



**ADDIS ABABA UNIVERSITY**  
**COLLEGE OF NATURAL AND COMPUTATIONAL SCIENCES**  
**SCHOOL OF INFORMATION SCIENCE**

**Challenges and Benefits of Outsourcing Information System  
Development Function: The Case of National Bank of Ethiopia**

**By: Iyasu Teshome**

**June 2017**

**ADDIS ABABA, ETHIOPIA**



**ADDIS ABABA UNIVERSITY**

**COLLEGE OF NATURAL AND COMPUTATIONAL SCIENCES**

**SCHOOL OF INFORMATION SCIENCE**

**Challenges and Benefits of Outsourcing Information Systems  
Development Function: The Case of National Bank of Ethiopia**

**A Thesis Submitted to School of Information Science in Partial Fulfillment for  
the Degree of Masters of Science in Information Science**

**By: Iyasu Teshome**

**Advisor: Tibebe Beshah (PhD)**

**June 2017**



**ADDIS ABABA UNIVERSITY**  
**COLLEGE OF NATURAL AND COMPUTATIONAL SCIENCES**  
**SCHOOL OF INFORMATION SCIENCE**

**Challenges and Benefits of Outsourcing Information Systems Development  
Function: The Case of National Bank of Ethiopia**

**BY**

**Iyasu Teshome**

**Signature of the Board of Examiners for Approval**

| <b>Name</b>                              | <b>Title</b>           | <b>Signature</b> | <b>Date</b> |
|--|------------------------|------------------|-------------|
| <b><u>Tibebe Beshah (PhD)</u></b>        | <b><u>Advisor</u></b>  | _____            | _____       |
| <b><u>Solomon Teferra (PhD)</u></b>      | <b><u>Examiner</u></b> | _____            | _____       |
| <b><u>Getachew Hailemariam (PhD)</u></b> | <b><u>Examiner</u></b> | _____            | _____       |

## DECLARATION

This thesis is my original work and has not been presented as a partial requirement for a degree in any university, and all source of materials used for the study has been duly acknowledged.

---

Iyasu Teshome Negeri  
June 2017

The thesis has been submitted for examination with my approval as University advisor.

---

Tibebe Beshah (PhD)

## ACKNOWLEDGEMENTS

First of all, I would like to thank my heavenly father for the strength he gave me. There are many people whom I would like to thank for their support during my thesis work. Primarily, I sincerely thank my thesis advisor Dr. Tibebe Beshah for his supervision, valuable and teaching comments for this thesis achievement. His commitment to guide and help this thesis work, and his friendly approach as well as academic assistance in my preceding courses is really appreciable. Dr. Tibebe you have shown me the right path of research and encouraged me to move forward throughout the study and you are always ready to answer my questions while I face difficulties in doing this research. Again really thank you Dr. Tibebe.

I also extend my profound gratitude to the Management of National Bank of Ethiopia for allowing me a permission to carry out the research. I also extend my thanks to those people at the National Bank of Ethiopia who gave me the data for this study. Most importantly, I would like to thank the Chief Information officer Ato Fikremariam Bizuneh, Jembere Negassa, Yidinekachew Haile, Seife Hailu and others for their uncountable assistance for the completion of this research. I also thank Ato Benti Geleta for his Expert Comments from questionnaire preparation up to the end comments whether the research is as the intended objective.

Most importantly, I would like to thank my wife Ebise Adugna, My daughter Hamerssen Iyasu and my son Jenenus Iyasu for your support and patience in different ways. My thanks also goes to my brothers Abdi Adugna, Olana Teshome, Bilisumma Amenu and Misgana Teshome for your whole hearted material and financial support.

At the end I would like to express great thanks to my best friends Tsegaye Nire, Temesgen Asnake and Lily Kebede for their encouragement while I faced challenges form my families' health problem by sharing my burden staying with me in all health centers.

### **List of Abbreviations**

|         |  |
|---------|--|
| CIO     | Chief Information Officer                                      |
| EATS    | Ethiopian Automatic Transfer system                            |
| ECRB    | Ethiopian Credit Reference Bureau                              |
| ERCA    | Ethiopian Revenue and Customs Authority                        |
| FEMOS   | Foreign Exchange Monitoring system                             |
| FIRA    | Federal Inland Revenue   |
| HRMS    | Human Resource Management system                               |
| IBM     | International Business Machines Corporations                   |
| IMF     | International Monetary Fund                                    |
| ISD     | Information system Development                                 |
| IS      | Information System   |
| IT      | Information Technology   |
| NBE     | National Bank of Ethiopia                                      |
| PSMS    | Property and Service Management System                         |
| QBS/CBS | Quantum Banking system or Core Banking System                  |
| R&D     | Research and Development                                       |
| SDLC    | System Development Life Cycle                                  |
| SLA     | Service Level Agreement  |
| S/N     | Serial Number  |
| SWIFT   | Society for Worldwide Interbank Financial<br>Telecommunication |
| TAT     | Turn –Around- Time   |

## List of tables

|  |    |
|--|----|
| Table 2.2.1-1 Legacy Versus Modern Information System outsourcing (Adapted from (Factor, 2001).... | 11 |
| Table 2.6-1 Timeline of Outsourcing development (Adapted from Tinseboer 2005) .....                | 24 |
| Table 2.6-2 Trends in outsourcing (Adapted from Brain 2012) .....                                  | 24 |
| Table 3.5-1 Respondents background.....  | 35 |
| Table 4-1 Respondents background.....  | 40 |
| Table 4-2 Critical systems outsourced in National Bank of Ethiopia.....                            | 42 |
| Table 4-3 Outsourcing strategies importance and its absence in NBE .....                           | 47 |
| Table 4-4 Summery of key themes in outsourcing ISD benefits .....                                  | 49 |
| Table 4-5 Summary of challenges in ISD Function outsourcing.....                                   | 52 |
| Table 4-6 Summary of Outsourcing ISD Function challenges and Benefits .....                        | 62 |

## List of Figures

|   |    |
|---|----|
| Figure 2.4-1 Reasons for IT outsourcing adapted from Loomis and Moore 2005.....                           | 20 |
| Figure 2.8-1 Steps in outsourcing ISD (Adapted from IBM corporation Architecture, 2002 ) .....            | 26 |
| Figure 3.6-1 Qualitative Research Analysis steps (Adapted from (Creswell, 2009, & Tayllor-powell,2003 ... | 36 |

## Table of Contents

|   |     |
|---|-----|
| DECLARATION .....   | II  |
| ACKNOWLEDGEMENTS.....   | III |
| List of Abbreviations .....   | IV  |
| List of tables .....  | V   |
| List of Figures.....  | V   |
| Abstract .....  | X   |
| Chapter one .....   | 1   |
| 1. Introduction.....  | 1   |
| 1.1. Background Study.....  | 1   |
| 1.2. Statement of the problem .....   | 3   |
| 1.3. Research Questions .....   | 5   |
| 1.4. Objectives of the study .....  | 6   |
| 1.4.1. General Objectives.....  | 6   |
| 1.4.2. Specific Objectives.....   | 6   |
| 1.5. Scope and Limitations of the study .....                                   | 6   |
| 1.6. Significance of the study .....  | 7   |
| 1.7. Organization of the thesis.....  | 7   |
| Chapter Two .....   | 8   |
| 2 Literature Review.....  | 8   |
| 2.1 Overview of the chapter.....  | 8   |
| 2.2 Outsourcing.....  | 8   |
| 2.2.1 Information System Outsourcing.....                                       | 10  |
| 2.3 Types of Information System Functions Outsourced.....                       | 12  |
| 2.3.1 Information System/Application Development .....                          | 12  |
| 2.3.1.1 Success and Failure of Information system Development outsourcing ..... | 14  |
| 2.3.2 Infrastructure Management.....  | 14  |
| 2.3.3 Help Desk Management.....   | 15  |
| 2.3.4 Data Center Management.....   | 15  |
| 2.3.5 Information System Integration .....                                      | 16  |
| 2.3.6 IT strategy (Research and Development).....                               | 16  |
| 2.3.7 Security Management .....   | 16  |

|                    |  |    |
|--------------------|--|----|
| 2.3.8              | Cloud Computing.....   | 17 |
| 2.4                | Benefits of Information System Outsourcing .....   | 17 |
| 2.4.1              | Access to the state of the art technology .....  | 17 |
| 2.4.2              | Helps to focus on strategic and core issues .....  | 18 |
| 2.4.3              | To Increase Flexibility .....  | 18 |
| 2.4.4              | Cost savings and quality. ....   | 19 |
| 2.4.5              | Overcoming lack of internal expertise and Capacity .....                                     | 19 |
| 2.5                | Major problems in Information system Outsourcing .....                                       | 20 |
| 2.5.1              | Lack of Compliance with the Contract by the Provider and the inability to control quality .. | 21 |
| 2.5.2              | Loss of Technical Knowledge.....   | 21 |
| 2.5.3              | Provider’s inability to adapt to the New Technologies.....                                   | 22 |
| 2.5.4              | Security Related problems .....  | 22 |
| 2.5.5              | No Easy Exit .....   | 22 |
| 2.6                | Evolution of Information System Development Outsourcing .....                                | 23 |
| 2.7                | Outsourcing Strategy .....   | 25 |
| 2.9                | Steps followed in .....  | 25 |
| 2.10               | Survey of Related works .....  | 27 |
| 2.10.1             | Outsourcing in Africa.....   | 27 |
| 2.10.2             | Outsourcing in Ethiopia.....   | 27 |
| 2.10.3             | Outsourcing in Ethiopian Banks and Insurances .....  | 28 |
| 2.11               | Summary .....  | 28 |
| Chapter Three..... |  | 31 |
| 3                  | Research methodology .....   | 31 |
| 3.1                | Overview of the chapter.....   | 31 |
| 3.2                | General Approach .....   | 31 |
| 3.3                | Case study as research method.....   | 32 |
| 3.4                | Data Collections Methods .....   | 33 |
| 3.4.1.1            | Structured and open ended research Question .....  | 33 |
| 3.4.1.2            | Observation.....   | 33 |
| 3.4.1.3            | Document Analysis.....   | 34 |
| 3.5                | Target Population and Sampling Techniques .....  | 34 |
| 3.6                | Analysis of the data .....   | 35 |

