Addis Ababa University

College of Business and Economics

Department of Public Administration and Development Management

EFFICIENCY OF ELECTRONIC SERVICE DELIVERY: A CASE STUDY OF AUTOMATED SYSTEMS FOR CUSTOMS DATA (ASYCUDA) IN ETHIOPIAN REVENUE AND CUSTOMS AUTHORITY (ERCA)

A Thesis Submitted to the Department of Public Administration and Development Management of Addis Ababa University in partial fulfillment of the requirements for the Degree of Master of Public Management and Policy (MPMP)

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This is to certify that the thesis prepared by Gossa Bekele entitled Efficiency of Electronic Service Delivery: A Case Study of Automated Systems for Customs Data (ASYCUDA) in Ethiopian Revenue and Customs Authority (ERCA), which is submitted in partial fulfillment of the requirements for the Degree of Master in Public Management and Policy (MPMP), complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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## ACKNOWLEDGEMENT

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# ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| ASYCUDA | Automated System for Customs Data |
| CBE | Commercial Bank of Ethiopia |
| COMESA | Common Market for Eastern and Southern Africa |
| ECuA | Ethiopian Customs Authority |
| EFTA | European Free Trade Association |
| ERCA | Ethiopian Revenues and Customs Authority |
| ICT | Information Communication Technology |
| ISO | International Organization for Standardization |
| MCB | Ministry of Capacity Building |
| MOFED | Ministry of Finance and Economic Development |
| NBE | National Bank of Ethiopia |
| SERVIQUL | SERVICE QUALITY |
| SIGTAS | TIN | Standard Integrated Government Tax Administration System (Tax payer Number) |
| UNCTAD | United Nations Conference on Trade and Development |
| UNPAN | United Nations Public Administration Network |
| WCO | World Customs Organization |
| WTO | World Trade Organization |

# ABSTRACT

This study aims to explore the efficiency of electronic service delivery by taking Automated System for Customs Data (ASYCUDA) as the case study in Ethiopia Revenue and Customs Authority (ERCA). To conduct this study descriptive research method was used. The study tried to describe the efficiency of the system (ASYCUDA) by triangulating different data from the view points of customers, employees, clearing agents and other relevant offices which use ASYCUDA processed data in their works.

Survey has been used to collect data from the total sample size of 130.The sample of this study were chosen using stratified random sampling. Questionnaires, interviews, data analysis and observation were used to collect necessary data. The research study involved three categories of sample population: customers of the authority, employees of ERCA and relevant offices which directly use the report of ASYCUDA driven data. Data analysis was made by using SPSS version 20 software and other simple statistical tools like percentage, ratio and tables.

The study finding indicates that even though ASYCUDA is facilitating the import and export process of the authority, it faces implementation problems. This creates inefficiency in the maximizations of the benefits expected from implementations of ASYCUDA. The major technical and institutional problems associated with implementations of ASYCUDA were also analyzed. Some of the challenges which created problems in smooth process of implementation of ASYCUDA were: lack of trained manpower, repeated system failure because of different reasons, frequent electric power interruptions and frequent network failures. These have created a big problem in import and export process of the authority.

From the descriptive statistics method of quantitative data analysis and interview interpretation, study concludes that these factors should be improved by creating coordination inside and outside of the organization to improve the efficiency of ASYCUDA which solve the problems of import and export process and make the revenue collection of ERCA smooth. The study gives recommendations accordingly and some of the recommendations are: give training to employees regarding ASYCUDA, using latest versions of ASYCUDA (version four instead of version three), improve management system of the work process, improve the availability of network by coordinating with Ethiopian telecommunication (ETC) and Ethiopian Electric Power Authority regarding electric power failure by using alternative source of energy to reduce the power interruptions at working hours.

# CHAPTER ONE
## INTRODUCTION

## 1.1. Background of the Study

Organizational design is aimed to contribute to the efficient fulfillment of organizational goals. Thus*, efficiency* means "doing things right", and it is an essential factor for the existence and success of the organization (Hodge, Anthony & Gales, 2003).

Pusi (cited in Benazic, 2012, p. 140) indicated that in many cases in the public sector, *effectiveness*, which can be defined as *capacity to achieve goals*, gains a greater importance than efficiency. Economic actors seek to structure their relationships – their firms – as efficiently as possible, and the economic system as a whole operates to weed out those that fail. Political actors, on the other hand, are typically not concerned with efficiency in the usual economic sense, and the political system clearly does not weed out the inefficient (Williamson et al., 1995). The political system is oriented primarily to the achievement of goals defined in the political process, regardless of the cost benefit ratio.

During the last decade, service giving organizations have been undertaking considerable transformations at macro and micro level, mainly due to the rapid development of emerging business applications, technological advances as well as the requirements and implications of the knowledge and experience-based economy. As a result, customers are becoming less loyal, more price sensitive and discriminating. To address such challenges and satisfy the dynamically changing customer needs, exploitation of information technology capabilities, reengineering business processes and creating business value have become necessary condition (Sigala, 2006).

According to Sigala (2006), current developments are not only required by service organizations to transform their business operating models, but also it helps to redefine their strategic scopes and roles. Overall, within this turbulent economic environment, business competitiveness and performance is currently being related with issues such as service quality, experiences adding customer value, exploitation of information and communication technologies, customer relationship management, personalization and

customization of services, cross-cultural understanding and – eventually – satisfaction of customer needs.

An efficient service delivery is the ability of an organization to deliver simple, effective, and transparent service, which addresses customer expectation. A customer whose service expectation has been addressed effectively and transparently becomes confident towards the organization. Successful service giving companies focus their attention on both their customers and their employees. They often try to understand the relationship that links their service provision and customer satisfaction. This consists of important considerations like internal service quality, satisfied and productive service employee, greater service value, satisfied, and loyal customer, healthy service profit, and growth to the company. The ingredient needed for success in the service area is the building of a client friendly system, making everything easier for customers and to satisfy the needs of the clients. The system must not be created for the convenience of the company rather on the axiom" do right thing in the right way". The system is a perfect combination of effectiveness and efficiency (Egidio, 1990).

It is commonly understood that every government seeks to raise revenue, mainly through taxation, in order to pay its expenditure on infrastructure development, among others. In Ethiopia, the responsibility to collect revenue for the federal government rests with the Ethiopian Revenue and Customs Authority. In addition to collecting revenue, the Authority is responsible to facilitate the legitimate movement of people and goods across the border. Simultaneously, the Authority focuses on those people and vehicles that may involve in the act of smuggling i.e. the act of bringing into or taking out of the country goods on which customs duty and taxes are not paid and goods of which the importation or exportation of which are prohibited by law. The Authority conducts investigation, audit and prosecutes offenders. In the attempt to discharge its responsibility, the Authority closely works with the Federal Police, Standardization Authority, Ministry of Health, and Immigration Service and with other stakeholders (www.erca.gov.et, accessed on 21 November, 2014).

Experience suggests that electronic service delivery can provide massive gain in effectiveness and efficiency for all forms of tax administration. To accomplish its task, ERCA has come across two stages: Manual and Electronic declaration and data processing. However, during manual data processing there was not an updated data and the national reports were not indicated at their up to date conditions. Hence, recently as a solution to the problem observed on the manual stage the Ethiopian Revenue and Customs Authority adopted the ASYCUDA and the Standard Integrated Government Tax Administration System (Tax-paying Number) SIGTAS | TIN systems.

The Automated System for Customs Data (ASYCUDA) is used for customs management system which covers most foreign trade procedures and activities in goods clearance process. ASYCUDA is a standardized system that takes into account the international codes and standards developed by International Organization for Standardization (ISO) and World Custom Organization (WCO) and they are adaptable to suit the national characteristics of individual customs regimes and duties of Ethiopia. It all began in 1995 when a group of COMESA delegates came to Ethiopia to introduce ASYCUDA version 2.7 to Higher Customs Officials (www.erca.gov.et, accessed on 21 November, 2014).

The targeted objectives from the implementation of the ASYCUDA system in the Ethiopian Customs are:
- Trade facilitation
- Effective revenue collection
- MIS and generation of trade statistics

Customs computerization speeds up the clearance of goods and reduces delays in deliveries to customers. As a result the related overhead costs, which affect the cost of imports and the price of export, are greatly minimized. And provides more precise external trade statistics, the computerized database on trade is used for statistical economic analysis, generate timely reports as required and cash account is automatically closed every other working day (United Nations Conference on Trade and Development (UNCTAD), 2001).

## 1.2. Statement of the Problem

According to Berry (1991), the heart of excellent service marketing is characterized by service reliability, performing the service consistently and accurately. When a company performs a service carelessly, when it makes avoidable mistakes, when it fails to deliver as per promises, it erodes the customer confidence in its capabilities and undermines its chances of earning a reputation for service excellence. From the customer's perspective, the proof of a service is its flawless performance.

In Ethiopia, in most cases, service is provided in manner that suits the administrative convenience (i.e. provider) rather than compliance to the recipient interest. In relation to this, inconsistency of regulation and guidelines among governing institutions that provide related service as well as lack of coordination and cooperation among various departments within an institution and between related institutions often hinder efficiency in service delivery (Ministry of Capacity Building (Ministry of Capacity Building (MCB), 2001:3).

Moreover, the service delivery in public institutions is time taking due to excessive hierarchal organizational structure. And yet sufficient attention is not given in the planning process of many governmental institutions to improve their time taking service delivery system as well as procedure of service delivery. In addition, the human resource management system and working condition in the civil service do not motivate employees to provide quality service properly. The service users are also not aware of their rights and obligations regarding how and when to receive the public service (MCB, 2001:5).

Even though the quality of service delivery has increased the satisfaction of customers, the efficiency of service giving company highly requires the ability to have a good service delivery system and efficient professionals who fit that technology. Now it is impossible to forget the contribution of modern information technologies for efficiency of service delivery system. Electronic service delivery as a system will benefit the organization in increasing profit, in decreasing transaction cost and maximizing customer

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satisfaction and it is one of the best services giving system even thought it may stimulate stress because of the knowledge gap and change challenging nature of human behavior between employees (Quinn and Byron, 2006).

A company can achieve a strong reputation for quality service only when it consistently meets customer service expectations. Customers evaluate service quality by comparing what they want or expect with what they are getting from the company. To earn a reputation companies should work as per expectations and requirements of customers because customers are the sole judge of service quality and if customers disagree with the quality of the service the organization offers, it can be concluded that the company has problems and must accept and correct accordingly (Berry, 1991:15)

Service companies are under a constant and dynamic change, everybody is aware of this and so, proactive action is required. What they have aimed to do is to identify issues that are relevant to make them fit with the required service delivering system and as such applicable to all involved in the management and competitiveness of service companies regardless of their location or national boundaries. Though, this is for private organization some parts are also extended to public organization and ERCA should watch its service delivery system as well as its efficiency in this changing situation to facilitate its revenue collection works.

Electronic service delivery facilitates the work of any organization and to maximize this opportunity and to get organizational efficiency, Ethiopian Revenue and Customs Authority (ERCA) adopted an electronic service delivery system called ASYCUDA. There is a claim that the introduction of information technology based service delivery system cannot guarantee the development of a country even though it may contribute to total development; this claim of under satisfaction by the service delivery systems continues to the introduction of ASYCUDA.

It is the experience of the researcher that Clearing agents feel that the adoption of ASYCUDA does not bring sufficient facilitation of works in the organization. They also

believe that the adoption of it cannot bring adequate change in efficiency, transparency and effectiveness of service delivery in ERCA. This is due to lack of trained employees and good management system, frequent system failure, network failure and electric power failure. This study assesses the service delivery in ERCA and demonstrates the efficiency of the organization after the adoption of ASYCUDA.

## 1.3. Research Questions

The adoption of the service delivery policy puts clearly on civil service institutions their responsibility of improving the efficiency and effectiveness of their service and of making every effort on making to attain user satisfaction by ensuring fairness and accountability in their dealings with the public. It also enables service institutions to serve service users transparently, ethically and equitably. Above all the policy reminds civil service officials and employees that they serve clients courteously.

Hence, ERCA applied ASYCUDA system for facilitation of its import and export works and easy collection of revenues. In this thesis the researcher addresses the following questions:

i. Is ASYCUDA facilitating work process in the organization and helping to bring organizational efficiency and effectiveness in ERCA?
ii. What are the perceptions of customers towards efficiency of ASYCUDA?
iii. What changes have occurred on the perception and performance of employees after the introduction of ASYCUDA?
iv. How much the adoption of AYSCUDA does reduce the transaction cost and the time the process takes?
v. What are the shortcomings and problems faced in utilization of ASYCUDA and what are possible solutions?

## 1.4. Research Objectives

ERCA adopted ASYCUDA to facilitate the import and export process activities in the organization. Here the main objective of this research is to assess the efficiency of ASYCUDA in service delivery process of ERCA.

## The specific objectives are:

- To assess the role of ASYCUDA in facilitating work process in ERCA and improving organizational efficiency;
- To assess the impact of adoption of ASYCUDA at the level of customers satisfaction;
- To assess the changes in work performance after the introduction of ASYCUDA in the organization;
- To assess the cost reduction and the shortening of time after adoption of ASYCUDA;
- To show the shortcomings and problems faced on utilization of ASYCUDA and give suggestions and recommendations accordingly.

## 1.5. Methodology of the Study

Under mixed method approach, the researcher bases the inquiry on the assumption that collecting diverse types of data best provides an understanding of a research problem (Creswell 2003). This mixed approach is appropriate when either quantitative or qualitative approach by itself is inadequate to understand a research problem.

To address the general objective and to fill the knowledge gap, adequate data from both quantitative (survey questionnaire) and qualitative (in-depth interview) sources are used, and converge data collected from both sources at the same time to get a comprehensive analysis of the research problem and interpret the overall result. Therefore, the researcher used quantitative survey research questionnaire and in-depth interview data gathering instruments together with documentary analysis. Thus, the researcher used concurrent mixed approach during the study.

## 1.5.1. Research methods

Research methods are specific techniques/methods of data collection and analysis used to achieve the broad research objective through addressing the specific objectives of the study. Consequently, this research used quantitative research methods particularly survey method and qualitative methods particularly in-depth interview and documentary analysis.

To address the research problem using a survey method the researcher used semi structured self-administered questionnaire. The reason to implement self-administered closed ended questionnaire was because of its low cost requirement and not consume much time to be answered by the respondents and quicker to administer by the researcher but, if questions wording is unclear and if respondents are not literate, its response rate is low. This Survey instrument was prepared in English. The questionnaire had two parts, the first part was comprised of profile of respondents and the second part is comprised of the main idea of the study issue.

The other specific method was in-depth interview. In-depth interview is a qualitative technique designed to draw out a glowing picture of the participant's perspective on the research topic. In depth interview is an effective qualitative method for getting people to talk about their personal feelings, opinions, and experiences. The interviews were made to 6 relevant offices (two officials from each organization). The Offices are Commercial Bank of Ethiopia (CBE), National Bank of Ethiopia (NBE), purposively selected private banks (NIB Bank and Dashen Bank), Ministry of Finance and Economics Development (MOFED) and the ERCA itself. Moreover, with regard to qualitative aspect of the method documentary analysis was made.

## 1.5.2. Study Design

The study population that the researcher intended to draw a sample is indicated in sample frame. Sample should be representative; because, based on the representative sample generalization is given for the entire population. Therefore under this study the sampling frame were customs official and employees, importer/exporter and third parties clearing agents.

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**Table 1.1: population of the study**

| Category | Station | | Total |
|---|---|---|---|
| | Addis Ababa(Kaliti) | Addis Ababa Bole airport | |
| Employee | 258 | 242 | 500 |
| Official | 24 | 24 | 48 |
| Importer/Exporter | - | - | 444 |
| Clearing agent | - | - | 244 |
| Total | | | 1236 |

Source: MTI, and ERCA

## Sample Size

The other element of sample design is determination of sample size, given the limitation of availability of time and other resources the sample size was determined as follows even if, there is no single right way for the determination of sample size (Fowler 1984). Accordingly, the researcher has taken 130 samples that were 10% from the total employees, 25% from the total officials, 10% from the total importers/exporter, and 10% from the total clearing agents. Random selection was applied in taking these samples.

Out of this 36, 28 and 16 questionnaires have been properly filled and returned from the employees, importers/exporters and clearing agents respectively. On the other hand, the researcher has drawn 12 interviewees from 48 officials to get detailed and clarified information as they are decision maker in their respective organization.

## 1.5.3. Data Instrument

The researcher used semi-structured self administered questionnaire for both quantitative and qualitative aspect of the research method. Further, for the qualitative aspects of the study methods data were collected from in-depth interview and document analysis from ERCA.

## 1.5.4. Data Analysis Methods

The specific methods applied in the study were survey methods and in-depth interview

together with documentary analysis. Therefore in this study, Quantitative data from the questionnaires were analyzed using descriptive statistics. The rational to use this descriptive statistics is to describe the basic features of the data in a study and to provide summaries about the sample and statistical package for social science (SPSS) tool was used.

## 1.6. Scope of the Research

The research study is limited in Addis Ababa, which has the biggest customer load on the Authority and the Addis Ababa Airport Branch Office (Bole) and Addis Ababa Export and other goods facilities branch office (Kaliti) are the main study areas of the research with equal proportion of samples taken from both sites. Because of the time and budget limitations the research was conducted only in Addis Ababa Revenue and Customs Authority Bole and Kaliti office and the head office and IT departments was covered in the study that have relevant sources of data.

