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**WORLD MARITIME UNIVERSITY**

Malmö, Sweden

**ASSESSING THE IMPACT OF NATIONAL SINGLE  
WINDOW ON THE COMPETITIVENESS OF  
GHANA'S MARITIME SECTOR**

By

**RHODALYN DJANITEY**

**Ghana**

A dissertation submitted to the World Maritime University in partial

Fulfilment of the requirements for the award of the degree of

**MASTER OF SCIENCE**

In

**MARITIME AFFAIRS**


**SHIPPING MANAGEMENT AND LOGISTICS**

2018

## Declaration

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me. The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.

Signature:

..........

Date:

..... 18<sup>th</sup> Sep 2018 .....

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## **ABSTRACT**

Title of Dissertation: **Assessing the Impact of National Single Window on the Competitiveness of Ghana's Maritime Sector**

Degree: **MSc Maritime Affairs**

Trade competitiveness is a major concern for both service providers and users of shipping services in Ghana's maritime sector, consequently the Government of Ghana has intensified its efforts at ensuring trade facilitation and competitiveness along the logistics and shipping value chain. Ghana's economy depends very much on the maritime industry for the importation of essential raw materials for production, and critical inputs such as fertilizers for Agricultural production, machinery and other major consumption needs.

This led to the introduction of the National Single Window System for trade by the government as a vehicle to drive change and improve on Ghana's trade competitiveness. This research was thus designed to measure the impact of the implementation of the National Single Window System on trade competitiveness in Ghana's maritime trade sector.

The study was conducted using the Tema port as a case study, which controls over 75% of Ghana's maritime trade traffic. The methodology used in the study was both qualitative and quantitative in nature using non-probability purposive sampling techniques.

The summary of the major findings of the study was that trade facilitation has been enhanced along the supply chain in Ghana's maritime trade sector following the implementation of the National Single Window System (NSWS). This has translated into reduced transaction time, reduce cost of clearing goods at the ports, and streamlining of regulatory procedures thus providing a competitive environment for shippers and shipping service providers alike.

The study however noted that there were some challenges in the implementation process and recommended for strong stakeholder collaboration, improvement in ICT

infrastructure, Capacity building and continues education and sensitization of port users on the implementation process of the National Single Window. The study further recommended the need for a strong legal framework and institutional oversight to ensure effective continuous monitoring and evaluation of the National Single Window System in Ghana.

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### **List of Abbreviations**

ERP	Enterprise Resource Planning
ESCWA	Economic & Social Commission for Western Asia
EU	European Union
GCNet	Ghana Community Network Services
GIFF	Ghana Institute of Freight Forwarders
GNCC	Ghana National Chamber of Commerce
GNSW	Ghana National Single Window
GPHA	Ghana Ports and Harbours Authority
GRA	Ghana Revenue Authority
GSA	Ghana Shippers Authority
MOTI	Ministry of Trade and Industry.
MPS	Meridian Port Services
NSW	National Single Window
OECD	Organization for Economic Cooperation and Development.
SW	Single Window
SWIF	Single Window Implementation Framework
SWS	Single Window System
TFA	Trade Facilitation Agreement
TOC	Theory of Constraint
UN	United Nation
UN/CEFACT	United Nation Centre for Trade Facilitation and Electronic Business
UN/ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNCTAD	United Nation Conference on Trade and Development
UNECE	United Nations Economic Commission for Europe.
UNNExT	United Nations Network of Experts for Paperless Trade and Transport
WB-DB	World Bank Doing Business
WCO	World Customs Organisation
WTO	World Trade Organisation

## **Chapter One (1)**

### **1.0 Introduction**

International trade continues to expand since the last century and remains the backbone of nations in the world. The United Nations Conference on Trade and Development has continuously recorded an increase in world trade for the past decade and projects trade volumes to expand at a compound annual growth rate of 3.2% between 2017 to 2022 (UNCTAD, 2017).

The increase in trade volumes has been attributed to industrialization, technological advances but most importantly to the elimination of trade barriers (Shuo, 2017). Artificial Trade barriers mainly related to trade policies have been in decline thanks to bilateral and multilateral trade negotiations and agreement (Ndongo, 2015), which has ultimately resulted in globalization and liberalization of the world economy.

The liberalization of the world economy has heightened the dynamics of the principles of comparative advantage, making room for national economies to get further integrated with their trading partners.

Despite the stride made in reducing artificial trade barriers, natural trade barriers related to transaction processes continue to grow complex in cross-border trade. The movement of cargo across borders requires many commercial transport and regulatory requirements involving many parties. (Duval, 2011)

The import and export compliance requirements, which include Government approvals, permits and licenses, as well as customs clearance and inspections continue to act as a barrier to trade facilitation, especially as it requires cargo owners to file trade documents with different agencies at various stages of the clearance process.

Governments have continuously employed different technological systems to meet these requirements with the aim of facilitating trade, but these systems stand alone and do not communicate with each other. Consequently, traders are faced with a confusing set of stringent, overlapping and onerous reporting requirements, often including redundant, repetitive and outdated or superseded regulations. (ESCWA, 2011)

The problem has become more critical in recent times with the high need for trade facilitation to meet the just in time delivery demand of the shipper (importer and exporter).

To address the problem, the concept of the Single Window Systems was developed at the United Nations Economic Commission for Europe (UNECE) by the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) in 2005 (UNECE, 2005, GRA, 2016).

The idea was to simplify, harmonize and standardize international trade procedure in respect to the flow of information between trade and government and within government (UNECE, 2016)

The concept employs the use of information technology to facilitate the single submission and reuse of trade information for processing and receipt of relevant response from government and private sector operators (WCO, 2012).

The UNECE defined the single window as a “facility that allows parties involved in trade and transport to lodge standardized information and documents with a single entry point to fulfill all import-export and transit-related regulatory requirement. If information is electronic, then individual elements should only be submitted once” (UNECE, 2005).

The Recommendation for the Establishment a Single Window system and the recommended guidelines by the UNECE to enhance the efficient exchange of information between trade and government (UNECE Recommendation 33) has become the global standard for Single Window implementation and has been implemented in over 70 countries (GRA, 2016).

The establishment of a single window system as indicated by the UNECE, “ can enhance the availability and handling of information, expedite and simplify information flows between trade and government and can result in a greater harmonization and sharing of the relevant data across governmental systems, bringing meaningful gains to all parties involved in cross-border trade.”

The use of a single window facility can improved efficiency and effectiveness of official controls and reduce costs for both governments and traders due to better use of resources. The Single Window is, therefore, a practical application of trade facilitation concepts meant to reduce non-tariff trade barriers and can deliver immediate benefits to all members of the trading community (UN/CEFACT, 2005)

### **1.1Background**

Ghana rolled out a single window system in 2002, following concerns by stakeholders over slow and cumbersome port clearance processes that were expensive and restrictive. The single window was to facilitate trade to enhance the competitiveness of Ghanaian business while ensuring that the collection of government revenue was not compromised (GCNet, 2009).

The system was operated by the Ghana Community Network Services Limited (GCNet) and operated on two models (a) A Customs Management Software called GCMS (Ghana Customs Management System) and (b) An electronic data interchange platform called Trade Net (GCNET, 2016).

The SW processed 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 (GCNet, 2009).

In its first year of the enrolment of the system, there was an increase of 35% government revenue and subsequent years increase of 20 % (UNECE, 2016). It,

therefore, helped increase government revenue collection and the achievement of set revenue targets. Clearances through the ports were also expedited so that Ghana was able to cope with an influx of transit goods and overcome the problem of congestion that had previously characterized clearances during peak periods (UNECE, 2016).

One major problem of the system was the reluctance of most regulatory agencies to interface with the system to enhance trade facilitation as well as ensuring a high level of compliance among trade, operators and declarants.

This era is termed the phase I of the single window implementation in Ghana as it focused only on automating customs processes and linking their system to just a few of the government agencies.

In 2015, Ghana launched the second phase of the National Single Window and contracted the West Blue Consulting to undertake the work. This phase was to further on from phase 1 automating and integrating the systems of all government agencies and private sector operators involved in the trade and transport business.

## **1.2 Problem Statement**

The cost of trade or doing business in Ghana is high compared to its neighbors, Togo, Benin and Senegal. This is confirmed by a number of studies conducted by the Ghana Shippers' Authority on demurrage and rent payments (GSA, 2016) and the Ghana National Chamber of Commerce in their cost of doing business study (GNCC,2015).

The World Bank doing business index ranked Ghana 158 in the area of trading across borders, compared to Benin, which was ranked 136, Togo, 121 and Cote d'Ivoire 155 (World Bank, 2017). This ranking takes into consideration the time and costs it takes to export and import as well as time and cost associated with documentary compliance. These statistics provide evidence that Ghana is lagging behind in these areas compared with its counterparts in the sub-region.

This high cost of trade has rendered many shippers (traders) uncompetitive in the global value chain. The high cost of doing business was mainly associated with the number of documents involved in the import and export business coupled with the



number of agencies that the shipper needed to submit documents to in the import and export business.

Freight forwarders were faced with the situation of having to move from one agency's office to another to physically submit documents and wait for approvals, permits or licenses to be able to continue the trade transaction process. The situation was characterized by delays and long queues in most Customs Compliance Offices.

The physical contact with government officials in the trade transaction process created the environment for the request for bribes and other means of extorting monies from importers and exporter.

Shippers also took advantage of the system to evade the payment of duties thereby causing revenue loss to the government.

To address this challenge the government relaunched the National Single Window, with the introduction of a more efficient model manned by the West Blue Consulting to assist in addressing the challenges of clearing goods at the ports. As part of the objectives, the new system was to within the first five years,

1. Reduce export costs by 50 percent
2. Reduce export time by 50 percent
3. Raise Ghana's global Trading Across Borders ranking from 171 to 99

This study is, therefore, to review the implementation process so far and establish the extent to which it has improved Ghana's international trade competitiveness.

### **1.3 Aim and Objectives of the Study**

The study aims to assess the impact of the National Single Window System on trade competitiveness in Ghana. The main objectives of the study include the following:

- I. Examine the implementation processes of the Single Window System in Ghana
- II. Identify the challenges that were confronted during the implementation
- III. Assess the impact of the implementation on trade

## **1.4 Research Questions**

To address the objectives outlined above, this research focuses on answering the following questions:

1. Has the introduction of the single window system reduced the time of clearance in Ghana?
2. What is the reduction in the cost of doing business since the introduction of the national single window?
3. What role does change management play in the impact of the SWS implementation and operationalization process?
4. What are the critical success factors in the successful implementation of the SWS?

## **1.5 Methodology of Study**

The principal methodology of the study involved the use of qualitative and quantitative approaches. The objective in using this methodology is to ensure effective use of both approaches to enrich the outcomes of the study.

Personal interviews (see appendix B) were conducted in selected organizations and questionnaires (see appendix A) were administered to selected agencies in the maritime sector. These methods were used because the nature of the research is quite specific, and persons with specific knowledge in and on the field, as well as regulatory agencies, were the best sources of accurate collection of information, reports, and data.

Sampling techniques used was purposive because of the unique nature of the maritime industry and the specialties involved in the deployment of the national single window system. Data analysis was done using basic excel applications.

Information sources were obtained from WMU library electronic and physical sources. These include books and journal articles as well as peer review materials and sector reports.

## **1.6 Scope of Study**

The study focuses on the maritime trade sector in Ghana, which controls over 90% in volume terms of Ghana's international trade. The specific areas of the study will include:

- I. Maritime sector and how transactions are done
- II. Major stakeholders and their views on the National Single Window

## **1.7 Significance of Study**

The study is expected to establish the level of effectiveness in the implementation of the National Single Window System and measure its performance relative to the objectives for its implementations, which is to improve the business environment to enhance competitiveness.

The results from this research will provide useful information to stakeholders in the trade facilitation and shipping and logistics field to further address challenges and build up a knowledge base in relation to the implementation of the maritime single window.

## **1.8 Limitations of Study**

Due to the broad and evolving nature of the research study, a probable challenge that can be faced is limited time for the study.

## **1.9 Organization of Research Report**

The report of the study is organized into five (5) chapter as follows:

Chapter 1- Background to the study. This chapter looks at the Single Window System and how it operates trade facilitation role of the Single Window System and institutional framework for its implementations in Ghana.

Chapter 2- This Chapter looks at Literature Review on the subject. It will look at two fundamental theories associated with the concepts of Single Window and the global

framework for the deployment of a single window system for enhanced trade, best practices, and how to overcome implementation challenges.

Chapter 3- This chapter will detail the methodology used in the study. It will outline the reasons for the methodology, sampling techniques, method of data analysis and the use of primary and secondary data sources.

Chapter 4- takes a detailed look at the Single Window concept. It discusses the evolutionary and architectural models of the system with examples. It also highlights some factors that contribute to a successful implementation of the single window system.

Chapter 5 - This chapter look at the Environmental Scanning and Data Analysis to establish the significant impact indicators following the implementation of the National Single Window system in Ghana. It presents the findings of the study and provides an analysis and discussion of the findings.

Chapter 6- Recommendations and Conclusion. These sections outline some recommendations following the findings to ensure effective implementation of the National Single Window and conclusions regarding the impact of the single window introduction on trade competitiveness in Ghana.

## **Chapter Two**

### **Literature Review**

#### **2.1 Introduction**

According to Saunders, Lewis, and Thornhill (2000), a good literature review must refer to work(s) by recognized experts in the chosen area; both those who oppose and support ideas of the author and must make reasoned judgements on the value of the work of others while distinguishing between facts and opinions. It must also support arguments with valid evidence.

The contemporary needs of the maritime industry keep on changing because of increasing world trends in international trade, which compels new definitions of ports and their operations. Therefore, what phenomena exemplify port efficiency is imperative.

In reviewing the literature on the subject of a single window system, the researcher will discuss the Lean Theory and Theory of Constraints (TOC) as underpinning theories associated with the concept of a single window. Both theories focus on eliminating waste and reducing the cost of business. The theories were initially developed and applied in the product-manufacturing sector. However, the fundamental principles are very much associated with the fundamental problems that led to the concept of a single window.

#### **2.2 Overview of the Lean Theory**

The concept originally applied to the manufacturing industry and originated from the Toyota production system. (Pinkney J, Rance S, Bengner J, et al., 2016). It is described as a philosophy, an approach, a technique and a transformational management strategy used to improve the efficiency and effectiveness of process performance. The Lean

methodology aims to minimize waste while maximizing value for customers (Joosten et al, 2009).

The production process becomes more efficient, saves cost and provides value to customers when redundant steps are eliminated. The concept may be applied to the international trade transaction process and specifically, the clearance of goods at the port. The Lean philosophy is underpinned by five fundamental principles below:

**2.2.1 Value** - The fundamental principle of the Lean concept focuses on the delivery of value for the customer. Therefore, the Lean methodology critically examines processes in order to reduce improvident activities that add no value to the customer. The customer, in this case, is the shipper, i.e., the importer or exporter who needs to go through the import and export formalities to clear his/her consignment.

