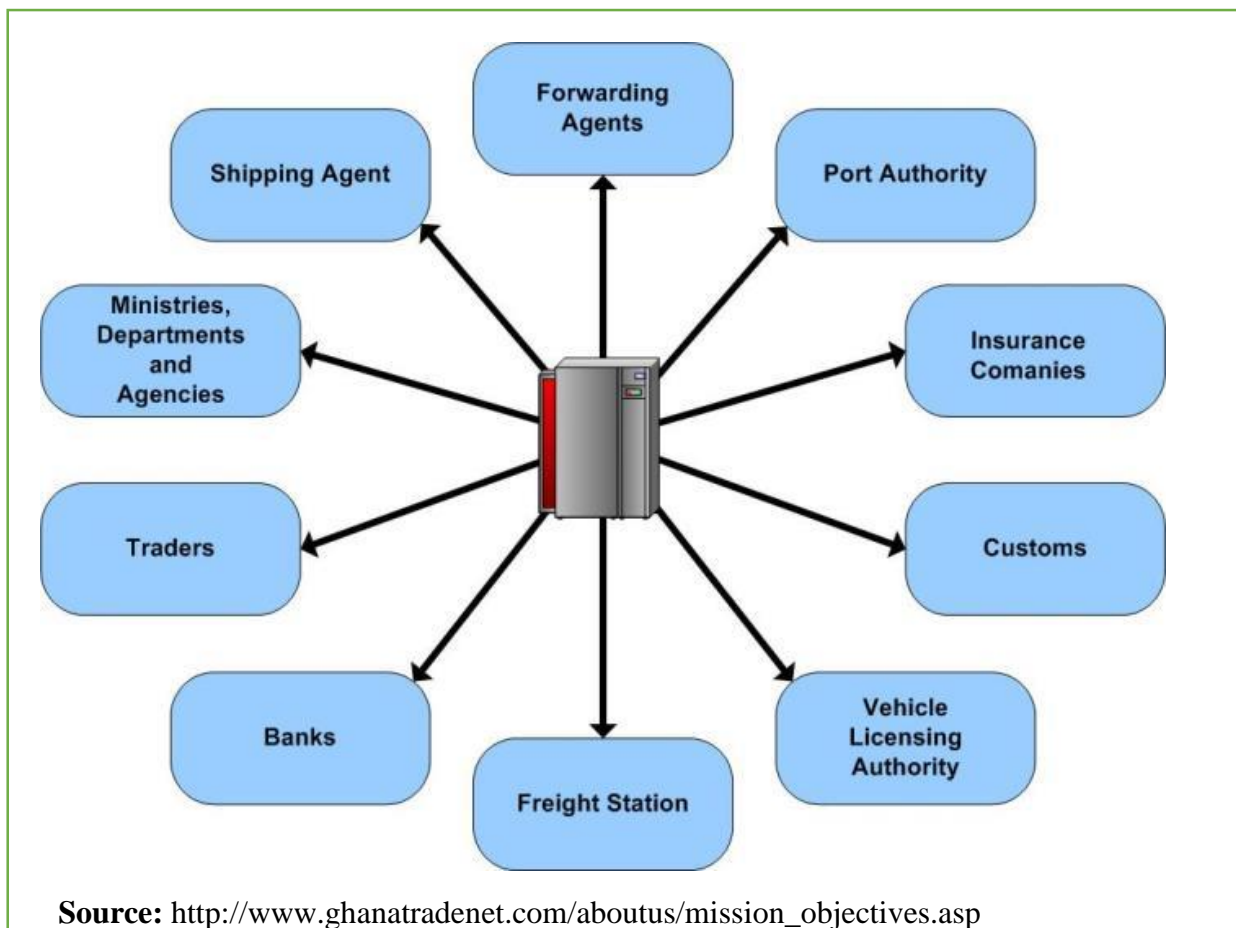
The GCNet system improves on the level of transparency associated with shipping and maritime business. With the GCNet, tax and duty payers (i.e. importers) are very much assured of paying the appropriate charges of which go to the right sources. The level of trust is high as

a result of transparency. Charges and duties are automatically calculated, and this gives some high level of trust of paying appropriate fees on goods and cargo clearance. The system is very open and unbiased to all consignees.

iv. To reduce transaction cost and delays trade operators encounter in clearing consignments through the port.

This was one the major reasons for the establishment of the GCNet. The manual system of cargo clearance was too cumbersome with high level of bureaucracy, which leads to long dwell time of cargoes at the port. This in turn results in cost accumulation as penalties are been charged on keeping consignments in the warehouse beyond the “grace period”. Through the GCNet, there has been experiences of smooth and speedy clearance of consignments at the ports, and this situation tend to minimize cost on clearing goods on the ports of Ghana, hence higher marginal profit for businesses all thing being equal.

In the pursuance of its mission and above mentioned objectives, GCNet has developed, and operates, an electronic messaging platform (TradeNet system), with Electronic Data Interchange (EDI), XML, AINSI, etc. functionalities (i.e. a TradeNet) for processing trade and customs declarations, that seeks to link all stakeholders on a unique, common platform. This reduces the stress encountered and time spent by importers in the clearance of cargoes, which was associated with the pre-GCNet (manual) system of clearance. Figure 2.4 shows the new order with the introduction of the GCNet which has resulted in massive revenue gain for government, cost minimization and reduced dwell time for importer in clearing their consignments at the ports of Ghana:



Source: http://www.ghanatradenet.com/aboutus/mission_objectives.asp

Figure 2.4: The GCNet Situation

2.5.2 How Does the GCNet Work?

The GCNet which is made up of the TradeNet and the GCMS work in a very simple way in interfacing files across its four corners. First, the GCMS enables the performance of all necessary Customs-related processing. By exchanging the EDI files, the TradeNet interfaces GCMS to all stakeholders. The TradeNet does not only interface GCMS to stakeholders, but also interfaces all stakeholder among themselves.

All the data is saved on the GCMS (customs system) and hosted at Customs Headquarters and maintained by customs staff. The system also operates a Call Centre for taking first level enquiries. The call Centre then solve the enquiries or problems. In cases when the Call Centre is unable to solve the enquiries, it is then being referred to the on-site engineer for assistance.

The Single Window system processes Master Manifest submission and distribution, House Manifest submission and distribution, Customs Declaration submission and distribution, Customs Release distribution, Delivery Order distribution, ship and aircraft movement information over web-portal, access to statistics by various stakeholders using data-mining, and issuance and distribution of licenses, permits and exemptions by regulatory agencies (www.ghanatradenet.com, April, 2014).

2.5.3 Benefit of the use of GCNet in Electronic Cargo Clearance in Ghana

The benefits of the GCNet system are multiple as it performs multifaceted role in linking stakeholders among themselves and also interfacing GCMS to all stakeholders in the Trade and Industry Ministries and beyond. The benefits however, could be categorized into the usefulness and how beneficial GCNet has been to the major stakeholders: to importers/exporter, government, and customs.

i. Importers/Exporter

To the importers or exporters, GCNet has ensured a faster clearance time, a more transparent and predictable processes whilst reducing the level of bureaucracy which is characterized by the former (manual) system of cargo clearance. Statistics by [ghanatradenet](http://ghanatradenet.com) shows that, as envisioned, the deployment of the system has resulted in a significant improvement in the clearance time for consignments through the ports. Eighty-one (81%) per cent of consignments cleared through KIA have been effected in one day, as against a pre-GCNet situation of 2-3 days of clearance times.

Again, consignments at the Port of Tema are being cleared within 1-2 days, as against an average 2-3 weeks clearance time in the past, consignments are now being cleared within 1-2

days even when complementary services by other agencies are still being done manually. At Takoradi also, nearly seventy (70) per cent of consignments are cleared within one day of a declaration being validated by the system. Clearances at the land borders of Aflao, Elubo and Paga take, on average, a couple of hours. These remarkable results is on the greater part due to the less bureaucratic GCNet system.

ii. Government

The system has also benefited government and government agencies tremendously. There has been substantial increase in government revenue. The system also helps control and check against government revenue collection/generation systems as all payments go through a single system which leave traceable prints which are verifiable, and this instil some level of accountability. This reduces the tendency of corruption in the revenue collection system.

In the first year, import revenue grew by almost 50%. In subsequent years, there has been an average growth of 23%. According to ghanatradenet, Tema has enjoyed a similar positive revenue collection result with growths of 48.7% in 2003 and 42.5% in 2004, 21% in 2005 and 11% in 2006. As succinctly put by “The Chronicle”, “the introduction of the Ghana Community Network Services Limited (GCNet) at the Port of Tema has boosted the collection performance of Customs Excise and Preventive Service (CEPS)”.

Revenue collection has also increased significantly, in spite of a correspondent growth in exemptions in duty and taxes granted, and in the face of a fairly stable import volume. CEPS KIA, for instance, has acknowledged that “since the implementation of the GCNet/GCMS there has been a marked progressive increase in revenue”. Over the 2002-2003 period, for instance, revenue increased by an average of 38.1%. A further average growth of 37.3% was achieved

over the 2003-2004 period, whilst 16.69% growth was recorded in 2005, and a 33 % growth was attained in 2006 (www.ghanatradenet.com, April, 2014).

iii. Customs

With the introduction of the GCNet, customs operation as well as working condition has seen drastic improvement. It clear indicates improved staff working condition as custom worker now get to work with and in a more technological environment. There has also been substantial increase in customs revenue, hence contribution to Ghana's GDP. The GCNet has also instil some sense of high professionalism in the maritime industry with its single window system that has help curb the issue of corruption and malpractices at the port (www.ghanatradenet.com).

The GCNet which processes approximately 350,000 Customs declarations per annum (1,000 to 1,500 per day representing 98% of total number of declarations) and 6,000 manifests per annum (representing 100% of manifest) was established based on an adoption primarily of the Mauritian model which in itself was developed based on the Singaporean model. The GCNet follow all relevant international standards, hence making customs works more professional in international standards (www.ghanatradenet.com, April, 2014).

In developing the system, GCNet has worked closely with CEPS to re-engineer CEPS operational processes. Among the tasks undertaken were the preparation of new Customs Procedure Codes (CPCs) that meet standards set by the World Customs Organization (WCO). The Ghana Customs Tariff Book has been extensively reviewed and updated to ensure that it meets standards set by the WCO. To enhance CEPS' operational efficiency, a number of innovative features have been incorporated into GCMS. These include the issuance of Electronic Delivery Orders by GPHA and the freight stations as well as the shipping lines.

There is also a Valuation Module that enables CEPS Compliance Officers to quickly access a transactional value database that has been generated in the system, as further validation of values submitted by Declarants or proffered by inspection companies. Similarly a Used Vehicle Valuation Module has been incorporated into the system that brings transparency and automaticity to the valuation process has been introduced.