Ethiopian Revenue and Customs Authority adopted electronic service delivery system that facilitates its work on tax collection-ASYCUDA and SIGTAS. ASYCUDA deals with the tax collection on imports and exports activities and SIGTAS deals with tax collection from all sources at home. However, the researcher focuses on the ASYCUDA package and assesses the efficiency of the import and export system after the implementation of ASYCUDA. This study does not cover the ICT application; it rather concentrated only on the administrative efficiency of ASYCUDA.

## 1.7. Limitation of the Research

It was better to investigate and assess both ASYCUDA and SIGTAS to see all over the efficiency of the system. But because of time and cost limitation the study was only limited to ASYCUDA and tried to make an intensive study on stratified and randomly selected samples.

## 1.8. Significance of the Study

i. This paper is important for the authority to observe its gaps in service delivery and to initiate corrective actions.

ii. It instigates other researchers to investigate more about the system which are not covered by this paper and other studies

iii. It is valuable for other researchers to use it as a source of reference for comprehensive and       thorough study on efficiency of the public organization.

## 1.9. Organization of the Thesis

This study is presented in four chapters. It starts with the introductory part which discusses the service delivery, and electronic service delivery of ICT and ASYCUDA in Ethiopia .It also deals with statement of the problem, objective of the study, significance and methodology of the research as well as data analysis methods of this research. The second chapter deals with the literature of service delivery and deals more on concepts in Public Service Delivery and electronic service delivery, efficiency measurement of Public Service Delivery. It also deals more on ASYCUDA and its implementation ERCA. The third chapter is committed to analysis of the data collected, thereby on the improvement and give hint on efficiency of service delivery to customers and cost reduction, transparency and effectiveness in customs operation. Based on the findings of the study, the final chapter offers suggestions and recommendations towards the efficiency of ASYCUDA and gives ways for better utilization of the system for ERCA.

# CHAPTER TWO

# LITERATURE REVIEW

## 2. Conceptual Framework: Electronic Public Service Delivery and Its Efficiency Measurement

### Introduction

This chapter reviews literatures on concepts in public service delivery, electronic service delivery, its efficiency and measurement in public sector performance. It also discusses the development of information technology and its service delivery contribution in Ethiopia. In addition, some limitations on ICT service delivery are discussed. Finally, development of information technology and implementation of ASYCUDA in Ethiopian Revenue and Customs Authority (ERCA) are also looked into.

### Definitions of Important Terminologies

This section attempts to define the terms widely used in this research paper, and it is important to Understand their meanings and usage in the context of the research paper which are derived from free dictionary ( http://www. thefreedictionary.com).

**Service-** is any work that is done by a person or a group of people that provides a function to others. Service work can be paid or voluntary. This is to say you provide a service rather than sell an object.

**Service delivery-** refers to delivery of work by a person or group for the benefit of someone else or assistance offered by an organization to its customers.

**Public service delivery-** is a term usually used to mean services provided by government to its citizens, either directly (through the public sector) or by financing private provision of services.

**Electronic service delivery**- is electronic commerce in services, means the provision of services with the assistance of telecommunications and telecommunications-based tools .It is any application program or information resource which make to exploit the potential electronic service and internet service to facilitate all the activities involved.

**Information Technology**-in the broadest sense, information technology refers to both the hardware and software that are used to store, retrieve, and manipulate information. At the lowest level you have the servers with an operating system. Installed on these servers are things like database and web serving software. The servers are connected to each other and to users via a network infrastructure. And the users accessing these servers have their own hardware, operating system, and software tools.

**Efficiency:** a situation in which a person, company, factory, etc. uses resources such as time, materials, or labor well, without wasting any(cambridge.org/dictionary/business-English /efficiency)

**Consistency-** the quality of always behaving or performing in a similar way, or of always happening in a similar way: (.cambridge.org/dictionary/british/consistency)

## 2.1. Concepts in Public Service Delivery

A public sector or government organization first and foremost exists for providing service to its citizens through their operation. Service is generally any activity undertaken to meet social needs. Public service, particularly, refers to those activities of government institutions aimed at fulfilling the needs and ensuring the well being of the society as well as enforcing laws, regulations and directives of government (MCB, 2001:1).

Several distinctive characteristics make special the public service delivery system of the government from the private ones. These distinctive characteristics in combination make the performance measurement in public sector a challenging practices and it is not easy to make a comparison between performance of public and private sector organizations. The occurrence of differing competitive conditions, differing objectives, constraints and data difficulties makes very difficult to evaluate performance of public sector service deliveries (Fox, 2002:14).

According to Ghobadian (Ghobadian et al 1994: 44-45), there are possibly major differences between service and manufactured goods. These differences have an impact on the approach and substance of quality management and four of them are:

- **Inseparability of production and consumption**: in service industries, usually the marketers create or carry out the service at the same time as the full or partial consumption of the service takes place. The high visibility of the conversion process means that it is not possible to hide mistakes or quality shortfalls. Moreover, the involvement of the consumer in the delivery process introduces an additional process factor, the consumer, over which the management has little or no direct control (Ghobadian et al 1994:44-45).

- **Intangibility of service**: Many services are essentially intangible that it is difficult for the producer to illustrate the service and for the consumer to ascertain its likely qualities. The consumer cannot see, feel, hear, smell, or touch the product before it is purchased. Therefore, the consumer often looks for signs of quality: for example: word of mouth; reputation; accessibility; communication; physical tangibles; etc (Ghobadian et al 1994:44-45).

- **Perishability of services:** Services are perishable and cannot be stored in one time period for consumption at a later date. This means that, unlike manufactured goods, it is not possible to have a final quality check. Hence, service provider needs to get the service right first time, every time (Ghobadian et al 1994:44-45).

- **Heterogeneity of services**: It is often difficult to reproduce a service consistently and exactly. A number of factors can affect the extent of the heterogeneity of service provisions. First, delivery of service often involves some form of contact between the consumer and service provider. The behavior of the service provider influences the consumer's perception of quality. It is difficult to assure consistency and uniformity of behavior (Ghobadian, et al, 1994, 44-45).

**Figure 1: Four service characteristics**

| Intangibility: | | Inseparability: |
|---|---|---|
| Service cannot be seen, tasted, felt, heard or smelled | **Service** | Services cannot be separated from their providers |
| Perishability: Service cannot be stored for later sales or uses | | Variability (Heterogeneity): Quality of service depends on who provides them and when, where and how |
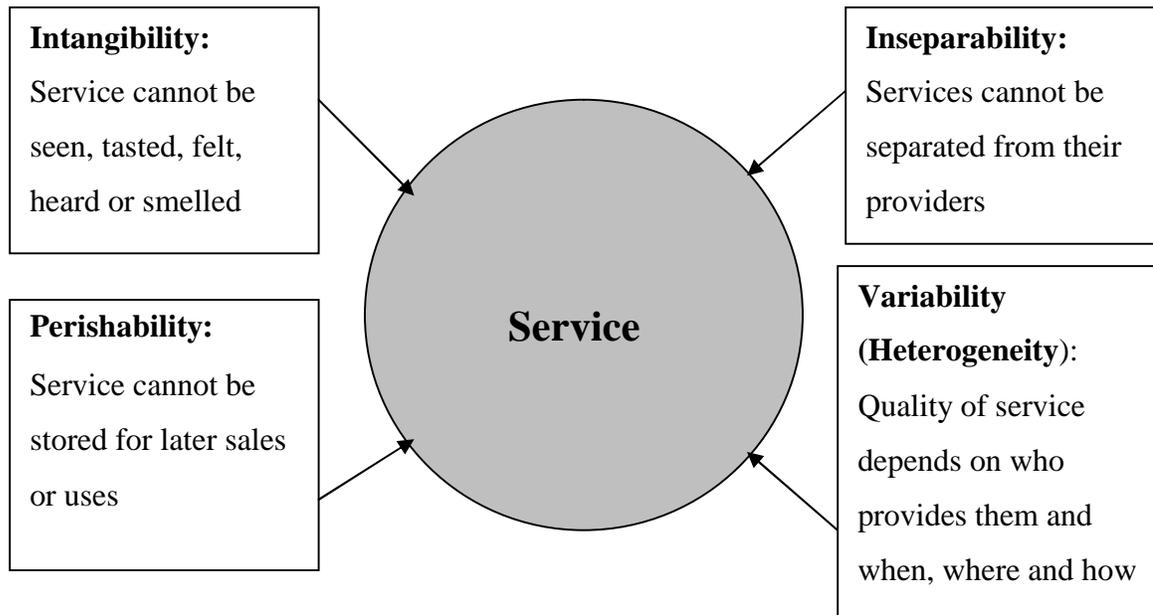
(Source: Kotler and Armstrong, 2001:317)

Modern service delivery, which has been a distinguishing feature of the private sector, has become a topic issue among government as well as non-government institutions in their recent effort to transfer good management practices from private to the public sector. Service delivery basically refers to the systematic arrangement of activities in service giving institutions with the aim of fulfilling the needs and expectations of service users and other stakeholders with the optimum use of resources .In short, improvement of service delivery means increasing the cost effectiveness, coverage and impact as well as efficiency of service (MCB, 2001:1).

Service companies want to ensure that customers receive consistently higher quality service in every service encountered. However unlike product manufacturers, who can adjust their machinery & inputs until everything is perfect, service quality will always vary depending on the interaction between employees & customers, problems will inevitably occur. As hard as they may try, even the best companies will have an occasional late delivery (Kotler and Armstrong 2001:323).

However, although a company cannot always prevent service problem, it can learn to correct the problems immediately. Good service recovery can change angry customers into loyal ones. Therefore companies should take steps not only to provide good service every time but also to recover from service mistakes when they do occur. The first step is to empower front line service employees, to give them the authority, responsibility and incentive they need, to recognize, care about and tend to customers' needs. Generally, they must learn to watch service performance closely and make needed corrections (Kotler and Armstrong 2001:323).

Improving public service delivery is one of the biggest challenges worldwide. Because, public services are a key determinant of quality of life while it is very difficult to measure in per capita income, and also it is very difficult to show its efficiency clearly. They are also an important plank of poverty reduction strategy in a country. But, it is a particular challenge in Africa, given the low quality of service provision and the critical needs of the citizen for quality services from beginning to end by organizing public service provision is deemed to be a core function of government. These goods and services given by government have important benefits not captured in market as the reason of they are subject either to externalities or have equity or minimum service objectives. Given these features, it is well known that the market provides them as market allocation based on willingness to pay and the price system does not internalize externalities and mostly given by the government (Besley and Ghatak 2007:127-128).

In order to bring quality service, service providers can train current employees better or hire new ones who will work harder or more skillfully. Because it is known that everything depends on the behavior of staff, if they are empowered they will work for organizational goal achievements. Empowerment definitely calls for creativity and enhance employees efficiency. In addition, we can exploit the power of technology because it saves time and costs, it also has great and often untapped potential to make service workers more productive and efficient. Hence, companies can differentiate their service delivery having more able and reliable superior physical environment in which

the service products delivered, or by designing a superior delivery process better customer service (Quinn and Byron, 2006:77-78).

Here, the private sector provides private goods efficiently, and the public sector steps in to provide public goods and services and uses taxes or subsidies to correct externalities. People are requesting for quality service which is by government reasoning out they are tax payers and it has a responsibility to provided as per the requirement of them because its responsibility is to serve the citizen (Besley and Ghatak, 2007:128).

Nowadays, continuous improvement in service quality is considered a requirement in the services industry. Supporting multiple service delivery channels with up to date technology is now a key competitive quality has become an essential part of organizational success due to increased customer expectations and customization of services in many markets. In fact, even the definition of service quality is changing. Good service quality used to mean that the output was made to conform to the specifications set by the process designers. Today, the concept of service quality is evolving to mean uniformity of the service output around an ideal (target) value determined by the customer (Frei, et al, 1997:36).

A performance evaluation in public sector is very difficult and it is particularly serious in three respects. First, it is frequently difficult to define the service being provided. Secondly, it is challenging always to price the service being provided. Third, quality matters particularly in the provision of service because service quality is notoriously difficult to define much less to measures (Fox, 2002:19).

Competition, processes, and technological improvements in delivery systems have resulted in a gradual shift in strategic focus from price to service quality. It depends on the magnitude of service process variability and its impact on service quality and organizations performance. It has become an essential part of organizational success due to increased customer expectations and customization of services in many markets (Frei, et al, 1997:2).

However, before applying quality control methods developed in manufacturing to service operations, more fundamental questions need to be addressed: How does process variation in services brings organizational efficiency? How do process variations affect an organization performance? It is very important to point out that removal of unnecessary process variation is a necessary, but not a sufficient condition, for improving service quality as well as for bring efficiency. It is not sufficient because high levels of inherent difference will continue to exist due to other factors and must be managed, even in the best of all possible scenarios (Frei, et al, 1997:2).

There are four major factors which contribute to the substantial difference in the delivery of services, but not all four of these factors apply to all services, nor is this complete list of variables, but these four factors represent major explanations for the existence of process variation in services: heterogeneous customers with different service expectations; lack of precise policies and processes; high employee turnover; and nature of customization (Frei, et al, 1997:2).

Due to the co-productive nature of most customers, the presence of heterogeneous customers usually introduces variation into the service delivery. The principal reason for this is that a component of the production process (the customer preferences and expectations) is different for each instance of service delivery. For example, one customer may want fast service with no idle chatter and another customer may want to have a discussion amidst service delivery. Serving these customers will likely to require different amounts of time, and thus will result in higher variation. Aside from variation in customers, there may also be process variability. Services, typically, do not apply as much rigor to the definition of each and every step of the production process. In fact, it is not uncommon for upper management not to know the details of a particular process and for there to be no institutional knowledge of process designs (Frei and Harker, 1995).

Many organizations want to work for the fulfillment of their goals, but they may not get the right way of doing a work and intended to move ahead and improve organizational efficiency. But many activities in service giving organizations require better facilitation

as well as skill full employees. Hence, organizations should work to empower employees to make the service quality as well as to bring organizational efficiency by following organizational goals as well as implementing better information technology which helps its performance as well as make an organization efficient and effective in using its resources.

## 2.2. Electronic Public Service Delivery

The term electronic services delivery is much used, but seldom defined. The generic concept, for both the terms 'electronic business' and 'electronic commerce' is widely used as the conduct of business with the assistance of telecommunications, and of telecommunications based tools. Hence, electronic services delivery is electronic commerce in services. It is the delivery of information, products, service, or payments with the help of telephone, computer or other automated media. It includes many kinds of business activities, and all commercial transactions conducted by the internet, telephone and fax and all forms of trade in digitized goods and services. However, it is not commonly used in relation to government services in developing countries especially like Ethiopia, but all in all the electronic technologies is a promising application to get a promising return to the companies who apply it and to the other stakeholders (Clarke, 1999:2) .

Electronic services delivery can be performed using a wide range of electronic tools. The emergence of the Internet and the World Wide Web (WWW) has resulted in a situation where substantial proportion of recent business activities being focused on that channel. While electronic commerce can help increase the effectiveness of tax administrations, it also raises major new issues and challenges established tax systems and laws. The potential with electronic commerce for avoidance and evasion is major and necessitates that countries review their tax policies and administration to ensure that tax laws are applied appropriately (Clarke, 1999:3).

Achieving integration of electronic service delivery capability is not enough for a government. It also needs to ensure that these electronic services are accessible by the

citizens. This is achieved through different Service Delivery Channel, which takes into consideration the information technology infrastructure, ability of a citizen to interact with the government electronically, and social considerations. It offers considerable potential to tax authorities to reduce costs, improve efficiency, accessibility, transparency, and client orientation (Jenkins, 2002:16).

The emergence of Information and Communications Technology (ICT) has provided means for faster and better communication, efficient storage, retrieval and processing of data and exchange and utilization of information to its users, be they individuals, groups, businesses, organizations or governments. What had begun as a faster, more accurate and simpler means of word-processing quickly lent itself to being used as a tool for processing and tabulating data as an aid in decision making. With growing computerization and increasing internet connectivity, this process has presently reached a stage where more and more users are motivated to modifying their ways of doing things in order to leverage the advantages provided by ICT. In other words, this has led to 'business process re-engineering'. So far as governments are concerned, the coming together of computerization and internet connectivity/web-enablement in association with process re-engineering, promises faster and better processing of information leading to speedier and qualitatively better decision making, greater reach and accountability, better utilization of resources and overall good governance. In the case of citizens, it holds the promise of enhanced access to information and government agencies, efficient service delivery and transparency in dealings and interactions with government. (http://arc.gov.in)

With the increasing awareness among citizens about their rights and the resultant increase in expectations from the government to perform and deliver, the whole paradigm of governance has changed. Government, today, is expected to be transparent in its dealings, accountable for its activities and faster in its responses. This has made the use of ICT imperative in any agenda drawn towards achieving good governance. It has also led to the realization that such technologies could be used to achieve a wide range of objectives and lead to faster and more equitable development with a wider reach (http://arc.gov.in).