**2.2.2 Value stream-** Womack and Jones (1996) defined the value stream as “the processes or activities required to design, order and provide a specific product or service.” They elaborated on three activities in this process, thus value addition and elimination of type one Muda and Type Two Muda. The Creation of value stream is a critical step in understanding how processes work and identifying value and waste from the customer’s perspective. (Joosten et al., 2009)

**2.2.3 Flow-** This principle ensures a “tight sequence of the value creation step through standardization of processes. After value is specified and the stream is determined by eliminating wasteful processes, Flow is the next step which focuses on maintaining the value stream steps.

**2.2.4 Customer Pull** – “Pull in simplest terms means that no one upstream should produce a good or service until the customer downstream asks for it” (Womack & Jones, 2003).

**2.2.5 Perfection** - This principle of perfection makes the quest for lean a never-ending activity; it pursues the elimination of waste in a continuous process. The quest for

perfection necessitates a standardized process of benchmarking in order to ascertain improvements over time. (Joosten, et al, 2009)

Although the concept applies to the manufacturing processes, Womack and Jones (2003) are of the view that it applies to any kind of organization or system.

### 2.3 Overview of the Theory of Constraint (TOC)

The theory of constraints (TOC) coined by Goldratt (1990) has been described as a management philosophy that ensures improvement by eliminating bottlenecks that inhibit a system from attaining a high level of performance. The theory states that every organization must have at least one constraint. Goldratt and Cox (1992) explained constraint as any factor that restricts the system from doing more of what it was designed to achieve. The TOC, therefore, requires managers to ascertain what inhibit the achievement of their organizational goals and endeavor to find solutions to overcome the limitation. (Cox & Spencer, 1998; Simatupang et al., 1997).

Goldratt (1999) defines five steps to be used in tackling the constraint. This includes; identification of the constraint, exploitation of the constraints, Alignment of system around the constraint, elevate the constraints and repeat the process.



Figure 1: The five steps of the Theory of Constraint

The TOC has been adopted and applied in many areas consequently leading to many publications regarding the TOC approach (Mabin & Balderstone, 1999).

For example, there are accounts of how the TOC approach was applied to a manufacturing company to achieve the implementation of enterprise resource planning (ERP), and in another instance, Womack and Flowers (1999) applied the theory to the health care system to improve performance.

#### **2.4 Need for Trade Facilitation**

Import and export formalities associated with international trade continues to be a bottleneck in trade facilitation as the number of agencies and trade requirements increases for purposes of security and revenue collection. Long waiting times at borders, inappropriate charges, cumbersome procedures, inadequate or unclear rules, and regulations are serious hindrances to trade, and consequently adversely affect investment, employment and trade-led development (UNCTAD, 2018). The World Trade Organisation (WTO) encourages member states to ensure trade facilitation in order to create investment and employment opportunities. Trade facilitation is concerned with the application of efficient rules and regulation to simplify, harmonize and standardized trade transaction process with the aim of reducing time and cost of doing business to both traders and government. Trade facilitation is defined as “removing bottleneck to the crossing of goods across borders” (WTO, 2018).

Through the Bali round of negotiations (2013), the trade facilitation agreement was given birth with the primary aim of streamlining trade transaction processes; thus eliminating the “Muda” in the import, export clearance process. One of the outstanding recommendations in the proposed trade facilitation measures is the establishment of a single window system by member states. According to the WTO, the cost and time needed to export and import goods can be slashed when paperwork and trade procedures, as well as customs requirements, are harmonized and modernized (WTO, 2013).

The dwindling fortunes of Ghana’s maritime sector in the 1990s, occasioned by the clutter within the cargo clearance processes, called for new strategies to position the country to compete favorably on the ever improving and competitive world



marketplace. This effort gave birth to the Ghana Single Window (GSWS), which is modelled on Singapore's Trade Net.

## **2. 5 The Concept of Single Window**

Abeywickrama and Wickramaarachchi (2015) noted that, import, export, and transit information documents required from parties involved in trade have become voluminous and therefore constitute a burden to both governments and traders. These documents often requesting the same information are to be submitted to different government authorities for international trade transaction. The establishment of a single window system can resolve this problem.

United Nations Center for Trade Facilitation and Electronic Business (UN/CEFACT) (2005. p3) defined Single Window “as a facility that allows parties involved in trade and transport to lodge standardized information and documents with a single entry point to fulfill all import, export, and transit-related regulatory requirements. If information is electronic, then individual data elements should only be submitted once”.

Koh (2010) emphasised that the Single Window will ensure the simplification of trade processes, improve transparency and predictability in international trade transactions. The use of the single window in trade will reduce complexity, delays and cost of doing business. This will lead to improved competitiveness and more trade. Koh (2010) states further that the Single Window for trade has become necessary because of the increase in global trade and its concomitant problems.

Veloso and Kumar (2002) expressed that, the value of international trade has increase fifty times more in 1999 than it was in 1960. This calls for efficient ports to enable trade facilitation. The National Single Window System therefore enhances port efficiency. It helps improve the trading environment and boost firms' international competitiveness (Royaume Dumaroc 2017).

## **2.6 Single Window to Facilitate Trading Across Borders**

The amount of time required to complete the import and export process and the required number of documents involved in this transaction are indicators of cost and ease of doing business in a country. A study conducted by the World Bank on time and cost (excluding tariffs) use in exporting and importing goods and the associated documentary requirements in many economies revealed that, export volumes increase by 10% when the export time is reduced by one day (WB DB, 2015). These direct and indirect costs have a significant impact on the competitiveness of national economies (UNNEExT, 2018).

Recognising the benefits of foreign trade for economic performance, Juan Carlos Elorza (2012, p11) stated that, "the ability of a company to export can be blocked by a series of factors such as the lack of an appropriate infrastructure, inefficient management of the port, excessive or cumbersome documentation requirements and long customs procedures, strictly thorough inspections, and tax investigations by numerous governmental entities." Elorza further expressed that, considering the high rate of competition in the exports business, any obstacle, delays, extra costs incurred in the process of marketing the goods could cause lags in the business or even its total loss (Elorza, 2012). That is why it is vitally essential for countries to work to improve all of the factors that are involved in facilitating trade.

Numerous countries are shifting from the paper-based customs processes to a paperless regime by employing electronic systems for filing, transferring, processing and exchanging regulatory and trade information to manage imports and export across borders (UNCEFACT, 2015). Chile and Malaysia are examples of countries that make use of such electronic systems to allow submission of trade-related documents. Other countries employ more sophisticated systems to further link not only traders and customs but also other private actors and government agencies involved in trade through the National Single Window (UN/CEFACT 2005). A Single Window system makes it possible for traders to declare import or export information in a single platform that interfaces with relevant regulatory agencies for issuance and approval of

permits, Licences, and trade certificates electronically. Efficiency is increased when the internal processes of these agencies are simplified and coordinated. (UNECE, 2004).

The single window facility eliminates physical contact between traders and government authorities. The most advanced SW Systems connect participant from the private sector such as banks, clearing agents and insurance companies. Korea and Hong Kong electronic trade portals are a typical example of such a system (UNESCAP, 2018). Time for import and export as well as regulatory documents can be significantly reduced if a Single Window System is effectively implemented. (UNNEXT, UN/ESCAP & UNECE, 2012) Noted improvement in trade facilitation because of the implementation of electronic Single Window System. It is estimated that the Republic of Korea, made some 18million USD in benefit in 2010 as a result of the implementation of the SWS (Korea Customs Service 2011, WB, 2012).

ISLAMABAD (2018) noted that a National Single Window (NSW) system for trade, introduces automated paperless trade-related processes causing a transformation from outdated ways of doing business and leading to significant savings in terms of time and cost of doing business in Pakistan. The National Single Window, therefore, enables international trade parties to submit standardized trade-related documents at a single point for all import, export, and transit-related regulatory requirements.

According to ISLAMABAD (2018), bureaucratic procedures that encumbrance traders discourage the import and export business and therefore SWS will accelerate the process of cross-border trade, and permit businesses to expand their operations. The NSW make it possible for businesses to increase profitability, making room for economies to increase tax recovery ratio and expand their tax-base (ISLAMABAD, 2018).

The European Commission (2014) observed the duplicative and time-consuming formalities associated with the maritime transport industry in respect of complying with complex administrative procedures and national legislation such as submissions

of various documents to port authorities and opined that the phenomena cause delays and render the maritime transport business less attractive.

Globalization play a significant role in trade as the world economies get further integrated and interdependent on each other in respect of import and export of goods and services. Multinationals enterprise accounts for two-thirds of global exports of goods and services and nearly 10% of domestic sales worldwide (Gallegos, 2015). Electronic transaction and communication technology play significant role in achieving internationalization and globalization, which positively affect world trade. John Iwori (2016) opined that a single window for cargo clearance helps to reduce cargo dwell time, facilitate trade and ultimately cost. He envisages the use of the single window to slash down the many processes accompanying the clearance and bring a new outlook in the clearance of goods in the seaports, airports and international land borders in Nigeria.

Gerard Mclinden (2013) saw the national single window systems as a facility that delivers a useful means of improving border clearance performance. According to him, the SW can serve as a ‘Trojan Horse’ to overcome institutional resistance to cooperation and change. Mclinden noted collaboration among stakeholders as a significant challenge of the implementation of a SWS.

A Single Window employs sophisticated technology to enable its operation. The automated processes that allow the single window operation is critical for trade efficiency. Therefore, proper maintenance of the system and management of the information should be the priority of government and the private sector (UNESCAP/UNECE, 2012).

Experience gathered from countries that make use of the SWS indicates continuous simplification of import-export and transit processes and regulatory documentation as an essential factor for the improvement of SWS. Emphasis is also laid on ensuring the safety and security interests of the States involved economies and citizens. According to a study conducted by the World Bank, OECD countries, e.g., EU, USA, and Japan

with extensive regulation for trade safety and security have been able to decrease time and documents required for import-export transaction (UNECE, 2012).

## **Chapter Three (3)**

### **Research Methodology**

#### **3.1 Introduction**

This chapter examines the techniques employed in data collection and analysis. In general, it gives an overview of the design of the dissertation. It also describes the target respondent/population for the study and the sampling technique used in sampling for the study. It provides some highlights on the sample size and a brief description of the data sources.

#### **3.2 Research Approach**

This research adopted both a qualitative and a quantitative research approach. This approach attempts to identify the characteristics of a problem through quantitative and qualitative analysis and description.

#### **3.3 Research Design**

A research design is the structure of any scientific work, which provides direction and systematizes the research work (Mwajita, 2016). A qualitative approach was considered for the research because of the numerous stakeholders involved in the implementation and the use of the single window system. The researcher wishes to learn from their experience with the system and therefore used interviews for this purpose. A questionnaire, which is often used in data collection under exploratory or explanatory research, was used to collect the data. The questionnaires were designed by the researcher and administered to stakeholders in Tema Port. The questionnaires were questions with multiple-choice answers. It also had one question that allowed participants to provide answer in their own words.

### **3.4 Research Strategy**

A research strategy is a method that enables the researcher to investigate the research issue in this case, “assessing the impact of the Single Window System in Ghana’s Maritime Sector.” It also provides a means of answering the research objectives systematically. For this study, the case study strategy was adopted. This method enabled the researcher to have clear objectives, research questions, and data collection techniques. The case study approach enabled the researcher to meet the research objectives on time.

### **3.5 Study Population**

Participants were from the maritime trade and transport industry and had been involved either in the implementation process or are users of the single window system. Government Ministries, Departments, and Agencies who transferred their manual operations onto the single window platform were considered for interviews. Freight forwarders and the shipping public who interface with the system in the transaction of their business were issued with the questionnaire. It was a requirement that all participants had some experience with the system. An information sheet was issued to participants to introduce them to the research topic and the purpose of the research. Participants were also issued a consent form to seek their consent before interviewing. The study population comprised service providers at the port, shippers, as well as regulatory and ancillary shipping and logistics operators including

1. Freight Forwarders
2. Clearing Agents
3. Ghana Revenue Authority Customs Division
4. Ghana Ports and Harbours Authority
5. Ghana Shippers Authority
6. Ministry of Trade
7. Ministry of Transport
8. Trade Associations (SHIPPERS)
  - Chamber of Commerce
  - Association of Ghana industries

- Ghana Union of Traders Association
- Shipper Committees.
- Importers and Exporters Association

### **3.6 Sample Size of the Study**

The study involved one hundred (100) respondents drawn from the population of the study. This involved selected clearing agents, shipping agents, terminal operators, etc. operating at Tema Port.

### **3.7 Sampling Design**

Sampling enabled the researcher to study a subset of the targeted population, and the data obtained from the study of the subset represent the whole target population (Neuman, 2006). Sampling, therefore, is the process of selecting a subsection of the target population that was to be included in a study (Sarantakos, 2007). According to Sarantakos (2007), sampling is divided into two approaches, namely, probability and non-probability sampling. In non-probability sampling, the researcher determines the sample units to be chosen (Sarantakos, 2007).

Non-probability sampling is categorised into different types, namely quota sampling, haphazard (accidental or convenience sampling), snowball sampling, purposive or judgmental sampling, deviant case sampling, theoretical sampling and sequential sampling. Neuman (2006) asserts that in purposive sampling, researchers purposely select subjects that are relevant to the research topic. The project used purposive and simple random sampling techniques to gather data from respondents. Purposive sampling is a type of sampling method in which particular settings and persons are selected deliberately in order to provide relevant information (Saunders, Lewis & Thornhill, 2009). The advantage of this sampling method is that it enables the researcher to select only respondents who are likely to have the required information.

### **3.8 Data Collection**

The study employed two data collection instrument. First of all, a questionnaire was used to gather data from the targeted population. It contained both open and closed-



ended formats. The choice for the use of questionnaire was for the reasons that it provided fast and cost-effective means of data collection. Secondly, secondary data regarding the single window implementation and its impacts were considered. This helped to unravel the actual state of the research problem.

### **3.9 Data Analysis**

According to Sarah Robinson (2011) data analysis “ involves the accumulation of data for research purposes and forming inferences or conclusions from the data which will uphold the main tenets of the research project.” The data analysis process commences after data collection and ends at the point of interpretation and processing. The analysis steps include editing, coding, classifying and tabulating. The Statistical Package for Social Sciences (SPSS) was employed for this research. Descriptive statistics were used in analyzing the data and frequencies, and percentages were generated from the data categories and presented in figures and tables.

### **3.10 Ethical Consideration and Issues**

The research team knows this is a serious academic research work assessing the impact of a trade facilitation system on trade competitiveness in Ghana's maritime sector. All care was taken to ensure genuine work. There was no breach of confidentiality. The field research was administered by the researcher and field volunteers to ensure that genuine answers were obtained from the respondents.