Within the system also, there is a Transit Module, that among its features captures the consignment details, and then breaks it into sub-consignments, captures transit truck and its driver details, makes provision for the issuance of an electronic transit bond (by SIC, the national transit guarantor), the usage of various seals, IP cameras that record images of the cargoes as they travel along the transit corridor as well as electronic satellite tracking devices. This goes a long way to improve the performance of custom worker, making them more effective and efficient.

To be able to achieve these positive results, GCNet has not only introduced the system, but has undertaken substantial human capacity building through training and skills set development. Nearly 3,000 users, including Customs officers, freight forwarders, port, bank and public sector officials have been trained, in the usage of the system, the related application software for the generation of reports (www.ghanatradenet.com, April, 2014).

2.5.4 Who is connected to GCNet?

The GCNet connects several stakeholders in the Shipping and Maritime Industry who are connected through import and export activities at the ports. The system connects a wide variety of people from the shipping agent, the importer, through to the participating Banks and other agencies. The individuals, corporate bodies or entities connected to the GCNet includes

- i. **Shipping Agents:** The first document to be processed by Customs is the Master Manifest as provided by the Shipping Agent. The Manifest contains all necessary information relating to the cargo present on the carrier.
- ii. **Forwarding Agents:** In the case of consolidation (or groupage), the Forwarding Agent submits the House Manifest to Customs. The House Manifest replaces the corresponding Master Manifest.
- iii. **Declarants:** The word “Declarant” refers to all CEPS approved entities who submit Customs Declarations i.e. clearing Agents, Customs Brokers and approved Self-Declarants.
- iv. **Freight Stations:** The Freight Stations (or Freight Terminals) are the CEPS approved locations where consignments are held between arrival of the carrier and release to the owner after completion of the customs process.
- v. **Collecting Banks:** The collecting banks are the approved financial institutions which physically collect the Duties, Taxes and other charges payable. They confirm payment to GCMS electronically.
- vi. **Other Agencies:** Other agencies involved in the clearance process are usually governmental bodies such as Ministries, Bank of Ghana, Port Authorities, Regulatory bodies etc.

2.5.5 Stations Connected to GCNet

Currently, the GCNet process about 98% of total declarations, and it is connected to two seaports (Tema and Takoradi), the Kotoka International Airport (KIA), and four land borders; Aflao at the Togo border, Elubo on the Cote d’Ivoire border, Kulungugu and Paga on the Burkina Faso border (www.aace-africa.net, May 2014). The GCNet system became very

operational at the Kotoka International Airport (KIA) in January 2003 after the formal launch of the service by the former Vice President of the Republic of Ghana, H.E Alhaji Aliu Mahama.

This replaced the old ASYCUDA system which had been used by customs. Subsequently, the system was deployed in Tema in June 2013, and thereafter Takoradi in November 2003. The land borders were also connected to the system starting with Aflao on the Togo border in September 2004, Elubo on the Western border with Code d'Ivoire in October 2005, and Paga on the Northern border with Burkina Faso in March 2006 (www.ghanatradenet.com, May 2014)

2.5.6 Users of the GCNet

The main client of GCNet is the Ministry of trade and Industry of Ghana. It is the entity that provided the mandate for the system (www.ghanatradenet.com). The Current system users (of the GCNET) or the main clients in terms of system users include the following players in cargo clearance at the Port;

- Customs
- Port Authority
- Shipping Lines (55)
- Custom House Agents freight forwarders (700)
- Commercial Banks
- Freight Terminals
- Airport Freight Handling Operator
- The Central Bank
- Oil marketing Companies
- Driver and Vehicle Licensing Authority

- Shipper's Council
- Ministries, Departments and Agencies (28). e.g. - Ministry of Trade and Industry, Ministry of Finance and Economic Planning, Revenue Agencies Governing Board, Standards Board, Food and Drugs Board, Ghana Investments Promotion Centre, Minerals Commission, Environmental Protection Agency, Free Zones Board, Statistical Service, Narcotics, among others.

2.5.7 Functions of the GCNet in Cargo Clearance⁵

The functions of the GCNet in cargo clearance as already highlighted in the import clearance procedure in earlier sections include. The system is designed to cater for the following activities:

1. Electronic submission of Master Manifests by Shipping Agents and Airlines.
2. Electronic submission of House Manifests by Forwarding Agents / Consolidators.
3. Electronic submission of Customs Declarations by Clearing Agents or Self-Declarants.
4. Payment of Duties & Taxes confirmed electronically by the banks.
5. Electronic transmission of Customs clearance approvals to Terminal Operators
6. Electronic transmission of Delivery Orders from Shipping Agents to Terminal Operators
7. Integrated system for the sharing of files between Customs Officers.
8. Transfer of electronic messages between Customs, Traders and other parties concerned.
9. Import, Export, Warehousing, Free Zone and Transit operations.
10. Processing Final Classification and Valuation Reports (FCVRs) and distribution
11. Issuance and distribution of licenses, Permits and Exemptions by Regulatory bodies

12. Electronic Valuation of Used vehicles
13. Processing of Declarations and distribution. This involve two forms of declaration:
 - i. Standard Declaration.
 - ii. Head load Declaration (Simplified Declaration to capture activities of informal and/or unregistered traders, Process eliminate Custom House Agents)
14. Customs Release and Delivery Order;
 - i. Allows freight terminals and shipping lines to receive Customs electronic declaration advising them of cargo due for examination
 - ii. Allows shipping lines to send instructions to freight terminals advising them that cargo can be released
15. Ship and Aircraft movement information over web portal.
16. Access to statistics by various Stakeholders using data mining tools

2.5.8 Challenges Confronting the Operations of the GCNet

The challenges associated with the operations of the GCNET ranges technical ability, non-compliance, infrastructural lags, among others. These challenges are outlined as below;

- i. Overcoming the human factor, institutional, attitudinal and infrastructural constraints required for a successful change management
- ii. Ensuring high level of compliance among trade operators and declarants
- iii. Overcoming the seeming reluctance of some regulatory agencies to interface with system to enhance trade facilitation
- iv. Developing complementary electronic system for other Trade related agencies (e.g. Port Cargo Management systems and MDA internal systems)
- v. Addressing infrastructural constraints especially at land borders.

2.6 Empirical Evidence of Delay in cargo Clearance

Time and money cost has been major constraints in businesses of all kinds. These are considered as the important factors of competition in the world economy by economists, ports administrators, traders and producers as the infrastructures of global trade play significant role in optimization of transportation costs and distribution of goods.

Congestion at the Port of Tema has gradually become a persistent phenomenon with the tie ups been partially blamed on increased containerization of cargoes (Obilie-Odei, 2006). The extent of port efficiency is very important to traders and businesses as it has an effective role in the business environment (Nasser et al., 2013). Businessmen and importers therefore wish to expedite the clearing of their goods at the minimal time possible, and the period of goods clearing is influenced tremendously by the extent of ports efficiency.

In Nigeria, the Managing Director of Gold-Link Investment Limited (a clearing and forwarding company) confirmed the increasing nature of cargo dwell time and indicated that ports congestion spelt doom for importers, shipping lines, terminal operators, and the Nigerian economy as a whole. This, he anticipated increase in freight charges with increase in turnaround time of vessels. He reiterated that the situation has an economic implication to importers. Thus, the importer would be made to pay for the additional costs that would be transferred to the end users in the form of high prices of goods and services on the market.

The business world is very volatile with prices of goods and services changing every now and then. The customs system at the Port of Tema is such that some cargo take weeks and even months to clear. This period of ships stay in ports, and period of goods sedimentation could be long enough that prices of goods might have changed by the time of clearance. This situation

is usually bad for the business world as prices of the goods at the time of final clearance might not reflect the true cost of the product, hence altering the demand for the goods in the system.

According to Nasser et al (2013), port efficiency has the potency of ensuring customer satisfaction, increasing the level of demand, hence profitability all things being equal. The researchers argued that optimization of loading and unloading operation is considered a very significant approach to curb the issue of delay in clearance; and thereby ensuring the transmission of goods from suppliers to consumers within a minimal time period. Most companies are very successful in their job because they are able to deliver goods duly to their customers with a lower cost.

The delay factors in goods clearance at the Ports of Nigeria according to Emeghara (2008) is also attributive to inadequacies of berth, lack of cargo handling equipment, inadequate manpower, insufficient depth of the entry channel, administrative bottleneck, and too many public holidays and strikes. The complexities and inconveniences of the paper work (manual system of customs procedures) results in delay in goods and cargo clearance (dwell time) which immediately affects efficiency, and has a long run effect on business, and the economic growth of a nation. This manual customs procedures has a toll on the admission and departure operations and subsequently create the problems of massive volumes of goods storage at the ports (Sarai, 1995).

Advocates of the electronic system of cargo clearance initiatives cite reasons as efficiency and increase in port productivity as the motivation for this thinking. These measures Mr. Jacob Adorkor reiterated on the “World Customs Day” would help reduce delay in goods and cargo

clearance which will have a direct effect on transaction costs on the part of business and government and as well increase ports efficiency.

The GCnet system within the new Ghana Revenue Authority (GRA) automation project is also expected to enhance the efficiency of local tax collection system and the receipts thereof. The system also supports the government revenue mobilization efforts where the GCNet has deployed enhanced models to the Ghana Customs Management System. This is evident in the interim dividend of GH¢4 million (GH¢1 is approximately 0.28USD as at February, 2014) presented by the GCNet to government for its 2013 operations. This payment was in respect of government's equity stake in GCNet, which is held by the GRA. The total payment to government over the past two decade's amounts to GH¢67 million, and this is respect of total dividend payment to government through the GRA shareholding in GCNet. There is also a GH¢2 million and GH¢1 million interim dividend payments to Ghana Shippers Authority and the Ghana Commercial Bank from the 2013 operations of GCNet (Ghanaian Times, cited February, 2014).

Also, the Electronic Commerce (eCommerce) draws on the technologies of the GCNet, such as the Electronic Data Interchange (EDI) for its operations. The modern system of automation, where mobile phones, computers and other platforms are employed in trade. With the World Wide Web, modern business transactions are undertaken at a relatively low cost and less time involved (Snider et al., 1992). The GCNet system has therefore enhance business transactions and facilitated trade in a very easy and fashionable manner within the commercial, insurance and financial sectors amongst others.

Again, many stakeholders are involved in the cargo clearance process which involve exchange of documents (often the same documents) among themselves many times. Usually in the absence of the electronic system (e-system) of clearance, exchanges are in hard copies and in most cases, processing of information is executed manually. This system of clearance results in high transaction costs, high dwell or lead time, and incorrect processing to and on the part of the enterprises. It also involves complex government regulations (too many paper work and stages to follow). It is usually and highly difficult to monitor in terms of time and money cost involved. This leads to potential revenue loss to government as a result of corruption, favouritism among others. The situation however goes a long way to also decrease national competitiveness resulting in mass inefficiency and Balance of Trade (BOP) deficits.