'Electronic governance' is basically the application of Information and Communications Technology to the processes of Government functioning in order to bring about 'Simple, Moral, Accountable, Responsive and Transparent' (SMART) governance. This would generally involve the use of ICTs by government agencies for any or all of the following reasons: (a) Exchange of information with citizens, businesses or other government departments (b) Speedier and more efficient delivery of public services (c) Improving internal efficiency (d) Reducing costs / increasing revenue (e) Re-structuring of administrative processes and (f) Improving quality of services (http://arc.gov.in/arc_11threport_ch2.pdf).

Electronic governance and web services for citizens will happen only in those countries that have the infrastructure to support it while some countries have embrace electronic government, a number of others have not placed enough information or services online, and are not taking advantage of the interactive features of the Internet. While some countries have embraced electronic government, a number of others have not placed enough information or services online, and are not taking advantage of the interactive features of the internet (Ahmed, 2003:3).

The increasing forces of intensifying global competition, continuing customer demands, and the significant revolution in digital communication technologies have together put pressure on many organizations to switch their operations into the e-business world by making use of electronic commerce, technologies such as the Internet and the World Wide Web (WWW) as media for business-to-business, and business-to-consumer transactions. This process potentially facilitates the expansion and development of new linkages among various business partners around the globe. It also speeds up information flow and enables information and knowledge sharing with other entities in a "boundary less" business supply chain (Al-Mashari, 2005:2).

According to Fine (2003:2), determining the impact of information technology on organizational structure and outcomes has become a crucial task for government. With the speed of communications and the pace of business constantly on the increase,

government need to know how technology is affecting them and their grantees what they need, what they could be doing better, whether their IT systems are helping or hindering them in achieving their missions. But certain knowledge of the impact of technology on an organization or a program is like a pot of gold at the end of the rainbow: its value is obvious, and it looks easy to find, but the path toward it is unclear and transient. Implementations of electronic governance will bring benefit by providing efficiency to the government service. Improvements in information technology can have dramatic effects on both the internal and external operations of government internally, improved IT systems can enhance and strengthen organizational infrastructure and capacity by increasing the efficiency of client intake; service coordination; information sharing between departments, staff and board (Fine, 2003:2-3).

Implementing new information technology applications to enable a competitive edge has become a core and important strategy in most contemporary corporations. Earlier studies have suggested that information technology plays a fundamental role in an organization's ability to perform through innovations in products, channels and customer segments. Information technology infrastructure includes networks, management and provisioning of large-scale computing, electronic data interchange and shared databases, and research and development to identify emerging technologies (Chen, 2007:13).

Accordingly, as Chen (2007:13) states, Information Technology adoption will help the organization to maximize external advantage as well as internal advantage that the technology provides.

**Figurer 2: Relationships among information technology adoption, service innovation practices and competitive advantage**

| I T Adoption | Service Innovation Practices | Competitive Advantage |
|---|---|---|
| • IT Infrastructure<br>• Strategic Alignment<br>• Organizational Structure<br>• Individual Learning | Process Innovation<br><br>Product Innovation | External Advantage<br><br>Internal Advantage |
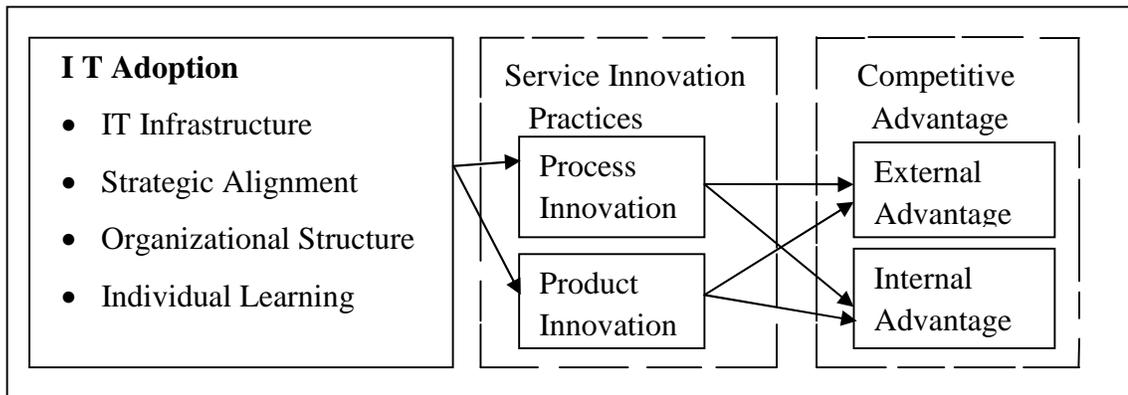
(Source: Chen and Tsou, 2007)

## 2.3. Measuring Public Sector Performance

Service is an intangible experience of customers. It cannot be stored on a shelf, touched, tested or tried on for size because service is not a thing. Rather, it is a process performed for the benefit of customers (Brown and Fisk, 1984:250).

It is not easy to standardize and control the characteristic of service delivery and in some instants what the organization intends to deliver may be completely different from what the consumer receives. In addition to this the service operations depend on consumers to communicative their needs or provide information. The accuracy of the information and the ability of the service provider to understand this information correctly have strong impact on service delivery. The priority and expectations of the consumer may vary each time he or she uses the service. Moreover, priority and expectations may change during the delivery of the service. The variability of service from one period to another and from consumer to consumer makes quality assurance and control difficult. Service providers have to rely heavily on the competence and ability of their staff to understand the requirements of the consumer and react in an appropriate manner (Kotler and Armstrong 2001:318- 319).

Even though it is very difficult to measure the efficiency of public service delivery since it is involved with many immeasurable factors and its nature makes it difficult to measure

easily; Polidano identified some measures to improve public service delivery. They are summarized as follows:

1. Understanding needs of its customers. These identify all types of customers or find out what they want and need;

2. Design its service in light of this understanding which means creates or reforms services to suit its customers and delivering as the way they requested;

3. Consult with user regularly by gathering information on user expectations so that service can respond to changing requirements and circumstances;

4. Introduces healthy and well developed arrangements for delivering service by design and introduces better ways of delivering a service;

5. Employing and motivating capable staff, especially on front line and recognize the value of its staffs at all level ,appreciate the impact of motivated frontline employees on service delivery;

6. Monitors service performances and learns lesson so that it can innovate by establishing suitable and credible performance measurement, regularly monitors performance and carries out effective analysis, applying lessons learned to make service improvement;

7. Rectify when things go wrong-recognize sometimes things go wrong and appreciate efforts and compensation channels that are accessible to all and efficient to administer;

8. Publicize service and performance levels to all users and communicate information on service and performance through tried-and-tested methods and innovative approaches;

9. Balances not overburdening service users with rules and demands for information with the need to safeguard public money;

10. Deliver and repeatedly deliver to the same high standards service (Polidano, 1999:7-9).

Shah (2005:121-122), explain more on justification for the difficulties of performance measurement in public organizations and reasoned as the challenge to analyze output of

service and difficulties to measure the outcomes of the given services. To evaluate the role for these bodies and how they should be structured, it needs a set of criteria. Some of them can be efficiency, accountability, transparency and ease of administration:

- **Economic allocation/efficiency:** This is achieved within the organization when all service responsibilities are organized and allocated to get the greatest possible gain from the use of all resources (inputs) at its disposal;
- **Accountability** is achieved when the customer or taxpayer is able to identify who is responsible for what and is able to link the governing unit responsible for the service directly to its funding which are tax payers;
- **Transparency** is achieved when citizens or tax payers have access to information and decision making forums, so that the general public knows that what is happening and is able to judge whether it is appropriate;
- **Ease of administration** is an extension of the criteria of efficiency and accountability. The easiest system to administer is one that is not confusing and does not require an unnecessary amount of time and effort in consultations, correspondence and meetings in reaching decisions (Shah, 2005:121-122)

By considering only few factors it is very difficult to measure the efficiency of public service delivery because it is very difficult and complicated to measure the service delivery given by the public organization; hence, sometimes it is better to see it from the angle of private organization to make the service measurable. One of service quality measurement models that have been extensively applied is the SERVQUAL model developed by Parasuraman et al. (1985).

The dimensions of SERVQUAL framework are**:**

- **Tangibles**: Physical facilities, equipment, and appearance of personnel;
- **Reliability**: Ability to perform the promised service dependably and accurately;
- **Responsiveness**: Willingness to help customers and provide prompt service;

- **Assurance**: Knowledge and courtesy of employees and their ability to inspire trust and confidence;
- **Empathy**: Caring, individualized attention the service provider gives to its customers. (Chowdhary and Prakash, 2007:18).

Service quality continues to be a challenging topic in contemporary quality management theory and practice. Unlike products, services are not easily measured, tested or controlled for quality. The most consistent findings of two decades of service quality research are that: (i) service quality is more difficult for the consumer to evaluate than product quality; (ii) service quality perceptions result from a comparison of consumer expectations with actual service performance; and (iii) quality evaluations are not based solely on the outcome of a service but also involve evaluation of the delivery process (Nakhai and Neves, 2009).

**Figure 3: The service quality model**

| Dimensions of Service Quality<br><br>1. Tangibles<br>2. Reliability<br>3. Responsiveness<br>4. Assurance<br>5. Empathy | Brand image Word of mouth | Past experience Customer's needs | Industry standards Company's messages |
|---|---|---|---|

Expected Service (E)

Perceived Service (P)
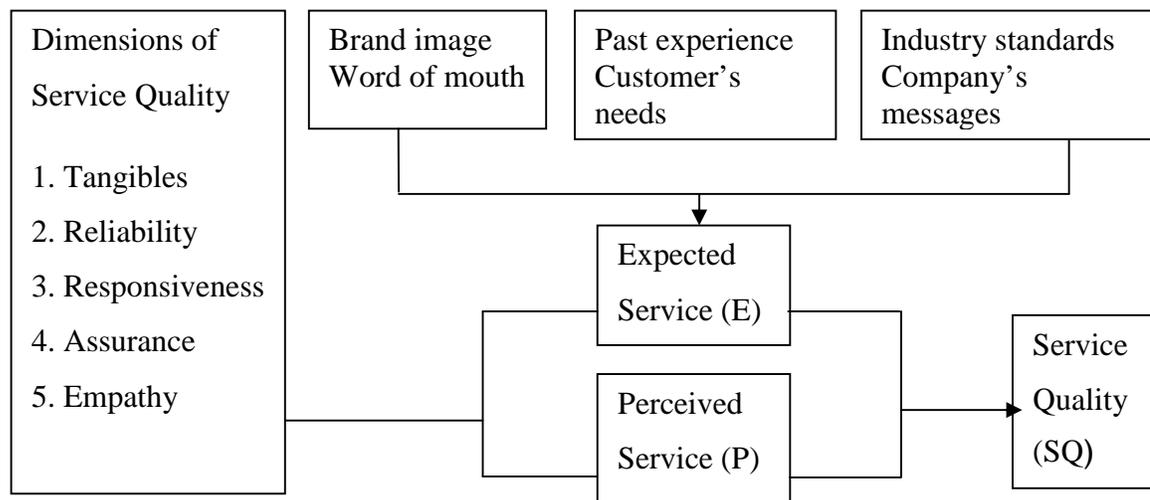
Service Quality (SQ)

(Source: Nakhai and Neves, 2009)

As shown in Figure-03, perceived services quality is the result of the consumer's comparison of expected service with perceived service. The comparison of expectations with perceptions is suggested in the service quality literature: the relative importance of these criteria in shaping customer expectations prior to the delivery of service may differ

from their relative importance in actual customer perceptions of the delivered service. However, an important implication of the service quality model is that the gap between service performance and customers' expectations level may lead to dissatisfaction even when the producer meets the exact design specifications (Nakhai and Neves, 2009).

The problem of measuring the performance of private or public sector organizations is fundamental to any economy concerned with the accountability, transparency, efficiency and effectiveness of these institutions. In the private sector it has long been assumed that, in the long run, the discipline imposed by the marketplace motivates corporations to strive for cost efficiency and profit maximization, facilitated by feedback from the markets for capital, corporate control and managerial labor. These include measures derived from profits, rates of return on assets, investment and invested capital, market shares and market power (Parasuraman, Zeithaml and Berry, 1985)

Overall performance is divided into two components: (i) efficiency, which describes how well an organization uses resources in producing services; that is, the relationship between the actual and optimal combination of inputs used to produce a given bundle of outputs, and (ii) effectiveness, the degree to which a system achieves its program and policy objectives. In turn, effectiveness encompasses a number of different desired aspects of service linked to program outcome objectives. These are: (i) appropriateness (matching service to client needs); (ii) accessibility (aspects such as affordability, representation amongst priority groups and physical accessibility); and (iii) quality (the process of meeting required standards or incidence of service failures) (Worthington and Dollery, 2000).

According to Ghobadian, et al. (1994) service quality is considered a critical determinant of competitiveness attention; it can help an organization to differentiate itself from other organizations and through it gain a lasting competitive advantage. High quality of service is considered an essential determinant of the long-term profitability not only of service organizations, but also of manufacturing organizations. It affects the repurchase intentions of both existing and potential customers. Market research has shown that

customers dissatisfied with a service will disclose their experiences to more than three other people. Positive word of mouth can be a very powerful tool for attracting new customers. Negative word of mouth can have a devastating impact on the credibility and effectiveness of organizations' efforts to attract new customers. In addition, customers' service expectations are constantly rising, while their tolerance for poor service is declining (Ghobadian, et al, 1994: 44).

The obstacles to service quality improvements are identified and discussed below:

1. Lack of visibility. Service quality problems are not always visible to the provider. This places greater responsibility on the service provider to be proactive in the identification of quality problems.

2. Difficulties in assigning specific accountability. The consumer's overall perception of service quality is influenced by experience at different stages of service delivery. However, it is hard to attribute quality problems to a particular stage of service delivery.

3. Time required improving service quality. Service quality problems often require major effort over a long period of time to resolve. This is because service quality is more dependent on people than systems and procedures. Attitudes and beliefs take longer to change than procedures. It is difficult for managers to keep their attention focused on the problem and remove the root causes of the quality shortcomings.

4. Delivery uncertainties. Control of service delivery and quality is complicated by the individual and unpredictable nature of people. The people element encompasses both customers and frontline staff of the service organization (Ghobadian. et.al, 1994:46).

According to Ghobadian et al, (1994), the attainment of service quality requires a lot of performances through different directions, some of them are:

- **Market and customer focus**. "Service quality" problems are more likely to arise in organizations that are not focused on identifying and acting on the customer's needs and expectations. A quality organization should put itself in the "customer's shoes" and build its policies from the customer's vantage point (Ghobadian et al, 1994:46).

- **Empowerment of frontline staff**. "Service quality" can be enhanced by giving frontline staff the latitude to make important decisions regarding the customer's needs. It is generally recognized that devolvement of those decisions which affect customer care to the frontline staff pays (Ghobadian et al, 1994:46).

- **Well-trained and motivated staff**. Frontline staffs who are not adequately trained for their job will find it difficult to perform their tasks effectively. This will be noted by the consumer and is likely to cause adverse quality perceptions. It is also important to ensure that frontline staff are effectively supported and well motivated. Motivated staff requires the provision of: an appropriate and clear career ladder and opportunities; remuneration and recognition system; a measurement system; and appraisal procedures (Ghobadian et al, 1994:47).

- **A clear service quality vision**. One consequence of the interactive nature of service is the need for a clear vision of quality. In the absence of a clear vision and definition employees are likely to have their own interpretation of service quality. Lack of common vision will inevitably increase the variability experienced by the customer within and without each stage of the service delivery. Inconsistency and variability of treatment is likely to have an adverse impact on the perception of quality (Ghobadian et al, 1994:47).

## 2.4. Information Communication Technology and Service Delivery
### Experiences of Africa

In the continuum of human development five overlapping phases can be identified: the nomadic/agrarian, agrarian, industrial, service, and knowledge. In the latter stages, Africa has lagged behind the rest of the world. During the industrial phase, this lag was attributable to the colonial experience, which denied most of this continent its sovereignty over decisions and policies affecting its development and imposed on it activities that contributed to the development of the colonial powers. The colonial period was one during which Africa lost control over its political, economic, administrative and technological destiny (Kwankam and Ningo, 1997: 2).

Information technology penetration in Africa began just after the wider introduction of mainframe computers in the developed world by the end of 1960s. Later microcomputers spread widely in the region through direct purchase and by donor development aid programs. The initial stages of microcomputers introduction into Ethiopia were characterized by inadequate literacy and irregular understanding of the technology by potential users. Full adaptation of the technology had been difficult due to conditions like cultural and literacy problems, languages barriers, in existence of scripts and limited access to software and training materials. Still most users are still not aware of the potential of the technology. The original resistance, due to fear and dislike is, however, replaced by intensive application of word processing, transaction and data processing (Julie, 2007:1)

If the delay in development in the past can be attributed to the loss of sovereignty, it will be difficult to explain the continuing lag in this era of political and administrative independence. Africa must avoid the specter of a new form of colonialism based on the generation, storage, processing, retrieval, transmission, and distribution of information. Many African countries are burdened with inadequate communications infrastructure. The development of IT in African countries will be influenced by answers, if any, to questions concerning the economic benefits of IT, IT policy, and its impact on government, society, business, and the security of the state. It is not clear how these

concerns will be handled, given the limited experience of other societies. Nevertheless, they deserve consideration because acceptance of IT will depend on its perceived benefits in solving some of society's pressing and anticipated problems in education, health-care, business, government and sustainable rural development (Kwankam and Ningo, 1997:2).