### **3.11 limitation of the Methodology**

According to Atieno (2009), the findings of qualitative research cannot be extended to cover a broader population for the reason that these findings are not tested to establish if they are statistically significant or are by chance (Atiemo, 2009)

Some participants did not elaborate much on their responses for the reasons of not being very familiar with or exposed to the technicality of the question. The research was time-consuming and labor intensive because of the quantum of data that needed to be collected (Creswell, 2014).

## **Chapter Four (4)**

### **The Concept of the Single Window System**

#### **4.0 Introduction**

#### **4.1 The Single Window System**

A Single Window System is a trade facilitation tool that allows parties involved in international trade to submit data required by the government through a single platform only once to fulfill regulatory requirements or to use government services (Ahn & Han, 2007).

United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) (2005, p. 3) defines SWS as "a facility that allows parties involved in trade and transport to lodge standardized information and documents with a single entry point to fulfill all import, export, and transit-related regulatory requirements. If the information is electronic, then individual data elements should only be submitted once."

The SWS concept is further expounded by the World Customs Organization (WCO) as a trade facilitation tool which "permits the trader or transporter to submit all the data needed for determining admissibility of the goods in a standardized format only once to the authorities involved in border controls and at a single portal"(WCO, 2018). In another definition the WCO describe the SWS as "A Single Window Environment is a cross-border, 'intelligent', facility that allows parties involved in trade and transport to lodge standardized information, mainly electronic, with a single entry point to fulfill all import, export and transit-related regulatory requirements" (WCO, 2011).

According to the World Bank Doing Business (DB) 2017, the single window concept has expanded to include the complete evolution of electronic systems including trade point portals, customs automation, electronic data interchange techniques, institutional -specific single window, national single windows, regional and global single windows. The DB (2017,) therefore, defined the SWS as "a system that receives trade-related information and disseminates it to all the relevant governmental authorities, thus systematically coordinating controls throughout trade processes."

The Trade Facilitation Agreement (TFA) of the World Trade Organization (WTO), defines SWS as an instrument that permits traders to submit documentation and/or data requirements on international trade transactions through a single-entry point to the participating government institution (WTO, 2014).

The preceding definitions illustrate the evolution of the single window concept over time from a simple regulatory mechanism to an advance trade facilitation instrument including financial and logistics services. The term intelligent as used in the definition by WCO (2011) suggests the SWS as a platform that provides shared services and coordinates risk management and not just as a data switch. A Doing Business report (2017) noted that "traders in economies with fully operational electronic systems (that allow for export and import customs declarations to be submitted and processed online) spend considerably less time on customs clearance." Figure 2 illustrates a trade transaction procedure before and after the introduction of a Single Window System.

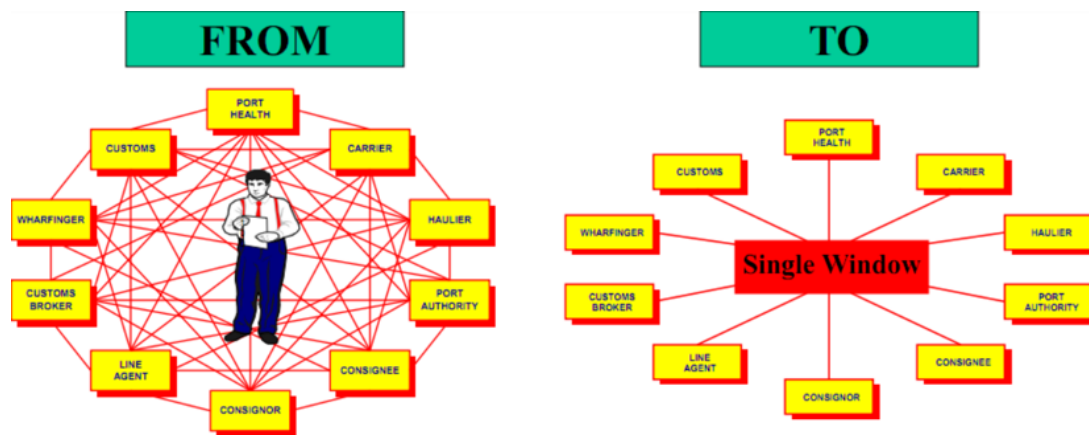


Figure: 2 Trade documentation operations before and after SWS Implementation

#### 4. 2. The Evolutionary Model of the Single Window System

The SWS is not established in a one-run but incremental steps. UNESCAP/UNECE (2012) in their Planning and Implementation Guide noted the SWS iterative development as follows;

Level 1: Paperless Customs

Level 2: Regulatory Single Window

Level 3: Port Single Window or B2B Port Community System

Level 4: Fully Integrated Single Window

Level 5: Cross-border Single Window Exchange Platform

The paperless customs connects traders to customs. It involves electronic transmission of all regulatory documents to Customs. This eliminates the need to print and manually attach the documents to shipments.

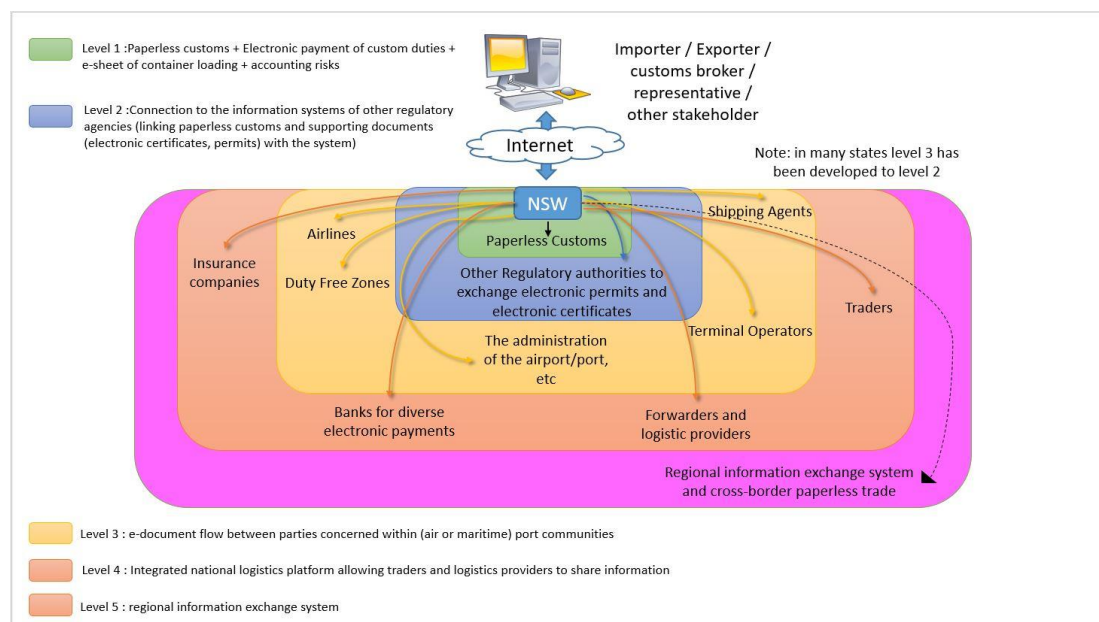
The regulatory Single Window involves an integration of the paperless customs with regulatory bodies that issue international trade-related permits and certificates, and other related documents (UNESCAP, 2018).

The port single window also known as the B2B Port Community System involves the all stakeholders, including public and private agencies in the port within the seaport

airports, and/or dry ports. (UNNEXT, UNESCAP, 2018). It allows swift and safe information between all port stakeholders. The DAKOSY system in Germany is an example of a port SWS. The seaport uses an electronic document exchange in its operations. Other examples of Port Single Window include UK, Felixstowe Port Community System, established in 1984, Finland's PortNet System (1993) and that of India in 2007. (UNECE, 2012).

The Fully Integrated Single Window System is platform that integrates administrations, companies and the service sectors with the aim properly manage the total import-export operations (UNECE 2011). At this level, the connection is extended to include companies from the private sector like the banks and insurance companies.

The Cross-Border Single Window is an interconnection and integration of NSWs into a bilateral or regional cross-border e-information exchange platform (UNECE 2011.) An example of the cross-border SW is the ASEAN SW, where trade partners make use of the paperless cross-border e-document exchange (UN/CEFET, 2005). Figure 3 below shows the five evolutionary development of the SWS.



### **Figure 3: Roadmap of single window in five stages of evolutionary development**

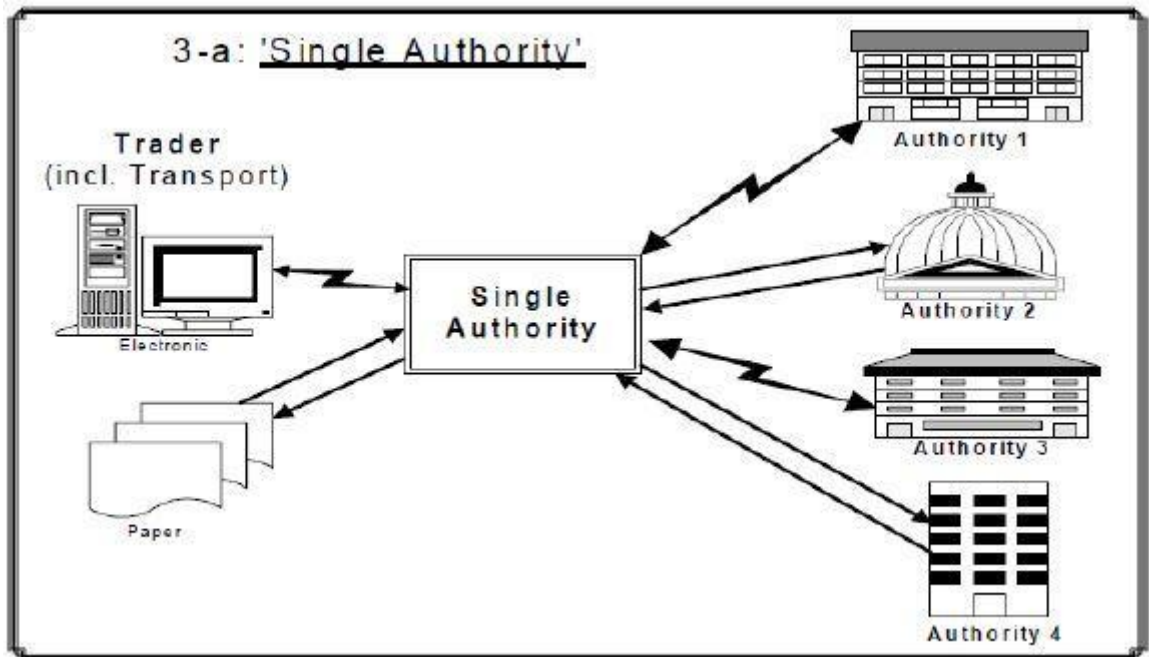
According to Abeywickrama et al. (2015), the Single Window does not specify a unique model. Instead, Countries adapt and develop their own models to suit the conditions and requirements of their country. In practice, the SW takes many forms and does not necessarily require the use of sophisticated IT systems. In its implementation, countries have employed different models that best serve the needs of the country.

### **4.3 Architectural Models of a Single Window System**

Different countries have established different models of SWS. However, reviews embarked by UN/CEFACT international trade procedure working group of numerous systems that are in place indicated three basic models ( UN/ CEFACT 2005) as described below:

#### **4.3.1 A Single Authority**

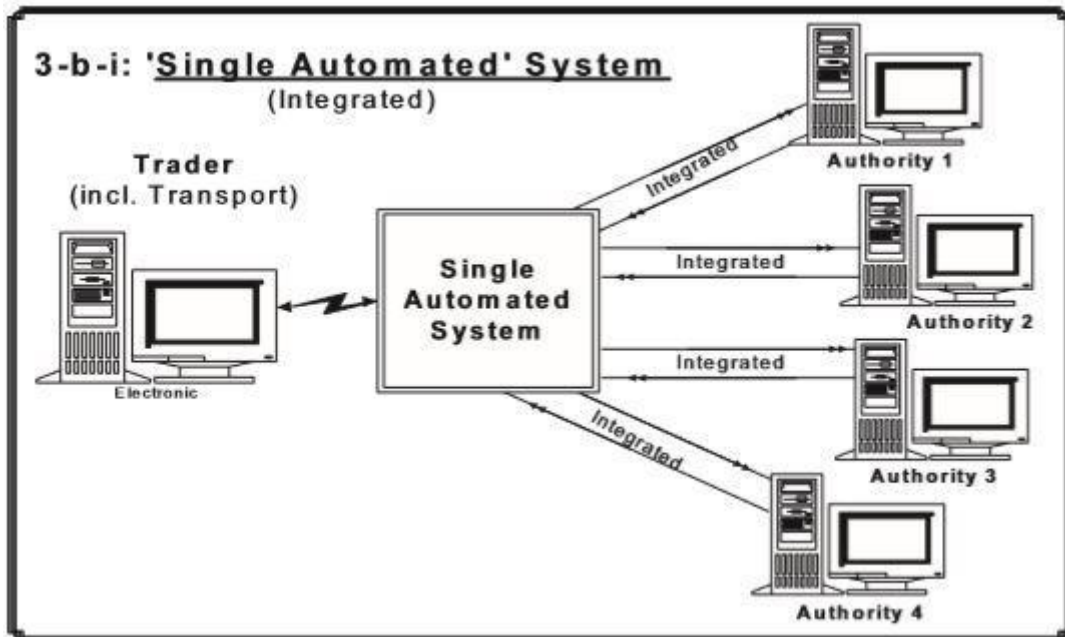
Single authority is a unit that coordinates the logistics chain information between all relevant agencies and enforces all border-related controls to prevent undue hindrance in the logistic chain. It accepts information either paper or electronic submissions and disseminate to agency and cross-border authority. An example of this model is the Swedish Single Window System, which performs some tasks on behalf of some government authorities (UN/CEFACT 2005). Figure 4 illustrates a single authority architectural model (Pontén, 2011).



. Figure 4 **Single Authority SWS**  
 Adopted from: (UN/CEFACT, 2005)

#### 4.3.2 A Single Automated Systems

The system integrates all authorities involved in the trade transaction process and serves as a transaction hub. It electronically receives declarations and permits in a single application. It also allows the submission of data only once and distributes such data to relevant authorities who require the data for use. There are two versions of this model. (i) An integrated system that processes data and (ii) an interface system that sends data to agencies after processing. The United States of America has a system in place that receives standard data from traders only once, processes the data and disseminates the data to relevant agencies that have interest in the transaction. Figure 5 shows a single automated system.