According to Bainah (2008), the increasing volume of cargo handled by the Ports had overwhelmed the Customs Excise and Preventive Service, GPHA, clearing agents, freight forwarders and other Port agencies as well as government controlled agencies resulting in inefficiencies in their operations.

In Korea, the Korea Customs Service (KCS) has since 1992 been seeking to automate its customs process through Electronic Data Interchange (EDI) system. By 1998 KCS completed its effort and successfully built a system where all its clearance-related applications and declaration documents were processed electronically. The system, UNIPASS served as a cyber-community which was utilized by about 110 thousand businesses. The Korea Single Window (SW) was established based on the shared views UN/CEPACT and World Customs Organization (WCO) and it complies with the standard guidance provided by UN/CEPACT (<http://www.spidc.gov.kr>, February 2014).

The Korea SW system covered 17 participating organizations (with 4 of them being government agencies like Korean Food and Drug Administration, National Fisheries Products Quality Inspection Service, etc. and the remaining 13 are private organizations that are commissioned with requirement verification task by the Korean government), about 16,068 businesses from the trade community and handles 33 documents (i.e. standard clearance report, import declaration for food items, waste declaration forms, etc.) as of December, 2009.

The Korea SW system is said to have benefited the Maritime Industry and the nation as a whole in boosting its trade on the international scene as the system reduced about 24 hours in import procedures of approval of PGAs and customs declaration. It also aided in reducing cost KRW 250million or over USD 260million thousand annually in EDI transmission fees as electronic documents for process results were transmitted among participating agencies and KCS not through Edi but over the internet. The system also facilitated trade and enabled the trading community to reap the benefits of time and cost reduction. It also allowed government to easily conduct better risk management by actively sharing information submitted by traders, although the system did not generate additional customs revenue since the Korea Custom had already set up the electronic clearance system.

Before the system was introduced, traders had to go through dual tasks of submitting PGA requirement applications and customs declarations to multiple organizations respectively. Different lodging and information system for import reports caused inconvenience and incurred hefty logistics costs including EDI fees. The SW system however curtailed the problem as traders could comply with clearance requirements less effort, time and cost. The system is said to enhance customer satisfaction and confidence in the government since it was in essence, an improvement towards custom-centered administrative system.

Using original and extensive data on container imports in the ports of Douala, Cateen and Refas (2011) also investigates the main factors explaining long dwell time in African ports. The study looked at and demonstrated the interrelationships that existed between the logistics performance of consignees, operational performance of port operators, as well as the efficiency of customs clearance operation.

The study employed the shipment analysis to identify the main determinants of long cargo dwell time and the impact of shipments characteristics. Shipments characteristics such as fiscal regime. Bulking and packaging type, density of value, last port of call, and the region of origin or commodity group were tested. Findings from the study revealed that external factors such as performance of clearing and forwarding agents, shippers, and shipping line strategies also play an important role in the determinants of long dwell times in cargo clearance.

The importance of the electronic system of cargo clearance is highlighted in Kenya; where according to the Kenya Trade Network Agency (KenTrade), a National Electronic Single Window System is underway which is expected to boost trade in the country. This new system of cargo clearance or ports operation is expected to boost trade which will see Kenya save approximately between 12billion and 17billion Shilling in the first three years, and between 24billion and 36billion Shilling per annum thereafter. This development is said to fulfil all imports, exports, transit related regulatory requirements. The Single Window System is also expected to reduce the cargo dwell time at the port of Mombasa from 8days to 3days.

In the standardization of Customs Services in the European Union (EN), Gwardsinska (ND) remarked that the introduction of an electronic system will considerably change the face of (conditions for) international trade. According to her, the EU has made a massive effort towards

a fully automated Customs environment (e-Customs). This effort is left with more work to be done on some initiatives concerning full implementation of the e-Customs vision although a lot of progress has been made in the customs program implementation.

She remarked that the provision of the e-customs services will ensure that customs operates within a completely electronic environment and provide its services electronically. In this system, an IT system named CELINA is used to put customs declarations into electronic forms both in standard and simplified procedures, and to forward electronic documents to CELINA, ECS, ICS, or the INTRASTACT systems.

In the manual system of customs operations, the customs, excise and preventive services (CEPS) who are expected to become facilitators of trade end up creating cost for traders at the borders and ports of their respective countries as far as border-related costs are concerned. For instance, a study by Djankov et al. (2008) revealed that each day of delay at customs is equivalent to a country distancing itself from its trading partners by an additional 85km. This clearly indicates the importance of transport procedure in reducing the dwell time of cargoes at the port. A very transparent customs procedure will eventually help reduce the length of time needed to clear a consignment, hence reduced cost of clearing of consignments. This argument is supported by Hummels (2001) in his studies. According to him, increased transport time dramatically reduces trade. That is, dwell time or delay in shipment, and unpredictability increases inventories and prevent integration into global supply networks.

This is demonstrated in a study by Arvis et al (2007), which revealed that over 50% of total land transport time from port to hinterland cities in Landlocked countries in SSA is spent in

ports. However, it has been unclear as to which component of ports operation contributes most to this dwell time.

Reducing dwell time is very crucial to efficient operation and management of the maritime industries across the World. Some studies over the last decade assumed that controlling agencies such as customs are primarily responsible for long dwell time, with infrastructural lags being the secondary cause. Contrary to this argument however, this assumption does not hold in SSA (Roballet et al, 2012).

2.7 Summary

The chapter started with the historical development of custom brokerage house in Ghana, and looked at the clearance process at the seaports of Ghana. The chapter further reviewed the GCNet system with regards to its constituent, functions, cliental base, the benefits derived by major stakeholders and finally some challenges confronted by the system. Empirical review of literature revealed that relative to the electronic system of cargo clearance, the manual system of cargo clearance in most ports resulted in considerable delay in cargo dwell time; and Djankov et al. (2008) describes a day of this delay to equivalent a country distancing itself from its trading partners by an additional 85km. The next chapter explains the methodology that will be employed in the study.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This section discusses the methodology of the study. This study seeks to review the electronic systems and process of good clearance at the Port of Tema of Ghana, and we seek to achieve this by administering questionnaires to stakeholders to solicit from them the nature of the customs procedures at the ports. It introduces the methods and techniques used in the survey. It also looks at the study area, sampling size and techniques, as well as research design and the model of data analysis.

3.1 Study Area

In Ghana, there are currently two Sea ports; the port of Tema and the Takoradi Port. The study however focuses on the Port of Tema as a case study. The choice of study area is primarily influenced by the volume of jobs handled at the port of Tema (i.e. the port of Tema handles a larger share of Ghana's imports). The proximity of study area to researcher is also another rationale behind the choice of study area, and this will ensure effective and efficient data collection. Most importantly, it is the oldest and biggest of the two seaports of Ghana.

Port of Tema, the bigger of two seaports of Ghana is located within the East Coast of Ghana and 21 nautical miles off the North East Coast of the Capital city, Accra. The port of Tema also has the biggest quantum of imports and it spans a land area of 3.9 million square meters and is flanked by an industrial city, Tema. Within the Port's environs are Inland Clearance Depots (ICDs), warehouses, transport and haulage companies and related service centres.

The Port consists of 12 berths, two jetties, a fishing harbour and a dry dock with draughts ranging from 8.0 m to 11.5m. There are also privately operated offshore facilities. Most marine services including pilotage, towage and mooring are provided by the Port Authority.

Most of the Port's traffic are imports. These consist mainly containerized cargo, break bulk cargo such as rice, sugar, fertilizer, etc., liquid and dry bulk cargo. Exports consist of agricultural bulk like cocoa, Shea nuts, banana, etc. (GHPA 2012)

3.2 Sample Frame

The study was conducted with respect to those who use the port of Tema for their shipping imports. A total of 175 respondents were selected for the survey. Enumerators were employed to administer the questionnaire to respondents (shippers and freight forwarders) each, whilst the field supervisor reviews the answered questionnaires for completeness and appropriateness.

Out of the 175 respondents, 95 consisted of shippers randomly sampled from an estimated population of 1200 shippers. The actual random sampling strategy for recruiting survey respondents (shippers and freight forwarders) was as follow:

A complete list of the names of all the 1200 shippers (the complete sample frame) was written down on a sheet of paper. Next, each name was thorn off one by one and placed into a box. Then one name was selected at a time from the box; one at a time until the complete set of 75 was drawn (sampling without replacement). This same strategy was used in selecting the remaining 80 freight forwarders from the 370 (www.ghanafreightforwarders.org/directory.htm, April 2014), all within the study area. The study also employed the purposive sampling technique in selecting some managerial persons for interview.

3.3 Research Design and Data Source

The research design is a survey design and a combination of stratified, simple random, and purposive sampling method together with structured questionnaire and interviewer's guide were adopted as instrument for primary data collection. The questionnaires were intended to be answered with verbal instruction. It was easy to complete, easy to understand and had been designed to give the individual respondent a stimulus to reflect upon after the survey was completed.

The research design is motivated by the nature of the study and the type of data required for analysis. The survey design is the appropriate method to solicit responses from the various respondents. This is aided by the use of structured questionnaire and interview guides for primary data collection.

Field operation started in the first week of December, 2012 with the pre-testing. This aided in the final drafting of the questionnaire. The second phase of the field work continued in the second week of March, 2013 upon final approval of the questionnaire and it continued for about seven weeks. The task of the enumerator was to interview some randomly sampled respondents from the study area while the field supervisor reviews the submitted questionnaires for completeness, accuracy, and consistency.

The researcher also interviewed the Chief Collector of Customs Division of the Ghana Revenue Authority, Long Room, the Tema Branch Manager of Ghana Commercial Bank, and the Assistant Operations Officer of Destination Inspection Company (DIC), Ghana Gateway Services (GSL), all at the Port of Tema. The interview offered the researcher the opportunity to ask pressing questions with respect to customs clearance procedures at the Port of Tema.

However, purposive method was used to select the management officials who worked with Gateway Services Limited, a Destination Inspection Company, and Ghana Commercial Bank, one of the largest banks which is selected as pay points for import duties in connection with clearance of cargoes at the Port of Tema. The study also employed the random sampling technique for recruiting shippers and freight forwarder for the survey.

3.4 Method of Data Analysis

The method employed for data analysis of this study was essentially descriptive. The data analysis was mainly descriptive. The responses were arranged in categories, analyses, and presented using some quantitative tools such as percentage and averages were also used in the analysis. The data gathered from the survey was analyzed using the Excel Spread Sheet and SPSS software. The SPSS was used in the initial entering and coding of data from the questionnaire, while the Excel was used in extrapolation of graphs and tables.