|   |    |
|---|----|
| 3.6.1. Question preparation.....  | 37 |
| 3.6.2. Data Collection: .....   | 37 |
| 3.6.3. Note Taking and recordings.....  | 37 |
| 3.6.4. Categorizing the data: .....   | 37 |
| 3.6.5. Inductive analysis and interpretations:.....   | 37 |
| 3.6.6. Writing .....  | 37 |
| 3.7 Validity and Reliability of the data .....  | 37 |
| 3.8 Summary .....   | 38 |
| Chapter Four .....  | 39 |
| 4 Data Presentation, Analysis and Discussion .....  | 39 |
| 4.1 Over view of the Chapter.....   | 39 |
| 4.2 Data Presentation .....   | 39 |
| 4.2.1 Critical Information system developments outsourced in the Bank .....                   | 41 |
| 4.3 Case study Analysis and Findings .....  | 42 |
| 4.3.1 Driving forces for outsourcing Information system development functions .....           | 43 |
| 4.3.2 Outsourcing strategies.....   | 46 |
| 4.3.3 Benefits of Information System Development functions outsourcing .....                  | 48 |
| 4.3.4 Challenges the Bank faced while outsourcing Information system development function ... | 52 |
| 4.3.5 Observation results.....  | 60 |
| 4.4 Discussions .....   | 61 |
| 4.4.1 Driving forces for outsourcing Information system development functions.....            | 63 |
| 4.4.2 Benefits of Information System Development functions outsourcing .....                  | 63 |
| 4.4.3 Challenges the Bank faced while outsourcing Information system development function ... | 64 |
| 4.5 Summary of data presentation, Analysis and Discussion .....                               | 65 |
| Chapter Five .....  | 67 |
| 5 Conclusion and Recommendations .....  | 67 |
| 5.1 Conclusion.....   | 67 |
| 5.2 Recommendations and Future Research .....   | 70 |
| 5.2.1 Recommendations for practices .....   | 70 |
| 5.2.2 Future Research.....  | 70 |
| Bibliography .....  | 72 |
| Appendix 1: Letter of Request .....   | 77 |

Appendix 2: Interview Questions, document and observation checklist.....78  
Appendix 3 List of Supporting documents.....80

## Abstract

Outsourcing Information System is rapidly growing internationally and locally in different organizations including the Banking sectors that are commercial and regulatory bodies to manage and achieve the mission given to them. National Bank of Ethiopia which has the mandate to regulate and keep the healthiness of financial sectors considered outsourcing as a means to achieve its mission. The bank outsourced the many functions of its information system like its System or Application development function; Data center management function, Infrastructure management function and help desk service function.

In this research the application/ system development outsourcing function is studied and the bank outsourced its six mission critical system to International and local vendors to gain benefits from the outsourcing of Information system development. Despite the benefits the bank has faced many challenges and surprisingly the bank has not devised outsourcing strategies to mitigate the challenges.

The objective of this study is to identify the key driving forces for the bank to outsource its Information system development, to examine benefits the bank gained from outsourcing; to investigate the core challenges the bank faced while outsourcing information system development function and to find out outsourcing strategies utilized to tackle the challenges.

The research employed qualitative research methodology, and therefore interview, document analysis and observation supported by checklists are used as data collection methodology. The data collected are analyzed from the perspectives of research questions and specific objectives of the study.

From the data analysis it is clearly observed that the bank outsourced its information system because of political or external forces, standardization by which National Bank should have in relation to system to lead financial sectors. In addition from the analysis the bank benefited from some of the application outsourced but in reverse the bank has faced challenges and it has no outsourcing strategies to solve or minimize the challenges.

# Chapter one

## 1. Introduction

### 1.1. Background Study

According to (Dangoli, 2011) Information System is more essential than land, capital and labor in this 21 century. It is the cornerstone of current financial sector changes by increasing the speed of service delivery and achieving reliability on financial institutions by their clients. Banks which are both regulatory bodies and commercial are investing in information system because modern financial business management needs standardizations to compete internationally and to provide the right decision making, to transform banking business process, from the outdated banking system to digital system to provide quality, efficient and effective services through the use of information systems to their advantage (O'Brein, 2010) and to employ an information system as a strategic resource for competitive advantage so banks and other organizations can fundamentally change their products and services and improve internal and external relationships (DeJohnson, 2010).

To achieve the advantage gained from Information system, banking and other organizations exploit internal capacity for information system development, network configuration and operation, user support for day to day operations, Data center construction and development for back up and infrastructure management, research and development for future road maps. But there are many constraints to use internal capacity which are Lack of competitive skill in specialized Information system fields (Avison, 2008), to focus on core and strategic issues in information system Management (Richmond, 2011), Lack of experience, frustration of users and undermining internal expertise, absence of management commitment and Information system projects governance problem.

As a solution banking industries which are commercial and regulatory bodies, consider outsourcing and offshoring as means for success in recent years and many organizations adopted outsourcing as a means to manage their Information System (IS) /Information technology (IT) service delivery, innovation, strategic management and operation areas that enable them to be competitive and best selected organizations by their customers. Organizations outsource their

business to achieve major benefits such as access to new technology, to reduce costs, to increase flexibility, higher quality of services (McFarlan and Nolan, 2005) and political reason (Slaven and Blazekovic, 2007) as well as to enable staff to focus their efforts on higher value work of their organizations to improve output. The need for competitive advantage such as increasing quality, technical knowledge etc. forces organizations to search for external solutions. Offshore outsourcing, which is defined as the allocation of non-core operations or jobs from inner production within a business to an external unit (such as a subcontractor) in a country other than the one where the product or services will be sold or consumed is also a means organizations use for information system development outsourcing (Kishore and Tejaswin, 2010).

Outsourcing which “*an organization decides to contract out or sell its assets, people and/or activities to external party supplier, who in exchange provides and manages these assets and services for an agreed fee over an agreed time period*” (Willcoks, 2013).” is highly applied and adapted in National Bank of Ethiopia .

To modernize its services, lead the supervisory and regulatory role on financial sectors more effectively than before (Shifa, Enhancing governance for financial setors, 2011) which are government owned and private banks, Micro-finance institutions and Insurance companies National Bank of Ethiopia outsourced its six mission critical systems to international and local vendors. For the success of the outsourced system the bank established a unit called Information System Management. This unit outsourced all of the banks critical Information system development functions for different vendors to support the regulatory role given to National Bank of Ethiopia by technology so that Information system enable National Bank of Ethiopia to succeed more in leading financial sectors.

As to the analysis result of this research the bank the outsourced its information system development function to gain benefits such as are access to technology, knowledge transfer and business users satisfaction and sharing risks .Despite, the bank has faced challenges which are absence of outsourcing strategies, poor contract management and the inability to understand it, absence of project manager, absence business user involvement while outsourcing beginning from requirement gathering up implementation , relinquishing responsibility using outsourcing as a coverage and delay in projects.

## **1.2.Statement of the problem**

The business Environment in banking segment changes from time to time and the corporate leaders continually looks for means to improve supervisory role achievement, commercial operations of loans and process, reducing costs, and enhance the success and competitiveness. To endorse best management system and to keep the efficiency and effectiveness seen in their day to day operations, different business industries including National Banks use different strategies like, outsourcing, virtualizations, online support at least costs and high profitability (Siani, 2006).

The practice of outsourcing or subcontracting a part of business outside the organization has become prevalent internationally and major organizations use outsourcing to deliver services with output in Information systems (Davis and Knox, 2007).National Bank of Ethiopia manages, monitors and supervises the banking sectors (Muhidin, 2013) .One of the tasks given to National Bank of Ethiopia is to modernize its Information system so that the performance of each Bank can be regulated and supervised effectively by technology using some outsourced system like Ethiopian Automatic transfer system(EATS),Ethiopian Credit reference Bureau system(CIS/ECRB),Core Banking system named Quantum Banking system, Foreign Exchange Management System(FEMOS) and other system that helps National Bank of Ethiopia to support internal services which are Human resource management system(HRMS) and Property and Services Management system. For the last five years the budget the bank spent on outsourcing information system development is greater than any other budgets. To achieve this responsibility National Bank of Ethiopia outsourced all of its systems for development to different vendors outside the country and inside the country.