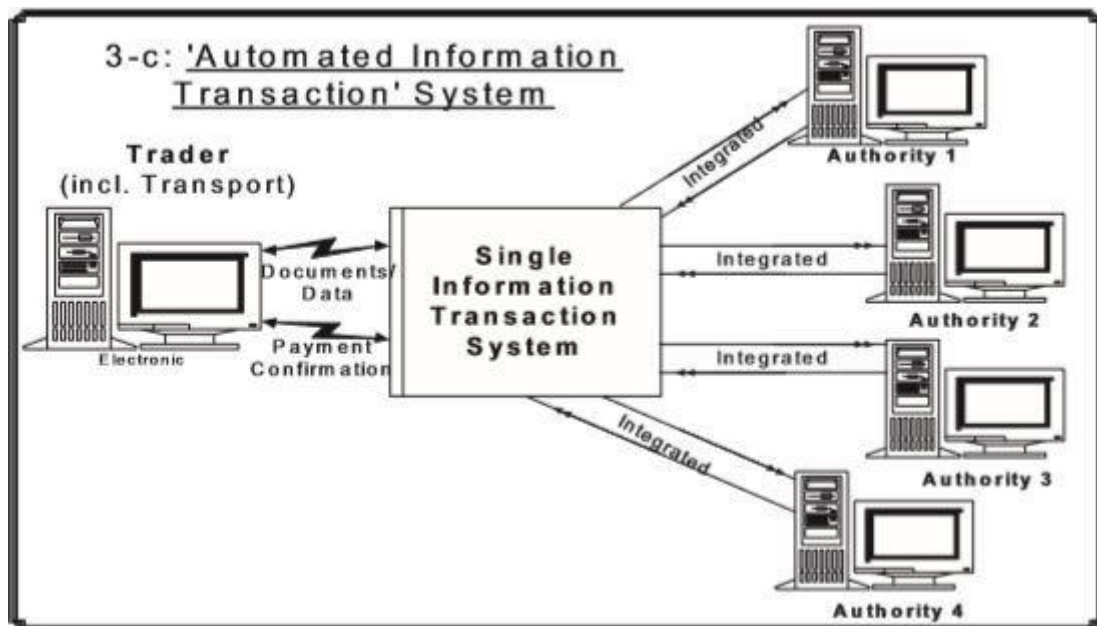


**Figure 5: Single Automated System**  
 Adopted from: (UN/CEFACT, 2005)

#### 4.3.3 Automated Information Transaction System

This system allows the electronic submission of data to various authorities for processing and approval in a single application (Pontén, 2011). Government authorities also transmit approvals electronically to the trader's computer. The system also allows the attachment of functionality, which permit fees and duties to be calculated and drawn from the trader's bank account (Pontén, 2011). The Singapore system is an example where trade related fee are computed electronically and debited from the trader's bank account (UN/CEFACT, 2005). Figure 6 illustrates the Automated Information Transaction System.





**Figure 6: Single automated information transaction SWS**

Adopted from: (UN/CEFACT, 2005)

#### 4. 4 Components or Element of a Single Window System.

In order to establish a sustainable SW environment, Vives (2018) underscored the importance of stakeholder collaboration and the alignment of business process with information technology strategy. The critical need for data harmonization, simplification, and standardization of documents is a significant step in the establishment process. Vives (2018) stressed the importance of ensuring legitimacy and building stakeholder trust in electronic transaction.

UNECE, 2011 Single window information framework highlighted two alignment strategies.

- a) The alignment of business strategy and IT strategy; and
- b) The systematic transformation of the pre-defined strategies into well-governed IT solution.

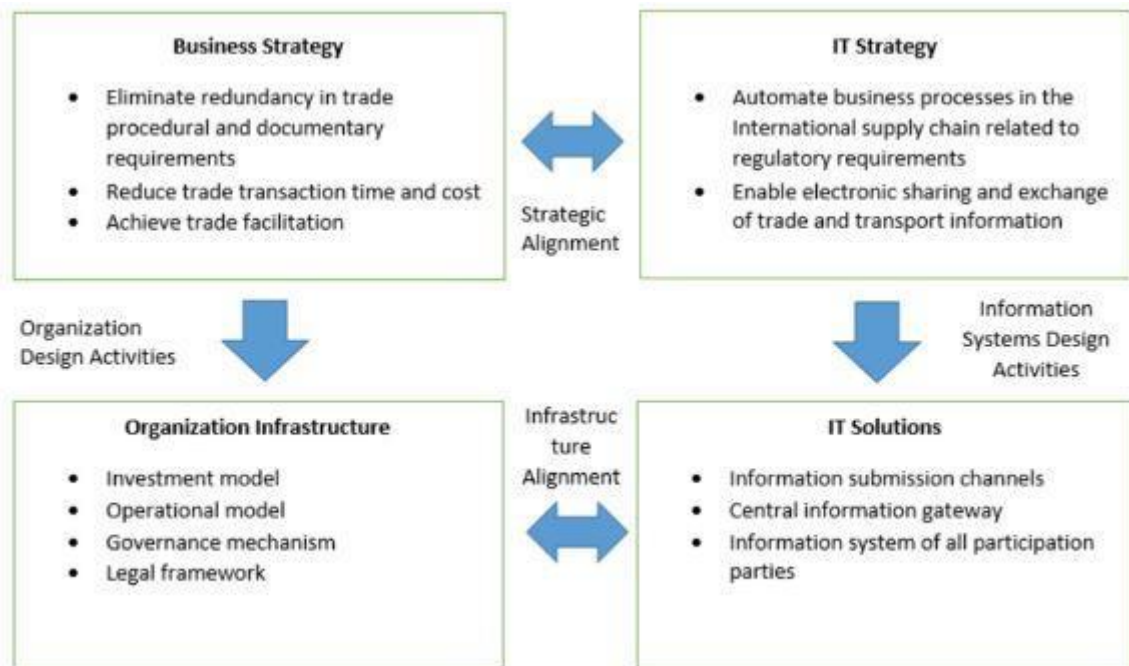


Figure: 7 Core alignment principles of SWIF  
 Adopted from: UNECE (2011)

A significant challenge in the implementation of SWS is the issue of alignment in respect of harmonizing data and procedures of various ministries and agencies with international reference models such as the UN core component approach (UNECE, 2011). SWIF emphasized the importance of such alignment principles and therefore adopted an enterprise architecture as a conceptual, methodological framework for the alignment process. It involves decomposing the multifaceted single window into layers for easy implementation (UNECE, 2011). The multi-facets of SW includes issues related to the management of stakeholder viewpoint and expectation, the development of business vision, the transformation of architecture vision, the simplification of relevant business processes, the harmonisation of data requirement, the identification of value proposition and corresponding services and the establishment of IT and legal infrastructure (UNECE, 2011).

Also, the Single Window Planning and Implementation Guide identified the hierarchical layer of the various aspects of the SW component to aid implementation.

Figure 8 shows the decomposition of the implementation into ten components (UNESCAP/UNECE (2012)).

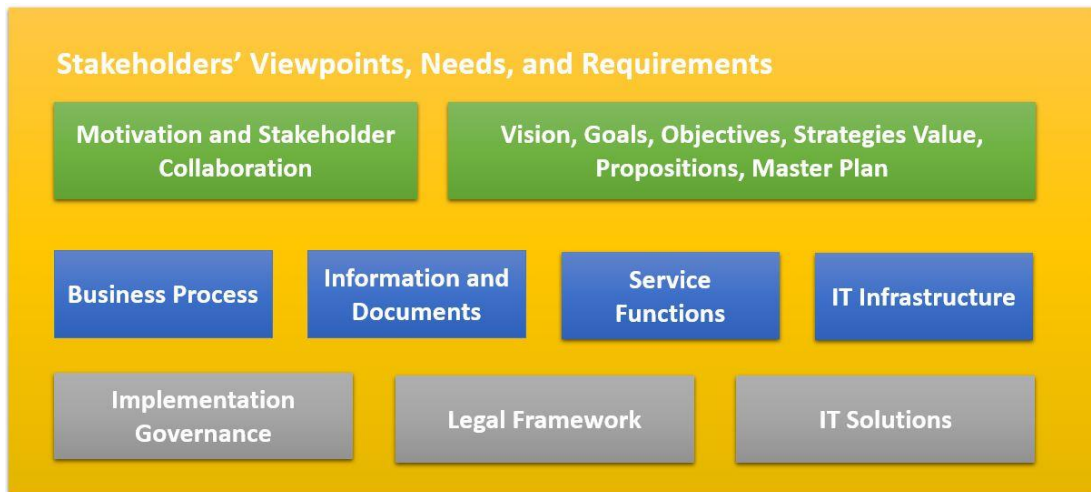


Figure 8: Components of the single window architecture

#### **4.5 Critical Factors in the Establishment of a Single Window**

Best practices have indicated that, for successful establishment of a single window system, some critical factors must hold UN/CEFACT (2005). Recommendation No. 33 provided the following list of critical factors in establishing successful SWS:

##### **4.5.1 Political Will**

The political will is the most critical factor and therefore forms the foundation on which other factors rest (UN/CEFACT 2005). A strong political will from both the government and business community is critical for the successful introduction and operation of SWS (UN, 2013). To achieve this, clear and impartial information should be disseminated regarding the SWS objectives, implications, benefits, and possible challenges among stakeholders.

##### **4.5.2 Strong Lead Agency**

There must be a lead agency to oversee the launch and the implementation of the SWS. The agency could be either private or public but must have the legal authority, political or stakeholder support to enable it to carry its mandate. It must have skilled human

resources, financial ability and links to the trading community. For example, Mauritius SWS was established by a tripeptide joint venture made up representative from the public and private sectors as well as a foreign technical partner.

#### ***4.5.3 Partnership between Government and Trade***

The SW requires cooperation among government authorities and between government and the trading community; therefore, it is crucial to involve all relevant agencies and the private sector in the development of the SWS from inception. They should contribute to the project objectives, analysis, design, and implementation. This provides an opportunity for public-private partnerships and the ultimate aim of getting commitment from the parties.

#### ***4.5.4 Establishment of Clear Project Boundaries and Objectives***

UN/CEFACT, (2005). Recommends for the SWS be part of the trade facilitation strategy of a country. The project goals and objectives must be clearly defined from the onset to serve as a guide through the development stages. A comprehensive stakeholder needs analysis must be done when formulation to inform the goals and objectives that needs to be achieved. Consideration should also be given to existing infrastructure and the existing trade-related information submission approach.

#### ***4.5.5 User Friendliness and Accessibility***

Stakeholders should be able to adapt quickly to the system; therefore, there is the need to train and build stakeholder capacity for the use of the system. A help desk should be established to provide support and guidance to users at the implementation stage. A feedback system must also be available to enable improvement of the system. The multilingual requirement and ICT capacity of users of the system should also be considered at the establishment stage (UN/CEFACT, 2005). The future technological advancements of the country and the users' threshold capacity to ensure system availability and uptime at all times is also necessary for consideration (Mwajita, 2016).

#### ***4.5.6 Legally enabling Environment***

The need for a legal framework that provides guidance and structure with regards to the SW establishment is emphasised by the World Customs Organisation and the UN/CEFACT. The legal framework should conform to international trade treaties that support the national single window. The UNICITRAL trade treaty is an example as it serves as a guide to many trades and e-commerce legal and regulatory codes (ESCWA, 2011).

#### ***4.5.7 International Standards and Recommendations***

UN/CEFACT 33 recommendations 1 and 18 provide details on the establishment and implementation standards of the SWS (Koh, 2015). Given the fact that single window system implementation incorporates the alignment and harmonization of international trade documents, it is important that its establishment and implementation be in conformity with international standards.

#### ***4.5.8 Financial Model***

Many financing options exist from which governments could explore in the establishment of the SWS. The financing option must be determined at the onset of the project and communicated to stakeholders as this influences the stakeholder's support for the project. Governments can choose to solely sponsor the project as exemplified in the Netherlands and Kenya or enter into a public, private partnership (Choi, 2011).

#### ***4.5.9 Payment Possibility***

SWS integrates a payment system that determines the relevant fees, duties, and taxes to be paid by traders per the consignment declared. Given the fact that it incorporates a payment system, additional security mechanisms should be incorporated to prevent cyber security or any fraudulent attack from hackers. This is critical for the smooth end-to-end processes and can be an attractive feature for the government and trade community. The agency in charge of the SWS can also use this payment system to generate revenue.

#### 4.5.10 Communications Strategy

There must be a well-defined communication strategy aimed at fostering trust among stakeholders regarding the SW implementation. The goals, objectives, and targets of the project should be communicated to stakeholders from the onset of the project. Stakeholders must be made aware of the process, timelines and any challenges encountered in the implementation of the project. Stakeholders' expectations must be well managed to avoid overpromising and under delivering so as to generate significant goodwill to deliver the project successfully (Mwajita, 2016). There must also be a project charter to determine the frequency of communication with stakeholders and this must be well defined from the onset of the project.

#### Summary

The SW concept has evolved from a regulatory documentation submission system to a system that employs sophisticated IT to coordinate trade transaction processes between government authorities and stakeholders involved in international trade. The establishment of a single window system depends on a number of factors which do not operate in isolation but interdependent of each other to ensure a successful implementation.



**Figure 9: Interdependency of CSFs for SWS**  
Adopted from: UNESCAP, 2015

## **Chapter Five (5)**

### **Data analysis and Summary of Key Findings**

#### **5.1 Introduction**

This part of the study mainly deals with the data analysis based on the questions contained in the questionnaire and interview guide. The questionnaire contained questions on various aspects of the supply chain management system in Ghana's maritime sector and the role that the National Single Window is expected to play and its impact. Each question was reviewed and the responses analysed to achieve meaningful conclusions. The review of the responses was captured in percentages and in diagrams or graphical representations to achieve a better understanding of the research findings.

It is essential to mention that the questionnaire was designed to elicit responses from varied backgrounds of stakeholders within the industry on various aspects of the value chain. Some respondents did not respond to some questions because they were either not disposed to answering them or it was not relevant to them, or those questions did not cut across their line of operations.

Some conclusions were also drawn from the significant findings of the study and thus gave an evaluation of the responses, and the key findings and recommendations were done with due considerations to this fact giving by the respondents of the research study.

#### **5.1.2 Environmental Analysis (SWOT)**

This section analyses the internal environment of Ghana's maritime trade sector in relation to the Single Window System, using Strengths, Weaknesses, Opportunities,

Threat (SWOT). The section further presents central managerial issues identified and an analysis of the data collected.

### **5.1.2 SWOT Analysis**

SWOT analysis according to Singh (2010) is a device that helps business managers to evaluate the strengths, weaknesses, opportunities, and threats in any business enterprise. It is a fundamental and candid model according to Singh (2010) that assesses what a business can and cannot do as well as its potential threats and opportunities. The SWOT analysis of the case study organization is presented below:

#### ***Strengths***

- a. The maritime sector in Ghana is composed of different people with a varied level of knowledge and expertise in several fields such as marine engineers, legal professionals, logistics and supply chain management, finance, and information technology. These specialties complement the work of each other in the sector that can potentially lead to economies of scale.
- b. Greater diversification in business portfolio: The sector has business specialties that are wide-ranging mostly covering shipping handling services, loading, and unloading of cargo ships, pilotage services, towage services, terminal operations including transport and haulage, logistics and supply chain, oil and gas and pipe transport. This higher level of diversification to some extent mitigates the risks associated with its operations.
- c. Strategic partnership and cooperation with major international ports: The Ghana Ports and Harbours Authority (GPHA) has many partnerships, collaboration and exchange programs with some of the major ports of the world in the global shipping and maritime industry. Top among these major ports of the world that GPHA has collaboration and partnership with are the ports of Hamburg, Rotterdam, Shanghai, Antwerp, Los Angeles, New Jersey and Dublin and among others.
- d. Innovations and strategic collaboration with the private sector. Vast amounts of expertise and experience in the industry through the use of concessions and



partnership with private operators of container handling terminals such as the Meridian Port Services, MPS.