3.5 Field Problems

The researcher encountered the problem of co-operation from the respondents, especially the freight forwarders. They thought their responses would be used for other purposes other than what was promised them and were therefore reluctant to co-operate. It took the researcher a lot of time to persuade and assure them of the purpose of the study and the fact that any information therein would be kept confidential and used only for the intended purpose before some were willing to co-operate. Also, the researcher under-estimated the amount of time and money that was required to undertake the study, moving from one respondent to the other was time consuming and financially demanding.

3.6 Conclusion

This section of the study looked at the data source, the sample frame and the method of data analysis. A random sampling techniques was employed to elicit responses from a total of 139 respondent with the aid of a carefully structured and pre-tested questionnaire. The Excel Spread Sheet and the SPSS quantitative software was used in data interpolation and analysis. The next Chapter presents and interpret results from the primary data analysis.

CHAPTER FOUR

DESCRIPTIVE ANALYSIS AND RESULTS DISCUSSION

4.0 Introduction

This chapter provides insight on the study results. It presents and discusses with the aid of diagrams, the descriptive statistics from the data analysis. Specifically, the chapter presents the socio-economic characteristics of respondents, and also present and discuss the results on the responses from the various respondents.

4.1 Socioeconomic Characteristics of the Surveyed Individuals

4.1.1 Shippers and Freight Forwarders

As stated previously, a total of 175 respondents (95 shippers and 80 freight forwarders) were expected to be interviewed out of a population of 1570 (1200 shippers and 370 freight forwarders) with the aid of a structured questionnaire. Upon cross-examination of the questionnaires, the researcher realized that there were a total of 36 non-responses, hence remaining 139 questionnaires were found suitable for analysis.

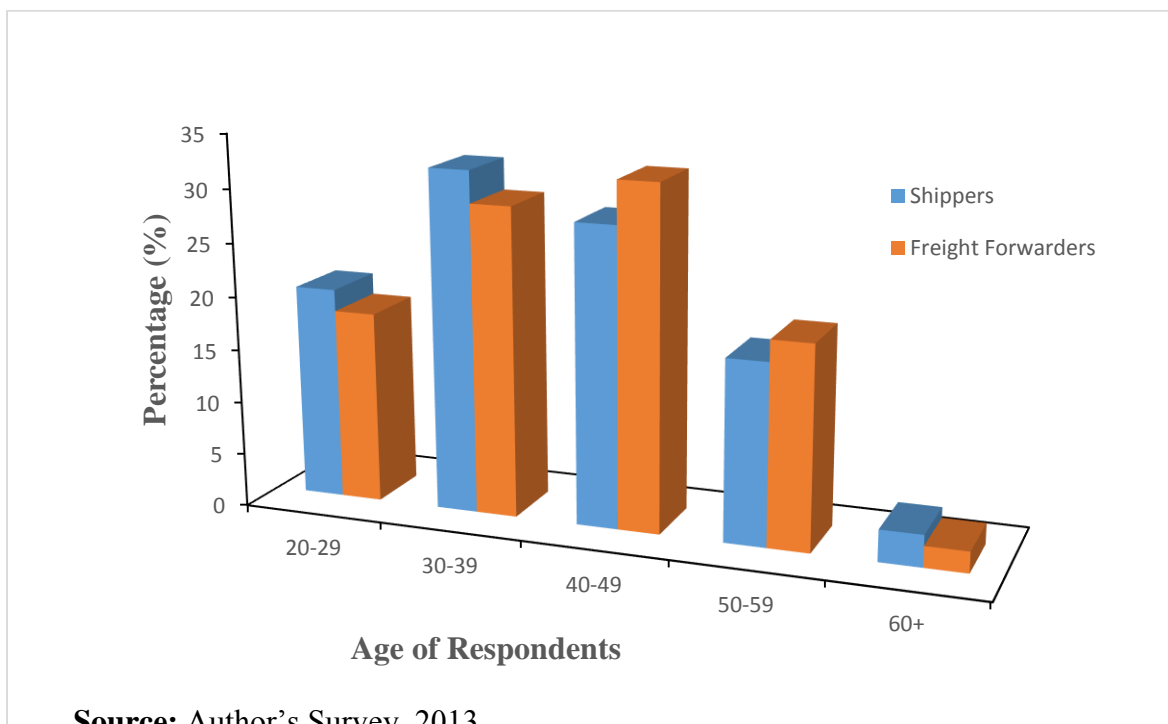
Gender analysis revealed that 93 (nearly 67 per cent) respondents out of the total 139 were males, and the examining 46 (almost 34 per cent) were females. Out of the 75 shippers interviewed, 27 individuals, representing 36% of the sample population were females and 48 (64%) were males. Also, 19 and 45 of the freight forwarders were female and male representing 29.69 and 70.31 per cent respectively. The corresponding gender representation in the various occupations is illustrated in the table 4.1.

Table 4.1: Gender Distribution of Respondents

Gender	Shippers		Freight Forwarders		TOTAL	
	Actual	Per cent (%)	Actual	Per cent (%)	Actual	Per cent (%)
Male	48	64.00	45	70.31	93	66.91
Female	27	36.00	19	29.69	46	33.09
TOTAL	75	100.00	64	100.00	139	100.00

Source: Author's Computation, 2013.

On the age distribution of the respondents, the survey revealed that 19.4% of the sample population are below 30 years, 30.9 % making the majority are between the ages of 30years to 39years, and 29.5% are between 40years and 49years. This was followed by 18%, and 2.2% of the respondents representing the 50-59years, and 60+ age brackets respectively. The age distribution of respondents (Shippers and Freight Forwarders) is shown in Figure 4.1.



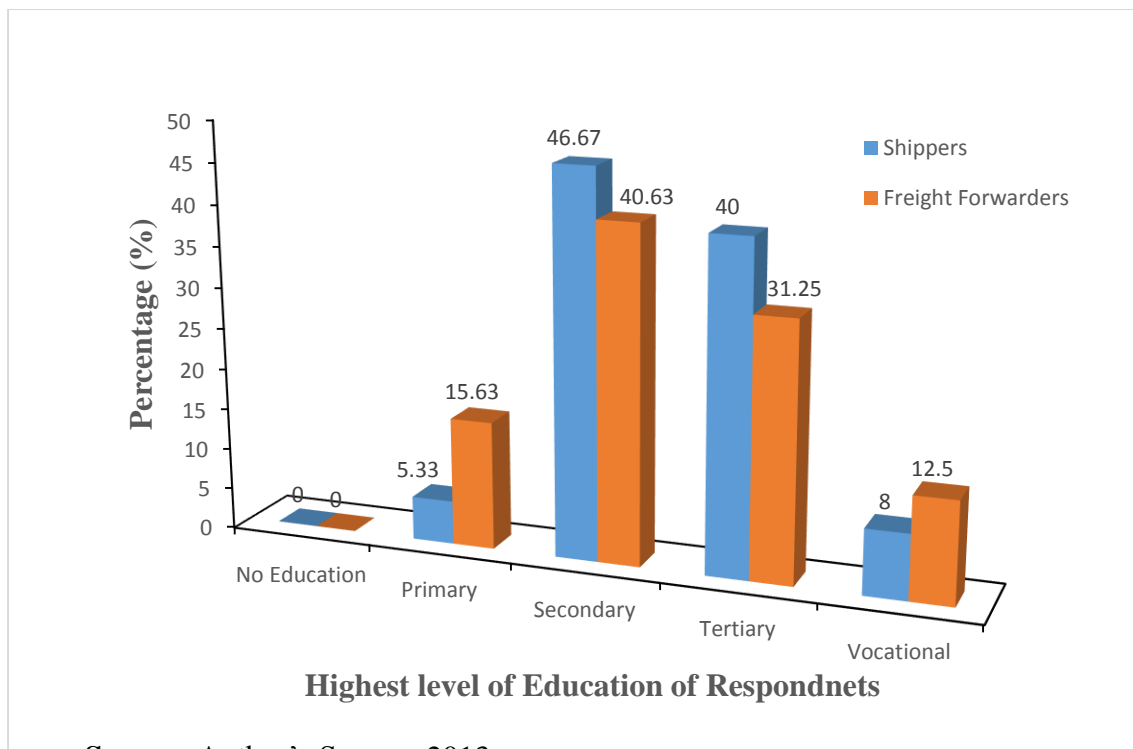
Source: Author's Survey, 2013

Figure 4.1: Age Distribution of Respondents

The results also indicated that all respondents have some form of formal education. The educational level ranged from No education to Vocational education, with No Education being the least, and the reference class as far as this research is concerned. The data on education revealed that 10.07 of the sampled population had Primary, and Vocational Education to be their highest educational level at the time of the survey. The majority (43.88%) of the respondents were reported to have Secondary level of education and this was followed by a 35.97% representation for respondents with Tertiary level of education. The distribution of respondent's highest level of education according to the category of respondents (Shippers and Freight Forwarders) is presented in Figure 4.2

From Figure 4.2, it is clear that 5.33% out of the 10.07% with Primary as highest level of education were shippers with the remaining 15.63% been freight forwarders. The figure also shows clearly that shippers dominated in the Secondary, and tertiary level of education with 46.67% and 40% representations respectively as against 40.63% and 31.25% for freight forwarders. Again, 8% out of the 75 shippers who responded to the questions had vocational as highest level of education with 12.50% of the 64 for freight forwarders with vocational level education.

Concerning the occupational status of respondents, 97 (69.78%) out of the 139 respondents were full-time and 30.22% part-time. 82.67% of the 75 shippers were full-time and the remaining 17.33% part-time. Also, most freight forwarders are full-time workers with 45.63% representation, whilst 45.31% of them being part-time workers. This is shown by table 4.6 in Appendix B.