The main reasons the systems are outsourced to external entity is, to have new Information systems that supports its supervisory role the bank provides for financial sectors which reduce complex processes reinforced by technology. In addition the bank understood that, the systems cannot be easily developed by internal staffs capability as the system needed to be developed, requires international best practices, to improve access to technical talent and technology (Davis and Knox, 2007) ,to improve technical quality of Information system service delivery time (Davis and Knox, 2007) and political imposition by world bank to automate the system within short period of time (Davis and Knox, 2007).

Investment on Information System outsourcing has existed for a long period of time with some limitations such as, loss of control on services developed (Smojver and Blazekovic, 2015), delay in time, the inability to meet requirement, cost overrun (Saini, Yen, & C.Chou)

National Bank of Ethiopia also invested and investing on outsourcing of Information System Infrastructures management like Datacenter construction constructed by Information Security Agency, Network installation installed by Information Security Agency, Application development like Ethiopian Automatic transfer system developed by South African Company Montran software development Plc. ,Ethiopian Credit reference Bureau system by South African Company Compuscan software development PLC, Core Banking system named Quantum Banking system developed by Indian company called Polaris software development Company, Foreign Exchange Management System developed by Hill mark Ethiopia, Human resource management took more than five years still under development and Property and Service Management system.

National Bank of Ethiopia have benefitted from some of outsourced Information system function by acquiring international standard supervision applications, changing the manual system in to automated system to increase efficiency , reduce long time taking process while performing the business processes manually and access to new technology. But there are problems which are the failure of systems outsourced, and lack of outsourcing strategies, delay in system development and implementation or failure to meet schedule plan like (HRMS and PSMS) and, absence of timely decision by the management, loss of control on services to be delivered, client and user need is not met properly which has brought dissatisfaction in users (Smojver and Blazekovic, 2015),the incapability to accomplish quality set by request for proposal(RFP),difficulty in communication and cultural differences, objective differences between outsourcer and service provider, the in ability to understand contracts and service level agreement (SLA) made which both outsourcer and service provider abided and guided in scope, cost and time (Siani, 2006).

Though the above problems are seen in the outsourcing of Information system development in National Bank of Ethiopia, researches related to outsourcing information system development that supports financial sector healthiness, supervision, their credit worthiness supported by technology from the perspectives of benefits gained from outsourcing of the systems and

challenges the banking sectors are facing from outsourcing is not done at all except general awareness of top management on outsourcing on commercial banks by (Meresa, 2007) and (Muluneh, 2009) on Information system outsourcing management and steps on Ethio-telecom.

But the business process of National Banks are quite different from other organizations in which National Banks manage, supervise and take actions based on the supervision result where Credit Information Reference system is one of the technology to provide information on loan performance of each Bank, Ethiopian Automatic Transfer system outsourced during 2010 G.C enables National bank of Ethiopia to interconnect banks and manages payment system between banks, Foreign Exchange Monetary system helps the bank to gain information whether foreign currencies are used for the intended purpose.

The researcher identified that Information system outsourcing benefits and Challenges in National Bank of Ethiopia including the driving forces had not been seen where the business objective of National Bank is managing and regulating the financial sector which are Banks, Microfinance and Insurances to monitor the Finance and Economic stability of the country (Muhidin, 2013) through the supervision and follow up of Banks, Micro Finances and insurances including their loan performance, technology soundness and Security vulnerability by modernizing its system which is a key responsibility given by the Bank to be implemented in five years strategic plan so that National Bank of Ethiopia will lead the Financial sector of the country to protect them from technology vulnerability, Software and Hardware outsourcing challenges in financial sector of Ethiopia which differentiates National Banks from other public and private institutions existing.

Therefore this research addresses the potential problems of outsourcing Information system development that the banks particularly National Bank of Ethiopia faced depending on external bodies and lesson learned from the challenges having strategies required to tackle it. In addition a reason for outsourcing and benefits of it is seen.

### **1.3. Research Questions**

- What are the main driving forces or motives for National Bank of Ethiopia to outsource its Information System Development functions?

- What are the benefits National Bank of Ethiopia gains from outsourcing its Information System Developments functions?
- What are the basic challenges National Bank of Ethiopia faced while outsourcing its Information System Development functions?
- Does National Bank of Ethiopia devised outsourcing strategies to solve challenges faced while outsourcing?

## **1.4.Objectives of the study**

### **1.4.1. General Objectives**

The general objective of the study is to identify benefits and major challenges of outsourcing Information system development function in National Bank of Ethiopia.

### **1.4.2. Specific Objectives**

- To identify the main drivers for outsourcing Information system in National Bank of Ethiopia.
- To examine Benefits National Bank of Ethiopia gained from outsourcing its Information system Developments.
- To investigate the core challenges of outsourcing Information system Development.
- To find out the types of outsourcing strategies National Bank of Ethiopia had to solve the challenges.

## **1.5. Scope and Limitations of the study**

This research study focuses only on challenges and Benefits of outsourcing Information system Development function in National Bank of Ethiopia and also considers only the client side of outsourcing Information system where major problems and benefits of outsourcing can be reflected from client side in terms of benefit and challenges that regulatory and supervisory financial institutions are gaining and suffering respectively. Therefore, this study has exclusively looked at the major benefits and problems of outsourcing application or system development functions of the Information System of the National Bank of Ethiopia which is a single case study of one organization.

## **1.6. Significance of the study**

The Banking industries are outsourcing their information system function in Ethiopia, therefore the study among other sectors, benefits the banking sector enabling them to get an understanding of outsourcing practices in financial institutions. In banking sector National Bank of Ethiopia which leads and supervise the Ethiopian financial sector will gain much more benefit from the study since technological outsourcing supports the National bank monitoring performance supported by system. It will inform the banking sector the challenges and problems outsourcing had, so that they will be aware of the challenges and be ready for the challenges by devising mitigation strategies. Besides it will serve them, that outsourcing is beneficial when projects are managed and governed according to project Management outsourcing principles and having outsourcing strategies that had benefits and challenges as components. Therefore, National Bank of Ethiopia which should be a model for Banking industries and other Financial Institutions will gain more benefits and adjust itself in future when decide outsourcing information system and supervise other banks to lead their information system outsourcing.

## **1.7. Organization of the thesis**

The Thesis is organized in to Five Chapters. Chapter one presents about background of the study, statement of the problems, Objective of the research, scope and Limitations of the study. The second Chapter is devoted to literature review which discusses about different concepts related to Information system outsourcing, its function, Benefits and Challenges of Information system outsourcing. In chapter three General research methodologies with target population and data collection is presented. Data Analysis, Findings and discussion are presented in chapter four. Finally chapter Five presented conclusions and Recommendations based on the analysis and result of the research.

## Chapter Two

### 2 Literature Review

#### 2.1 Overview of the chapter

In this chapter literatures related to outsourcing Information system concepts are reviewed to find out what outsourcing means, reasons for outsourcing, its benefits for organizations and challenges organizations are facing. Besides the type of outsourcing functions are studied in detail to see what problems each functions do have (data centers, wide area networks, applications development and maintenance functions, end user computing and business processing. The main comprehensive and acceptable steps taken and applied in information system outsourcing are also reviewed by the researcher so that financial institutions will gain benefits from outsourcing their information systems .Related works on outsourcing of information system in Ethiopian organizations, banks and too some extent insurances are also seen where most earlier works focus on the management awareness about outsourcing and process of outsourcing followed in Ethiopia.

#### 2.2 Outsourcing

According to (Nowduri, 2014) there are three important areas that should get consideration in today's dynamic world. The three developments are:

- Governance of Information Technology which requires working together from Chief Information officer, Information system higher officials which are Managers, Directors and up to all other members of responsible Management areas in organizations,
- Contribution of Information System is shifting from application delivery to system integration and infrastructure development which is the fundamental and strategic functions of the 21 century organizations and,
- Outsourcing understood as relocating accountability to external party which is holistic or selective, developing and handling contract agreements and relationships.

The idea of outsourcing arose from the American terminology “outside resourcing”, which does mean to acquire resources from the outside rather than strengthening in house development. (Troaca and Bodislav, 2012).

Outsourcing denotes the practice of changing business activities of an organization to external party vendor inside the local country or outside the country so that the firm can focus on its basic strategic areas which is assumed as core (Chiravan, 2011). From all these definitions we conclude, organizations outsource their services inside a country or abroad.

(Koszevska, 2004) Explains outsourcing as a way of shifting a business duty from internal to an external vendor through a long-term agreement, and involving the transfer of activities, management and acquaintance to the vendor. According to the description, four basics that illustrate strategic outsourcing are:

- The change of possession of a business purpose previously internally done by the organizations internal resource, frequently including a transfer of staffs and physical resources to the supplier.
- Agreement could be universal , longer and deeper
- A long-term obligation between the client and the Vendor.
- A contractual description of service levels and of each partners obligations.

(Willcoks, 2013) also supports the above definition as a” *process whereby an organization decides to contract out or sell its assets, People and/or activities to external party supplier, who in exchange provides and manages these assets and services for an agreed fee over an agreed time period*”.

(Singh and Zack, 2006) Explained outsourcing as, to change some or all of an organization’s IS functions to external Vendor(s) and he also described outsourcing as additional to in house development.

(Bradely, Brown, Deboer, & Tai, 2012) Defines outsourcing as the task of creating an agreement for part of business functions or knowledge-related areas work with an outside party company or supplier.