- e. High level of profitability of the companies over the years has ensured that the maritime sector is able to enhance and sustain its reputational image in society through a miscellany of social responsibility projects by operators.

#### ***Weaknesses***

- a. Vulnerable to risks: The operations of some of the business units of maritime agencies are very much exposed to business risks that may be beyond their control, mainly the financial. For example, the operation at Tema Shipyard is a capital-intensive venture which has many risk factors including lawsuits and maritime claims arising from accidents, which may be caused, by poor ship repair work.
- b. Due to outsourcing of some of its services mainly in the logistics and supply chain sub business units, the GPHA may not be able to control certain costs and control of business information that may not furnish the interests of the company.

#### ***Opportunities***

- a. There is increasing support from the government and the private sector and donor partners on issues related to efficient port operations and management. This presents an opportunity for the GPHA to collaborate with these bodies to improve its business expansion.
- b. Some of its sub business units like the container terminals can explore the opportunity of partnerships with private sector investors to improve on their capacity. This presents an opportunity to increase GPHA revenues and profitability levels.

#### ***Threats***

1. Growing competition in the industry in relation to the ports of Dakar, Abidjan, Lomé and Cotonou can reduce the market share of the GPHA in the transit trade and transshipments business and subsequently its profitability level.

2. Slowing economy can sometimes affect the demand for its ports and services (export/imports) and sometimes threaten business survival and continuity.
3. Possible emergent risks such as operational risks arising from inadequate or defunct internal processes, people and systems or from impact of external risks such as legal risks. A related risk in this context is reputational risks due to damage to the GPHA cooperate image resulting in loss of earnings or adverse impact on the market share as a result of stakeholders taking a negative view of Tema Port or its actions.
4. Government regulations: Government rules for the most part regarding its international obligations regarding global shipping standards, safety and security standards and likewise restrictions can be an obstacle to the port's operational performance and reduce profit levels.

<b>Strength</b>	<b>Weakness</b>
<ul style="list-style-type: none"> <li>• Professionals varied level of knowledge and expertise</li> <li>• Greater diversification in business portfolio</li> <li>• Strategic partnership and cooperation with major international ports</li> <li>• Innovations and strategic collaboration with the private sector.</li> <li>• High level of profitability of the companies</li> </ul>	<ul style="list-style-type: none"> <li>• Vulnerable to risks</li> <li>• Inability to control cost</li> </ul>
<b>Opportunity</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Increasing support from the government and the private sector and donor partners</li> <li>• Opportunity of partnerships with private sector investors</li> </ul>	<ul style="list-style-type: none"> <li>• Growing competition in the industry in relation to neighbouring ports</li> <li>• Slowing economy can sometimes affect the demand for its ports and services</li> <li>• Possible emergent risks such as operational risks arising from inadequate or defunct internal processes</li> <li>• Government regulations</li> </ul>

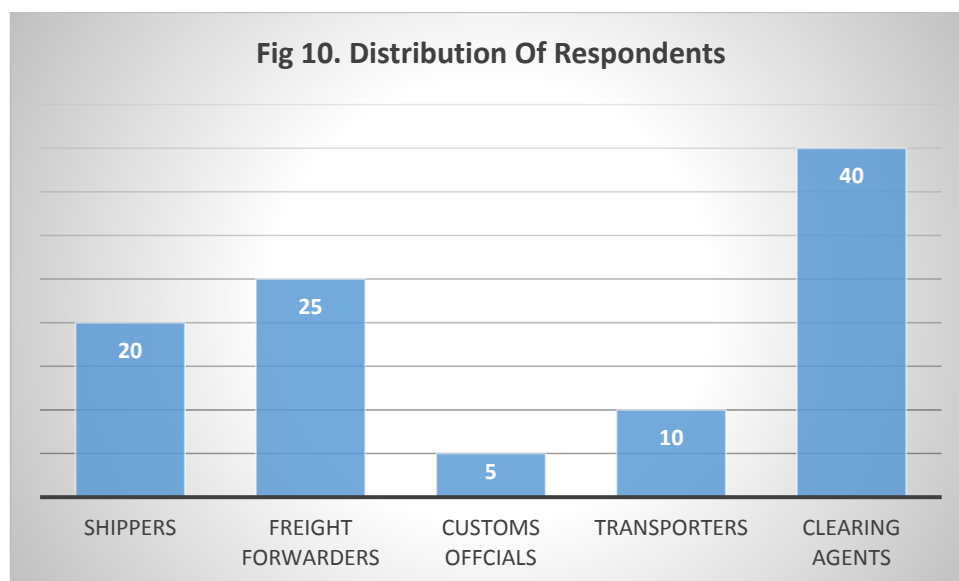
**Table 1: SWOT analysis of Ghana maritime sector**

## 5.2 Questionnaire Analysis

Q.1 This question seeks to identify the distributions of the targeted respondents who took part in the survey. The clearance process in Ghana's maritime industry can simply be defined as the means by which cargoes are made available to consignees on payment of duties, taxes and other port and shipment related charges, as well as on satisfying the requisite security, environmental, health and other related standards governing the clearance of cargoes in the ports.

All one hundred (100) respondents completed the questionnaires. Of the one hundred (100) respondents, twenty-five (25) were freight forwarders, forty (40) clearing agents, ten(10) transporters, twenty (20) shippers, and five (5) customs officials.

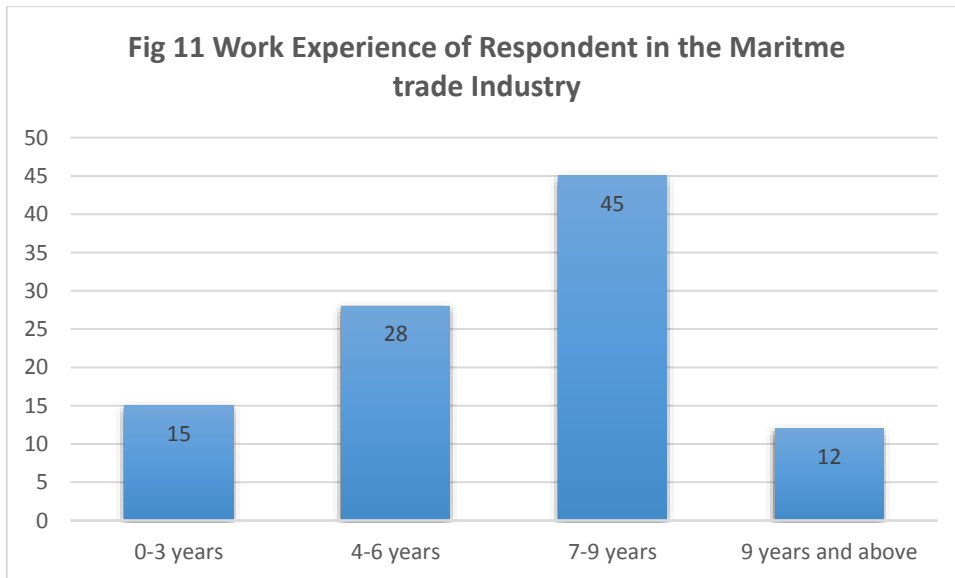
Figure 10 gives the pictorial distribution of the respondents who took part in the study.



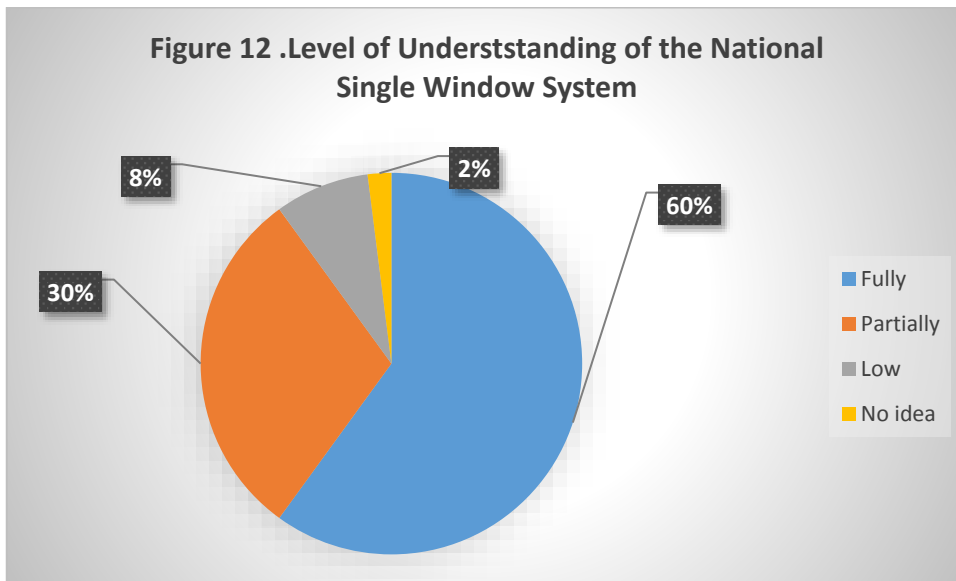
Q2. Question two seeks to establish the level of experience and duration of respondents working in the maritime trade industry.

For the respondents sampled, a combined total of 70% of them had over five years' working experience in the maritime trade industry and had the capacity to fully appreciate and give an independent evaluation of the national window system and how

it is likely to impact on the trade competitiveness. Figure 11 shows the graphical representation of the response to question two.

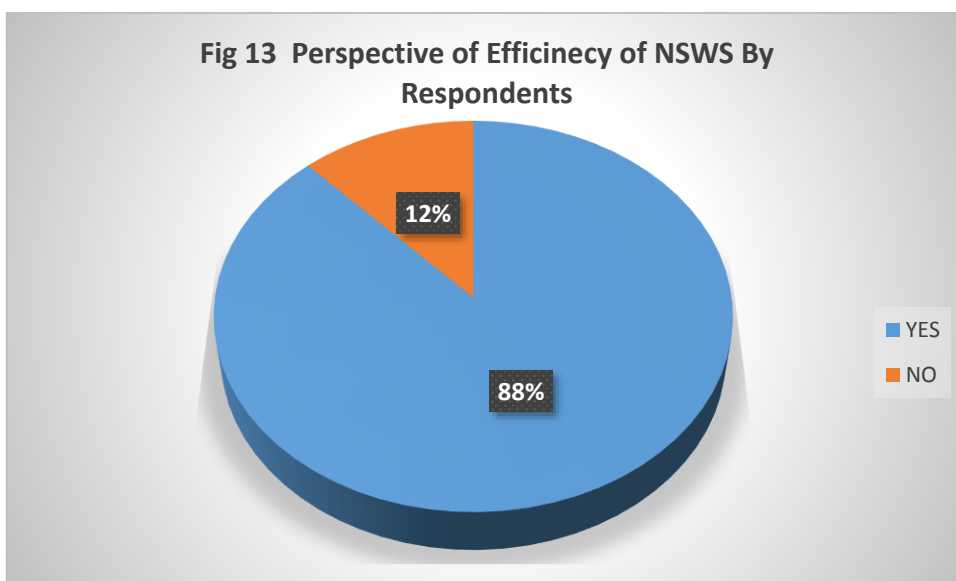


Q3. This question seeks to establish the level of understanding of respondents targeted for the study in respect of the National Single Window System. The essence of this question is to determine whether the respondents comprehend the NSW system and its potential impact on trade competitiveness. Figure 12 indicates the levels of understanding of the National Single Window System among respondents. About 90% of respondents indicated their level of understanding of NSWS to be full and partial, which indicates that the respondents sampled, have a very good comprehension of the NSWS and expected outcomes and impact on trade competitiveness.

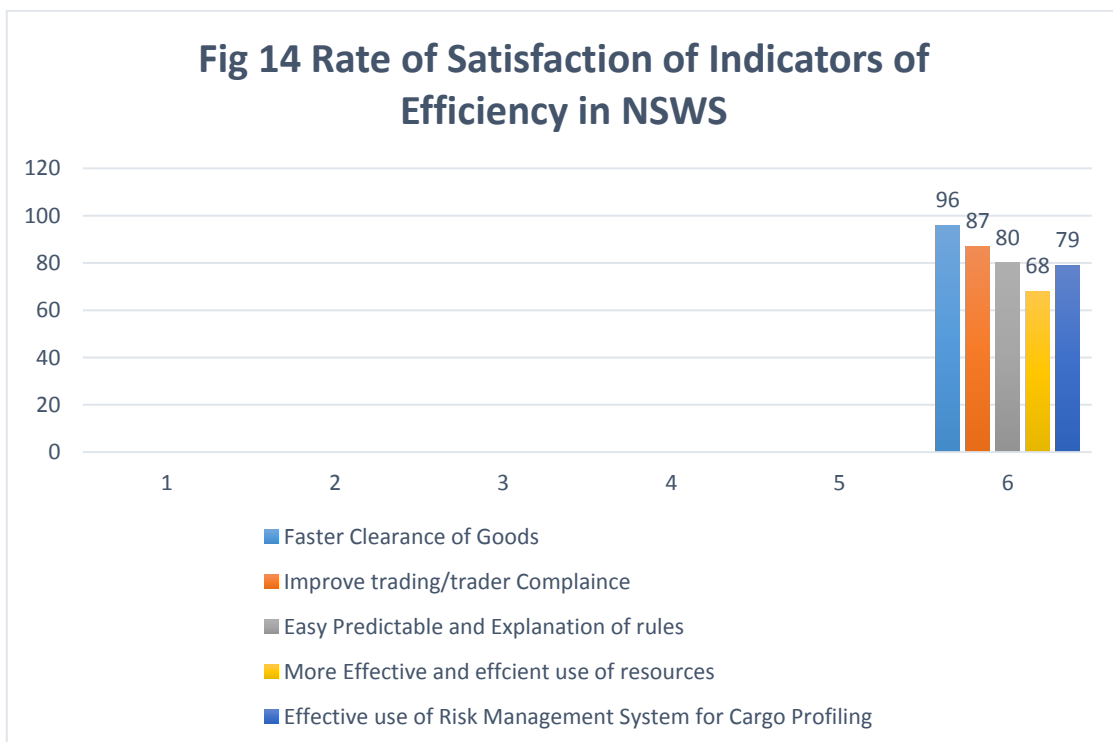


Q4. This question sought to find out from the respondents whether in their view the implementation of the National Single Window System has improved efficiency in Ghana’s shipping and logistics operations.