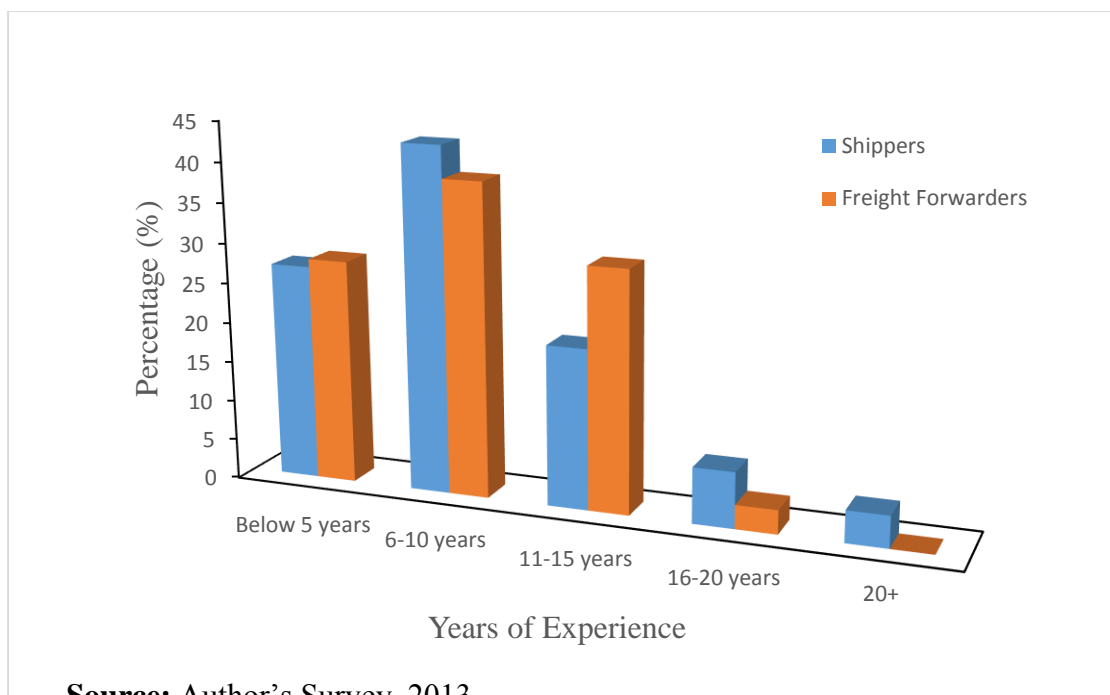


Source: Author's Survey, 2013

Figure 4.2: Highest Level of Education of Respondents

In relation to the years of stay in the particular occupation (years of experience/length of service), a minimum of 6months (0.6 years) and a maximum of 38years were observed. Respondents with less than 5years of work experience represented 27.34 per cent out of the 139 sample. Data also revealed a 24.46, 5.04, and 2.16 per cent representation for respondents with 11-15years, 16-20years, and 20+ years of experience, whilst the majority (41.01%) have 6-10years of work experience. For both shippers and freight forwarders, the majority (42.67 and 39.06) of the respondents have 6-10years of work experience as indicated by the longer bars in Fig. 43.

Years of work experience could serve as a barometer in measuring the extent to which the respondents appreciate the nuances and dynamics of cargo clearance at the Port. The marital status of the respondents also revealed that 75 (53.13%) of the respondents are married while the rest are single or divorced (see Appendix B)



Source: Author's Survey, 2013

Figure 4.3: Years of Experience of Respondents

As depicted in table 4.7, results concerning the role played by respective respondents indicates that majority of the shippers reported their major line of responsibility to be related to importation of goods, with most of the freight forwarder dealing with cargo clearance. Thus 61 shippers (representing 62.24%) deal with imports, whilst 49 (67.12%) freight forwarders deal with cargo clearance. Nearly 18.4% of the shippers stated their post of responsibility to be linked to transportation services. Nine (9), eight (8), and two (2) of them representing 9.18, 8.16, and 2.04 per cent stated their major line of operation is in respect of warehousing, cargo clearance, and other duties respectively.

Additionally, in relation to the freight forwarders, 11 (15.07%) out of the 72 respondents indicated the major line of responsibility to in relation to transportation services. 6.85% also have warehousing as their main line of responsibility. Four (4) of the freight forwarder who

responded to the questions forming 5.48 % each are reported to engage in goods importation and others as their major line of operation or responsibility.

In table 4.7 however, the number of responses are more than the number of respondents for each category of respondent. This is because most of the respondents (Shippers and Freight Forwarders) perform or has more than one post of responsibility. The post of responsibility of respondents is very key as it determines how adequately the respondents are resourced with adequate information about the activities the revolve around the clearance of goods and cargoes at the Port.

Table 4.7: Post of Responsibility of Respondents

Post of Responsibility	Shippers		Freight Forwarders		TOTAL	
	Actual	Per cent (%)	Actual	Per cent (%)	Actual	Per cent (%)
Cargo Clearance	8	8.16	49	67.12	57	33.33
Transport						
Services	18	18.37	11	15.07	29	16.96
Warehousing	9	9.18	5	6.85	14	8.19
Imports	61	62.24	4	5.48	65	38.01
Others	2	2.04	4	5.48	6	3.51
TOTAL	98	100.00	73	100.00	171	100.00

Source: Author's Computation, 2013

4.1.2. Officials from Destination Inspection Companies (DIC), Bank, and Customs

The survey also administered questionnaire to some selected official representatives of DIC, the Bank, and Customs Division of the Ghana Revenue Authority. The responses of the officials of the Destination Inspection Company, Bank and the Customs Division of the Ghana Revenue Authority were gauged by means of interviewer's guide.

4.2 Delay in Cargo Clearance at the Ports

Respondents were also asked some questions pertaining to the system of cargo clearance at the ports and how important the electronic system is in the maritime industry, specifically in cargo clearance. This section presents responses from shippers and freight forwarders as well as the officials from DIC, Bank, and Customs.

4.2.1 Shippers and Freight Forwarders

The results on the responses of Shippers and Freight Forwarder concerning port procedures and cargo clearance, and the time taken in clearing goods from the Port of Tema are presented in this section of the chapter. Respondents were asked about the need and rationale for the electronic system of goods and cargo clearance at the port. These responses are summarized in tables 4.9 and 4.10.

Concerning the need for an electronic system of cargo clearance, 69 out of the 75 shippers, representing 92% of shippers responded in affirmative, whilst the remaining 8% think that there is no need for an electronic system of cargo clearance. Again the majority of freight forwarders (54 out of the total 64) agreed that there was the need for the introduction of the electronic system at the ports. This formed nearly 84.4 % of freight forwarder who responded YES to the question with the remaining having contrast opinion. On the overall, there was an almost 89% YES response to the need for electronic system of goods clearance and a 12% NO response.

Also, the various respondents who responded in affirmation on the need of the electronic system gave various reasons for their stand. In relation to the rationale for the need for the e-system of cargo clearance, responses ranged from cost saving, efficiency, time save in cargo clearance. These responses were however fall under, and as well grouped appropriately into

four reasons as depicted in table 4.10 below. Nearly 35% of shippers argued that the new system will help reduce the bureaucracy in the system of goods and cargo clearance. This was followed by 18 (26.09%), 15 (21.74%), and 12 (17.31%) shippers who cited cost reduction, reduction in time spent in cargo clearance, and efficiency respectively, as the rationale for the electronic system of cargos clearance at the port.

Additionally, the majority (37.04%) of freight forwarders expressed that the electronic system is a step in the right direction in ensuring efficiency in ports operation. Almost 28% of the freight forwarders believed that it will help save cost in ports operation, 25.78 % argued for reduction is the bureaucratic process involved, and 9.26% gave reduction in turnover time as the rationale for the need to introduce an electronic system of goods clearance. This is clearly shown in table 4.10 below.

Table 4.9: Need for Electronic System of Cargo Clearance

Response	Shippers		Freight Forwarders		TOTAL	
	Actual	Per cent (%)	Actual	Per cent (%)	Actual	Per cent (%)
Yes	69	92.00	54	84.38	123	88.49
No	6	8.00	10	15.63	16	11.51
TOTAL	75	100.00	64	100.00	139	100.00

Source: Author's Computation

Table 4.10: Results for Responses on Rational for Need for Electronic System of Cargo Clearance

Responses	Shippers		Freight Forwarders	
	Actual	Per cent (%)	Actual	Per cent (%)
To reduce Procedure of cargo clearance	24	34.78	14	25.93
To ensure efficient operation	12	17.39	20	37.04
Save cost of cargo clearance	18	26.09	15	27.78
Reduce time taken to clear cargo	15	21.74	5	9.26
TOTAL	69	100.00	54	100.00

Source: Author's Computation, 2013

Question ten (10) in the questionnaire enquired from shippers and freight forwarders on a brief identification of the cargo clearance procedures at the ports. The question sort to solicit from shippers and freight forwarder on the procedures involved in the electronic clearance system.

Responses were however expressed generally as follows:

The process initially involves the submission of documents to the Freight Forwarders. This is followed by the submission of these relevant documents to the Destination Inspection Company (DIC) for inspection, after which the final submission of the Final Clarification and Validation Report (FCVR) details is made to GCNet. The validation report is then sent to the bank for payment of relevant and appropriate duties and or charges, upon which the process is finalized with a custom compliance.

These stages or procedures in the electronic clearance system is summarized in the table 4.11 presented below.

Table 4.11: Cargo Clearance Procedures at the Port of Tema

S/N	Cargo Clearance Procedures at Port of Tema as expressed by Shippers & Freight Forwarders
1	Submission of documents to freight forwarders
2	Submission of documents to DIC for inspection
3	Submission of FCVR details to GCNET
4	Validation of report sent for the payment of appropriate charges and duties
5	Customs compliance

Source: Author's Computation, 2013

Also, question six (6) in the questionnaire asked about the number of days it takes to clear a cargo from the port, before and after the electronic system was introduced. Respondents provided different days from their own perspective and the results were analyzed accordingly. The shippers provided different number of days ranging from a minimum of 4 days to a

maximum of 16 days. That provided by freight forwarders ranged from 3 days to 14 days. However to arrive at a more experimental figure on the dwell time, the data on the number of days were averaged⁶ by dividing the total number of days provided by each category or respondents and divided by the total number of respondents.

Clearly indicative in table 4.12 below, the total number of days provided by the shippers and freight forwarders are 802 days and 615 days respectively for periods before the electronic system was implemented. This gives a mean (average) days of 10.69 and 9.61 by shippers and freight forwarders in that order. Similarly, analysis for periods after the implementation of the electronic system resulted in a mean of 4.64 days and 3.36 days for cargoes clearance according to shippers and freight forwarders respectively.

This clearly indicate that the electronic system of clearance at the port save more than 100% of time. As presented in table 4.12 below, the electronic system according to shippers has reduced time dwell time from an average of 10.66 days to 4.64 days which represents a percentage change in the dwell time by more than a half (57%). Analysis for that of freight forwarders also indicate a more than 65% save in time taken to clear cargoes from the port.

Results however show an improvement in the clearance of goods and cargoes at the sea ports of Tema with an introduction of the electronic clearance system. The electronic system of clearance is shown to fasten the ports operations and customs procedure, thereby doing double the work of the paper system at a given time. The time saved could therefore translate into

⁶ Average number of Days is defined as the mean number of days and calculated as a ratio of the summation of the number of days (total number of days) to the total number of respondents.

efficiency if the quality of service is at least the same as that provided by the original, manual system of clearance.

Table 4.12: Days Taken to Clear Cargo: Before & After implementation of Electronic System of Cargo Clearance

Period	Shippers		Freight Forwarders	
	Total (days)	Average (days)	Total (days)	Average (days)
Before	802	10.69	615	9.61
After	348	4.64	215	3.36
No. of Respondents	75		64	

Source: Author's Computation, 2013

From the Table 4.13, out of the 75 who responded to the questionnaires, 11 of them making 14.67% suggested that they needed training in documentation in order that they are well equipped to be able to file and present genuine documents in the clearance process. Also, 34 of them representing 45.33% recommended training on customs procedures whilst 30 (40%) proposed training programme on ethics.