African countries, by virtue of their potential market size, should not be obligated simply to react to trends in the IT industry, but should play an active part in their determination. A proactive rather than a reactive approach should be adopted in the development of IT in Africa. This means anticipating problems and designing strategies to resolve them before they occur. Our vision should not be limited to catching up with what exists in the developed world. This will simply guarantee the propagation of the gap between them and us. Secondly, it will perpetuate problems of appropriateness, adaptability, etc. perennial issues which will continue to eat up our meager resources (Kwankam and Ningo, 1997: 2).

With the rapid spread of Information and Communication Technologies (ICTs), new opportunities have been opened for a revival of public discourse and improved governance efficiency. ICTs offer concrete opportunities for local and national governments to improve their performance in terms of transparency, participation and decentralization. The "mainstreaming" of ICTs within planning and design of development strategies help to strengthen the establishment of efficient, effective and transparent governance systems. On-line tools can significantly improve the rendering of services and information flows from administrations to their constituencies; communication among administrations and citizens can be enhanced and, lastly, ICTs offer unique opportunities for broadened citizen involvement and participation in the decision-making process (Gucheteneire and Mlikot, 2009:3).

Ethiopia faces a number of developmental challenges including those that posses barriers to the development and roll-out of e-government systems. Unlike in the case of the developed countries whose systems (government administrative systems, etc) are in an advanced stage of development and hence can be described as 'e-government system

deployment and exploitation ready,' Ethiopia currently faces a number of e-government development and implementation barriers and challenges. A number of these barriers and challenges need to be addressed within the context of developing and implementing a suitable strategy for facilitating and mapping out how Ethiopia is to roll-out its e-government program. (Dzidonu, 2006:32)

According to European free trade association, from the beginning of trade, the exchange of goods, services and money between two parties, has existed. The exchange of one merchandise for another between two persons or villages, that is barter, is an example of an early form of trade. It eventually led to persons or villages specializing in certain products with the sole aim of delivering them to other parties in exchange for commodities which the first did not have (the delivery of woolens from one village to another in exchange for cooking equipment produced by the latter, for instance) (EFTA, 1999:12)

Due to the fact that participants in free trade arrangements adopt separate external customs duties, they run the risk that third countries circumvent these duties by channeling exports into the free-trade area via the state with the lowest tariff. Consequently, for a product to qualify for regional preferences and in order to assure free circulation of goods and services within the free trade area, trade operators are required to prove by documentation that the traded product has been wholly obtained or sufficiently processed within the free-trade area. Within a Customs Union there is no need for rules of origin for internal trade because the Member States have harmonized tariffs and trade policy with regard to third countries. With regard to preferential trade in services, in the context of economic integration, the nationality of the service supplier is relevant to determine whether or not preferential treatment can be granted (EFTA, 1999:26)

With the emergence of money, which is defined as a good that can be exchanged for any other good, exchange became more and more complex. Indeed, with the development of institutions that specialised in lending and borrowing money, including gold, and with revolutions in transport and technology, trade has evolved from exchange within a

limited area to a global network of transactions in which, in the 1990's, orders which are instantly delivered by fax or e-mail allow a company in Hungary, for instance, to immediately supply made-to-order merchandise to a company in Germany.

As trade takes place world-wide between a network of competing producers and consumers, that is suppliers and clients, different trade procedures are established, some of which are more efficient than others. A given procedure may thus give a producer the edge over his competitors in a given market. Thus, if the exporting country has border and customs controls compatible with those of the importing country, the importing country will prefer to deal with that exporting country rather than with another whose export procedures are unfamiliar. Moreover, the simplification of trade procedures (also known as trade facilitation) will reduce transaction costs and increase the volume of trade.

Technology can be most broadly defined as the entities, both material and immaterial, created by the application of mental and physical effort in order to achieve some value. In this usage, technology refers to tools and machines that may be used to solve real-world problems. It is a far-reaching term that may include simple tools, such as a crowbar or wooden spoon, or more complex machines, such as a space station or particle accelerator. Tools and machines need not be material; virtual technologies such as computer software and business methods fall under this definition of technology.

The word technology can also be used to refer to a collection of techniques. In this context, it is the current state of humanity's knowledge of how to combine resources to produce desired products, to solve problems, fulfill needs, or satisfies wants; it includes technical methods, skills, processes, techniques, tools and raw materials. When combined with another term, such as "medical technology" or "space technology", it refers to the state of the respective field's knowledge and tools. "State-of-the art technology" refers to the high technology available to humanity in any field. Technology can be viewed as an activity that forms or changes culture. Additionally, technology is the application of math, science, and the arts for the benefit of life as it is known. A modern example is the

rise of communication technology, which has lessened barriers to human interaction and, as a result, has helped spawn new subcultures; the rise of cyber cultured has, at its basis, the development of the Internet and the computer. Not all technology enhances culture in a creative way; technology can also help facilitate political oppression and war via tools such as guns.

One of the greatest challenges facing public authorities today is to reconcile the apparently contradictory objectives of enforcing government regulations while at the same time posing the minimum obstacle to legitimate trade. Enforcement with a minimum of obstacles is a very good summary of the aim of trade simplification, facilitation and efficiency. With regard to this area, simplification of procedures is a key tool to facilitate trade and to increase trade efficiency. In fact, these approaches address the same goal: if enforcement is needed, then with minimum interference (Dzidonu, 2006:35).

There is no commonly accepted definition of trade facilitation. This could partly be explained by the fact that the subject of simplifying and standardizing trade information and its electronic transmission is in a process of constant evolution. However, trade facilitation could be defined as the simplification of trade procedures for international traders and agencies in order to facilitate the trade transaction process. This requires a series of governmental and non-governmental actions within international trade regulation and procedures. While trade facilitation is in the interest of both traders and governments, this must not be seen as easing the way for abuse or circumvention of national and international legislation nor circumvention of efforts to combat fraud.

With the lowering of tariffs across the globe, the cost of complying with customs formalities has been reported to exceed, in many instances, the cost of duties to be paid. In the modern business environment of timely production and delivery, traders need fast and predictable release of goods Clearly, this definition relates to a wide range of activities including but not limited to import and export procedures (for example, customs or licensing procedures), transport formalities, payments, insurance, and other

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financial requirements. However, recently, the definition of trade facilitation has been broadened to include the transparency and professionalism of customs authorities, harmonization of various standards and conformity to international or regional regulations. In a narrower sense, trade facilitation concerns the movement of goods in cross-border trade (Buyonge and Kireeval, 2008:4)**.**

The main reason for the initial unwillingness of African developing or least-developed countries to negotiate on trade facilitation was the understandable fear that implementation of any such agreement would require considerable investment of the governments of these countries in infrastructure, change of operational procedures and human resources. It is at the same time unlikely that the developed countries would need to change anything for implementing any of the trade facilitation measures to be included in such a multilateral trade facilitation agreement. African countries are now very keen to explore the possibilities provided by trade facilitation whether in the context of the WTO negotiations, regional or country-specific initiatives. New trade facilitation initiatives in Africa address both physical infrastructure (roads, ports, telephone connectivity, etc.) and administrative hurdles (Buyonge and Kireeval, 2008:3).

Automated systems in Customs provide one of the most important tools for facilitation of trade procedures. Customs automation results in increased transparency in the assessment of duties and taxes, substantial reduction in customs clearance times, and predictability, all leading to direct and indirect savings for both government and traders. The higher the level of automation of customs procedures in a country is, the greater the possibility of detailed inspections, detection of fraud, and firm action including prosecution in court. Early versions of 'ASYCUDA', the preferred customs IT system in Africa, have limited functionality compared to contemporary versions such as 'ASYCUDA++'.

Most of the employees of the clearing agents' organizations did not have the knowledge and ability to use computers and technology efficiently. So understandably it was quite a challenge for most of the clearing agents to comply with the requirements for exchange of electronic information with Customs while learning basic IT skills. An important

lesson that should be learned is to invest in developing the IT skills of the staff of companies if customs technological developments are to lead to improved levels of trade facilitation. (Buyonge and Kireeval, 2008:3).

Customs administrations in Africa are going through a period of rapid change, which requires a paradigmatic shift in customs operation. There are ongoing positive developments by Customs to reform and modernize procedures and processes, as well as commendable initiatives by the private sector to take a more proactive approach to improve customs administration for the benefit of governments and business. The increasing positive engagement of business with Customs has helped identify major trade facilitation weaknesses that if addressed, can help reduce transaction costs in Africa. These include the lack of a service ethos across all customs management levels, adversarial relationship between Customs and business, insufficient or inefficient supporting infrastructure, lack of a facilitation culture in other government departments, corruption and illicit trade. The challenges present opportunities for businesses to engage with Customs to bring about the desired change (Buyonge and Kireeval, 2008:5).

However, businesses need to create customs compliance strategies that reflect an understanding of the Customs business in specific countries. While investments in infrastructure can be expensive, delays can be minimized through cooperation between business, Customs and other government agencies. It is also important to take advantage of information and communication technologies, especially since many administrations are now automating their systems. Human factors will also determine the amount of customs-related delays that can be experienced_ specifically the integrity of employees and customs officials. Due to emerging supply chain security concerns at the global level, businesses across the world, including in many countries in Africa, are required to have more transparency in their operations including mechanisms for vetting third party service providers (Buyonge and Kireeval, 2008:5).

## 2.5. Development of Information Technology in Ethiopia

The world economy is experiencing the effects of rapid globalization and liberalization as well as the impact of the emerging information age. The prediction is that this will bring about a new global economic order to be dominated by information and information age knowledge-based economies. Like other developing countries, Ethiopia is facing new challenges to her socio-economic development as a result of the emerging information age characterized by information and communication technologies (ICTs). The crucial role that ICTs can play in facilitating and accelerating socio-economic development has been recognized worldwide. And Ethiopia like other countries is equally placed to take advantage of these technologies to facilitate her socio-economic development process (UNPAN, 2006:6)

According to Adam (1999) awareness about of information technology has been greatly growing among users in the field of academics and research, among workers of international organizations and in international business organizations. This has resulted in a growing recognition of the importance of networking and expansion of the technology. The Ethiopian Telecommunications Corporation has made huge investment in the development of the network infrastructures.

Technology has affected society and its surroundings in a number of ways. In many societies, technology has helped develop more advanced economies (including today's global economy) and has allowed the rise of a leisure class. Many technological processes produce unwanted by-products, known as pollution, and deplete natural resources, to the detriment of the Earth and its environment. Various implementations of technology influence the values of a society and new technology often raises new ethical questions. Examples include the rise of the notion of efficiency in terms of human productivity, a term originally applied only to machines, and the challenge of traditional norms (http://en.wikipedia.org/wiki/Technology assessed 16 January, 2015).

Information Technology (IT) is not a luxury for the poor: rather it is an essential tool for poverty alleviation as per Asian Pacific Newsletter. The impact of IT is pervasive both on

an organization and on society as a whole and it offers opportunities of break through changes. The ongoing innovation in the IT the Internet is growing with accelerating pace (Mesfin, 2005:7).

Ethiopia recognizing the developmental potentials and opportunities of the information and technological revolution has embarked on a process of economic transformation through the modernization of the key sectors of the economy including those of agriculture, services and industrial sectors through the deployment and the exploitation of ICTs. A key strategy is to pursue an agricultural sector development-led industrial strategy aimed at rural and agriculture centered development, guided by an ICT-driven competitive and market oriented development approach. Acknowledging the key role that development, deployment and exploitation of ICTs can play in Ethiopia's economic and social development, the Government recognizes the need for the rapid development of nation's information and communications infrastructure as well as the development of the nation's educational, human resources and other development-focused resources to bring about the necessary change and transformation required to achieve improvements in the determinants of the nation's socio-economic performance (UNPAN, 2006:6).

According to Teferi (2004:13) the application of computers, and thereby the development and awareness of mechanization, is closely related to the introduction of computers into Ethiopia by foreign suppliers. In this report an attempt is therefore made to show how computer usage started in Ethiopia in relation to the major suppliers, namely IBM, NCR, SERIC Ethiopia, and Burroughs. As a result of competition between suppliers in Ethiopia, changes in the technology were brought to the attention of users. Demand for more efficient systems began to be felt.

Coupled with lack of national guidelines, a weak education infrastructure and a restrictive information seeking culture have remained the stumbling blocks to diffusion of information and communication technologies in Ethiopia. On the positive side, international organizations and development aid agencies have played a significant role in information technology diffusion in the country. The existence of many international

organizations in the capital city has created opportunities for demonstrations of key information technology, transfer of ideas, sponsoring structural development projects and a potential market segment for emerging small and medium enterprises in the field. The number of international organizations recognizing the importance of information technology for the development of local capacity has been increasing (Teferi, 2004:13).

The application of information and communication technology does not just encompass technology_ hardware, radios, computers, telephones and software and the content or data, but also needs organization, incentives, procedures and people. Without enabling policies environment for vibrant private sector development, and the human resources, telecommunications, energy and social infrastructure development, ICTs application will remain fragmented. The ability to participate in information and communication technologies requires participation, partnership, understanding of social implication of new technologies and management of changes at national level. As an industrial activity, electronics has yet to start in Ethiopia, though some efforts have been initiated towards assembling radio receiver sets. Sophisticated systems are in operation in the fields of mass media, radio communication, telecommunication, and communication and navigational aids for civil aviation. The data-processing sector, which was practically nonexistent about 30 years ago, is now within reach of many operational areas. The earliest use of electronics in Ethiopia was in the mass communication sub sector, followed by telecommunication and radio communication (Julie, 2007:9).

According to Fikre (2005:10) Information Technology strategy of Ethiopian Revenue and Customs Authority is to cope with the latest information technology in line with the international standards for the computerization of Customs. ERCA introduced ASYCUDA 2.7 version in 1998 and has embarked on the change to implement an advanced version of ASYCUDA (Automated System for Customs Data), ASYCUDA++ in all Customs administrations to improve the way Customs carry out its tasks by applying Information Technology. The new system is intended to provide a better working tool and benefits the users by providing an integrated solution for declaration processing, accounting management, customs enforcement (selectivity & risk

management), and management information system. An efficient and effective customs is essential to the welfare of the country. It provides the statically information on foreign trade transaction essential for the economic planning.

According to Fikre (2005:11) the main objectives of ASYCUDA++ are to achieve:
- More effective customs control
- More efficient customs clearance
- Uniform applications of customs Law
- More efficient revenue collection
- More effective data analysis and improved data quality
- Efficient production of external trade statistics and enable exchange of information between relevant institutions in the country, Customs administrations in the region and the COMESA centre (Fikre, 2005:11).

## 2.6. Limitations on Information Communication Technology in
### Service delivery

Fortunately, there is some overlap between policy issues for IT and for computer technology which only a few years back was a preoccupation of many African countries. The prospect of a technology with such potential impact as IT evolving totally unchecked within our country is disquieting. Although there are many successful instances of IT introduction, a few bad examples are sufficient to give the industry a bad name, particularly with potential users who are not fully committed to the idea. The rational transfer and application of this technology requires that some guidelines be set down for service providers, distributors of equipment, and end users alike.

Such guidelines must have the backing of government in order to be effective, and should cover:
- Acquisition of information technology,
- Use and application of the technology,
- Human resource development, and
- Regulation/deregulation and management.

The most pressing needs are for:

- Government policies and legislation to support IT development;
- Informatics policy and management infrastructure;
- Establishment of financing mechanisms, with adequate financial analysis, controls, and accounting;
- A clear position on the level of control to be exercised locally and a desired level of dependency on foreign sources; and
- Coordination and integration of the needs of the public and private sectors' continuing awareness of the state of the art in IT.

According to Fine (2003:3) measurement of the impact of an IT investment is problematic for a number of reasons:

- There usually isn't any baseline against which to assess new improvements.
- The process of planning for IT upgrades or installation—discussing how things are done, what the bottlenecks are within an organization—can, in and of itself, free up sticking points and improve efficiency, even without the implementation of new IT systems.
- New technology can be so intimidating for staff that an organization actually becomes less efficient in the first few months following a technology upgrade—so an evaluation done too soon might result in a "false negative", reflecting inefficiencies that would be resolved with time.
- Sometimes new technologies aren't used at all (for example, when adequate training isn't available or when organizational culture presents barriers), ossifying an anti-technology mindset and causing long term reductions in efficiency and impact. Correctly attributing improvements to proximate causes can be a challenge: at what point does the technology stop having an impact and other factors (that may be out of the hands of the service provider) come into play?

Faced with such challenges, many nonprofits find the evaluation of technology an intimidating task. How can nonprofits effectively evaluate the impact of technology on their work? Innovation Network's information technology evaluation efforts over the past

five years have provided some key lessons for improving the use and measuring the impact of information technology within nonprofit organizations.

## 2.7. Development of Information Technology in Ethiopian Revenue and Customs Authority (ERCA)

Customs plays a key role in international trade. Every international trade transaction involves at least two customs intervention, one at export and one at import. It is clear, therefore, that the manner in which customs conducts its business has a substantial impact on the movement of goods across international borders.