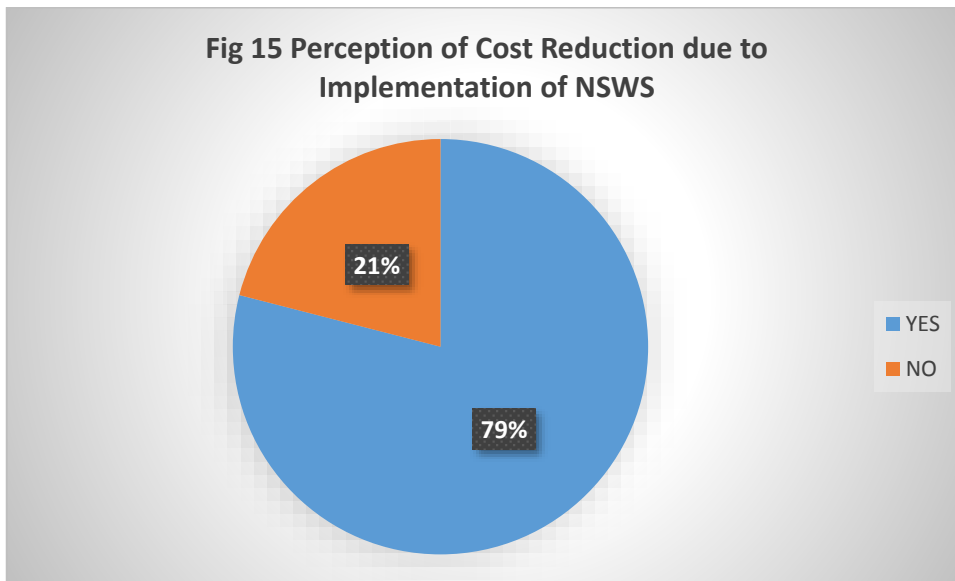
Over 80% of the respondents indicated the view that they think the NSWS has brought about some efficiency in the logistics and shipping operations at the ports. Figure 13 shows the graphical representation of the views expressed by the respondents.



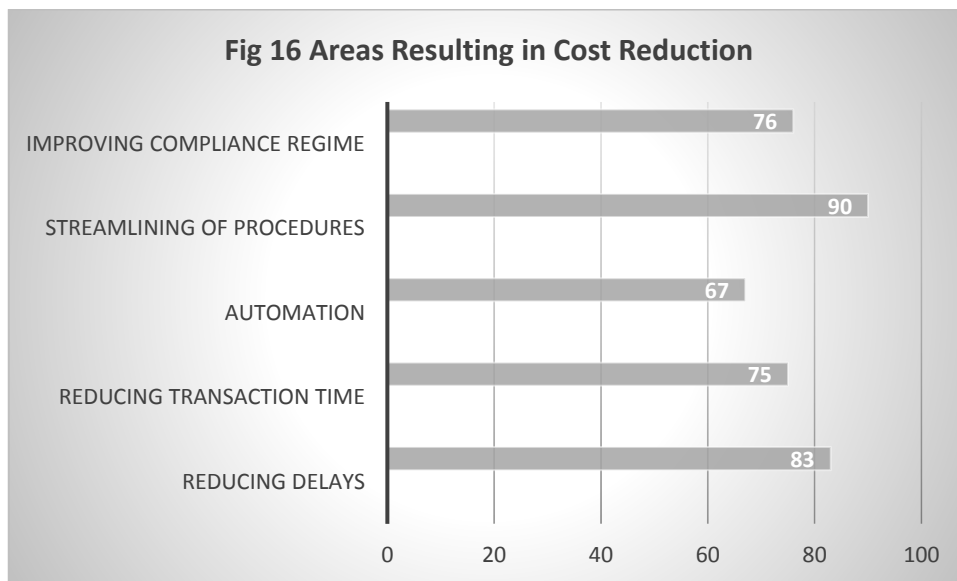
Q5. This question seeks to rate the measure of efficiency as expressed by the respondents on the national single window system in relations to logistics and shipping operations at the port. A number of indicators for measuring efficiency were given the respondents to rate from a scale of 1-5 representing, least satisfactory to most satisfactory. From the analysis of the data an overwhelming majority rated the indicators most satisfactory as indicated in Figure 14.



Q6. This question sought the view of the respondents on whether the introduction of the NSWS had led to any reduction in the cost of doing business for port users. From the analysis, it was observed that due to the improvement in the number of days in clearing goods port users made some savings on rent and container demurrage. Figure 15 shows the view expressed by the respondents.

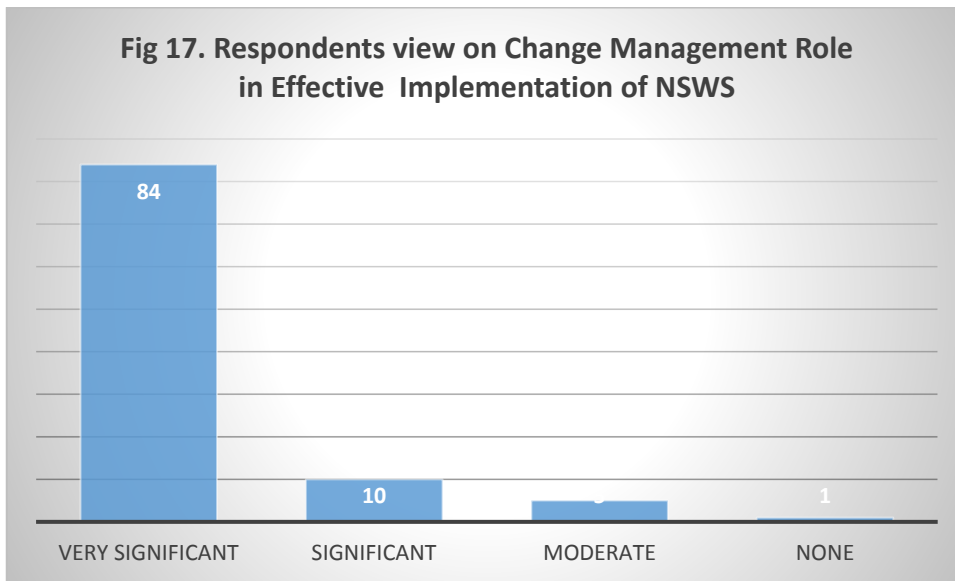


Q7. This question sought to establish the areas in which cost is being reduced due to the implementation of the NSWS. This is to give a clear view of the areas of improvement and cost reduction. Figure 16 gives a pictorial view of the situation and analysis. 76% sighted the improvement in compliance levels due to the NSWS implementation as a major source of cost reduction. 90% attributed to the savings made in the cost of clearing goods due to the streamlining of procedures for cargo clearance and the implementation of the NSWS. 83% of respondents indicated that due to reducing delays as a result of the implementation of the NSWS, the cost of doing business is going down. 67% attributed that the reduced cost in doing business is as a result of the automation process taking place now within the framework of NSWS on the port and cargo clearance process. 75% of respondents cited the reducing time in transaction time is helping improve the cost of doing business.

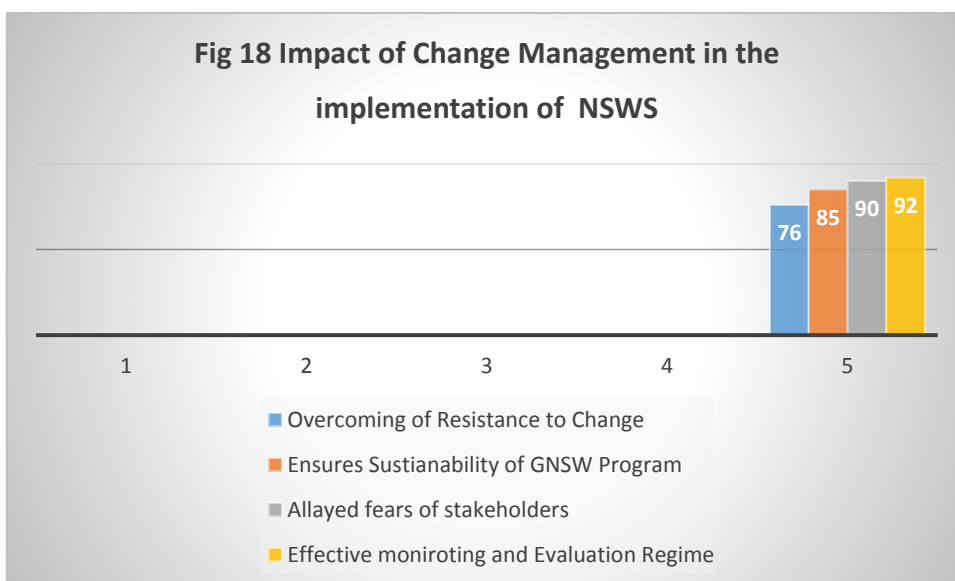


Q8. This question seeks to identify the role of change management in the smooth implementation of the national single window system. The current arrangement for the implementation of the NSWS is in the hands of a private ICT company, West Blue Consulting, which is driving change among various operators in the shipping and logistics sector in Ghana. The extent to which respondents agree or otherwise of the impact of this management approach is illustrated below. Figure 17 shows the views expressed by the respondents. An overwhelming majority (95%) indicated that the changed management role plays an integral part in the effective implementation of the NSWS.

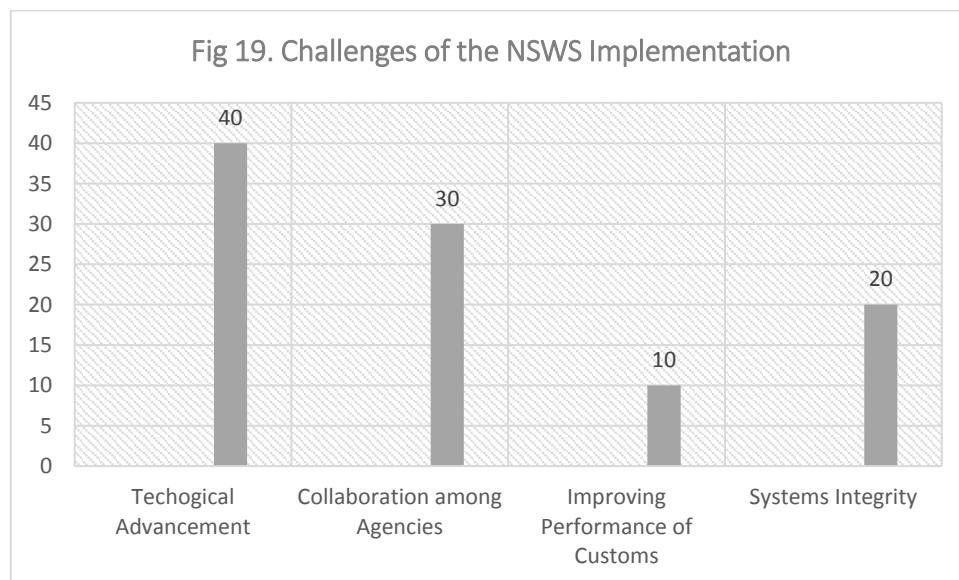




Q9. This question seeks to measure the impact of the change management approach to implementing the NSWS on the logistics and shipping operations in Ghana. Based on the reviews, it was clear that over 80% of the respondents agreed that the approach ensures continuous improvement of the system, sustainability of the system and help strengthen the institutional capacities required for efficient logistics and shipping sector in Ghana. Figure 18 shows the views expressed.



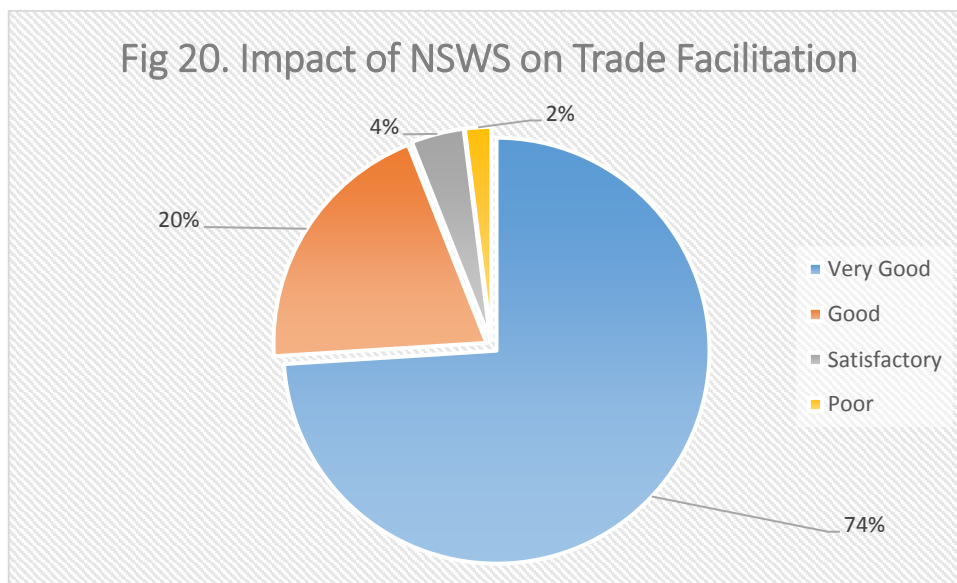
Q10. This seeks to establish from the respondents the challenges the system is facing since its implementation. A number of these challenges were enumerated and rated. Figure 19 shows the views expressed by the respondents.



Q11. This question sought to determine from the respondents how these challenges could be addressed. Table 2 indicates the proposals from respondents on how to overcome the challenges in the operations of the NSWS in Ghana.

<b>Table 2. Proposals by Respondents on how to Overcome Challenges in the Implementation of NSWS.</b>
1. Effective Collaboration between all major Stakeholder in the Cargo clearance Process
2. Improving and Building Capacity of Customs.
3. Ensuring Effective Integrity of the System
4. Effective Monitoring and Evaluation of the System Operations
5. Continuous Improvement of Technology use in Operating Single Window Applications and Systems.

Q12. This question seeks to establish from the respondents the role of the introduction of the National Single Window System in trade facilitation. Figure 20 gives the views expressed by the respondents. Over 70% expressed the view that trade facilitation has been very good since the implementation of the NSWS, 20% rated the impact on trade facilitation as good, 4% as satisfactory and 2% as poor.



### 5.3 Discussion of Key Findings

This section of the study discusses the major findings and implications for the National Single Window system and its impact on trade competitiveness.

From the findings, it is quite evident that the National Single Window has significantly improved the business process at the ports especially in relation to cargo clearance time and cost.

On improvements in trade facilitation, following the implementation of the National Single Window, over 70% of the respondents expressed the view that trade facilitation has been very good since the implementation of the NSWS, 20% rated the impact on trade facilitation as good, 4% as satisfactory and 2% as poor. This has a direct impact on trade competitiveness because of the significant reduction in transaction time, and

elimination of trade process or transaction cost. Before the implementation of the system, delays were a feature in Ghana's cargo clearance process system.