Therefore, from the above definitions we recognize that outsourcing is providing business services including System development and infrastructure to external suppliers or vendors having the ability and quality to implement within the arranged and agreed period of time at the reasonable cost to meet the objective organization intended to achieve. In addition outsourcing

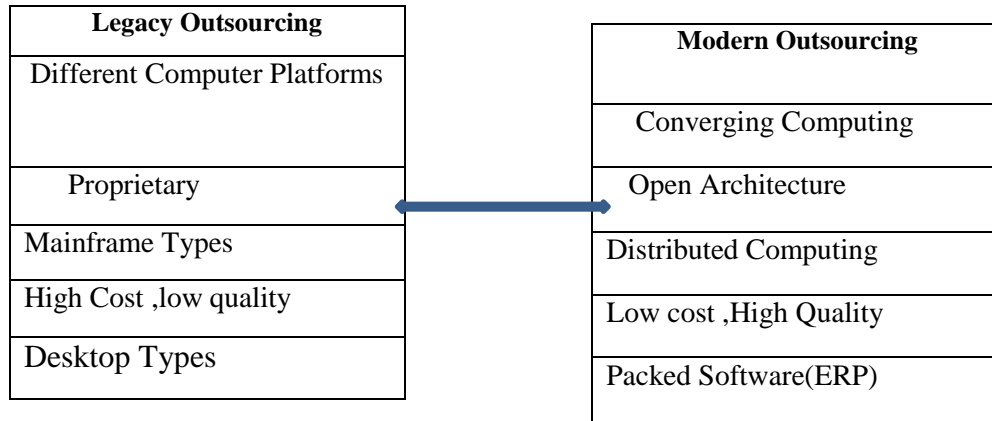
can incorporate part or all services of organizations within a country or outside the country to gain success over competitors and to meet the desired objectives.

### **2.2.1 Information System Outsourcing**

Information systems outsourcing is one area of outsourcing, which includes providing functions of Information system to external party management ,development ,construction and to some extent control to get a required result. The large areas of outsourced information systems functions of organizations are application management and development (Demaria, 2011) and information technology Infrastructure.

Outsourcing may be understood as the finding of organizational observation areas (Environmental scanning) which is an adaptive process through which organizations understand and interpret their process areas/functions, and choose which units to be done by external party. Ideas and Information needed for Management decision making are collected or acquired through business understanding or study and are stepping stone for organizations to get an understanding of outsourcing knowledge (Kim and Miranda, 2001) .Organizations which include financial sectors also outsource their Information system development as well as infrastructures management because of strong environmental competition from their surroundings (LP Bladwin, 2001). National Bank of Ethiopia also understood the critical area that has to be outsourced to external parties because of political factors, standardization, modernization which is technological advancement and lack of internal skills.

Meanings of Information system outsourcing differs from literature to literature; originally it is referred to the situations under which the companies raw data were processed at an outside computer service bureau (M.Gupta and B.Gulla, 2009)) Now, however, it can mean much more and the present condition of outsourcing is greatly different from its old-style forms to having systems that integrate organizations dispersed systems. (Factor, 2001) has given a good comparison overview between traditional (legacy) and modern Information System outsourcing patterns as depicted below.



**Table 2.2.1-1 Legacy Versus Modern Information System outsourcing (Adapted from (Factor, 2001)**

In all the definitions, there is an agreement about outsourcing information systems which all consider it as, a process of performing Information System functions by external parties and other few of Information system outsourcing definitions are listed below:

Information systems (IS) outsourcing is the transfer of part or all of the IS functions to an external vendor (Ucar and Bilgen , 2012).In addition to the above definition, Ucar and Bilgen also stated the areas of Information outsourcing that organizations outsource are, application development outsourcing, Information technology infrastructure outsourcing, and integration outsourcing. In some cases, where clients are non-IT entities such clients use vendors to manage their own IS. Since information systems not only include IT but also make use business processes and their human capability, vendors should be capable of working on both IT and non-IT domains.

According to (E.Johnsen, Johnsen, & Angeli, 2006), Outsourcing is ‘*Sourcing activities externally that an organization has internal capability to perform*’. (Bendixen, 2007) Also offer a similar definition of outsourcing as replacing internal activities of financial services with external acquire.

Outsourcing of the information systems (IS) functions is defined as organization’s choice to turn over part or all of their IS functions to one or more suppliers. Information system functions, delivered by such external parties for a certain amount of period and cost, might involve different combinations of people (e.g., managers, programmers, analysts, and technical specialists) and/or technological resources such as, hardware, software, and technology platforms. (Moura & Grover, 2001)

Outsourcing is an arrangement in which one firm delivers services for other business organizations that could also be or usually have been provided in-house. Therefore, we understand that, outsourcing is a trend that is becoming more common in information technology and other industries, for services that have commonly been regarded as basic to managing a business. In some cases, the whole information management of a corporation is outsourced, including planning and business analysis as well as the installation, management, and servicing of the network and workstations. Outsourcing can range from the large contract which includes the management of all IT services to the practice of hiring contractors and temporary office workers on an individual basis which is holistic outsourcing strategies (Newman, 2004).

### **2.3 Types of Information System Functions Outsourced**

(Bradely, Brown, Deboer, & Tai, 2012) Described that, Information Technology outsourcing has changed from routine outsourced services type, such as data processing and Information Technology help desk activities, to integrated, distributed high-end services, such as systems/Applications development, specialized research and development and strategic road map, and distributed computer support which is at Enterprise Resource planning level. Therefore, (Bradely, Brown, Deboer, & Tai, 2012) and (Halvey and Melby, 2005) have identified the following types of Information System functions usually Outsourced.

#### **2.3.1 Information System/Application Development**

In such type of outsourcing the software developments includes different critical systems like Core Banking, Credit Information Reference system or specific functions with their own modules and the business unit or customer should be given first attention in third-party software development together with technical skill and experiential knowledge to address business user specifications so that required system are developed (Bradely, Brown, Deboer, & Tai, 2012).Software developments success begins when the right experts are involved in the outsourcing process from both business users and Information system Development.

During coding and programming the application development methodology starting from the need and feasibility study should be established as part of the service provider's standard quality process. In such arrangements, System Development Cycle (SDLC) steps has to be described well, monitored, and managed directly by the user unit so that change request will be minimized. The user requirements and detail work statement must be stated clearly from the beginning

involving business users who are the ultimate utilizer of the applications. In such cases, the SDLC process ends with the fruitful achievement of the client's user acceptance testing, although the service provider may be responsible only until the component testing's completion. The system integration and customer testing steps are vital components that confirm the system satisfies the client's requirements. Testing can be done by the client team or jointly by the client and service provider. In any case, any difficulties noted in the testing stage are mentioned back to the service provider for improvement as it should be stated in the requirement specifications.

In addition to (Bradely, Brown, Deboer, & Tai, 2012) according to (Smuts, 2009) Information system Development outsourcing should be followed and its success and challenges can be achieved and avoided if Information system development life cycle are considered which he addressed as software lifecycle model which termed as "*the stage-wise model*" that suggests that software should be developed in successive stages consisting of concept, feasibility study, requirement definition where business users participation, involvement and scope should be defined. If the businesses are not involved well and scopes are not set at such step of outsourcing, major challenges will face for final system development project implementation. In design phase the key blue print or architecture components from end to end view has to be defined well, required skills or resources also described well.

In programming and testing potential scarce resources has to be allocated and the role of Information system team is high in programming phase. In case of testing involvement of both an IT expert and business users is a must to get quality deliverables as per outsourcing scope. In integration and system test phase, the main issues that has to be seen in this step is included the management of multiple environments, resource conflicts among several key project streams and business representative availability and involvement. It must be ensured that system integration testing does not "pass" defects on to user acceptance testing and end-to-end testing should take place during system integration testing. Besides to the above (Smuts, 2009) explained that data migration should consider proper definitions of rules and procedures in information system development life cycle outsourcing phases.

In his last point Smuts, explained the importance of relationships between vendors and clients are important in Information system development outsourcing through fostering and encouraging

of all team rather than saying this team is good the other is the reverse. He stated this point directly as the following, foster and encourages a value of one team rather than us and them.

### **2.3.1.1 Success and Failure of Information system Development outsourcing**

(Smuts, 2009) explained that, managing successful Information System Development outsourcing relationships is concerned with exploiting outsourcing opportunities and avoiding outsourcing threats .To be successful in relationship, utilize opportunities and handle threats, both client organization and vendor, need a mutual understanding in any stage of their relationship. A good Information system Development involves the following:

**Delivery performance:** where services should be delivered not only to expectation but also to improved continuity,

**Strong relationships:** The relationship must be strong, with a team approach supported by a good understanding and trust between the parties,

**Staff Management:** The supplier must have Quality staff and Good staff Management.

**Cost management:** Both parties must have capable cost and financial management.

**Understand the customer:** The supplier must understand and listen to the customer organization and react to its needs.

**Use service level agreements:** The vital use of service level agreements and principles service level agreements has to be designed to achieve goals.

**Flexibility:** Flexibility and the ability to modify any aspect of the arrangement, as required, must be incorporated.

**Communication:** There must be ongoing and effective communication between parties.

**Technical expertise:** The supplier must provide quality technical expertise.

**Integration of the services:** The management of integration across different suppliers, the amount of change control required and the need to define how the bridging role between services will be managed must be addressed.