Additionally, 31 of the freight forwarders representing 48.44% proposed training on the need to identify genuine documents for submission whilst 16 (25%) suggested training on custom procedures, and the remaining 26.56% recommended a training on ethics. The recommendation on need for training in ethics could be as a result of deliberate under declaration of values of imported cargoes by some of the shippers and freight forwarders.

Table 4.13: Training Needs Required for Shippers & Freight Forwarders

Response	Shippers		Freight Forwarders	
	Actual	Per cent (%)	Actual	Per cent (%)
Documentation	11	14.67	31	48.44
Customs procedures	34	45.33	16	25.00
Ethic	30	40.00	17	26.56
TOTAL	75	100.00	64	100.00

Source: Author's Computation, 2013

On giving recommendations to the challenges faced, the shippers and freight forwarders generally suggested that all payments should be done at the central system (GCNET) and that after selectivity process; Customs have to release cargo to the exit without the interaction of the freight forwarder by applying to the Port Audit Clearance method.

4.2.2 Officials from Destination Inspection Companies (DIC), Bank, and Customs

Concerning the various post of responsibility, the official from the DIC had responsibility of vetting genuineness of documents and assessing the values of goods for dutiable taxes payable by the shippers. The bank official had the responsibility of ensuring that duties paid are kept in their respective accounts and the related documents are sent to the stakeholders for auditing and compliance purposes. The official from the Division had the responsibility of ensuring that the required customs procedures are observed by clearing agents in respect of getting adequate valuation for their cargoes, vetting the authenticity of documents as well as ensuring compliance.

Again, in respect of their views concerning the need for an electronic system (e-system) of cargo clearance at the port, all three respondents from DIC, the bank, and Customs answered in affirmative indicating a 100% acceptance and need for the electronic system of ports operation in respect of goods and cargo clearance. The official from the DIC indicated that it

would facilitate their vetting and valuation of documents from shippers, thereby saving shippers of more valuable time. The bank official argued that the electronic clearance would make transactions more transparent to shippers, whilst the Customs official stated that it would facilitate the work of shippers since they would be able to transact with the various stakeholders on a common technological platform.

Moreover, in respect of the question concerning whether shippers needed training in e-clearance procedures, all the respondents answered in the affirmative. The DIC official stated that shippers needed training in relation to the cargo clearance procedures at the Port. The bank official suggested that shippers needed training in ensuring that they deal with genuine partners abroad in relation to transactions leading to imports whilst the official from the Customs Division of the Ghana Revenue Authority indicated that shippers needed training in custom procedures of cargo clearance.

Concerning what shippers should do to enable the effective implementation of the GCNET the respondents generally suggested that shippers should get themselves acquainted with the clearance procedures and ensure that information they furnish the stakeholders is accurate to enable smooth clearance process. This they explained to be a step in curbing the traffic within the customs procedures at the ports.

Notwithstanding the benefits derived from the new system of cargo clearance and its technological nature, it is without lapses. The system is confronted by challenges ranging from technical ability, cost of training, and system compromises among others. In relation to the challenges facing the effective implementation of the GCNET, the official from the DIC indicated that complementary electronic system for the Port is yet to be developed. Also, the

official from the bank stated that the reluctance of some of the regulatory agencies to interface with the system militates against trade facilitation. More so, the official from the Customs Division of the Ghana Revenue Authority stated that the major challenge facing the effective implementation of the GCNET is in relation to ensuring compliance among trade operators and declarants.

Officials however suggested remedial measures to the challenges faced by the new and improved system of goods clearance at the port. The official from the DIC proposed that there should be frequent stakeholder meetings to deliberate on issues that affect the various players in the industry. Also, the official from the bank expressed that financial institutions should be ready to aid the players in organizing training programmes for the shippers. Also, the Customs official recommended that other stakeholders should endeavour to integrate their systems to the GCNET platform.

4.3 Summary

In the first part of this chapter, the discussion highlights the descriptive statistics on some relevant variables of the surveyed respondents including their age, sex, educational background, years of experience, and work status among others. Particular attention was also paid to the analysis of the delay factors and conditions under the system of goods clearance at the ports of Tema. Generally, results suggests that the electronic system of cargoes and goods clearance at the ports is very significant in the operation process of the port. It was clearly indicative that the electronic system save time in cargo clearance by reducing the dwell time, which could also transcend into efficiency, more jobs, reduced turnover time, all things being equal. The next chapter however concludes the study by summarizes the finding, and provide some policy recommendations based on the results from analysis of the surveyed data.

CHAPTER FIVE

CONCLUSION AND RECOMEDATION

5.0 Introduction

This chapter concludes the work and recommends policies based on the results from the data analysis. The chapter also make possible future research suggestions in the area of study. The research findings are concisely presented in the opening section of this chapter. The second part presents some remedial measures based on the findings with the last chapter outlining the limitations of the study and proposes some future research areas in the field.

5.1 Summary of Findings

Analysis of data revealed the socioeconomic characteristics of respondents as well as the empirical results from the responses concerning the electronic system of cargo clearance at the port. A total of 142 individuals were interviewed (i.e. 139 out of which 75 are shippers, 64 freight forwards, and the remaining three being representatives from DIC, the bank, and customs. Majority of each category of respondents were male: 64% shippers, 70% freight forwarders, and the other⁷ three all being males. The majority (32% and 31%) of the shippers and freight forwarders fall within the 30-39 and 40-49year bracket respectively, whilst the bank and Custom representative are within the 50-59 year bracket with the respondent from DIC falling in the 40-49 years category.

Also, the bulk of shippers and freight forwarders (almost 43% and 39% respectively) have 6-10 years of work experience, and the other respondents having 5-10years of experience. On

⁷ Other here referred to the three respondents from DIC, Bank, and Customs

educational level also, the other respondents have tertiary level as highest level of education whilst majority of shippers and freight forwarder (nearly 47% and 41%) with highest level of education being secondary.

Results also revealed that all three other respondents are married and were all on full time employment. Approximately 55% of shippers and 53% of freight forwarders are married, and 62% and 67% are on full time employment in that order. Out of the 75 shippers, 62% forming the majority had their post of responsibility relating to imports, and majority of freight forwarder (67%) being engaged in cargo clearance as their post or line of responsibility.

In relation to the need for electronic system of cargo clearance, 92% shippers, 83% freight forwarders, and all other three representative from DIC, Bank and Customs responded in affirmative; citing various reasons for the need for the GCNet system. These rationale included cost and time save, efficiency, transparency, conducive business climate, policy coherence, among others. The training needs also suggested by respondents were also categorized into training on documentation, customs procedures, maritime and shipping ethics, policy sensitization, etc.

Finally, in response to the question on the days spent on cargo and goods clearance (dwell time) under the manual and electronic systems, general results revealed that with the manual (paper work) system, it takes an average⁸ of 11.61 days to clear a cargo from the ports as against 4days with the introduction of the electronic system. This gives an approximately 56% decrease in cargo dwell time at the ports of Tema with the use of the GCNet system according to

⁸ Overall average refers to the mean of the days provided by the shippers and freight forwarders all together. Calculation is shown in Appendix D.

respondents (see Appendix D). It could however, holding all other things equal, be inferred that the electronic system of cargo clearance is most efficient, time and cost saving, and therefore preferred over the manual (paper work) system.

5.2 Conclusion

This study which set out to review the electronic system of cargo clearance in Ghana using Port of Tema as a case study was necessitated by the argument concerning the long dwell time at our ports as a result of the lengthy and time-consuming manual clearance system (paper work). The study started with an introductory chapter which stated the problem of the study, the research justification, a brief methodology, and gives an outline of the study (chapter outlines).

The second chapter looked at a review of related literature in the area of study. This was followed by the research methodology in the third chapter. Chapter three basically was focused on the study area, sample frame, research design and source of primary data, which was gathered with the help of a questionnaire, and also explained the method of data analysis.

Chapter four examines the data collected by analyzing and presenting results with the aid of some economic tools of analysis (tables, graphs, etc.). The results presentation is put into socioeconomic characteristics of respondents which presented the sex, age, marital status, work status, work experience, educational level of respondents among others; and the cargo dwell time which also revealed cargo and ports activity specific results from responses from surveyed respondents.

Employing a dataset sourced from a survey of respondents at the Port of Tema, the study aimed at reviewing the electronic system of cargo clearance at the Port of Tema. The purpose of the study was to examine the research questions posed in section 1.4; namely:

- i. Are there any benefits to shippers in relation to the use of electronic process of cargo clearance at the Port of Tema? If yes, what are the cost savings to the shippers?
- ii. Do shippers face challenges in clearing cargo at the Port? If yes, what are they?
- iii. Do shippers derive any benefits in respect of electronic cargo clearance at the Port? If yes, what are they?
- iv. What measures could be deployed to improve the cargo clearance system and process at the Port?

From the study. It could be concluded that shippers benefit from the introduction of the electronic system of cargo clearance in numerous ways. The benefit which were however grouped under four includes reduction in bureaucratic procedure involved by way of harmonizing the lengthy documentation and paper works into a simple and fast moving electronic system. This, in turn, leads to reduction in cargo dwell time and hence save time which translate into reduced cost of cargo clearance. The faster cargoes are cleared from the ports, the lower the cost involved all things being equal. The new process therefore saves time and money cost involved in clearing goods at the ports. This results in an increased revenue for both government and traders (businesses) and as well improve the relationship between government and port management institutions and traders (Asuliwonno, 2011).

Again, as explained by some respondents, the electronic system would facilitate the vetting and valuation of documents from shippers, hence saving time and cost. The system will ensure transparency in documentation as well as facilitate the work of shippers since they would be able to transact businesses with the various stakeholders such as the MDAs (Ministries, Departments and Agencies), the Port, etc. This will help halt the increasing difficulties and corruption associated with ports and customs activities (Asuliwonno, 2011).

Concerning the problems or challenges hindering the effective implementation and operation of the GCNet, review of the questionnaire and responses from respondents revealed that there is no complementary electronic system for the Port of Tema. There was also the problem of instilling trade policies and ensuring compliance with trade operator (shippers) and declarants. Lack of commitment on the part of regulatory authorities and government on upholding the imports and exports restriction also contributed to the numerous problems or challenges, and the regulatory bodies were also reluctant to interface with the system which militates against trade facilities and restrictions.

These challenges coupled with some others hindered the smooth and effective operation of the GCNet in the port administration as most people or stakeholders in the ports and customs administration are unwilling to embrace the GCNet system in the ports operation and administration (Asuliwonno, 2011).

5.3 Recommendations

On the basis of the study, the Shippers and Freight Forwarders generally recommended that;

- i. shippers should get themselves acquainted with the clearance procedures and documentations
- ii. Shippers should ensure that information they furnish the stakeholders is accurate to enable smooth cargo clearance process.