Customs, as an agency of government, has as its primary function the execution of government policy. Accordingly, although the responsibilities of customs are basically the same in every country, it would be wrong to assume that there is uniformity or consistency in the emphasis, which is placed on the discharge of these responsibilities. Different governments expect different things from their customs authorities. For some governments, especially those in developing countries, customs are the principal revenue collectors. For others, customs form the front line in the fight against drugs or are key implementers of trade policy.

When we come to Ethiopia, as the country is listed in developing countries, revenue collecting is one of the main objectives of the customs authority, as any other developing countries do. However, the role of implementing trade policy of the country is not totally neglected. In this regard, we can mention the vital role of Ethiopian Customs Authority that plays an important role in implementing export duty incentive schemes which is one of export trade promotion policy instruments of the government.

Under the civil service reform program, Ethiopian customs authority recently has made an effort to introduce the new customs transit and clearance control manual to meet its establishment objectives. But this is not an end by itself; rather, customs has always to be in reform. In reforming existing customs practices to farther facilitate the movement of

goods, customs should adopt modern business process re-engineering (BPR) techniques to identify inefficient and/or redundant activities for streamlining or elimination.

The main objective of the new manual is to enable customs authority render efficient and effective service to importers and exporters and ensuring effective customs control in line with national, regional and international laws and, conventions by shortening both transit and clearance time of imported and exported goods and reducing document requirement.

Delays in the release of goods are caused by a number of factors including inefficiency and lack of professionalism on the part of some shipping agents, freight forwarders and customs clearing agents/brokers. According to the recommendation given by Customs Co-operation Council on draft guideline on key sectors for trade efficiency, to overcome this program, government should set minimum standards for these professions and closely regulate performance (www.erca. gov.et accessed on 2015/02/05).

## 2.8. Implementation of ASYCUDA in Ethiopian Revenue and Customs Authority

Delays in the release of goods are caused by a number of factors including inefficiency and lack of professionalism. In order to facilitate its operation the Ethiopian Customs Authority started to implement ASYCUDA (Automated System for Customs Data) in 1998 which is developed by UNCTAD (United Nation Conference on Trade and Development) and implemented by over 80 countries. The ECUA has implemented ASYCUDA 2.7 in seven clearance offices and one transit office which is located in another country, Djibouti. Except the two sites in the capital city, all other sites are working on Local Area Network (LAN). The two sites located in the capital city are connected to the Automation and Data Processing Department through Telecommunication line with 64KB Digital Data Network (DDN). The effects of implementing ASYCUDA in ERCA are:

- Improves clearance conditions for trade
- Provides timely external trade statistics (Mesfin, 2005:12)

To meet the demands of modern international trade with the change in technology and advancement and be in line with internationally accepted standards the ECUA has started implementing the advanced system ASYCUDA++. The business people users of the customs computer system are more interested in being served expect to save time and reduce costs. Therefore the main changes and benefits that come with this ASYCUDA++ implementation are aimed at meeting these objectives. The main features and benefits expected with ASYCUDA++ migration are:

- Direct Trader Input (DTI)
- Selectivity
- Transit
- Flexibility in report generation
- Connectivity with other systems

### 2.8.1. Direct Trader Input (DTI)

Under the ASYCUDA 2.7 DTI was not used; so, declarants (customers) prepared declarations written by hand and presented to customs for data input on the computer system. This often led to loss of time and data captures as declaration get rejected at various stages before they can finally be accepted on customs computer system. The Direct Trader Input is a facility that provides for the declarant to input declaration data to the ASYCUDA++ module designed for this purpose and then transfer the data directly to Customs Systems. This is achieved by connection to the customs system with the telecommunications infrastructure. Effectively DTI will remove the aspect of data entry from customs responsibility to the declarant. Therefore, a declarant with DTI facility may prepare, view or check and print a declaration at any time, even outside normal working hours from their premises. The system requires the declarants to be equipped with a personal computer, printers and connected to the customs server through telecommunication line (leased line or dialup line) (UNCTAD, 2000:23).

**Advantages to Customs**

i. DTI reduces the cost of declaration processing (since printing of declarations copies goes to the declarant).

ii. Rationalizes on manpower utilization as personnel initially deployed for face examine and data capture can be re-assigned to other needy areas of important customs work.

iii. Help customs in realizing the objectives of quicker clearance for trade facilitation.

**Advantages to the Traders**

i. Traders have full control on the information entered on the customs system as they enter and counter check declarations against customs control files. The possibility of having someone else key different information from that declared the hardcopy is realty minimized.

ii. Time loss is reduced as face vet and data input and their accompanying rejection stages of are removed. The system provides for this through the check stages of a declaration before registration. Once a declaration has been registered it means that data elements have been accepted.

iii. The facility allows immediate access to declaration information. From their premises or some other location where the DTI facility can be located, the declarant is able to check the status of an entry in customs. For example the declarant can know if an entry has been assessed or queried, requires physical or document examination or if it has been released. Further, some summary reports on declarations and accounts can be seen without necessarily going to Customs offices.

iv. DTI work can be carried out according to client's schedules as entries can be prepared and stored on the client's PC. This is possible as all the necessary control tables and the tariff are available on the PC to facilitate this. Depending on local arrangements, if the customs server is available (left on to accept data) after normal working hours, the declarants can register declarations anytime even when the customs office is not open.

**2.8.2. Selectivity in ASYCUDA++**

The introduction of ASYCUDA selectivity is an important component in the package of procedural reorganizations that should be included in the introduction of ASYCUDA++. The concept and practice of risk based controls is already in practice and seems to be well emphasized in the revision of procedures currently going on. At the previous system due to the limitations of ASYCUDA version 2, these processes are performed manually with little or no formal risk profiling being used. This approach is not sustainable if the use of the ASYCUDA++ selectivity module is to be successfully introduced. At present a structure exists in the Ethiopian Customs Authority (ERCA) that could take up the responsibility of managing selectivity at a national level. However, its effectiveness in this area has yet been established as the unit is said to be in its infancy and the team members have not yet acquired the necessary skills required for this task (UNCTAD, 2000:23)

Using MODSEL many different pieces of data, input as declaration details, can be used by Customs to select particular declarations for special treatment before any assessment is made. This provides the means of implementing decisions on processing channels, which are named 'Red', 'Yellow', 'Blue' and 'Green'. Control over the rates of random selections and 'expected rates' means that Customs Office management or supervisors have the means to match daily workload, the numbers and levels of declarations selected for check, to the capacity of the Office to cope with those checks bearing in mind the existing priorities.

The various lanes can be described briefly as follows:

**Red Lane-** Goods described within the selected declaration are to be physically examined before assessment is permitted.

**Yellow Lane-**All documents relevant to the selected declaration are subjected to a full documentary check, before assessment proceeds

**Blue Lane**- Post clearance audit- This provides flexibility, and can allow Customs to make more efficient use of their resources, such as allowing release of 'low risk' goods, subject to some check at a later date.

**Green Lane-** All declarations other than those selected Red, Yellow or Blue. This contains an option to 'delay' the automatic assessment of Green Lane declarations. A delay can be set to allow Customs time to 'manually' examine details of the declaration, with the option to re-route to Red, Yellow or Blue if a higher level of check is thought necessary for those particular goods.

### 2.8.3. Transit

The system has a facility that manages the transit risks and enforces adequate controls. The main problems of transit that are related to lack to timely information and system controls for intervention are adequately addressed. This facility will be deployed between Djibouti and Inland offices in Ethiopia to facilitate the quick movement of transit data and goods. This is expected to help in trade facilitation (UNCTAD, 2000: 27).

### 2.8.4. Flexibility in report generation

There are a number of standard reports that come with the system to help users in managing customs operational and making decision. In addition to that the system has flexibility for the user countries to develop additional reports to meet their national demands. The data managed by ASYCUDA++ is handled by an Oracle database containing the entire transactions and references table, the user-define report data can retrieve from the database by SQL statement (UNCTAD, 2000:32).

### 2.8.5. Connectivity with Other Systems

The ASYCUDA++ is based on modern technology and can easily interface with other systems used by Banks, Airline and shipping lines and Ministry of Trade and Industry. These lead to revised procedures that will result in quicker clearance & promote efficiency in the conduct of trade. To ensure the effective use of IT and delivery of good service to meet the demands of modern trade, the Ethiopian Customs Authority (ECuA) has taken the following measures:

**Formation of Revenue Net**

a. This encompasses the key sectors of tax collection that is the Banks, Ministry of Trade and Industry, the Ethiopian telecommunication corporation. The main aim is to use the technical expertise in all these sectors and interconnect the systems to exchange information thereby maximizing the use of resources and offer improved service

b. Implementation of the Wide Area Network (WAN) to interconnect all the computerized customs sites to ensure timely availability of data at the central point   and simplified system support for distant areas form the capital city.

**Adoption of modern system**:

The ERCA has embarked on the use of modern systems that meet demands of modern trade. Therefore the system that is being put in place has flexibility to interconnect with commercial systems used in Banks, Airlines etc to facilitate easy exchange of information for speedy administration of customs clearance (Fikre, 2005:11).

# CHAPTER THREE

# DATA PRESENTATION AND ANALYSIS

## 3.1. INTRODUCTION

This chapter primarily deals with the presentation of the detail analysis of primary and secondary data gathered from the distributed questionnaires to customers and employees of the ERCA, the interview conducted to officials from different relevant institutions as well as the analysis of available relevant documents. For the purpose of obtaining data in this study, semi structured questionnaires were distributed to customers and officers of ERCA in the airport branch office and Kality branch office. The other technique for collecting data is interviews from relevant offices like private and government owned banks, the MOFED, the Information Technology (IT) department and the Head office of ERCA. In connection with this, the chapter explains the opinion of customers and officers concerning the efficiency of ASYCUDA, the problems ERCA is facing while applying the ASYCUDA and the overall efficiency of ASYCUDA. Moreover, the analysis of this chapter provides the ground to forward recommendations for implementation where ERCA can improve the efficiency of the ASYCUDA.

## 3.2. Characteristics of Respondents

## 3.2.1. Customers of ERCA

Customers responded to 65 percent (44) of the total 68 questionnaires. The major customers of ERCA are importers, exporters and both importers and exporters of different kinds of goods, required for commercial, Investment, project and diplomatic purposes. As the collected data (Table 3.1) from the customers shows, 34 percent of customers import or export commercial goods while 34 percent of customers import project goods, about 23 percent import investment goods and the remaining 9 percent import diplomatic goods.

**Table 3.1: Type of goods declared by customers**

| Reponses | Frequency | | | Percent %) |
| --- | --- | --- | --- | --- |
| | Import | Export | Total | |
| Commercial goods | 7 | 8 | 15 | 34 |
| Project goods | 15 | - | 15 | 34 |
| Investment goods | 10 | - | 10 | 23 |
| Diplomatic goods | 4 | - | 4 | 9 |
| Total | 36 | 8 | 44 | 100 |

Source: Own survey 2015

According to this survey, as shown in Table 3.2, it is known that 36 out of 44 (82 percent) of customers are importers, while 8 out of 44 (18 percent) are exporters and 15 out of 44 (34 percent) are both importers and exporters. Since these customers have working experience in relation to importing and exporting from 2 years up to 10 years, it is safe to conclude that they have the ability to explain concerning the study at hand as well as to have a say on the performance of ASYCUDA as comparing to the manual practices of the offices.

**Table 3.2: Customers of the authority**

| Response | Frequency | Percent (%) |
| --- | --- | --- |
| Imports | 36 | 82 |
| Exports | 8 | 18 |
| Both | 15 | 34 |
| Total | 44 | 100 |

Source: Own survey 2015

## 3.2.2. The Staff of ERCA

Respondents of the questionnaires from staff members were selected randomly. From 500 employees of the authority who work at Bole international air port and Kaliti custom offices, 50 (10 percent) of respondents in Kaliti and Bole offices were taken as representative sample and semi structured questionnaires were distributed to them but the returned questionnaires were 36 which is 72 percent of the total questionnaires distributed. The employees have working experience from one year to ten years in ERCA.

### 3.2.3. Interviewed Officials

Supplementary to questionnaires distributed to customers and employees, interviews were conducted with relevant officers who are directly related to the application of ASYCUDA driven data which they use as an input as well as in reports. A total of 12 officials from Commercial Bank of Ethiopia, National Bank of Ethiopia, NIB Bank, Dashen Bank and Ministry of Finance and Economics Development and the ERCA were selected (2 from each organization) and interviewed. Generally from 130 targeted sample respondents of the written questionnaires and interviews, only 80 of them were returned and 12 officers were interviewed. Hence, the analysis deals with the opinions of 92 out of 130 (71 percent) respondents.

## 3.3. Data Analysis

### 3.3.1. Challenges in Goods Clearance Activities

### 3.3.1.1. Delay in Goods Clearance

Delay in goods clearance can be because of many reasons. Respondents were asked whether goods clearances are delayed or not and what is the reason for delay. As long as the ASYCUDA system works well and every necessary document is ready, the clearance process speeds up.

**Table 3.3: Reasons for delay of goods clearance**

| Responses | Frequency | Percent (%) |
|---|---|---|
| Less working habit of workers | 2 | 4 |
| Frequent system failure | 11 | 25 |
| Time taking price checking | 6 | 14 |
| Less transparency | 5 | 11 |
| Un updated database | 6 | 14 |
| Shortage of cargo space | 3 | 7 |
| Electric power failure | 7 | 16 |
| Network failure | 4 | 9 |
| Total | 44 | 100 |

Source: Own survey, 2015

However, as table 3.3 shows, customers give many reasons for delay of clearance of goods about 2 out of 44 (4 percent) customers associated the reason for delay with less working habit of workers, while 11 out of 44 (25 percent) stated that with frequent system failures cause the delay, 6 out of 44 ( 14 percent) associated the delay

with extended price checking and 5 out of 44 (11 percent) agreed that less transparency in work process of the organization is the reason for delay, the other 6 out of 44 ( 14 percent) associated the reason for delay with un updated database while about 3 out of 44 ( 7 percent) of customers associated the delay in goods clearance with shortage of cargo space, 7 out of 44 ( 16 percent ) related the delay with electric power failure, while 4 out of 44 (9 percent) attributed with network failure as the cause for delay. This implies that, different reasons cause the delay in goods clearance and the existence of delay in goods clearance by itself is an indication of a gap to which the organization has to respond.

### 3.3.1.2. Frequent System Failure

The other challenge in goods clearance process is frequent system failure, and respondents from customers as well as employees were asked about the occurrences and the reasons of frequent failure of ASYCUDA.

**Table 3.4: Reasons for system failure**

| Reponses | Frequency | Percent (%) |
|---|---|---|
| Network failure | 13 | 30 |
| Electric power interruption | 13 | 30 |
| Un skilled manpower and low competency of worker | 8 | 18 |
| Server problem | 4 | 9 |
| Absence of system supervisor | 6 | 13 |
| Total | 44 | 100 |

Source: Own survey 2015

As Table 3.4 shows, with regard to the reasons why the system fails, 13 out of 44 (30 percent) customers stated that it is due to network connections problems , 13 out of 44 (30 percent) said the reason for system failure is frequent electric power interruptions, 8 out of 44 ( 18 percent) customers associated the reason with unskilled manpower and low competency of employees for the work, 4 out 44 (9 percent) associates the reason of system failures as server problem while 6 out of 44 (13 percent ) of them associated the reason of system failure as absence of system supervisor. In relation to this, most of the respondents stated that whenever system failure happen, it is not customary that the organization immediately takes corrective measures to maintain the system and ensure its operational continuity.

## 3.3.2. Performance Efficiency of ASYCUDA

The main objective of the implementation of ASYCUDA is to improve the delivery of service to the public and thereby to attain an efficient revenue collection mechanism. Intending to assess the materialization of this objective, the researcher asked the customers as well as the employees of the organization to express their opinion regarding the service quality improvement as a result of the adoption of ASYCUDA.

**Table 3.5: ASYCUDA brings quality service**

| Response | Frequency | Percent (%) |
|---|---|---|
| Yes | 33 | 75 |
| No | 11 | 25 |
| Total | 44 | 100 |

Source: Own survey 2015

As shown in Table 3.5, most of the respondents 33 out of 44 (75 percent) agreed that there exist service improvement on quality of service delivery system after adoption of ASYCUDA, while the remaining respondents 11 out of 44 (25 percent ) did not agree that there exist service improvement as a result of the adoption of ASYCUDA. There is of course a change towards bringing quality service delivery process in the organization , even if the system has big potential to bring more efficiency and quality service system to the organization ; the complaint given by 25 percent of the respondents is significant enough to retard the move of the organization for efficiency and can be a sign for some correction at some point of the clearance process .The study implies that the ERCA is not in a position to provide full quality and efficient service delivery system because of the reasons explained above and this in return hinder its overall efficiency of the service delivery process of ASYCUDA.

Automation of service delivery in customs is part and parcel of creating conducive customs environments which involves decreasing prerequisites to get service, simplification of work processes, setting of clear and complete directives and clear and simple insurance system. It also involves making the control trade based on risk assessment, creation of work information provision system for clients and most importantly automation of activities. It is known that automation has a major role to play in setting the favorable environment.