### **2.3.2 Infrastructure Management**

This function is the critical and essential part of Information system where other system like Application, Databases ,security systems like application developed use to run effectively and efficiently on the infrastructures. The services include network management, maintaining overall infrastructure performance monitoring and availability, disaster recovery policies and

capabilities, troubleshooting errors, sustaining databases, and backing up and restoring services (Bradely, Brown, Deboer, & Tai, 2012). More over other transforming services under this category are the monitoring of IT infrastructure activities and capacity management, performing of downtime analyses, and reporting of critical system failures and their implications.

### **2.3.3 Help Desk Management**

Help desk Information system function is outsourced in order to handle clients request service which includes understanding incidents, problem management, live production support, and infrastructure related problems handling (Bradely, Brown, Deboer, & Tai, 2012). Under this functions, the vendor fore front employees care of the customer through various IT incidents management system, problem management either on site which is at the client's side or off site which is from the service provider's side. Turn-around time (TAT) which states, Responses and resolutions, is defined for each detail of serious problems with service level consists of achieving defined TATs and the quality of the service provided for the required services. In addition, management of the support estimated for continuing monitoring procedures that measure and compare actual performance to the expected service-level parameters is also included in help desk outsourcing services. At the end, performance results, unaccomplished tasks, and actions to be taken for uncompleted, should be used as core criteria for constant vendor evaluation.

### **2.3.4 Data Center Management**

According to (Bradely, Brown, Deboer, & Tai, 2012) shared benefits between Information Technology Clients and vendors have increased and two of them came into the market highly, which brought a shift in outsourcing usual understanding from simple data processing to Data Center Management. The present datacenter typically provide the following service which has to be considered while outsourcing take place:

- Hosting physical server with virtualized and distributed Environment
- Hardware, software, and operating system planning, specification description, acquiring methods, installation, configuration, maintenance, upgrades, and management.
- Continual checking of the server's performance and operational status.
- Server capacity management, including required size, load balancing, tuning, and reconfiguration.

- Backup, restoration and recovery of server systems in the event of a disaster.

### **2.3.5 Information System Integration**

In a dispersed environment, various functions of Information systems are organized through different systems and applications that may not be compatible to each other easily unless Interface is developed between those distributed systems. Decentralized environments require more intervention of human to accomplish system and application updates (Muller, 2010).

System integration services include the development of scripts, modules, tools, or programs to integrate multiple applications and systems. This enables existing applications to communicate with one another smoothly, resulting in one united system. In systems integration, there is a limitation that must get an attention which outsourcing do bring which is interoperability between systems and compatibility.

### **2.3.6 IT strategy (Research and Development)**

According to (Bradely, Brown, Deboer, & Tai, 2012) today most organizations establish a unit called Information System re-engineering and innovation Department to adapt to competitive environment, to be innovative and to meet market needs. Many organizations outsource the research and development of different technologies, solutions, processes, and systems in order to modernize their system as best as required. Outsourced research also includes the use of external-party vendors to perform bench marking organizations status that identify the trends, gap identification where to reach, the current step and analyses and provide ways to reach an objective which is Information system road map.

### **2.3.7 Security Management**

Several organizations outsource their security levels on their systems. This outsourcing area is called “*managed security services (MSS)*” and it is described as the service that oversees an organization’s security over its full IT infrastructure, data assets, and user management activities. Other terms used to identify this function include Internet security services, Penetration Testing security outsourcing, intelligence services, security consulting services, network security services, security assessment services. Depending on the client’s needs, contract terms may include the use of end-to-end security architecture design and support (e.g., design consultation, implementation, security administration, user provisioning, and technical support) or the management of specific security functions on a particular system (e.g., firewall monitoring, data

transmission, content identification, virus protection, intrusion detection and response, and network vulnerability assessments, penetration test ) (Bradely, Brown, Deboer, & Tai, 2012).

### **2.3.8 Cloud Computing**

Cloud computing offers “scalable” and often virtualized computing resources to fill a business need on demand. Cloud computing provides servers, storage, and computer power as a service rather than a product. Resources, software, and other information are provided dynamically like a utility over a network, often the Internet. Types of delivery include private cloud, public cloud, hybrid cloud, or community cloud as well as one or more of the following services: software-as-a-service (SaaS), infrastructure-as-a-service (IaaS), or platform-as-a-service (PaaS).”Cloud computing gives businesses the flexibility to adapt to their market and launch an initiative or program without buying and maintaining expensive IT capacity (Bradely, Brown, Deboer, & Tai, 2012) and (Halvey and Melby, 2005).

## **2.4 Benefits of Information System Outsourcing**

### **2.4.1 Access to the state of the art technology**

(Hirschheim and Dibben, 2014) justified that IT outsourcing gives client organizations access to practical knowledge, innovation, advanced technology and experienced professionalism that can deliver best output for an organization. Client organizations usually start to consider outsourcing arrangement when planning a significant upgrade of IT services for their performance changes which could be obtained through the access of technologies. The advanced, proven technology available from vendors can assist client organizations in accomplishing their missions. User or client organizations are likely to get the best-of-the-breed technology or selecting best types from different brand services.

The dynamisms of information technology can quickly make IT skills outdated. Software is updated and replaced very rapidly by the time an entity finances in and trains its full-time staff; the technology may no longer be state-of-the-art when client organizations know it very well. Outsourcing specialists must be well trained and up-to-date to survive and serve their organization for effective competitions (Tibour and Tukul, 2006).In addition (Gonzalez, Gasco, & Liopis, 2008)said that outsourcing provide access to Technology explaining as outsourcing

brings advantages related to technology as these business organizations can have access to specialized, state-of-the-art technology which is evidently supplied to them by the provider.

#### **2.4.2 Helps to focus on strategic and core issues**

In terms of time and employees, where organizations have limited resources, outsourcing supports client organizations to give attention and concentrate on their organizations strategic and core areas (Gonzalez, Gasco, & Liopis, 2008). The rare resources of an organization most likely better consumed focusing on their core competencies that generate revenue is through Information system outsourcing (Richmond, 2011). In addition to Richmond (Davis and Knox, 2007) studied that outsourcing makes organizations to focus on their basic competency areas by delivering those operational duties to vendors. They also added that, in the computer area outsourcing liberates line managers who do not have to coordinate with a large IS department thus simplifying the organization. Likewise, the outsourcing of the most repetitive actions liberates computer professionals to dedicate their time to key IS activities. (Nicholson, 2012), Beaumont & Shoal (2004) and Olson (2006), also describes the main reasons organizations outsource their information system functions include:

- To win over competitive pressures;
- To focus on core business activities; and
- For Strategic, economic and technological benefits.

#### **2.4.3 To Increase Flexibility**

(Gonzalez, Gasco, & Liopis, 2008) explained that the great change experienced by technology in recent years gives many firms a chance to obtain a considerable advantage from outsourcing, as they will prevent themselves from technology obsolescence without making large investments in technology. Business organizations can increase their flexibility through nonstop restructure of their contracts that will enable them to meet their information requirements at any given time. Outsourcing additionally provides a large degree of efficiency in the application of IT resources and makes it easier to face business level dynamism (Saini, Yen, & C.Chou). Client organizations can equally use outsourcing as a strategy to achieve flexibility and dynamism, during a restructuring or reorganization process.

#### **2.4.4 Cost savings and quality.**

Cost savings are other Benefits gained from IS outsourcing. In order to compete and open business, vendors may less cost to provide services at a lower rate than that of in-house provision. Several client organizations may share the same IT infrastructure as the vendor arranges sharing access. The cost of maintaining a specialized support team is also shared by a number of client organizations. The cost savings are especially significant when acquiring a highly specialized service, which is usually expensive (Singh and Zack, 2006). (Richmond, 2011) also stated that IT outsourcing reduces capital and he explained that Cost-cutting is the most common reason why many organizations choose to outsource. Outsourcing providers can cut organizations capital costs by reducing the amount of internal equipment (such as servers, software costs, desktops, etc.) required to keep organizations information systems running smoothly.

#### **2.4.5 Overcoming lack of internal expertise and Capacity**

(Avison, 2008)Under the Title outsourcing Information System projects Hiring and retention of information systems, professionals became a serious challenge for the management of technology and to solve such problems organizations should take Outsourcing as an option to be competent enough replacing it as an option in the absence of IT professionals. Information systems outsourcing begin recently with the hiring of external consultants to aid in areas where companies did not have sufficient internal expertise and every information systems task will be seen as a candidate for outsourcing.

To support all the reasons explained above (Moore, 2005)summarized Benefits organizations will gain from outsourcing as the below table.