Furthermore, the result of the findings also established that 76% sighted the improvement in compliance levels due to the NSWS implementation as a major source of cost reduction. 90% attributed to the savings made in the cost of clearing goods due to the streamlining of procedures for cargo clearance and the implementation of the NSWS.

About 83% of respondents indicated that due to reducing delays because of the implementation of the NSWS, the cost of doing business is going down. 67% attributed the reduced cost in doing business is as a result of the automation process taking place now within the framework of NSWS on the port and cargo clearance process. 75% of the respondents cited the reduced time in transaction time is helping improve the cost of doing business.

The conclusion from these findings is that due to the implementation of the NSWS there are significant improvements in trade competitiveness. This is a result of reduction in cost of doing business; reducing time in processing cargo and automation of the business process has also resulted in improved trade competitiveness.

However, the operation of the system is challenged and requires continuous improvement through the stakeholders' engagement. From the findings of the study, a number of ways were suggested to help address these challenges. One of the issues to tackle is the effective collaboration among the major stakeholders in the cargo clearance process. These stakeholders include customs, freight forwarders, customs house agents and key regulatory agencies. It is vital that all these stakeholders streamline their process to ensure an effective business process.

Improving and building the capacity of customs is the key to the successful implementation of the national single window. Customs are the repository of cargo at the port; indeed the ports are a designated customs zones. Due to government revenue

by way of duties and related taxes on imported cargo, customs play a pivotal role in the cargo clearance process and thus will need to be trained and supported to ensure their processes are streamlined and automated in line with the national single window agenda.

Consequently, the study is recommending regular capacity building for customs officers running the Ghana Customs Management System, which is a key component of the national single window framework. Freight forwarders and customs house agents who use the front end of the system for inputting their declarations also need training to ensure they understand the system and its requirements.

One of the key measures to adapt to improve the efficiency of the National Single Window System is the implementation of an effective monitoring and evaluation regime. This will ensure there is a constant review of the system and challenges identified and addressed swiftly.

The study further observes that technological upgrades of the National Single Window will ensure its robustness and continuous improvement for the various components of the National Single Window System.

#### **.5.4 Interview Questionnaire Analysis**

The interview questionnaire was designed as an additional tool targeting key stakeholders in the implementation of the National Single Window to answer the research questions of this study. The study was conducted to assess the impact of the National Single Window System on trade competitiveness in Ghana's maritime sector. Several ideas, opinions and suggestions were solicited from very high and recognized stakeholders, such as the Ministry of Transport (MOTI), Ghana Shippers' Authority (GSA), Customs Division of the Ghana Revenue Authority (GRA), Ghana Ports and Harbours Authority (GPHA) and Ghana Institutes of Freight Forwarders (GIFF).

The following information was gathered based on the questionnaire administered to them:

### **5.4.1 Summary Analysis of Question One (1)**

Question one sought to gauge the level of understanding of key stakeholders as to the role of the National Single Window System being implemented in Ghana. All stakeholders demonstrated a very good understanding of the role of the National Single Window System. A few of the views expressed are captured below.

#### **5.4.1.1 Customs Divisions**

The customs division of the Ghana Revenue Authority viewed that the National Single Window System is a system whereby all players in the supply chain in the country will hook up to a single system for data sent in only once and the system works on the data and transfer to relevant agencies who have need for it. It is very important in the maritime sector to help reduce the time and cost of doing business.

#### **5.4.1.2 Ghana Shippers' Authority**

Another salient view raised by Ghana Shippers' Authority was that the National Single Window System is a government initiated project to partner business to strengthen Ghana's trade competitiveness and enhance the participation of the business community in the global market, thereby creating new trade and business opportunities. Furthermore, the NSWS is expected to facilitate the quick movement and delivery of cargoes to final recipients (consignees) at an optimum cost and in good time too and also to remove and reduce the human interface in day-to-day trade transactions amongst agencies in the maritime sector.

#### **5.4.1.3 Ministry of Transport**

The National Single Window System is a way to provide an electronic platform as a one-stop shop for declarants/ traders in the submission of their documents in the clearance process which was opted by the Transport Ministry.

#### **5.3.1.4 Ghana Institute of Freight Forwarders (GIFF)**

GIFF viewed that the NSWS is supposed to harmonize all operations of customs procedures so that it would be one stop for all customs procedures and to eliminate the massive usage of paper from the system to enhance efficiency and better mobilization of government revenue.

#### **5.4.1.5 Ghana Ports and Harbours Authority (GPHA)**

GPHA viewed the NSWS as an electronic platform that coordinates the submission and issuance of import and export related documents between traders and the government and among government agencies. It allows the payment of duties and performs risk management to enable trade facilitation.

All this information was the answers pertaining to “What is your understanding or expectation of the role of the National Single Window System in Ghana’s Maritime Sector”?

#### **5.4.2 Summary Analysis of Question Two (2)**

Question two had to do with the efficiency of the National Single Window System and the necessary area of implementation based on the performance of the National Single Window System. The summary of information gathered was as follows:

The research revealed that elimination of the use of documents and the sharing of information amongst service providers can be said to be efficient. It continued by suggesting that the area of internet connectivity should be enhanced.

It also brought to light that submission of documents through one portal is efficient. The rate of response and addressing issues of appeal by the Customs Technical Services Bureau needs some work. It is very efficient in document processing for clearance of goods as at now. There are deficiencies in the area of siting and location of shipping containers and lodging of trade documents now are another concern raised by the Customs.

Another view was that the efficiency has to do with the easy application of electronic data interchange on some platforms hitherto that were done separately from the platforms of the various government agencies. They continued by saying that the area that is not efficient is when you have to sometimes follow up with calls for approval from these agencies even upon submitting them electronically.

#### **5.4.3 Summary Analysis of Question three (3)**

Question three had to do with the challenges in the implementation process of the National Single Window System to Ghana's trade competitiveness and the following opinions came up from the various stakeholders:

- Total acceptance of the concept by the stakeholders in the maritime sector.
- Inadequate logistics in the participating agencies like internet facilities and internal IT systems to operate the internal systems which can be hooked on to the NSWS.
- Adequate IT expertise in the participating agencies.
- Resistance to change as a result of fear of insecurity.
- Failure to engage all relevant stakeholders before its implementation.
- Failure to hook up all relevant agencies onto the platform such as agencies responsible for the issuance of permits.
- Legal framework as some government agencies are by law mandated to operate within or has access to import cargo for inspection.

#### **5.4.4 Summary Analysis of Question Four (4)**

Question four was: What challenges do you envisage, should the National Single Window System be poorly operationalized relative to Ghana's trade competitiveness? The following challenges were solicited from the various stakeholders;

- Will retard trade facilitation and pave the way for Ghana's neighbouring countries to attract traffic through their ports, thereby denying the country from increasing foreign earnings.
- Delay in cargo clearance for importers



- Additional cost in terms of demurrage/rent and other charges
- Congestion on the land side of the port
- Uncompetitive port compared to our neighbors
- Increase in the price of imported goods on the final market
- High cost and time of doing business
- Loose investment and business opportunities to other competitors in the sub-region.
- Our world ranking in cost of doing business in our country will be low or will not improve.

#### **5.4.5 Summary Analysis of Question Five (5)**

Question 5 was about reforms and operations to improve on Ghana's trade competitiveness, and the following information was gathered from the necessary stakeholders;

- All agencies should have service standards which they can be held against. With all agencies on the NSWS operating with service standards, they will have targets to meet
- National consensus of all participating agencies should be sorted first.
- The need for political leaders to have a total understanding and acceptance of the concept so that government policies will be tailored in this direction
- The current presidential directive on paperless processes in the ports is not in total conformity with the NSW concept.
- The internet connectivity should be enhanced to ensure uninterrupted services. When this is done, responses or feedback from service providers to users/declarants will be timeously.

#### **5.4.6 Summary Analysis of Question Six (6)**

Opinions were made from the various stakeholder based on the question 6 which was: Can the operators of the National Single Window System improve its performance? These are the reactions towards the question:

- Operators should ensure continuous engagement with stakeholders to address operational issues that may arise
- Continuous sensitization and education on the new system
- To collaborate and receive feedback from users/declarants in order for them to improve on areas identified by users as inefficient
- Broad consultations are needed to bring all stakeholders on board
- Lastly, there is no need for different operating systems for one agency for automation processes as we have in customs now as opined by the customs.

#### **5.4.7 Summary Analysis of Question Seven (7)**

Question 7 demanded an explanation for Ghana's readiness for the implementation of an efficient National Single Window System considering the trade practices pertaining in developing nations like Ghana. Different ideas and responses came up from different players within the industries. The responses obtained from the various stakeholders were put together as follows:

Ghana Shippers' Authority opined its view from different persons in the Authority as with the implementation of the NSWS; Ghana is not ready because there are many problems such as the following:

The challenge of less education on the implementation and how reliable the system may be facing the business communities in terms of the trading system in Ghana. It is very important to state that there is a need to sensitize the trading public on the NSWS in order to ensure the common acceptance by all of the major players in the maritime industry.

The Customs is of the opinion that Ghana is far behind the proliferation of ICT that enables the deployment of the National Single Window System. The state of ICT infrastructure and penetration of digital and automated system are relatively low. The NSWS requires a robust and extensive network of IT infrastructure to ensure its

effective and efficient deployment. This is a challenge that needs addressing and the government must take the lead role in that.

The GPHA opined that connectivity of various stakeholders involved in the cargo clearance and processing chain is very crucial for a well-functioning NSWS. Different systems are operating in the port environment, which needs to be connected for efficiency.

In the view of the Ministry of Transport (MOTI), the GCNet started the single window implementation process ten years ago by first automating customs processes and connected with a few agencies. This foundation laid by the GCNet worked well and all that needs to be done is a build upon this solid foundation. In this respect, Ghana is ready for the full implementation of the Single Window System.

Ghana Institutes of Freight Forwarders were of the views that Ghana can only be ready if party politics do not influence the operation. In a developing country like Ghana where democracy is still being entrenched, the behavior of political actors regarding public policy is quite worrying. There is too much politicisation, and therefore there is no consistency in public policy implementation. This view is likely to hinder the smooth implementation of the NSWS. At the minimum, the government and all political actors must view this single policy of implementing an NSWS as a national priority for enhancing trade and economic development.

The current efforts being made in the implementation of the national single window require the full corporation of all major players and the government must ensure all the necessary investments and capacity building initiatives required for an efficient and modernized NSWS are achieved.

#### **5.4.8 Summary Analysis of Question Eight (8)**

Question 8 had to do with the extent the government's intervention can be in ensuring a well-functioning and efficient National Single Window System to achieve trade competitiveness in Ghana. The various stakeholders opined the following views:

The major success factor of Ghana's Single Window implementation is the commitment and support that the project has received from the government. The single window project has enjoyed enormous support from the government. The chair of the steering committee has always been the chief of staff from the office of the president, and therefore every action of the single window team is already known and coming from the government. Because of government commitment and active participation in the project, it is possible for Ghana to achieve the best single window system that will enhance trade facilitation for the benefit of the nation.

Another opinion was that the State owns the ports of Ghana and the government needs to take the lead by streamlining all its agencies at the port to set the tone. This requires interventions by various ministries and departments to ensure that every agency under the trade and transport industry is contributing to the smooth implementation of the NSWS.

The government should ensure the provision of IT infrastructure to support the full implementation of the system. This means the supply of up to date ICT equipment is needed for the NSWS to function efficiently.

In order to cure the possible political interference of the implementation process, the government must take steps to give legislative backing to the policy of NSWS implementation, to the extent of the government ensuring a legislation and a sanctions regime on non-conforming players to cover the National Single Window System.

The government should establish an authority to oversee the functions of all players in the industry. This is very important because it ensures accountability, proper

monitoring and evaluation of the system and above all a proper oversight. The government should undertake specific information to support the above areas, including the development of an inspection policy for trade in Ghana and also a full feasibility study of the implementation of the NSWS.

Government interest should not just be about the taxes from the maritime sector but how to ensure growth and development. This is a more sustainable way to ensure the benefits of the system accrue to all major stakeholders through improved competitiveness, job creations and business promotion. The government should support the service providers and have a governance structure in place to monitor the performance of the National Single Window System. This may require a governing board made up of experts who will advise the authority put in place and oversee the effective and efficient implementation of the National Single Window.

### **5.5 Governance model of the Ghana National Single Window**

The GNSW Programme has a three-layer structure comprising a steering, technical committee and the working group. The steering committee consists of ministers from the Finance ministry, Trade and Industry, Food and Agriculture and Transport Ministry. The chief of staff from the office of the president chairs this committee. The Technical Committee is made up of officials from all key government and private agencies. The Working groups are technical staff who run the day-to-day activities to help the implementation of the single window system. Figure 21 below shows an image of the governance model.

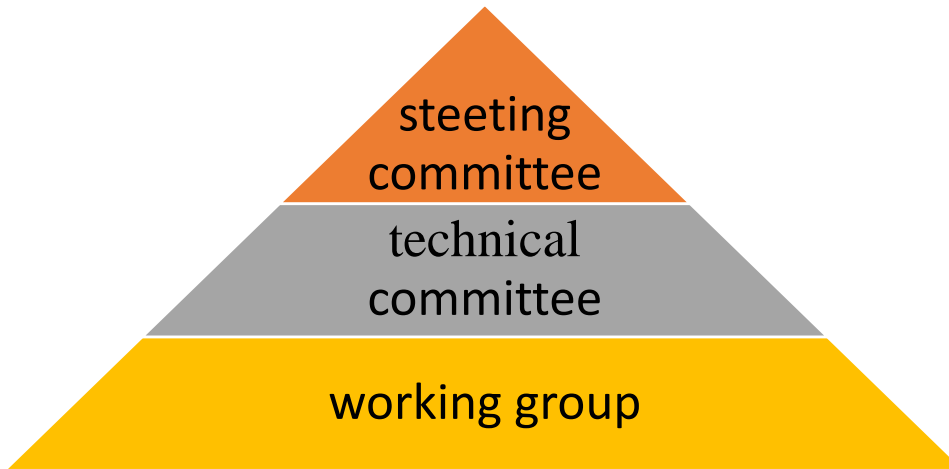


Figure 21: Structure of the governance model of the GNSW

### 5.6 Relationship between the Single Window Concept and the Two Theories (Lean Theory and the Theory of Constraints).

The import- export business is characterised by stringent and repetitive process, which causes delays and high cost of doing business for the trader. The concept of the single window system is to eliminate the wasteful process and create value for the trader. This principle is very much in consonant with the fundamental principles of the lean theory and the TOC. Figure 22 below shows the relation of the five lean principles to the single window development steps.