**Table 3.6: Work facilitation of ASYCUDA**

| Response | Frequency | Percent (%) | Rank |
|---|---|---|---|
| Minimize time | 7 | 16 | III |
| Increased speed | 12 | 27 | I |
| Reduce procedure | 10 | 23 | II |
| Reduce cost | 3 | 7 | VI |
| Reduce paper work | 4 | 9 | V |
| Facilitate paper work | 5 | 11 | IV |
| High accuracy | 3 | 7 | VI |
| Total | 44 | 100 | ------- |

Source: Own survey 2015

Customers were requested to explain how ASYCUDA brings quality service delivery system and as Table 3.6, shows, respondents mention different reasons, 7 out of 44 (16 percent) of customers indicated that the ASYCUDA facilitates work and minimize processing time, 12 out of 44 ( 27 percent) of respondents stated that ASYCUDA increased processing speed, 10 out of 44 (23 percent) of them agreed that it reduced procedure, while 3 out of 44 ( 7 percent) indicated that ASYCUDA reduced cost, 4 out of 44 ( 9 percent ) of respondents confirmed that the system reduced paper works, 5 out of 44 ( 11 percent) them stated that ASYCUDA facilitate paper works and the remaining 3 out of 44 ( 7 percent) them indicated that high accuracy was achieved as a result of the application of the ASYCUDA. Efficiency is composed of speed of activities, reduced service delivery cost, decreased in human involvement and shortening of work process. The adoption of ASYCUDA in Ethiopia Revenue and Customs Authority service delivery has yielded these benefits at least partly to users. Customers are able to declare their goods within short period of time, enjoy the benefit from the speed of activities in the comparison to the manual custom service delivery system.

As the Table 3.6 shows, when comparing the rating of customers, ASYCUDA has brought quality service delivery system minimizing processing and service delivery time ranks III, increasing speed of all the process of goods clearance ranks I, reducing cost of goods clearance process ranks II, Reduce cost ranks VI, Reduce paper work ranks V, facilitating paper work ranks IV and by bringing high accuracy in the process of goods clearance generally ranks VI.

### 3.3.3. Contrast between ASYCUDA and Manual System

Comparing the manual system with ASYCUDA, the later reduced human involvement as well as unnecessary extended procedures that would have been inevitable in the manual system and increase processing speed and efficiency. However, the increased processing speed and efficiency as a result of the ASYCUDA has not yet reached its optimal level, given the fact that the system frequent fails. The fact that, most of the respondents agreed on the existence of frequent failure of ASYCUDA for different reasons. While the respondents agreed to the frequent failure of ASYCUDA because of different reasons, almost half of the respondents agree on there are no immediate maintenances of system failure in the organization which stakes the overall process of goods clearances.

The study on Table 3.7 shows that, most of the respondents 33 out of 44 (75 percent) indicated that the adoption of ASYCUDA brought more flexible workflows in goods clearance while the remaining 11 out of 44 (25 percent) the respondents not agree on the work flexibility because of the adoption of ASYCUDA because there still high work procedures in ERCA in process of goods clearances and the officers at the front desk are not flexible enough to facilitate works.

**Table 3.7: Flexibility of workflows**

| Responses | Frequency | Percent (%) |
|-----------|-----------|-------------|
| Yes | 33 | 75 |
| No | 11 | 25 |
| Total | 44 | 100 |

Source: Own survey 2015

In addition to this, respondents were requested about the ease of access to information about their status of goods; and 50 percent of the respondents agree that they receive immediate information about status of their goods and if there is no system failure they received timely service from the organization. Since there is frequent system failure and there is no immediate correction and maintenance of the system. Then it implies that mostly there is no immediate access to information by the customers as per their request which reduce the efficiency of the work process generally.

**Table 3.8: ASYCUDA use less time than the manual**

| Responses | Frequency | Percent (%) |
|---|---|---|
| Yes | 37 | 84 |
| No | 7 | 16 |
| Total | 44 | 100 |

Source: Own survey 2015

According to the report issued by Ethiopian Customs Authority (ECuA: 2004), the introduction of ASYCUDA brought a remarkable improvement by reducing the number of time consuming steps. What is more is that, as Table 3.8 shows, 84 percent of the respondents agreed that ASYCUDA uses less time than the manual system. For instance before the adoption of the system import process was taking from 3 to 8 day while export was taking from 2 to 4 days. After adoption of ASYCUDA import process takes from1 to 3 days while export takes from half day to maximum 2 days. Even though there is progress after adoption of the system still there will be delay when system fails because of different reasons. In the previous manual system, collection and work process of duty and taxes and other controlling activities were carried out one after the other. In the new system after adoption of ASYCUDA, each activity can be undertaken simultaneously without waiting for the completion of the preceding tasks.

**Table 3.9: Differences of ASYCUDA from the manual system**

| Responses | Frequency | Percent (%) |
|---|---|---|
| Manual has poor performance in clearance process | 10 | 28 |
| Manual has slow processing of documents | 7 | 19 |
| Operation is manual | 13 | 36 |
| Manual has more  procedures | 4 | 11 |
| Manual creates work load | 2 | 6 |
| Total | 36 | 100 |

Source: Own survey 2015

In relation to this, 36 employees were requested to differentiate (see Table 3.9) about the difference of ASYCUDA from the manual system, 10 out of 36 (28 percent) said ASYCUDA is different from the manual that is, the manual has poor performance compared to ASYCUDA while 7 out of 36 (19 percent) of employees related the difference with slow processing of documents by the manual system, about 13 of 36

(36 percent) of employees believed the manual operation and computerized operation of ASYCUDA is the main difference while about 4 of 36 (11 percent) related the difference of as the manual is very procedural while ASYCUDA is not procedural compared to the manual system and about 2 of 36 ( 6 percent) related with the work load on the manual system while in ASYCUDA works are more easy because it is helped by the computerized system.

The ASYCUDA is far better than the manual system in that it is easier to use, generate and share information. Furthermore, ASYCUDA is faster and more accurate compared to the manual system. Generally, it achieves better performance of the organization. Most of the respondents agree that, there was need to change from the manual to IT based system ASYCUDA.

As the data show, the organization is in good progress after the implementation of ASYCUDA. However, ERCA is not in the position to maximize the benefits of ASYCUDA. The research shows, there are fluctuations in perception of the changes brought by the adoption of ASYCUDA by the organization, but most of the data gathered from the respondents implies the organization is not efficient enough in maximizing the benefits expected from the adoption of ASYCUDA.

### 3.3.4. Assessment of Service Delivery Quality in ERCA

In order to bring organizational efficiency in service delivery, the biggest constituent is the quality of the service delivering process. Service quality is one of the main outcomes which brings efficiency to the organization and satisfies the expectation of its customers. The SERVQUAL model compares the quality of service delivery with customer expectation and perception of service in terms of tangible assets, reliability, responsiveness, assurance, and empathy (Shah, 2005:121-122). In this part the researcher tried to assess the service quality delivered by ERCA in the process of import and export process after adoption of ASYCUDA based on the above methodology.

It has been reflected that the main objective of implementation of ASYCUDA is to improve the service delivery processes in ERCA as well as to improve the revenue

collection system from import and export process. Based on this objective, the researcher asked the customers of the organization to express their agreement or disagreement with respect to different dimensions of service efficiency as well as quality of service delivery of the organization. Hence, customers have indicated the following responses as the factors that contribute to the efficiency and reliability of service delivery in the organization: reliability, responsiveness, competency of employees, courtesy, credibility, Tangibility and Accessibility of service.

**Table 3.10: Reliability of Service delivery process**

| Reliability of Service delivery process | Responses | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Strongly agree | | Agree | | Disagree | | Strongly disagree | | Total | |
| | FR | % | FR | % | FR | % | FR | % | FR | % |
| Accuracy in performance | 1 | 3 | 18 | 40 | 2 | 5 | 23 | 52 | 44 | 100 |
| Consistency in performance | 1 | 3 | 15 | 33 | 8 | 18 | 20 | 46 | 44 | 100 |
| Keeping records correctly | 4 | 10 | 13 | 29 | 3 | 7 | 24 | 54 | 44 | 100 |
| Service is dependable | 1 | 3 | 15 | 33 | 3 | 7 | 25 | 57 | 44 | 100 |

Source: Own survey 2015

Customers were requested to give options about service by the organization improvement, while customers requested accuracy in performance 19 out of 44 (43 percent ) of the respondents were strongly agreed or agreed about the accuracy in performance of the organization but 25 out of 44 respondents ( 57 percent ) strongly disagreed or disagreed the accuracy in performance.

While customers were requested about consistency in performance 16 out of 44 ( 36 percent) of the respondents strongly agreed or agreed about the consistency in performance in the organization but 28 out of 44 respondents (64 percent) of customers were strongly disagreed or disagreed on the consistency in performance in the organization. Customers were also requested about keeping records correctly 17 out of 44 (39 percent) of the respondents strongly agreed or agreed about keeping records correctly in the organization but 27 out of 44 respondents (61 percent ) of customers strongly disagreed or disagreed on keeping records correctly in the

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organization. Form this data 64 percent of respondents strongly disagreed or disagreed on service delivery improvement in the organization and reliability of the service, which is given by the organization.

**Table 3.11: Responsiveness of employees**

| Responsiveness of employees | Responses | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Strongly agree | | Agree | | Disagree | | Strongly disagree | | Total | |
| | FR | % | FR | % | FR | % | FR | % | FR | % |
| Employees are Supportive | 11 | 25 | 30 | 67 | 1 | 3 | 2 | 5 | 44 | 100 |
| Service provided immediately | 1 | 3 | 15 | 34 | 4 | 9 | 24 | 54 | 44 | 100 |
| Service is given on time | 1 | 3 | 14 | 32 | 4 | 9 | 25 | 56 | 44 | 100 |
| Information is given immediately | 7 | 16 | 33 | 75 | 2 | 5 | 2 | 4 | 44 | 100 |

Source: Own survey 2015

Customers were requested about responsiveness of employees to customers, while customers requested about employees' supportiveness, 41 out of 44 (92 percent) of the respondents strongly agreed or agreed about employees' supportiveness but 3 out of 44 (8 percent) of them strongly disagreed or disagreed. While customers were requested about immediate and on time delivery of service 16 out of 44 (37 percent) of the respondents strongly agreed or agreed about immediate and on time delivery of service and 28 out of 44 (63 percent) of customers were strongly disagreed or disagreed on immediate and on time delivery of service. Customers were also requested about immediate delivery of information by employees when requested 40 out of 44 (91 percent) of the respondents were strongly agreed or agreed about immediate delivery of information in the organization and 4 out of 44 (9 percent) of customers were strongly disagreed or disagreed on immediate delivery of information in the organization.

**Table 3.12: Courtesy by employees**

| Courtesy by employees | Responses | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Strongly Agree | | Agree | | Disagree | | Strongly disagree | | Total | |
| | FR | % | FR | % | FR | % | FR | % | FR | % |
| Employees have good manner | 1 | 3 | 7 | 15 | 4 | 10 | 32 | 72 | 44 | 100 |
| They respect Customers | 1 | 3 | 5 | 12 | 7 | 15 | 31 | 70 | 44 | 100 |
| Employees are Friendly | 1 | 3 | 5 | 11 | 9 | 20 | 29 | 66 | 44 | 100 |
| They care for Customers property | 3 | 7 | 6 | 14 | 5 | 11 | 30 | 68 | 44 | 100 |

Source: Own survey 2015

As the data shows in Table 3.12 customers rated very low the courtesy of employees of the organization and they rate more than 79 percent to strongly disagreed or disagreed regarding the questions requested about the employees have good manner, whether they are caring and polite, whether employees respect customers, whether they care for customers property, whether they are friends to customers .This implies customers are not happy or not satisfied by the care given by the employees of front desk officers who are at front desk. Thus the organization has a gap on the employee and customer relationship which shows the customers who are more than 79 percent of the respondent are not happy with the front desk officers who work in the goods clearance processes.

**Table 3.13: Credibility of employees**

| Credibility of Employees | Responses | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Strongly Agree | | Agree | | Disagree | | Strongly disagree | | Total | |
| | FR | % | FR | % | FR | % | FR | % | FR | % |
| ERCA is trustworthy | 3 | 7 | 1 | 2 | 14 | 32 | 26 | 59 | 44 | 100 |
| Honest to Customer | 2 | 5 | 2 | 4 | 11 | 25 | 29 | 66 | 44 | 100 |
| loyal to customers | 3 | 7 | 1 | 2 | 11 | 25 | 29 | 66 | 44 | 100 |

Source: Own Survey 2015

Respondents were requested to speak about credibility of ERCA and 40 out of 44 (91 percent) of the respondents strongly disagreed or disagreed about employees' trustworthiness, honesty and loyalty to customers. While 11 out of 44 (9 percent) of the respondents strongly agreed or agreed about employees' trustworthiness, honesty and loyalty to customers .This implies that the organization do not have a very good image which is a very big problem for the organization.

**Table 3.14: Tangibility of the organization's assets**

| Tangibility of the organization | Responses | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Strongly Agree | | Agree | | Disagree | | Strongly disagree | | Total | |
| | FR | % | FR | % | FR | % | FR | % | FR | % |
| Organization has best facilities | 3 | 7 | 1 | 2 | 12 | 27 | 28 | 64 | 44 | 100 |
| It has modern Technology | 3 | 7 | 5 | 11 | 12 | 27 | 24 | 55 | 44 | 100 |
| It has skill full Employees | 3 | 7 | 5 | 11 | 11 | 25 | 25 | 57 | 44 | 100 |
| The office is Convenient | 3 | 7 | 3 | 7 | 11 | 25 | 27 | 61 | 44 | 100 |

Source: Own Survey 2015

The respondents were requested to rate the organization on its facilities, technologies on use, skill of employees as well as the convenient of the office, accordingly 91 percent respondents strongly disagreed or disagree on the organization having the good facilities, in addition 82 percent of the respondents strongly disagreed or disagreed on the organization having modern technologies as well as having skillful employees. 86 percent of the respondents were strongly disagree or disagree on convince of the office to customers. The organizations tangibility is very important matter which make the customer to feel comfortable towards requesting service as well as to stay in the office; in addition the modern facilities and technologies the organization acquired made the customers to trust the organization, and believed their works are made at the maximum best technologies as well as best efforts .The respondents showed, except the adoption of ASYCUDA, the organization do not have best facilities, modern technologies, skill full employees and the office is not convenient to the customers. Thus the organization does not have good image in the eyes of the customers.

**Table 3.15: Accessibility of service**

| Accessibility of service | Responses | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Strongly Agree | | Agree | | Disagree | | Strongly disagree | | Total | |
| | FR | % | FR | % | FR | % | FR | % | FR | % |
| The service is easily Accessible | 3 | 7 | 1 | 2 | 11 | 25 | 29 | 66 | 44 | 100 |
| Waiting time for service is short | 3 | 7 | 4 | 9 | 10 | 23 | 27 | 61 | 44 | 100 |
| Convenient working hours | 3 | 7 | 5 | 11 | 10 | 23 | 26 | 59 | 44 | 100 |
| Convenient locations of service facility | 3 | 7 | 2 | 4 | 11 | 25 | 28 | 64 | 44 | 100 |

Source: Own survey 2015

Facilitating easy access gives better opportunity to all service users to benefits from the available services. These promote equity and enhance effectiveness by widening coverage of the service. 91 percent of the respondents strongly disagreed or disagreed about the service is easily accessible; 84 percent of the respondents were strongly disagreed or disagreed on the waiting time for service is short; 82 percent of the respondents were strongly disagree or disagree on the convenient working hours; 89 percent of the respondents were strongly disagree or disagree on the convenient locations of service facility. Service users with full, accurate and up to date information about the public institutions will have better understanding of what and where service is provided and thus will be a better position to benefit from the available services. This could also contribute to gains in efficiency by minimizing the cost (time, effort and resources) of dealing with uninformed service users as well as it enables stakeholders to hold institutions accountable in case of failures.

As table 3.15 shows the accessibility of service in the organization is not easy and as we see about 91 percent of the respondent of this study believed that accessibility of service is very difficult because of many reasons. The effect of ASYCUDA to maintain up- to- date data is considered to be very low. Close to 91percent of the respondents is disagreed as to whether the implementation of ASYCUDA resulted in the availability of updated information. Similarly around 84 percent of respondents

were strongly disagreed or disagreed on the waiting time for service is minimal. Given the status of the ICT infrastructure availability in Ethiopia, it is not surprising to note that access and communication for service delivery received the lowest ranking in agreement of customers while requiring about the service delivery of ERCA.

It has been pointed out that flexibility on generation of reports as one of the benefits of adopting ASYCUDA data entered into a computerized system not only be easily connected but also in different formats at any point of the work process help to be accessed and can be used. There is no need to wait for summation, accumulation or clearing to get a data about transaction. The data storing mechanism enables to access information perpetually.

### 3.3.5. Assessment of Competency of Public Service Delivery in ERCA after  Adoption of ASYCUDA

It is difficult to measure the competency of public service delivery because it is very difficult to know the value of public goods and service. Shah (2005:121-122) explain more on justification for the difficulties of performance measurement in public organizations and reasoned as the challenge to analyze output of service and even very difficult to measure the outcomes of the given services. To evaluate the role for these bodies and how they should be structured, it needs a set of criteria. Some of them can be efficiency, effectiveness, accountability, transparency, timely and ease of administration. Implementation of ICT- based service instead of manual service delivery does not necessarily mean that everything is smooth. Adopting ICTs in the service delivery industry brings machines in to use of furnishing service to the service seekers, the machines are diligent. They can perform as long as they are maintained up to the capacity they can serve. And it is known that ERCA adopted the ICT based service delivery process in order to facilitate the import and export process and in goods clearance activities to bring organizational efficiency but without maximizing the potentials of ASYCUDA it is very difficult to ERCA to achieve its objectives.