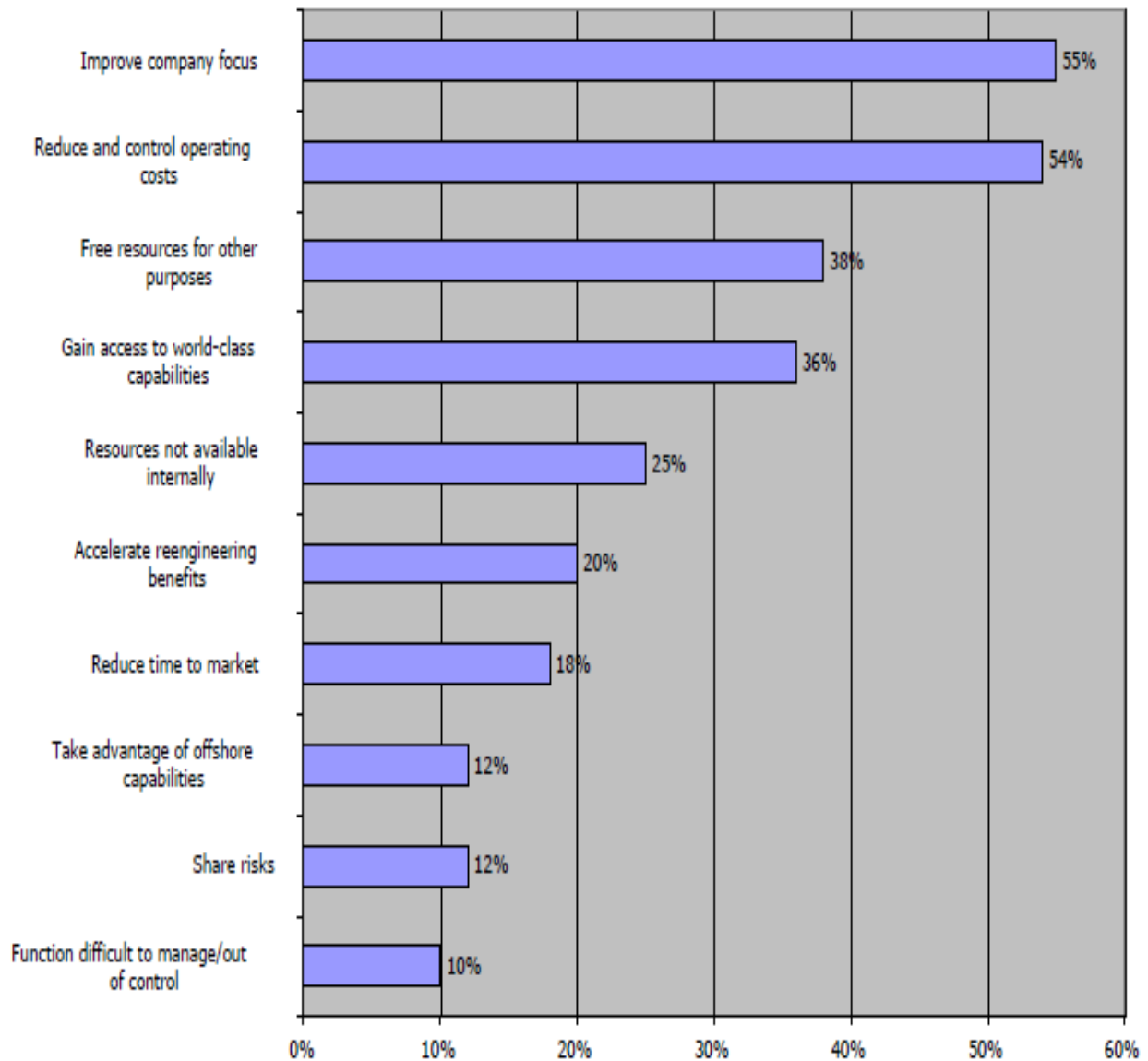


Figure 2.4-1 Reasons for IT outsourcing adapted from Loomis and Moore 2005.

## 2.5 Major problems in Information system Outsourcing

Any business decision involves challenges, and that challenge is greater in situations when there is increased change or uncertainty. The recommended choice, however, is not to relinquish responsibilities or to delay and see what might happen elsewhere. Good management practice suggests careful assessment of potential challenges for any decision. Although outsourcing of information systems services has been going on and had benefits there are also challenges that should be considered by client organizations (Avison, 2008)

### **2.5.1 Lack of Compliance with the Contract by the Provider and the inability to control quality**

When service provider performs outsourcing jobs there are challenges that the vendor might not carry out the mandatory jobs as expected or the vendor might give fewer consideration and monitor the development and management less carefully than the primary would have done. Additionally, in the case of IS outsourcing, client needs may not be appropriately addressed, or priorities may be mistakenly arranged and done, since the supplier or vendor does not quite understand what the business is all about. Problems are likely to arise in relation to the dependence generated by this service (Gonzalez, Gasco, & Liopis, 2008). Client organizations will have difficulty in quantifying and defining their needs in terms of information services, which additionally incline to evolve over time. Therefore, if not all the services produces are not as original contract, an extra fee will be applied, thus increasing the total costs (Arshad, May-Lin, & Mohammed, 2009). This is why (Lacity, 2009)claim that external providers are not strategic partners, since the interest in benefits is not a shared one when clients' costs grow, so do providers' benefits.

In addition (Perry and Yu chen , 2003) found that, One of the primary concerns in outsourcing is the loss of control over service level and service quality. Once an IT service is outsourced, the project scope, technologies, costs, and IT direction of the client organization are some of the factors that may be beyond the direct management control usually available to in-house service provision (Kishore and Tejaswin, 2010). Control is particularly difficult when a large gap exists between the client organization's knowledge of services and the vendor's. Client organizations have difficulty confirming any claims that vendor organizations make, because they may not have access to critical information possessed by the vendor for right validation (Fraihat, 2006).

### **2.5.2 Loss of Technical Knowledge**

When a service or product is outsourced, clients gradually lose their understanding of the service or product over time. Though the supplier supplies state-of-the-art services to the customer, a large quantity of the new knowledge required remains in the minds of the provider and cannot be transferred to the client. What is more serious, the client organizations may lose its capacity to stay up to date with the technological developments (Clark, Zmud, & Mccry, 1995). Furthermore, the innovation ability of the client organizations itself can be reduced, since every

modernization requires a sufficient availability of technical and economic resources, something that is not always included by outsourcing (Gonzalez, Gasco, & Liopis, 2008).

### **2.5.3 Provider's inability to adapt to the New Technologies**

Another challenge in Information system outsourcing is the Provider's inability to familiarize to the latest Technologies. It was stated under the benefits of outsourcing, one of the benefits obtained from outsourcing is the possibility to access state-of-the-art technology, but this is not always the successful in outsourcing. If vendors or suppliers do not recognize clear benefits in the integration of latest technologies, they may be unwilling to adopt them, their main concern being to exploit to the full the service that they already offer (Glass, 1996).

### **2.5.4 Security Related problems**

Potential Security difficulties may be created while outsourcing takes place because deep knowledge is in the mind of the service providers and loop hole may be created which will bring crisis. Confidentiality for the sensitive information has to be strictly kept, otherwise the service providers themselves will be a disaster maker and potential danger when they leave the client organizations( (Lacity and Hirschheim, 1993)and therefore, a negotiation must take place within the framework of the outsourcing contract for the sake of creating guidelines and procedures to confirm that IS security goals to be achieved (Gonzalez, Gasco, & Liopis, 2008).

(Perry and Yu chen , 2003) strictly stated that, Security is another risk factor. Critical data may be stored in a facility outside the client organization. The shared information systems of the customer and client organization and those of the supplier may be subsequently subjected to security threats. If the main technology infrastructure and passwords of vendors are shared by multiple client organizations, there can be multiple sources of security threats. Security can also be an issue when security practices are problematic. Personnel training, awareness and background screening of IT personnel are important in addressing security threats.

### **2.5.5 No Easy Exit**

According to (Kronke, 2013)one of the disadvantage of Information system outsourcing is no easy and free withdrawal once contractual agreement is made and the system are implemented. This is because that important knowledge is in the mind of vendors, not with the employees so it is expensive and challenging to change vendors. When we relate this issue with outsourced Information system applications of National Bank of Ethiopia the vendors implemented

different system but skill on the system management, development way is not properly delivered which the vendor closed exit ways for National bank of Ethiopia hiding knowledge sharing practices. The organization tried to change and exit the system but data migration became an issue as the knowledge is with the vendor.

## **2.6 Evolution of Information System Development Outsourcing**

The development and growth of outsourcing is deeply embedded in the history of the progress of the Modern Business Enterprise, which grown up in the latter half of the 19th Century (Gonzales, Dorwin, & Gupta, 2006)).

Businesses have been outsourcing information technology (IT) activities since the early 1950s (Costa, 2001; Due, 1992; Klepper and Jones, 1998). But, outsourcing has started development greatly from the time when Kodak outsourced its Information system in 1989 where IBM finalized a plan by which IBM designed and built a new state of the art data center for Kodak and it encouraged IBM to provide IT outsourcing for other Companies. In addition to Data center IBM moved its outsourcing services to integrated solutions in 1994 (IBM Corporate Archives 2002).Early outsourcing arrangements were motivated primarily by operational cost saving (DiRomualdo and Gurbaxani, 1998), but more recently, the motivation for outsourcing has shifted to core areas business performance enhancement(Yang and Huang, 2000). According to (LP Bladwin, 2001) Organizations that earlier outsourced only some part of Information system functions are currently outsourcing their whole Information system functions.