The management officials also made the following suggestions;

- i. Ensuring that the required customs clearance procedures are observed by freight forwarders in respect of getting adequate valuation for their cargoes, vetting the authenticity of documents as well as ensuring compliance.

- ii. That there should be frequent stakeholder meetings to deliberate on issues that affect the various players in the industry.
- iii. That the financial institutions should be ready to support financially in relation to training programmes initiated for shippers and forwarders on cargo clearance procedures.
- iv. Stakeholders should endeavour to integrate their systems to the GCNet platform to facilitate easy access and sharing of information among the various players connected to cargo clearance in Ghana.

Based on the general findings of the study however, the researcher make the following recommendations;

- i. The Ghana Shippers' Authority should liaise with the Ghana Institute of Freight Forwarders to deliberate on ways of designing refresher courses for shippers and the shipping public
- ii. The Customs Division of the Ghana Revenue Authority should also liaise with the various stakeholders to offer training to enable them know of any relevant changes in cargo clearance custom procedures

5.4 Limitations and Area for Further Study

This work was limited by time and financially constrained in the data collection process. The study could have looked at the general port system in Ghana (both Tema and Takoradi) to give a more representative result on the nature of the electronic system of ports operation in Ghana. This was however limited in time and finance, which was basically one of the reasons for choosing Port of Tema as the study area due to proximity to and convenience for the researchers.

Also, this study reviewed the electronic system of Cargo clearance at the Port of Tema. A future research would aim at the port system in Ghana as whole. Further studies could also focus on a comparative analysis of the two ports (Tema and Takoradi) in terms ports operation and efficiency with regards to cargo dwell time and processes in cargo clearance.

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Appendix A: Review of the Electronic System of Cargo Clearance Questionnaire

I. QUESTIONNAIRE FOR SHIPPERS

Introduction

This research is an academic exercise in a partial fulfilment of the award of the Master of Arts Degree in Ports and Shipping Administration at the Regional Maritime University, Accra. I would be very grateful if you could furnish me with all the necessary answers to the questions stated below. All information provided will be treated strictly confidential and will only be used for study purposes. Thank you.

Name of Enumerator: Date of interview /...../.....

(Please tick and answer as appropriate)

Section A (Background)

1. Age
 - a. 20 – 29 years []
 - b. 30 – 39 years []
 - c. 40 – 49 years []
 - d. 50 – 59 years []
 - e. 60 years + []
2. Gender
 - a. Male []
 - b. Female []
3. What is your work status?
 - a. Full time []
 - b. Part time []
4. Marital Status
 - a. Married []
 - b. Single []
5. Years of work experience in freight forwarding

12. Briefly identify the electronic cargo clearance processes at the Port

.....
.....

13. What are the challenges facing electronic cargo clearing systems at the Port?

.....
.....

14. Do you think that shippers should be trained in the use of e-cargo clearance systems at the Port?

15. What should be done to improve the cargo clearance procedures at the Port?

.....
.....

16. What should the Ghana Shippers Authority do to facilitate cargo clearance at the Port?

.....

17. What should shippers do to facilitate the cargo clearance procedure at the Port?.....

.....

II. INTERVIEWER'S GUIDE FOR GPHA - PORT OF TEMA

This research is an academic exercise in a partial fulfilment of the award of the Master of Arts Degree in Ports and Shipping Administration at the Regional Maritime University, Accra. I would be very grateful if you could furnish me with all the necessary answers to the questions stated below. All information provided will be treated strictly confidential and will only be used for study purposes. Thank you.

Name of Enumerator: Date of interview /...../.....

(Please tick and answer as appropriate)

Section A (Background)

1. Age

- a. 20 – 29 years []
- b. 30 – 39 years []
- c. 40 – 49 years []
- d. 50 – 59 years []
- e. 60 years + []

2. Gender

- a. Male []
- b. Female []

3. What is your work status?

- a. Full time []
- b. Part time []

4. Marital Status

- a. Married []
- b. Single []

5. Years of work experience with the Port

- a. Below 5 years []
- b. 6 – 10 years []
- c. 11 – 15 years []
- d. 16 – 20 years []
- e. 20 years + []

Section B (Subject Matter)

6. Name of Department and Rank.....
7. What does the concept of electronic cargo clearance at the Port mean?

8. Do you think there is need for electronic cargo clearance processes at the Port?
 A. Yes [] b. No []
9. If yes, Please explain.....
10. What are the customs cargo clearance procedures at the Port?

11. What is/was the number of days it take/took to clear cargoes
 a. Before electronic clearance.....
 b. After electronic clearance.....
12. What is/was the cost of clearing one '20' footer container at the Port
 a. Before electronic cargo clearance.....
 b. After implementation of electronic cargo clearance?

13. What are the benefits shippers are likely to derive from the electronic cargo clearance processes?

.....

14. Do you think shippers need any logistical solutions to take full advantage of the e-clearance system?

a. Yes []

b. No []

15. If yes, please identify any two of the logistics solutions needed by shippers

.....
.....
.....

16. What role should shippers play to enable the Port Authority implement the system effectively?

17. What are the challenges facing electronic cargo clearance processes at the Port?

.....
.....

18. What should the Port Authority do to enhance the efficiency of the e-clearance processes at the Port?

.....

19. In your view, what should be done to improve electronic cargo clearance at the Port?

.....
.....
.....

III. INTERVIEWER GUIDE FOR GCNET

This research is an academic exercise in a partial fulfilment of the award of the Master of Arts Degree in Ports and Shipping Administration at the Regional Maritime University, Accra. I would be very grateful if you could furnish me with all the necessary answers to the questions stated below. All information provided will be treated strictly confidential and will only be used for study purposes. Thank you.

Name of Enumerator: Date of interview /...../.....

(Please tick and answer as appropriate)

Section A (Background)

1. Age
 - a. 20 – 29 years []
 - b. 30 – 39 years []
 - c. 40 – 49 years []
 - d. 50 – 59 years []
 - e. 60 years + []
2. Gender
 - a. Male []
 - b. Female []
3. What is your work status?
 - Full time []
 - b. Part time []
4. Marital Status
 - a. Married []
 - b. Single []
5. Years of work experience with the Port
 - a. Below 5 years []

- b. 6 – 10 years []
- c. 11 – 15 years []
- d. 16 – 20 years []
- e. 20 years + []

Section B (Subject Matter)

6. What is your post of responsibility?

.....

7. How long have you been at this post?

.....

.....

8. Do you consider that there is need for electronic cargo clearance process at the Port?

- a. Yes [] b. No []

9. If yes, Please explain.....

.....

10. Briefly identify the electronic cargo clearance procedures at the Port?

.....

.....

.....

11. What are the benefits shippers are likely to derive from the electronic cargo clearance process?

IV. QUESTIONNAIRE FOR BANKS

This research is an academic exercise in a partial fulfilment of the award of the Master of Arts Degree in Ports and Shipping Administration at the Regional Maritime University, Accra. I would be very grateful if you could furnish me with all the necessary answers to the questions stated below. All information provided will be treated strictly confidential and will only be used for study purposes. Thank you.

Name of Enumerator: Date of interview /...../.....

(Please tick and answer as appropriate)

Section A (Background)

1. Age
 - a. 20 – 29 years []
 - b. 30 – 39 years []
 - c. 40 – 49 years []
 - d. 50 – 59 years []
 - e. 60 years + []
2. Gender
 - a. Male []
 - b. Female []
3. What is your work status?
 - a. Full time []
 - b. Part time []
4. Marital Status
 - a. Married []
 - b. Single []
5. Years of work experience with the Port
 - a. Below 5 years []

b. 6 – 10 years []

c. 11 – 15 years []

d. 16 – 20 years []

e. 20 years + []

Section B (Subject Matter)

6. What is your post of responsibility?

.....

7. How long have you been at this post?

.....

8. Do you consider that there is need for electronic cargo clearance process at the Port?

a. Yes [] b. No []

9. If yes, Please explain.....

.....

10. Briefly identify the electronic cargo clearance procedures at the Port?

.....

.....

.....

11. What are the benefits shippers are likely to derive from the electronic cargo clearance process?

.....

12. Do you consider that shippers need any logistical training to take full advantage of the e-clearance system?

b. Yes []

b. No []

13. If yes, please identify any two of the logistics training needed by shippers

.....
.....
.....

14. What should shippers do to enable the Banks implement the system effectively?

.....
.....

15. What are the challenges facing the Banks since the introduction of the electronic cargo clearance process at the Port of Tema?

.....
.....

16. What should the Banks do to enhance the efficiency of the e-clearance process at the Port?

.....

17. In your view, what should be done to improve electronic cargo clearance at the Port?

.....
.....

Thank You.

V. QUESTIONNAIRE FOR REGULATORY AGENCIES

This research is an academic exercise in a partial fulfilment of the award of the Master of Arts Degree in Ports and Shipping Administration at the Regional Maritime University, Accra. I would be very grateful if you could furnish me with all the necessary answers to the questions stated below. All information provided will be treated strictly confidential and will only be used for study purposes. Thank you.

Name of Enumerator: Date of interview /...../.....

(Please tick and answer where applicable)

GHANA STANDARDS AUTHORITY, PORT HEALTH AND FOOD AND DRUGS BOARD

Section A (Background)

1. Age
 - a. 20 – 29 years []
 - b. 30 – 39 years []
 - c. 40 – 49 years []
 - d. 50 – 59 years []
 - e. 60 years + []
2. Gender
 - a. Male []
 - b. Female []
3. What is your work status?
 - a. Full time []
 - b. Part time []
4. Marital Status
 - a. Married []
 - b. Single []

5. Years of work experience with the Port
- a. Below 5 years []
 - b. 6 – 10 years []
 - c. 11 – 15 years []
 - d. 16 – 20 years []
 - e. 20 years + []

Section B (Subject Matter)

6. What is your post of responsibility?

.....

7. How long have you been at this post?

.....

8. Do you consider that there is need for electronic cargo clearance process at the Port?

- a. Yes [] b. No []

9. If yes, Please explain.....

.....

10. Briefly identify the electronic cargo clearance procedures at the Port?

.....

.....

11. What was/is the number of days it take/took to clear cargoes

- a. Before electronic clearance.....

- b. After electronic clearance.....

12. What was/is the cost of clearing one '20' footer container at the Port

13. Before electronic cargo clearance.....

14. After implementation of electronic cargo clearance?

15. What are the benefits shippers are likely to derive from the electronic cargo clearance process?
.....

16. Do you consider that shippers need any logistical training to take full advantage of the e-clearance system?

c. Yes []

b. No []

17. If yes, please identify any two of the logistics training needed by shippers
.....
.....
.....

18. What should shippers do to enable the Regulatory Agencies implement the system effectively?
.....
.....

19. What are the challenges facing electronic cargo clearance process at the Port of Tema?
.....
.....

20. What should the Regulatory Agencies do to enhance the efficiency of the e-clearance process at the Port?

.....