In this part, the researcher tried to assess the competency of public service delivery in ERCA in the process of import and export processes after adoption of ASYCUDA

based on the efficiency, effectiveness, accountability, transparency, timely and ease of administration bases of service delivery process of the organization.

**Table 3.16: Efficiency in ERCA after adoption of ASYCUDA**

| Efficiency in ERCA after adoption of ASYCUDA | Responses | | | |
|---|---|---|---|---|
| | Customers | | Employees | |
| | Frequency | Percent (%) | Frequency | Percent %) |
| Strongly agree | 12 | 27 | 14 | 39 |
| Agree | 3 | 7 | 17 | 47 |
| Disagree | 19 | 43 | 5 | 14 |
| Strongly Disagree | 10 | 23 | - | - |
| Total | 44 | 100 | 36 | 100 |

Source: Own survey 2015

As can be seen from table 3.16, 15 out of 44 (34 percent) of the respondents from customers strongly agreed or agreed about the efficiency of ERCA after adoption of ASYCUDA, but most of the respondents that is 29 out of 44 (66 percent) form customers were strongly disagreed or disagreed about the efficiency of ERCA after adoption of ASYCUDA. In relation to this, about 31 out of 36 (86 percent) of employees were strongly agreed or agreed about the efficiency of the performance the organization because of the adoption of AYCUDA while 5 out of 36 (14 percent ) of them were disagreed about this idea.

This implies, regardless of the respondent's inconsistency, 66 percent of the respondents from customers and 14 percent of employees agreed on the inefficiency of the performances of ERCA after adoption of ASYCUDA. Thus, though it may have different reasons, this study shows the organization is not efficient enough to exploit the potential of ASYCUDA in bringing performance efficiency and process facilitation of the revenue collection and goods clearance processes.

Efficiency is composed of speed of activities, service delivery cost reduction, decreased in human involvement and shortening of work processes. The adoption of ASYCUDA in customs service delivery has yielded these benefits at least partly to users, dramatic decrease in the time taken for the service delivery was achieved due to the decreased human involvement and shortening of work flow process (steps).

Efficiency is a joint effect system of the operation of different parts of a system .The excelling of service provision in few parts the whole institutions might hinder the right functioning of the other. The efficiency aspect is satisfactory only if it is compared to the manual system; otherwise, the failure of computers printers and internet connection as well as electric power failure are persistent after implementation of ASYCUDA in providing customs service. As a result, it becomes impossible to commutate with the server of ASYCUDA in providing up to four days in a week on average indicated by many of the respondents including customs officer, the discontinuity causes an accumulation of unprocessed document and created backlog. Therefore the general ICT aided customs service delivery will not work better while each of its subsystems are not working in proper conditions.

**Table 3.17: Effectiveness in ERCA after adoption of ASYCUDA**

| Effectiveness in ERCA after adoption of ASYCUDA | Responses | | | |
|---|---|---|---|---|
| | Customers | | Employees | |
| | Frequency | Percent (%) | Frequency | Percent (%) |
| Strongly agree | 12 | 27 | 14 | 39 |
| Agree | 5 | 12 | 16 | 44 |
| Disagree | 16 | 36 | 5 | 14 |
| Strongly Disagree | 11 | 25 | 1 | 3 |
| Total | 44 | 100 | 36 | 100 |

Source: Own survey 2015

As it can be seen from table 3.17, more than half of the respondents of customers expressed their disagreement on the effectiveness of the performance of ASYCUDA. 61 percent of the respondents from customers strongly disagreed or disagreed about the effectiveness of the performance of the organization because of the adoption of ASYCUDA while 39 percent of the respondent from customers strongly agreed or agreed about the effectiveness of the performance the organization because of the adoption of ASYCUDA. In relation to this, 83 percent of the respondent from employees strongly agreed or agreed about the effectiveness of the performance of the organization because of the adoption of ASYCUDA while 17 percent of the respondent from employees strongly disagreed or disagreed about the effectiveness of the performance the organization because of the adoption of ASYCUDA.

**Table 3.18: Accountability in ERCA after adoption of ASYCUDA**

| Accountability in ERCA after adoption of ASYCUDA | Responses | | | |
|---|---|---|---|---|
| | Customers | | Employees | |
| | Frequency | Percent (%) | Frequency | Percent (%) |
| Strongly agree | 3 | 7 | 11 | 31 |
| Agree | 14 | 32 | 16 | 44 |
| Disagree | 11 | 25 | 4 | 11 |
| Strongly Disagree | 16 | 36 | 5 | 14 |
| Total | 44 | 100 | 36 | 100 |

Source: Own survey 2015

As it can be seen from table 3.18, most of the respondents which are customers express their disagreement on the accountability of the organization, 27 out of 44 (61 percent) of the respondent from customers strongly disagreed or disagreed about the accountability of the performance the organization while 17 out of 44 (39 percent) of the respondent from customers strongly agreed or agreed about the accountability of the performance of the organization. In the opposite to this, 27 out of 36 (75 percent) of the respondents from employees strongly agreed or agreed about the accountability of the performance the organization, while 9 out of 36 (25 percent) the remaining of the respondent from employees strongly disagreed or disagreed about the accountability of the performance of the organization because of the adoption of ASYCUDA.

This implies, regardless of the respondents inconsistency above 60 percent of the respondents from customers as well as 25 percent of employees agreed on the inefficiency of the performances of ERCA after adoption of ASYCUDA. Thus, though it may have different reasons, this study shows the organization is not effective to exploit the potential of AYCUDA in bringing performances efficiency and process facilitation of the revenue collection and goods clearance processes.

**Table 3.19: Transparency in ERCA after adoption of ASYCUDA**

| Transparency in ERCA after adoption of ASYCUDA | Responses | | | |
|---|---|---|---|---|
| | Customers | | Employees | |
| | Frequency | Percent %) | Frequency | Percent (%) |
| Strongly agree | 10 | 23 | 10 | 28 |
| Agree | 5 | 11 | 13 | 36 |
| Disagree | 15 | 34 | 4 | 11 |
| Strongly Disagree | 14 | 32 | 9 | 25 |
| Total | 44 | 100 | 36 | 100 |

Source: Own survey 2015

Besides, Table 3.19 also shows, more than half of the respondents which are customers express their disagreement on the transparency of the organization, 66 percent of the respondents from customers strongly disagreed or disagreed about the increase in transparency of the performance the organization after the adoption of ASYCUDA by ERCA but 34 percent of the respondents from customers strongly agreed or agreed about the transparency of the performance the organization because of ASYCUDA. In this relation, 64 percent of the respondents from employees strongly agreed or agreed about the transparency of the performance of the organization, while about 36 percent of the respondents from employees strongly disagreed or disagreed about the transparency of the performance of the organization because of the adoption of ASYCUDA.

This implies, regardless of the respondents inconsistency above 60 percent of the respondents from customers as well as employees disagreed on the transparency of the performances of ERCA after adoption of ASYCUDA. Thus, though it may have different reasons, this study show the organization is not effective to exploit the potential of ASYCUDA in bringing performances efficiency and process facilitation of the revenue collection and goods clearance processes.

The level of transparency that ought to be reflected in public service delivery has not yet been achieved in customs. The means to follow the route of documents once the declaration is submitted to declaration receiving and data capturing section is hardly transparent. In case, the declaration and /or its accommodating documents are missed, there is no enough means to find them back. The degree of transparency in the

classification of goods for tariff payment is also very much low, the duty that should be paid on the same goods differs from one officer's assessment to another.

**Table 3.20: ERCA is less procedural after adoption of ASYCUDA**

| ERCA is less procedural after adoption of ASYCUDA | Responses | | | |
|---|---|---|---|---|
| | Customers | | Employees | |
| | Frequency | Percent %) | Frequency | Percent (%) |
| Strongly agree | 14 | 32 | 6 | 17 |
| Agree | 3 | 7 | 15 | 42 |
| Disagree | 10 | 23 | 3 | 8 |
| Strongly Disagree | 17 | 38 | 12 | 33 |
| Total | 44 | 100 | 36 | 100 |

Source: Own survey 2015

As it can be seen from table 3.20, most of the respondents which are customers express their disagreement on whether the organization is less procedural. 27 out of 44 (61 percent) of the respondents from customers strongly disagreed or disagreed about less procedural performance of the organization, while 17 out of 44 (39 percent) of the respondents from customers strongly agreed or agreed about less procedural performance of the organization. In the opposite to this, 21 out of 36 (59 percent) of the respondents from employees strongly agreed or agreed about less procedural performance of the organization, while 15 out of 36 (41percent) of the respondents from employees strongly disagreed or disagreed about less procedural performance of the organization after adoption of ASYCUDA.

This implies, regardless of the respondents inconsistency above 60 percent of the respondents from customers as well as employees agreed on the less procedural performance of ERCA after adoption of ASYCUDA. Thus, though it may have different reasons, this study shows the organization is not effective to exploit the potential of ASYCUDA in bringing performances efficiency and process facilitation of the revenue collection and goods clearance.

**Table 3.21: Consistency in ERCA after adoption of ASYCUDA**

| Consistency in ERCA after adoption of ASYCUDA | Responses | | | |
|---|---|---|---|---|
| | Customers | | Employees | |
| | Frequency | Percent (%) | Frequency | Percent (%) |
| Strongly agree | 3 | 7 | 5 | 15 |
| Agree | 18 | 41 | 13 | 36 |
| Disagree | 4 | 9 | 2 | 5 |
| Strongly Disagree | 19 | 43 | 16 | 44 |
| Total | 44 | 100 | 36 | 100 |

Source: Own survey 2015

As Table 3.21 shows, respondents who are 52 percent of customers responded as strongly disagreed or disagreed for the question whether the company is consistent or not while 48 percent of them were strongly agreed or agreed. In this relation 51 percent of employees were strongly agreed or agreed for the consistency of the organization while 49 percent of the employees were strongly disagreed or disagreed about the consistency of ERCA in its performances. Unavailability of precise and up-to date duty paying value and tariff for goods of different country of origin and for newly innovated products worldwide also hampered the smooth operation of the customs and big inconsistency in performance of the organization. So experts must have knowledge and up -to -date information about the working of ASYCUDA.

ASYCUDA is too rigid to accommodate the ever needed changing information and correction of errors. Every decisions concerning correction should be approved by both the supervisor and branch manager. Unless some kind of flexibility is available for the desk officers, the ICTs are not to facilitate the efficient service rendering by themselves because ITC and centralization of authority could not go side by side, hence requiring the approval of the authorities to each of the changes in the service delivery system. The case would become deterring for customs officers who are required to attend many other tasks.

**Table 3.22: Timely performance of ERCA after adoption of ASYCUDA**

| Timely performance of ERCA after adoption of ASYCUDA | Responses | | | |
|---|---|---|---|---|
| | Customers | | Employees | |
| | Frequency | Percent (%) | Frequency | Percent (%) |
| Strongly agree | 10 | 23 | 7 | 19 |
| Agree | 6 | 14 | 9 | 25 |
| Disagree | 4 | 9 | 5 | 14 |
| Strongly Disagree | 24 | 54 | 15 | 42 |
| Total | 44 | 100 | 36 | 100 |

Source: Own survey 2015

Table 3.22, shows, more than half of the respondents who are customers express their disagreement on the timely response of the organization on its work performances, 37 percent of the respondents from customers strongly agreed or agreed about the timely performance the organization, while about 63 percent of the respondent from customers strongly disagreed or disagreed about the timely performance the organization. On respecting time, 44 percent of the respondents from employees strongly agreed or agreed about the timely performance of the organization, while about 56 percent of the remaining respondents of the employees strongly disagreed or disagreed about the timely performance of the organization because of the adoption of ASYCUDA.

This implies, regardless of the respondents inconsistency more than 50 percent of the respondents from customers as well as employees agreed that ERCA is less timely in its performance after adoption of ASYCUDA. Thus, though it may have different reasons, this study show is that the organization is not timely to exploit the potential of AYCUDA in bringing performances efficiency and process facilitation of the revenue collection and goods clearance processes.

**Table 3.23: Concern about customers in ERCA after adoption of ASYCUDA**

| Concern about customers in ERCA after adoption of ASYCUDA | Responses | | | |
|---|---|---|---|---|
| | Customers | | Employees | |
| | Frequency | Percent (%) | Frequency | Percent (%) |
| Strongly agree | 9 | 20 | 4 | 11 |
| Agree | 7 | 16 | 10 | 28 |
| Disagree | 14 | 32 | 4 | 11 |
| Strongly Disagree | 14 | 32 | 18 | 50 |
| Total | 44 | 100 | 36 | 100 |

Source: Own survey 2015

Table 3.23 shows, that more than half (64 percent) of the respondents who are customers express their disagreement on the concern about customers of the organization. 36 percent of the respondents from customers strongly agreed or agreed about the concern of ERCA for its customers after adoption of ASYCUDA, while 64 percent of the respondents from customers strongly disagreed or disagreed about the concern of customers about the performance of the organization. In relation to this, 39 percent of the respondents from employees strongly agreed or agreed about the concern of customers about the performance of the organization, while 61 percent of respondents from employees strongly disagreed or disagreed about the Concern of customers about the performance of the organization because of the adoption of ASYCUDA.

This implies, regardless of the respondents' inconsistency, 61 percent of the respondents from customers as well as employees agreed on the performances of ERCA after adoption of ASYCUDA. Thus, this study shows that, the organization has not been effective in exploiting the technological potential of ASYCUDA to bring performance efficiency to its customers on revenue collection and goods clearance processes.

## 3.4. Interview Result and Analysis

In addition to the questionnaire, the researcher has made an interview with officials in Addis Ababa Airport Customs branch and Addis Ababa commercial goods facilitation branch (Kality). During the interview almost all the officials argue that the clearing process has shown improvement from time to time, especially after the reorganization of the authority. The interviewees have justified the reason for the improvement as follows:

Firstly, the BPR study which facilitated the restructuring of the organization is the base or benchmark for the improvement. Secondly, shifting from manual to full automated system (ASYCUDA++) is the most decisive measure which serves as a vital input for the change. This in turns furnished the clearing agents and/or importers on line declaration services, using the direct trader input (DTI), and it also allows the access of electronic procedures. Thirdly, the recruiting of graduate employees, has

contributed in upgrading the capacity of the authority in performing modern customs clearing process. Finally, based on the BPR study, time taken for a document based on level of risk has been specified as a standard, and every employee is expected to deliver Customs clearance service within or below the presented time indicated on the manual. However, the officials agreed that, the Customs clearance process and the presented time length for a document didn't achieve as expected.

The interviewees extend that, the major causes for the failures of the planned outputs, are shortage of skilled manpower (in terms of number), interruption of system network (ASYCUDA++), employee's insufficient knowledge of the ASYCUDA's function, lack of standard training center to equip employees with technical knowledge of the clearing process and to upgrade their knowhow and create awareness about the nature of imported goods, so that they can develop self confidence in classification of goods accordingly.

Meanwhile, in the discussion, the officials added that beside to the listed problems in the preceding paragraph, the clearing agents and/or owners have a significant negative role on the Customs clearance process. They argued that, most of the agents do have no professional ethics even they facilitate to corrupt and are smart enough in cheating officers. At the same time, importers provide undervalued invoice, wrong certificate of origin and other forged documents. As the result of these and other related problems, Customs clearing time for a document/declaration became longer than the standard.

# CHAPTER FOUR

# CONCLUSIONS AND RECOMMENDATIONS

## 4.1. INTRODUCTION

This study investigates the adoption and efficiency of ASYCUDA in ERCA. The primary and secondary data collected from 44 customers and 36 employees at ERCA and 12 officials from six relevant organizations as well as studying the available documents and observations on the practice are the basis for my conclusions and recommendations for the performance of ASYCUDA in ERCA.

In addition, the study explores the application of ASYCUDA compared to the manual system that has been used by ERCA. Consequently, based on the theoretical frame work discussed in chapter two, the study attempts to describe and analyze the performance efficiency of ASYCUDA and suggests possible solutions by which ERCA can improve the performance of ASYCUDA.

## 4.2. Conclusions

From the findings of this study, ASYCUDA improves the goods clearance activities by reducing waiting time for service delivery even though the stoppage of the system due to system failure has taken more time to maintain and start the work process again.

ASYCUDA brought changes in service provision mechanisms like improved quality of service as well as changes in reduction of cost and procedures which are very important to achieve the efficiency of the organization, but the organization found to be inefficient.

There is a delay in goods clearance even though the reasons given for goods clearance are different among respondents. The study found out that; poor working habits of the employees of the organization, frequent system failures because of network failure as well as electric power failure, less transparency and un-updated data bases are the most common reasons for the occurrence of delay in goods clearance.

The study explores the major problems ERCA is facing with regard to its way of service delivery.