According to (Tinselboer, 2005)Nineteen Sixties(1960s) is considered as the start of Information Technology outsourcing which began by hardware as with the introduction of Mainframe Computer in to business, then followed by software which includes application packages introduction and contract programming as new trend in outsourcing and then moved to standardization of hardware and software which brought total solutions instead of separate hardware and software were the summary is described in the below table. But in 1980s outsourcing was slowed down because of the availability of cheap personal computer were many companies started to develop in house development and management of their Information system functions. In the 1990s outsourcing regained its popularity, this time for services like application development, systems operations, network, data center, telecom management and distributed

systems (Tinselboer, 2005). Therefore, most of the Information systems functions moved to outsourcing than in house development.

| Year  | Outsourcing Types                     | Approach                         |
|-------|---------------------------------------|----------------------------------|
| 1960s | Hardware                              | Services and Facility Management |
| 1970s | Software                              | Facility or Operation Management |
| 1980s | Hardware and software standardization | Customization Management         |
| 1990s | Total solutions                       | Asset Management                 |

**Table 2.6-1 Timeline of Outsourcing development (Adapted from Tinsboer 2005)**

(Brain, 2012) in his PhD study presented outsourcing time sharing, Technical models and trends history as below:

| Technical Models utilized         | Year  | Trends          | Remark |
|-----------------------------------|-------|-----------------|--------|
| Time sharing                      | 1960s | Hardware        |        |
| Facility Management               | 1970s | Software        |        |
| Facility Management               | 1980s | Standardization |        |
| Infrastructure-Client Server      | 1990s | Total solution  |        |
| Application outsourcing           | 1995  | Best of breed   |        |
| Process outsourcing               | 2000s | Rationalization |        |
| Offshoring besides to outsourcing | 2010s | Layering        |        |

**Table 2.6-2 Trends in outsourcing (Adapted from Brain 2012)**

So we can carefully conclude that Information Technology outsourcing is not a new trend, but has been around in one form or another since the beginning of Information Technology history. But the type and volume of Information system outsourced increased from decade to decade with multifaceted Information systems types like Application Developments, data center construction, Network and Infrastructure configuration, Help Desk and other related Information system functions.

Historically IT outsourcing is motivated primarily by cost cutting in the Information Technology department but the latest trends suggest that outsourcing is more about improving usage of internal resources and service satisfaction, to gain competitive advantage, core business activities and strategic, economic and technological benefits (Brain, 2012). (Brain, 2012), Described that National Banks and largest telecommunications company continued to outsource their Information system to external parties.

## **2.7 Outsourcing Strategy**

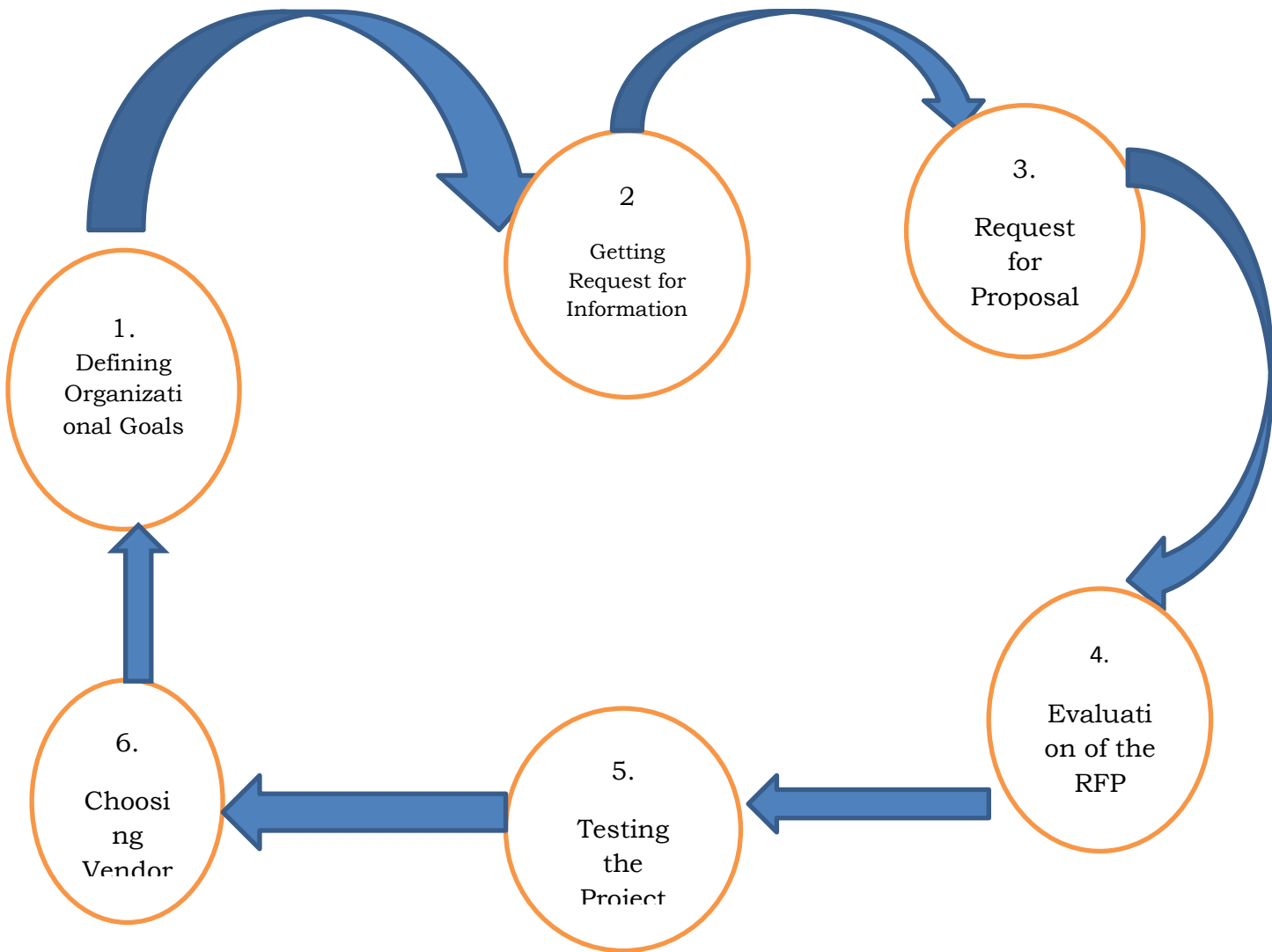
According to (Elena, 2016)there are four outsourcing strategies and organizations should see the one that is best for their own. These four outsourcing strategies are:

- Holistic and All Functional Outsourcing – this is the most complex, strategic, long term, type of strategic outsourcing which demands tight relationship with a supplier.
- Selective outsourcing strategies – this is also a very complex engagement, but somewhat less than a holistic deal because of the reduced integration of functional processes.
- Licensing Agreement – these engagements are forms of out-tasking and used when sourcing a concrete asset, such as a technology which usually takes the form of software as a service (SaaS) contracts.

2.8 Contracting – form of out-tasking engagements, and the most common form of outsourcing in the client organizations. Some refer to it as ‘labor for hire’ agreements. It is where the client pays a contractor by the hour/day/week/month to perform a task. Contracting is usually used when organizations source a service provider to manage a project, and then compensate them when the project is completed.

## **2.9 Steps followed in outsourcing**

According to (IBM Corporation, 2002)selecting the best vendor involves different steps and process. The success and failure of outsourced project depends on the strict steps which are depicted by the below figures in brief.



**Figure 2.7-1 Steps in outsourcing ISD (Adapted from IBM corporation Architecture, 2002 )**

## **2.10 Survey of Related works**

### **2.10.1 Outsourcing in Africa**

According to (Nduwimifura and Zheng, 2015) there is a fast development of Information System outsourcing market in Africa due to various factors such as an increased awareness of the benefits of developing the Information System outsourcing sector among African private and governmental organizations, the recent phenomenon of globalization, the commitment of many African governments to develop their Information Communication Technology distinct areas, a strong need to access the latest technologies due to rapid changes in information technology (cloud computing, web services, mobile computing, and other areas) and African organizations are realizing that to survive in today's ever competitive global economic environment, they need to be more competent globally, and one of the best ways to do that is through improving their Information system Management functions.

### **2.10.2 Outsourcing in Ethiopia**

(Muluneh, 2009) Studied the then telecom corporations the present ethio-telecom Information system outsourcing of customer billing management development process and practices from requirement gathering for billing system, customer management and provisioning functions to pre-contract management that involves signing the contract between vendor and top management, involvement of stake holders where the finding shows that no one from customer management and billing system are involved except Information system Management who has no functional or business knowledge in the areas of customer management system. Therefore, the required system was not developed at required level at first stage. In addition the contract manger involved which was a key for post development support and service level was assigned without experiences in contract management which brought contract understandings and administration problems. In addition Muluneh studied, construction of team members involves teams from different departments. But in actual implementation teams from business and Information system was assigned but contract mangers and payment manger was not assigned. Activities of suppliers were controlled against contract through statement of Work(SOW) and user acceptance testing with some limitations were done .The Service Level Agreement(SLA) has no detail specifications which shows what the vendor should deliver and not. In addition warranty, liability and dispute management practices were studied in his study.

In general the study focused on outsourcing management from requirement gathering up to conflict management for the organizations studied above.

(Daniel B. , 2010) in his research study in 2010 tried to assess risk and risk management strategies of Information system outsourcing in some selected higher institutions of Ethiopia in Addis Ababa University, Jimma University and Hawasa University through telephone interviews selecting some of outsourced functions like registrar system, Network Infrastructures, Finance System in the three universities. The researcher established structured questions to assess the risk management status in the selected three universities. As to the research result the selected universities had no explicit outsourcing procedures rather they follow the general project risk management approaches to mitigate risk related to knowledge transfer, security and dependency on vendors.