21. In your view, what should be done to improve electronic cargo clearance at the Port?

.....

.....

Thank You.

Appendix B: Socioeconomic Characteristics of Respondents**Table 4.1:** Gender Distribution of Respondents

Gender	Shippers		Freight Forwarders		TOTAL	
	Actual	Per cent (%)	Actual	Per cent (%)	Actual	Per cent (%)
Male	48	64.00	45	70.31	93	66.91
Female	27	36.00	19	29.69	46	33.09
TOTAL	75	100.00	64	100.00	139	100.00

Source: Author's Computation, 2013

Table 4.2: Age Distribution of Respondents

Age	Shippers		Freight Forwarders		TOTAL	
	Actual	Per cent (%)	Actual	Per cent (%)	Actual	Per cent (%)
20-29	15	20.00	12	18.75	27	19.42
30-39	24	32.00	19	29.69	43	30.94
40-49	21	28.00	20	31.25	41	29.50
50-59	13	17.33	12	18.75	25	17.99
60+	2	2.67	1	1.56	3	2.16
TOTAL	75	100.00	64	100.00	139	100.00

Source: Author's Computation, 2013

Table 4.3: Years of Experience of Respondents

Years	Shippers		Freight Forwarders		TOTAL	
	Actual	Per cent (%)	Actual	Per cent (%)	Actual	Per cent (%)
Below 5 years	20	26.67	18	28.13	38	27.34
6-10 years	32	42.67	25	39.06	57	41.01
11-15 years	15	20.00	19	29.69	34	24.46
16-20 years	5	6.67	2	3.13	7	5.04
20+	3	4.00	0	0.00	3	2.16
TOTAL	75	100.00	64	100.00	139	100.00

Source: Author's Computation, 2013

Table 4.4: Highest Educational Level of Respondents

Educational Level	Shippers		Freight Forwarders		TOTAL	
	Actual	Per cent (%)	Actual	Per cent (%)	Actual	Per cent (%)
No Educ.	0	0.00	0	0.00	0	0.00
Primary	4	5.33	10	15.63	14	10.07
Secondary	35	46.67	26	40.63	61	43.88
Tertiary	30	40.00	20	31.25	50	35.97
Vocational	6	8.00	8	12.50	14	10.07
TOTAL	75	100.00	64	100.00	139	100.00

Source: Author's Computation, 2013

Table 4.5: Marital Status of Respondents

Marital Status	Shippers		Freight Forwarders		TOTAL	
	Actual	Per cent (%)	Actual	Per cent (%)	Actual	Per cent (%)
Married	41	54.67	34	53.13	75	53.96
Single	34	45.33	30	46.88	64	46.04
TOTAL	75	100.00	64	100.00	139	100.00

Source: Author's Computation

Table 4.6: Work Status of Respondents

Marital Status	Shippers		Freight Forwarders		TOTAL	
	Actual	Per cent (%)	Actual	Per cent (%)	Actual	Per cent (%)
Full-Time	62	82.67	35	54.69	97	69.78
Part Time	13	17.33	29	45.31	42	30.22
TOTAL	75	100.00	64	100.00	139	100.00

Source: Author's Computation

Table 4.7: Post of Responsibility of Respondents

Post of Responsibility	Shippers		Freight Forwarders		TOTAL	
	Actual	Per cent (%)	Actual	Per cent (%)	Actual	Per cent (%)
Cargo Clearance	8	8.16	49	67.12	57	33.33
Transport Services	18	18.37	11	15.07	29	16.96
Warehousing	9	9.18	5	6.85	14	8.19
Imports	61	62.24	4	5.48	65	38.01
Others	2	2.04	4	5.48	6	3.51
TOTAL	98	100.00	73	100.00	171	100.00

Source: Author's Computation, 2013

Table 4.8: Socioeconomic Characteristics of Other Surveyed Officials

Officials	Socioeconomic Background					
	Sex	Age	Work Experience.	Marital Status	Education	Work Status
DIC	Male	40-49	5	Married	Tertiary	Full-Time
BANK	Male	50-59	8	Married	Tertiary	Full-Time
CUSTOMS	Male	50-59	10	Married	Tertiary	Full-Time

Source: Author's Computation, 2014

APPENDIX C: Cargo Dwell Time and Clearance Responses of Respondents

Table 4.9: Need for Electronic System of Cargo Clearance

Response	Shippers		Freight Forwarders		TOTAL	
	Actual	Per cent (%)	Actual	Per cent (%)	Actual	Per cent (%)
Yes	69	92.00	54	84.38	123	88.49
No	6	8.00	10	15.63	16	11.51
TOTAL	75	100.00	64	100.00	139	100.00

Source: Author's Computation

Table 4.10: Rational for Need for Electronic System of Cargo Clearance

Response	Shippers		Freight Forwarders	
	Actual	Per cent (%)	Actual	Per cent (%)
To reduce bureaucratic procedures	24	34.78	14	25.93
To ensure efficient operation	12	17.39	20	37.04
Save cost	18	26.09	15	27.78
Reduce turnover time	15	21.74	5	9.26
TOTAL	69	100.00	54	100.00

Source: Author's Computation, 2013

Table 4.11: Cargo Clearance Procedures at the Port of Tema

S/N	Cargo Clearance Procedures at Port of Tema as expressed by Shippers & Freight Forwarders
1	Submission of documents to freight forwarders
2	Submission of documents to DIC for inspection
3	Submission of FCVR details to GCNET
4	Validation of report sent for the payment of appropriate charges and duties
5	Customs compliance

Source: Author's Computation, 2013

Table 4.12: Days Taken to Clear Cargo: Before & After implementation of Electronic System of Cargo Clearance

Period	Shippers		Freight Forwarders	
	Total	Average (days)	Total	Average(days)
Before	802	10.69	615	9.61
After	348	4.64	215	3.36
No. of Respondents	75		64	

Source: Author's Computation, 2013

Table 4.13: Training Needs Required for Shippers

Response	Shippers		Freight Forwarders	
	Actual	Per cent (%)	Actual	Per cent (%)
Documentation	11	14.67	31	48.44
Customs procedures	34	45.33	16	25.00
Ethic	30	40.00	17	26.56
TOTAL	75	100.00	64	100.00

Source: Author's Computation, 2013

Appendix D: Calculation of Average Dwell Time (Days of Cargo Stay at the Port)

$$\diamond ADT_B = \frac{AD^S_B + AD^{FF}_B}{2} = \frac{10.69 + 9.61}{2} = \frac{20.30}{2} = \mathbf{11.61 \text{ days}}$$

$$\diamond ADT_A = \frac{AD^S_A + AD^{FF}_A}{2} = \frac{4.64 + 3.36}{2} = \frac{8}{2} = \mathbf{4 \text{ days}}$$

$$\begin{aligned} \diamond \% \Delta ADT &= \frac{\Delta ADT}{ADT_B} * 100 = \frac{ADT_A - ADT_B}{ADT_B} * 100 \\ &= \frac{4 - 11.61}{11.61} * 100 = \frac{-7.61}{11.61} * 100 = -0.65546942 * 100 \\ &= -65.5469423 \approx \mathbf{-65.547 \text{ (3dp)}} \dots\dots\dots \text{(Reduction in ADT)} \end{aligned}$$

Where AD^S_B = Average days before introduction of electronic system by Shippers

AD^{FF}_B = Average days before introduction of electronic system by Freight Forwarders

AD^S_A = Average days after introduction of electronic system by Shippers

AD^{FF}_A = Average days after introduction of electronic system by Freight Forwarders

ΔADT = Change in Average Dwell Time

$\% \Delta ADT$ = Percentage change in Average Dwell Time

Appendix E: Notice on Procedure for Processing Paperless FCVR

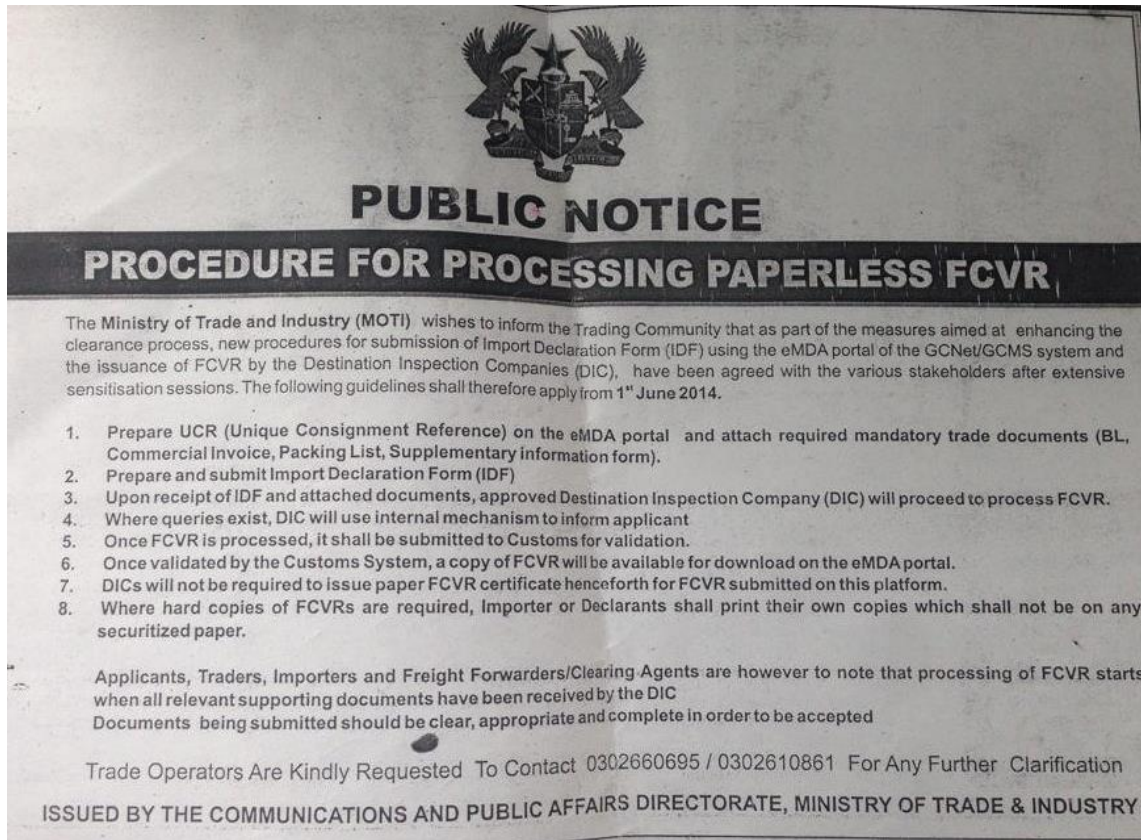


Figure A1: Image of Paperless FCVR Processing Procedure