- **Clearance and Inspection**: Inadequate automation of Information exchange, inefficient use of Customs resources (ASYCUDA), added time consuming, extra steps in clearance process like the use of physical forms and signatures.

- **Facilities**: The cargo places are crowded and in adequate that creates delays in over all processing of goods clearance.

- **Information Technology**: There is lack of interfaces among internal systems, poor data flow and integrity, effective use of ASYCUDA software, integration with outside agencies having IT links and there is no expanded/ continuous training available for efficient use of ASYCUDA

- **Impacts**: Some clearance processes remained manual while ASYCUDA and commercial system capabilities exist. As a result of this, ERCA cannot produce benefits of automation to reduce transaction costs and increase capacities. In addition, it is very difficult to efficiently forecast trade and revenue transaction as well as efficiently to plan for staffing with no workflow processing which have very significant negative influence on an efficient clearance process .In addition to this  Customs do not have pre-knowledge of upcoming inspection workload, no real-time visibility of clearance status and inability to determine work patterns and flows

- **Quality of inspections** is compromised on slow trade facilitation because integration of systems does not exist in developed systems. This creates, inefficient processing of  clearance   declarations   and   sometimes   duplicate processes adding to inefficiency

- **Lack of automation and integration** are the major obstacles to the implementation of ASYCUDA and still after adoption of ASYCUDA inspections are slow, time consuming, and costly

- **Man power**: According to the study, there is no adequate skilled manpower that immediately maintain whenever the system fails .As a result of this, delay in service delivery process is occurring which makes the customers to lose a lot of business opportunity. Besides, this will make it difficult for ERCA to efficiently collect tax from its customers.

While processing on ASYCUDA ++ system, ERCA does not consider the interest of banks because it evaluates all information from the point of view of revenue generation. Moreover other important information like invoice number is likely to be forgotten while registering in the declaration. The assessment must be from different angles and it must consider the interests of other interrelated organizations like Banks and MOFED.

It is very difficult to amend errors from ASYCUDA++ system, if error is committed in using the foreign exchange permit number, all of the processes for those goods in the whole system will encounter problems and it is very difficult to correct the error easily because the system does not allow any correction. Mostly replacements of foreign exchange permit numbers are given by banks to customers and this creates a delay in goods clearance process.

The ASYCUDA ++ system is excellent in tracing information and security for the system in the cross checking but still there are some gaps in checking and correcting some un given numbers used by some importers and exporter intentionally to cheat (take advantage of) the system and pass the banking processes but generally ASYCUDA brings efficiency and security

The ASYCUDA ++ frequently encounter errors and interruptions for different reasons due to electric power failure, network failure, lack of additional features of ASYCUDA ++ system which create inefficiency in ERCA in exploiting the potentials of ASYCUDA.

### 4.3. Suggestions and Recommendations

From the above discussions, the following suggestions and recommendation are provided:

1. Hard ware and infrastructure facilities such as high capacity printers, computers telephones, fax machines as well as good internet connection and uninterrupted electric power by using other means like generators have to be availed /equipped/, so that unnecessary delay due to the unavailability of these facilities can be eliminated

2. The level or degree of transparency must be increased by giving clear and complete information about the status of every document that is lodged and assessed in customs to eliminate corruption, manipulation and intentional bias

3. The lack of adequate electricity and telecommunication facilities not only make the system fail which create very big problem in goods declaration process but also it deprived the organization to maximize the full potential of ASYCUDA. Hence, ERCA must create a mechanism by which electricity and telecommunication facilities  can be available.

The study has shown both the strength and weakness concerning the application ASYCUDA by ERCA. To improve the performance of ASYCUDA, it will be useful to implement the interventions listed below:

1. As this study showed an effort has not been made to fully exploit the potential of the ASYCUDA ++ system by ERCA and there is no consistency in goods clearance process in the organization. These shows there are incorrect records which are mostly kept that reduce the reliability of tasks performed in the organization. Hence, ERCA must work for the organizational efficiency by making the work process very consistent and accurate. In addition, ERCA must make the necessary modification and adoption of ASYCUDA world which is the latest versions of the customs system than using ASYCUDA ++ system.

2. Continuous training opportunity must be available to employees to update them so that they can work efficiently with the system. As this study shows, the customers complaining about frequent changes of employees. Hence, ERCA should take the following measures to have competent and capable employees working in the implementation of the system:

i. Develop and implement a standard training program for all customs personnel and expand the skill sets of the customs officers, continuously schedule training, develop and implement a communications process to provide up-to-date information.

ii. Eliminate paper-based processing, restructure the present units into a workflow process, structure centers into more efficient workflow environments, incorporate the efficiencies of workflow queues, and develop standardized processes in the organization.

iii. Supervisors and front line officers should undergo mandatory training on how to operate computers and track operations on them

iv. Organization policies, directives and regulations have to be reviewed in line with the changes that have been taking place due to the implementations of ICT.

v. Most importantly, every civil servant in Customs Authority has to be enlightened to facilitate the smooth operation of the service delivery as the ultimate objectives of utilizing ICT is service enhancement.

3. This study showed that there is poor compliant management system in ERCA and the customers do not know where to go if they face problems. Hence, ERCA must establish independent compliant management system, which in turn provides an input for further service improvement mechanisms.

4. ERCA faces electric power interruption frequently which made the work process of ASYCUDA to stack and be very slow. Hence ERCA must work with Ethiopian Electric Power Authority to solve the problem and also must arrange other means of power supply like availing generator to solve the power interruption in working hours of the organization

5. Using appropriate/high/ technology the organization must use the latest technologies to use ASYCUDA at its full potential. Critical technology requirements for successful implementation of the system are very important.

Thus, ERCA Implement a simplified and standardized process model, eliminate redundant and manual processes, eliminate unnecessary steps, and develop a more automated processing model. Incorporate existing systems into ASYCUDA software, Review existing systems functionality in ASYCUDA and develop interfaces or incorporate functionality.

6. Work for efficiency, the organization is not efficiently working with ASYCUDA, and it must give timely service to its customers. If ERCA is to continue to give the service, it must give proper concern to serve its customers. Hence, ERCA must change its service delivery system so as to provide timely and efficient service for its customers.

7. The ASYCUDA ++ system needs to be linked to the system of Banks especially with the National Bank of Ethiopia as it reduces some problems that will be created in the clearance process. The process needs networking, to speeding up the process and sharing the information to the relevant office. ASYCUDA must be user friendly and ERCA has to work for that goal.

8. The organization must work for the development of skill of employees specially who are implementing ASYCUDA and should given related training that can help them to cope with the service delivery system.

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# APPENDIX

## Addis Ababa University

## School Of Graduate Studies

## Departments of public administration and development management

## Dear Respondents:

The objective of this questionnaire is to secure the necessary and relevant first-hand information that may be useful to conduct a Thesis regarding *"Efficiency of Electronic Service Delivery: A case study in Automated Systems for Customs Data (ASYCUDA) in Ethiopian Revenue and Customs Authority (ERCA)"* which will be used to prepare a Thesis required for my MPMP degree in Public management and Policy. Therefore, your response in this regard helps a lot to undertake the study. The result of this survey will be treated with at most confidentiality and will be strictly used for academic purpose only. The researcher thus appreciates in advance your cooperation and sparing your valuable time in filling this questionnaire **(by customers).**

1. What kind of business are you engaged in now?

      a) Importer        b) Exporter        c) Both

2. What kind of goods do you declare?

_____
_____
_____

3. For how many years have you been engaged on this work?

      a) Up to 2 years        b) From 3 to 5 years        c) From 6 to 10 years
      d) Above 10 years

4. Do you face delay for clearance of goods because of Ethiopian Revenue and Customs Authority (ERCA)?

      a) Yes        b) No

5. If your answer is yes for No. 4, what do you think are the reasons of delay for clearance of goods?_____
_____
_____

6. Do you know about the Automated System for Customs Data (ASYCUDA)?

      a) Yes        b) No

7. What is the difference between the ASYCUDA based system and the manual system for you?

_____
_____

8. Do you think ASYCUDA is facilitating the workflows in clearance of goods?

    a) Yes               b) No

9. If your answer for the No.8 is YES how?

_____
_____
_____
_____

10. Is there a place to go and ask about the delay of your goods?

    a) Yes               b) No

11. Do you think ASYCUDA reduces the procedures required for goods clearance?

    a) Yes               b) No

12. Do you think quality service is given for customers by the organization?

    a) Yes               b) No

13. Do you think ASYCUDA brings quality service delivery system?

    a) Yes               b) No

14. If your answer for No.13 is YES, how ASYCUDA brings quality service delivery system?

_____
_____
_____
_____

15. Does the ASYCUDA system fail sometimes?

    a) Yes               b) No

16 What are the reasons of the system failure? If your answer is YES for No.15

_____
_____
_____
_____

17. How frequently the system fails, if your answer is YES for No.15?

_____
_____
_____
_____

18. What changes does the adoption of ASYCUDA have brought in the following? (Please put √ Marks as per your perception of the service delivery system of ERCA.)

| S.N | Description | Strongly agree | Agree | I do not know | Disagree | strongly disagree |
|---|---|---|---|---|---|---|
| 1 | Efficiency | | | | | |
| 2 | Effectiveness | | | | | |
| 3 | Accountability | | | | | |
| 4 | Transparency | | | | | |
| 5 | Less bureaucratic | | | | | |
| 6 | Consistency | | | | | |
| 7 | Responsiveness | | | | | |
| 8 | Timely | | | | | |
| 9 | Concern about customers | | | | | |

19. Do you think ASYCUDA requires less time than the manual system?

    a) Yes                b) No

20. How much time do you take on average to clear the goods before adoption of ASYCUDA?

    a) Import_____

    b) Export_____

21. How much time do you take on average to clear the goods after adoption of ASYCUDA?

    a) Import_____

    b) Export_____

22. Does ASYCUDA make the work flow more flexible?

    a) Yes                b) No

23. Do you get information immediately about the status of your goods when you requested?

    a) Yes                b) No

24. Does Staff provide timely service to you?

    a) Yes                b) No

25. Is there a place to go to complain about a delay of you goods?

a) Yes                 b) No

26. Do you think the need from manual to ASYCUDA IT based system was important?

    a) Yes                 b) No

27. Does the organization have trained man power that facilitates the new system?

    a) Yes                 b) No

28. Do you think the failure in the ASYCUDA system immediately maintained?

    a) Yes                 b) No

29. Do you have any experience of immediate correction of ASYCUDA system failure in clearance of goods?

    a) Yes                 b) No

30. How do you rate the following as per the service delivery of ERCA? (Put √ marks as per your perception of the service delivery system of ERCA.)

| S.N | Description | Strongly agree | agree | I don't know | Disagree | Strongly disagree |
|---|---|---|---|---|---|---|
| 1 | Reliability | | | | | |
| | Accuracy in performance | | | | | |
| | Consistency in performance | | | | | |
| | Keeping records correctly | | | | | |
| | The service is dependable | | | | | |
| 2 | Responsiveness | | | | | |
| | Employees are very supportive | | | | | |
| | Service is provided immediately | | | | | |
| | Giving on time service | | | | | |
| | Consistency in performance | | | | | |
| | Information is given immediately | | | | | |
| 3 | Competency | | | | | |
| | Employees possess required skills | | | | | |
| | They have required knowledge | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | They are experienced | | | | | |
| | They are qualified | | | | | |
| 4 | Courtesy | | | | | |
| | Employees have good manner | | | | | |
| | They are caring and polite | | | | | |
| | They care for customers property | | | | | |
| | Employees are friendly | | | | | |
| | They respect customers | | | | | |
| 5 | Credibility | | | | | |
| | ERCA is trustworthy | | | | | |
| | It is always honest to customers | | | | | |
| | It is always loyalty to customer | | | | | |
| 6 | Tangibility | | | | | |
| | The organization has best facilities | | | | | |
| | It has most modern technology | | | | | |
| | It has skill full employees | | | | | |
| | The office is convenient for service delivery | | | | | |
| 7 | Access | | | | | |
| | The service is easily accessible | | | | | |
| | Waiting time for service short | | | | | |
| | Convenient hours of operation | | | | | |
| | Convenient location of service facility | | | | | |

31. Is there anything you want to add about ASYCUDA's performance *in ERCA*?

_____

_____

# Addis Ababa University

## School Of Graduate Studies

## Departments of public administration and development management

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1. Customs station _____

2. Age_____

3. Educational background a) certificate b) Diploma c) Degree d) Masters e) PhD.

4. Service year_____

5. Does your work relate directly to Automated System for Customs Data (ASYCUDA)?

    a) Yes       b) No

6. If your answer is YES, how many years have you worked on implementation of ASYCUDA?
_____

7. Do you think there is a delay in clearance of goods in your organization before adoption of the system?     a) Yes       b) No

8. What are the reasons /factors/ of delay in clearance of goods if your answer for No.7 is YES?
_____
_____
_____

9. What are the differences between the new system and the old procedure for you?
_____
_____
_____

10. Do you think ASYCUDA is facilitating workflows in clearance of goods?

    a) Yes       b) No

11. How ASYCUDA is facilitating workflows if your answer for No.10 is YES?
_____
_____
_____

12. Do you think there was importance to change form manual to IT based system (ASYCUDA)?

    a) Yes        b) No

13. Do you ever face system failure the implementation of ASYCUDA?

    a) Yes        b) No

14. Does the system fail frequently at high working time?

    a) Yes        b) No

15. Do you inform the customers the reasons of the delay of their goods?

    a) Yes        b) No

16. What is the reason if your answer is NO for question No. 15?
_____
_____
_____

17. Is there a place to go for to customers compliant about a delay of their goods?

    a) Yes        b) No

18. Do you think ASYCUDA reduce the bureaucratic procedures required for goods clearance?

    a) Yes        b) No

19. Do you think quality service is given for customers?

    a) Yes        b) N o

20. Do you think ASYCUDA brings quality service delivery system?

    a) Yes        b) No

21. Is there frequent ASYCUDA system failure during customer service delivery at ERCA?

    a) Yes        b) N o

22. What are the reasons for system failure if your answer is YES to question number 21?
_____
_____

23. Do you think ASYCUDA uses less time than the manual system?

a) Yes        b) No

24. Do you think ASYCUDA is efficient than the manual system?

      a) Yes        b) No

25. Do you think ASYCUDA reduce the cost involved in the transaction than the manual system?

      a) Yes        b) No

26. Do you think the need from manual to IT based system was important (from Manual system to ASYCUDA)?

      a) Yes        b) No

27. If your answer is YES what is your reason to question 26?

_____
_____
_____

28. What changes does the adoption of ASYCUDA have brought in the following? (Please put √ marks as per your perception of the service delivery system of ERCA.)

| S.N | Description | Strongly agree | Agree | I do not know | Disagree | Strongly disagree |
|-----|-------------|----------------|-------|---------------|----------|-------------------|
| 1 | Efficiency | | | | | |
| 2 | Effectiveness | | | | | |
| 3 | Accountability | | | | | |
| 4 | Transparency | | | | | |
| 5 | Less bureaucratic | | | | | |
| 6 | Consistency | | | | | |
| 7 | Responsiveness | | | | | |
| 8 | Timely | | | | | |
| 9 | Concern about customers | | | | | |

29. Do you think ASYCUDA make the work flow of goods clearances more flexible?

      a) Yes        b) No

30. Does the organization have trained man power to facilitate the new system?

    a) Yes        b) No

31. Do you think the failure in the system immediately maintained?

    a) Yes        b) No

32. Do you have any experience of immediate correction of system failure in clearance of goods?

    a) Yes        b) No

33. If your answer is No how long it take them to maintain the system?
_____
_____
_____

34. Any thing you want to add about the ASYCUDA performance?
_____
_____
_____
_____


  Thank you for your co-operation!

# Addis Ababa University
## School Of Graduate Studies
## Departments of public administration and development management

## Dear Respondents:

The objective of this interview is to secure the necessary and relevant first-hand information that may be useful to conduct a Thesis regarding *"Efficiency of Electronic Service Delivery: A case study in Automated Systems for Customs Data (ASYCUDA) in Ethiopian Revenue and Customs Authority (ERCA)"* which will be used to prepare a Thesis required for my MPMP degree in Public management and Policy. Therefore, your response in this regard helps a lot to undertake the study. The result of this interview will be treated with at most confidentiality and will be strictly used for academic purpose only. The researcher thus appreciates in advance your cooperation and sparing your valuable time in answering these questions (**by interviewees**).

## Interview Guide

1. Does your organization require information from Ethiopian Revenue and Customs Authority (ERCA) for your work? Do you use Automated Systems for Customs Data (ASYCUDA) processed data (declaration)

2. For what purpose are you using the information you received form ERCA?

3. Do you get immediate and correct information as you request from ERCA?

4. Do you face a delay in receiving any information from ERCA? What do you think is reason of the delay?

5. Do you think ASYCUDA facilitates the speed of information received form ERCA? What about your organization?

6. Do you think ASYCUDA reduced the procedure to received information from ERCA than the manual system?

7. Do you think ASYCUDA brings efficiency generally for the import and export process?

8. Are there any constraints that you face in using ASYCUDA data? Please mention major Constrains? What do you think as reasons for those problems? What are the possible solutions/Recommendations/ for those problems?

9. What do you want to add on the performance of ASYCUDA?

Thank you for your co-operation!