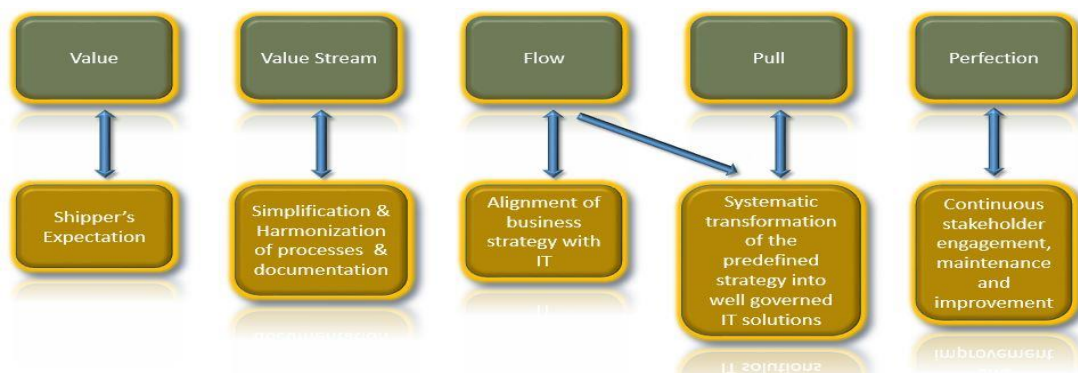


Figure: 22 Relation of the five lean principles to the single window development steps.

Lean theory focuses on the delivery of value for the customer. This is achieved by critically eliminating inefficient process that adds no value to the customer. The customer, in the case of the single window, is the shipper, i.e., the importer or exporter who needs to go through the import and export formalities to clear his/her consignment. The single window therefore deliver value to the shipper by offering a timely and cost effective transaction process. By this means, the shipper is able to make profit on his business.

The value stream in the case of the single window is the simplification and harmonisation of the clearance processes and documentation. This step is aimed at reducing duplicated processes associated with the clearance system and its based on the value earlier defined in the first step. The ultimate goal is to achieve trade facilitation.

The flow involves the alignment of business strategy with IT strategy. It builds up on the value stream by automating business process to enable electronic sharing and exchange of information. This alignment is done in conformity with the best practices. In the case of the single window, the UN/CEFACT implementation guide is an example.

The use of IT manages and coordinates the activities of the clearance system such that, a transaction is only done when it is needed as exemplified in the “pull” principle.

Perfection in the case of the single window is a continuous engagement with stakeholders to maintain or improve the level of efficiency of the system.

As earlier mentioned, the TOC acknowledges that every organisation has at least one constraint, and encourage managers to identify this constraint and endeavour to

overcome. The introduction of the concept of a single window could be said to have emerged out of the application of the above notion. The five principles of the TOC fit perfectly into the five lean principles as it provides the means for the establishment of the value, the stream and the flow. In developing a single window, the TOC steps are the basic principles applied to establish and maintain a single window system.



## **Chapter Six (6)**

### **Recommendations and Conclusion**

#### **6.0 Introduction**

This chapter presents the conclusions made in the study and recommendations. Finally, the chapter provides suggestions regarding avenues for future research. The conclusions and recommendations reflect the research objectives and related questions.

#### **6.1 Conclusions**

The study investigated the impact of a National Single Window System implementation among various shipping industry stakeholders operating at Ghana's largest port. The specific research aims were to ascertain and examine the implementation processes of the Single Window System in Ghana, identify the challenges that have confronted the implementation and assess the impact of the implementation on trade competitiveness. This is to ensure that delays, poor customer service and associated cost to port users are minimized. This research was also aimed to bridge the gap between the expectations of shippers and what is delivered by NSWS to maintain a level of consistency that allows both shippers and service providers to know where they stand and what outcomes they should expect.

The study addressed the following research questions:

1. Has the introduction of the single window system reduced the time of clearance in Ghana?
2. What is the reduction in cost of doing business since the introduction of the National Single Window?

3. What role does change management play in the impact of the SWS implementation and operationalization process?
4. What are the critical success factors in the successful implementation of the SWS?

Based on the outcome of the study, it is concluded that the NSWS has brought a significant change in trade competitiveness through improved trade facilitation, reduction in cost, streamlining of procedures and modernization of customs operations in Ghana.

The study indicated that the implementation of the National Single Window has reduced clearance time in Ghana's ports. The simplification and harmonization of regulatory documentary requirements and processes played a major role in achieving the reduction in clearance time. The introduction of the SW system enabled the reduction of the number of agencies involved in the trade transaction process consequently eliminating duplicated processes paving the way for trade facilitation. 70% of the respondents agreed that the implementation of the SW had enhanced trade facilitation in Ghana's port.

In addition, it is concluded that the cost of doing business is going down at the ports due to reduced transaction time and automation of procedures which has significantly reduced paperwork and delays in the cargo clearance regime. Current data shows that 70% of all containers are now being cleared before the seven(7) days' grace period for demurrage and rent payments. Secondary data according to the research department of the Ghana Shippers' Authority indicates cost to shippers in terms of demurrage is going down. It is gratifying to note that demurrage payments by shippers at Tema and Takoradi ports recorded a decline in the 1<sup>st</sup> half of 2018. Total demurrage payments in the 1<sup>st</sup> half of 2018 amounted to USD 28,512,541 representing a 25.93% decrease compared to the 1<sup>st</sup> half of 2017 (USD 38,494,314) as reported by the Ghana Shippers' Authority.

The average dwell time for containers at the ports is also reduced to 5 days owing to the National Single Window implementations. The Ghana National Single Window

Strategy and Road Map targets to reduce cargo dwell time to one day in Ghana's port by 2020. It also targets to introduce electronic manifest submission and implement an electronic payment system. If Ghana proceeds as it is and complies with the strategic roadmap, then the set targets are very much achievable.

The study findings also established 76% sighted the improvement in compliance levels due to the NSWS implementation as a major source of cost reduction. 90% was attributed to the savings made in cost of clearing goods due to the streamlining of procedures for cargo clearance and the implementation of the NSWS. 83% of the respondents indicated that due to reducing delays because of the implementation of the NSWS, the cost of doing business is going down.

About 67% attributed the reduce cost in doing business to the automation process taking place now within the framework of NSWS on the port and cargo clearance process. 75% of the respondents cited the reduced time in transaction time is helping improve the cost of doing business.

The findings also established that over 80% of the respondents indicated the view that they think the NSWS has brought about some efficiency in the logistics and shipping operations at the ports. This is critical to Ghana's economic growth as revenues generated from the port contribute substantially to Ghana's National budget. Ghana's ports were characterised with congestion due to the bureaucracy in the trade transaction process. The introduction of the SW has eliminated the bureaucracies and delays in the clearance process. The ultimate result is a trade facilitation environment that makes room for business to thrive and the government to benefit from the increase in revenue collection.

It was also evident in the study findings that the NSWS has also brought significant reduction in the number of inspections agencies and brought together all major stakeholders into a single platform for inspection of cargo at the ports.

The NSWS also brought about gains in the implementation of a risk-based management system for profiling cargo, thus improving the fluidity of the supply chain system in Ghana's maritime industry.

The research findings also indicate that the impact of the National Single Window System in trade competitiveness is very positive.

With regards to the role of change management, 95% of respondents endorsed the importance of change in the implementation of the single window system. Another 80% attributed the success of the implementation to the changed management approach adopted by the West Blue Consulting (Agency in charge of the SW implementation). The views expressed that the West Blue change in management approach ensured continuous improvements of the system, sustainability of the system and helped strengthen the institutional capacities required for an efficient logistics and shipping sector in Ghana.

A strong political will has been attributed as critical factors in the implementation of Ghana's National Single Window. The project has enjoyed commitment and oversight from the office of the president of Ghana. Available literature on the structure of the single window implementation team shows the office of the President as the Chair of the Steering Committee. This active participation of the office of the President at the level of implementation has been attributed the biggest behind the success.

Finally, the study concludes that effective implementation of measures to address improvement of the National Single Window System should be within the framework of global maritime industry standards.

The maritime industry is made up of various key actors upon which the business of the industry thrives. These actors operate within a global framework of standards and protocols that allows for information sharing, creating the enabling environment and risk management. The global maritime industry standards talked about is the best practices and application of single window environments for enhanced trade.

In view of the role the SW play and its benefits to international trade, it is important for the government to adopt global best practices in the implementation of the SWS. The UN/CEFACT recommendation 33 provides such implementation standards, which is available for the use of the government.

## **6.2 Recommendations**

Following the successful conduct of the research study to evaluate the impact of the NSWS implementation to trade competitiveness in Ghana's maritime sector, the study recommends the following:

- a. Effective collaboration should be developed between all major stakeholders in the cargo clearance process to help sustain the gains and drive the objectives of the NSWS, which will bring Ghana's maritime trade to the best levels ensuring value for money and competitiveness.
- b. Internal and external stakeholders should be identified to brainstorm on the action plans to be adopted to ensure inefficiencies in the NSWS operations are tackled and thereby leading to an improvement in service quality among shipping service providers within the framework of the NSWS.
- c. There should be transparency and sensitization of the actionable plans and the role of key actors or stakeholders in the implementation plans to address trade competitiveness issues at Tema Port within the framework of the NSWS.
- d. There should be formal guidelines developed for continuous improvement in technological updates of the NSWS and
- e. Building of requisite capacity among customs officials and major stakeholders to help in the efficient operations and management of the NSWS.
- f. A robust feedback mechanism should be developed by the change managers of the NSWS to ensure stakeholder inputs for addressing operational challenges.
- g. Since the port is mostly owned by the government, it needs to take the lead by streamlining all its agencies at the port to set the tone.
- h. The government should ensure the provision of IT infrastructure to support the full implementation of the system.

- i. The government should ensure a legislative backing and sanctions regime on non-conforming players to cover the National Single Window System.
- j. The government should establish an authority to oversee the functions of all players in the industry.
- k. The government should undertake specific information to support the above areas, including the development of an inspection policy for trade in Ghana and also, a full feasibility study of the implementation of the NSWS across all trade related transactions not only limited to ports but to include areas such as insurance and others.
- l. The government interest should not just be about the taxes from the maritime sector but how to ensure growth and development.
- m. The government should support the service providers and have a governance structure in place to monitor the performance of the National Single Window System.

### **6.3 Suggestions for further studies**

- a. The study provides an understanding of the NSWS among stakeholders, shipping service providers and the gap between the expectations of the service users and the actual service quality delivered. However, the findings of the study and the recommendations following are limited to the Tema port organization and experiences of the respondents based on different experiences. It is likely the findings of the study may not be applicable to other population settings not examined in this study. Therefore, the study suggests that this research be replicated in other port settings.
- b. In addition, the study recommends that future research should adopt quantitative research particularly to estimate the cost to port users arising out of service quality dimensions of the NSWS at Tema Port. This will lead to an understanding and determination of the relative magnitude of the impact of poor trade competitiveness as a result of the NSWS at Tema Port and the

economy since the port performance is a major barometer for Ghana's economic performance.

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**APPENDIX A**  
**QUESTIONNAIRE**

**WORLD MARITIME UNIVERSITY, MALMO SWEDEN**

**ASSESSING THE IMPACT OF THE NATIONAL SINGLE WINDOW**  
**SYSTEM ON TRADE COMPETITIVENESS IN GHANA'S MARITIME**  
**SECTOR.**

***Privacy Statement***

Please complete this questionnaire for the Research on the study into the Impact of the National Single Window System (NSWS) on Trade Competitiveness in Ghana's Maritime Sector. Thank you for your time and cooperation.

**Answer the following questions by ticking the most appropriate answer(s)**

1. Please indicate your field of work.
  - a. Agent
  - b. Custom
  - c. Transporter
  - d. Freight forwarder
  - h. Banker
  - i. Other Government Agency (state) .....
  
2. How long have you been working in your field?
  - a. 0 – 3 years
  - b. 4 – 6years
  - c. 7 – 9 years
  - d. 7 years and above
  
3. How best do you understand Ghana National Single Window System being implemented in the maritime sector?
  - a. Fully
  - b. Partially
  - c. Low
  - d. No idea
  
4. Has the introduction and implementation of the Single Window System

improved efficiency in Ghana's shipping and logistics business?

a. Yes  b. No

5. If Yes, how efficient has the introduction and implementation of the Single Window System improved in Ghana's shipping and logistics business? Tick one for each (1 = least satisfactory, and 5 = most satisfactory)

	1	2	3	4	5
i) Faster clearance and release	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii) Improve trader/trading compliance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii) Easy predictable and explanation of rules	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

iv) More effective and efficient deployment of resource to member community.

	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
v) Enabled the use of sophisticated 'risk management' techniques for control and enforcement purposes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

v. Others (please state) .....

6. Has the introduction and implementation of the Single Window System helped reduced costs of doing business as well?

a. Yes  b. No

7. If yes, how or what is the reduction in cost of doing business since the introduction and implementation of the National Single Window System (NSWS)?

- a. Reducing costs through reducing delays
  - b. Reducing time of trade related procedures
  - c. Reducing too much paper usage
  - d. Through the travel of traders to and from government agencies
  - e. Others (please state) .....
8. What role does the change management play in the implementation of Single Window System?
- a. Very significant
  - b. Significant
  - c. Moderate
  - d. No role
9. What impact does it have on Single Window System (SWS) implementation?
- a. Helped overcome resistance to change
  - b. Ensures the sustainability of the GNSW programme
  - c. Has allayed some fears
  - d. Others (please state)
10. What are the challenges since the introduction and implementation of Single Window System?
- a. Technology advancement
  - b. Getting individual to collaborate to achieve a collective goal
  - c. Improving the performance of customs
  - d. Others (please state) .....
11. How possibly can these challenges be address?
- a.
  - b.
  - c.
  - d.
12. How would you rate the Single Window System since its introduction and implementation in trade facilitation?
- a. Very good (70 – 100%)
  - b. Good (50 – 69%)
  - c. Satisfaction (40 – 49%)
  - d. Poor (below 40%)

**APPENDIX B**  
**INTERVIEW QUESTIONS**

**WORLD MARITIME UNIVERSITY, MALMO SWEDEN**

**ASSESSING THE IMPACT OF THE NATIONAL SINGLE WINDOW**  
**SYSTEM ON TRADE COMPETITIVENESS IN GHANA'S MARITIME**  
**SECTOR.**

1. What is your understanding or expectation of the role of the National Single Window System in Ghana's Maritime Sector?
2. With regard to the performance of the National Single Window System, what do you find to be efficient and which area is not?
3. What in your opinion are the challenges in the implementation process of the National Single Window System to Ghana's trade competitiveness?
4. What challenges do you envisage, should the National Single Window System be poor operationalised relative to Ghana's trade Competiveness?
5. What reforms and operational form would you recommend the National Single Window System assume to enable it improve on Ghana's Trade Competiveness.? How would you justify your response?
6. How in your opinion can the operators of the National Single Window System improve its performance?

7. Considering the trade practices pertaining in developing nations like Ghana, how would you explain Ghana's readiness for the implementation of an efficient National Single Window System?
  
8. To what extent do you think government's intervention can be in ensuring a well-functioning and efficient National Single Window System to achieve trade competitiveness in Ghana?