### **2.10.3 Outsourcing in Ethiopian Banks and Insurances**

According to (Meresa, 2007) Outsourcing Primarily used for Information system and Migrated to other services. Banks and Insurances were engaged in Information System outsourcing which is transferring duties to external parties to be competitive enough and both organizations outsource 80% of their Information system functions. Among Business functions outsourced in Ethiopia, Information system takes the third position and contributes to 32% next to Security and Mantainace services.

## **2.11 Summary**

Information system Outsourcing which is the transfer of duties and responsibilities to external party, shifts duties from internal management and control to external which has Benefits and challenges. The Benefits are fast service delivery or value addition, access to technology, standardization of services, helps organization to focus on strategic issues, to increase flexibility, cost saving, and serve as option in case lack of skill exists. Unless managed strictly outsourcing is with full challenges which includes the inability to understand and meet contract made between the vendor and client organization, loss of technical knowledge from the side of outsourcer or client organizations, security related problems, delay in project delivery and loss of control over the project

Information system outsourcing function ranges from help desk up to strategic development outsourcing. The types of Information system outsourcing include Application Development, Infrastructure management, Help Desk, Data Center Management, system interfacing and integration, Security management and cloud computing. Information system outsourcing has long history .When it started the focus was on hardware, but later on to software developments. Next to software focus, the trend moved to hardware and software standardization. Currently outsourcing of information system is on total solution or which is asset management rather than focusing on individual products or in short Enterprise Resource planning (ERP) allows an organization to use a system of integrated applications to manage the business.

For Information system outsourcing organizations should devise strategies whether to outsource all the functions of their organization or some part of their products including license management and contract management. In outsourcing there are steps that has to be followed for the success of the project outsourced which is feasibility study and objective definition, Need understanding about the vendor, request management through request for proposal(RFP), Vendor evaluation ,Testing the project and selecting the vendor.

Information outsourcing research is at infant stage in Ethiopia particularly in banking sector where no research is done on National Bank of Ethiopia which manages and supervises financial institution on technology utilization and soundness. Information system outsourcing process and management aspects in Ethio-telecom is done describing the steps followed by the organization. In addition, understanding and awareness level of managements on outsourcing of procurement services, human resources, mantainace and janitorial service, Information technology and sales and marketing in Ethiopian organization was studied.

This research has relation with the above researches as this research has seen outsourcing which is sourcing what is done internally to external parties .But this research exclusively focused on Information system development function outsourcing challenges, benefits and driving forces for outsourcing to external parties which other researchers have not seen .

Therefore, outsourcing of information system is sourcing services and products of organizations information system functions to external party for some defined time to get Benefits without ignoring that it had challenges and these challenges can be solved if outsourcing steps are

followed strictly and this research open the eye of National Bank of Ethiopia on its Information system development outsourcing ways to gain benefits and tackle problems the Bank is now facing.

# Chapter Three

## 3 Research methodology

### 3.1 Overview of the chapter

Methodology Designing for Outsourcing Information system Development function is designed to study outsourcing challenges and benefits of the system development to meet the objective of the study and find out the problems in outsourcing Information system in National Bank of Ethiopia. In addition the key driving forces for National Bank of Ethiopia to outsource its Information system development function is studied using the appropriate methodology selected. Qualitative research Approach is followed since the study focus on the challenges, key driving forces, and benefits of outsourcing information systems development function which is exploratory and assessment types that helps the researcher to dig out the challenges, driving forces and benefits of information system outsourcing (Creswell, 2009). In order to collect the required data, interviewee which is face to face discussion is applied with purposive sampling techniques. In addition observation and document reviews are also used as data collection instrument and techniques to figure out the required information for the study.

### 3.2 General Approach

The main objective of this study is to acquire basic understanding about factors that are related to outsourcing Information system development function. Therefore, qualitative Research method is used because of the following reasons:

The study requires detail understanding and exploring outsourcing information system Development functions challenges , Benefits (Creswell, 2009), (Berg, 2007), Experiences and explanation on data that cannot be expressed numerically (Hanock, 2009) in banking industries that play supervisory role particularly in National Bank of Ethiopia .Therefore, qualitative research method is more suitable than other methods.

As there is little research on IS/IT outsourcing done in Ethiopia and little is known about the subject, qualitative research approach is appropriate to undertake this study. According to

(Hancock & Algozzine, 2006) qualitative approach can also be used when little is known and the goal is to understand the situation under investigation.

In addition, qualitative research has the ability to represent the views and perspectives of the participants in outsourcing of information system studies through capturing the viewpoints of those involved in Information system development outsourcing function in National Bank of Ethiopia.

### **3.3 Case study as research method**

The study deals with outsourcing information system development case study of National Bank of Ethiopia only were case studies are a strategy of inquiry in which the researcher explores in depth studies about a factor, series of activity, event, development of one or more single case which are restricted by time and the researcher collected detailed information using a variety of data gathering techniques over a continuous period of dates and months (Creswell, 2009). According to (Zainal, 2007) case study technique enables a researcher to closely examine the data within a specific context of outsourcing information system development function. Case studies method, in their true nature, investigate the mandatory information and case study as a study technique investigate contemporary real-life phenomenon through detailed contextual analysis of a limited number of events or conditions which in this research the cases are challenges and benefits of outsourcing Information system development functions in National Bank of Ethiopia and their relationships. It can be considered as a robust research method particularly when a holistic, in-depth investigation is required about challenges and benefits of outsourcing information system in National Bank of Ethiopia.

Case study is therefore, used as a method of research for this study because a case study is an in depth study of a particular situation or phenomenon of outsourcing challenges, benefits and experiences in a real world life rather than a sweeping statistical survey (Darke, 1998). In addition, case study makes analytical generalization in which concepts and implications are developed to contribute to rich in sights. And thus, the results of a case study of this organization the researcher selected and its context can be extended and applied to other similar organizations

and a situation as other financial sectors outsource their information system development function and faces challenges and gain benefits from the function.

### **3.4 Data Collections Methods**

Interview with purposive sampling techniques, document analysis and observation are used as data collection instrument in order to meet the research objective (Mogalakwe, 2006).

#### **3.4.1.1 Structured and open ended research Question**

To gain rich information structured and open ended interview question is prepared (Creswell, 2009) to use it as guide lines and means of exploring the required information related to outsourcing Information system Development that contains in its inside like, key driving forces for outsourcing, benefits which the bank gained from it ,challenges the bank faced during outsourcing, how requirement was gathered, evaluation criteria and how the evaluation was made, involvement of both technical and business units in the project, Communication system of the management to resolve issues, delay in project time, Project manager roles and responsibilities ,service level management and follow-up. In general events took place during the outsourcing of the system and administration of the system, who or actors involved in the project, where and when the project took place (Creswell, 2009).

#### **3.4.1.2 Observation**

Observation which is a fundamental and highly important method in all qualitative inquiry and understanding the environment using sense organ (Kawulich, 2005) is used how the outsourcing information's system development functions are actually working. In addition observation will enable the researcher the practical benefits of outsourcing of outsourcing Information system development functions from the participants at first hand, creation of awareness on the system , users satisfaction with the developed system or observations of the users on the system (Creswell, 2009),the ability that technical staffs have got to manage the system, benefits gained by banks supervised by National Bank of Ethiopia from the systems, service level agreement procedures applied as on the signed documents between National Bank of Ethiopia and different Vendors. This helped the researcher to get key behavior, satisfaction and understanding the participants had on the outsourced system challenges and benefits (Creswell, 2009). Therefore

Observation used by the researcher helped him to discover complex interactions in natural and social settings.

### **3.4.1.3 Document Analysis**

Document data obtained from different outsourced documents like Project proposal , agreement between the bank for some systems(REF/E&A/014/2005 ),compliances and dissatisfaction of business users, streaming committee discussions and minutes made while the discussion which enable the researcher to understand decision made ,words had been used during the discussion ,Negotiation made, Service level agreements(Ref/F&A/09/2013 for FEMOS Applications and others signed between National Bank of Ethiopia and different vendors are used as document analysis which is a form of qualitative research in which documents are interpreted by the researcher to give voice and meaning around an assessment topic is used focusing on service level agreement, bid document and request for proposal with vendor response is used as second method to understand outsourcing information system practices (Mogalakwe, 2006).

## **3.5 Target Population and Sampling Techniques**

The primary source of information for this research is Management of National Bank of Ethiopia Particularly Information System Management Directorate or Chief information officer at the bank who initiated and followed the project from beginning to the end, Each system Team leaders Ethiopian Automatic Transfer System (1),Ethiopian Credit Reference Bureau system (1) , Human Resource Management System and Property and service Management system (1) and Quantum Banking System and FEMOS (1) Business users and Technical staffs participating in the six Information system development outsourcing where four (4)persons participated in each systems two (2) from Business users and two(2) from Information system Directorate and the researcher selected six(6) from both technical and business who actively participated while the system outsourced, where the Chief Information officer participates at each of the system and the Chief Information officer is also part of the steering committee which is the decision making organ, Procurement Services Management Directorate who actively followed the bidding process, facilitated negotiations, and manages the service Level Agreement.

The above twelve staffs of the bank, CIO (1), four team leaders, six participants from both technical and business ,one procurement Manger are selected. They are purposefully selected

because they had been actively participated in the project while outsourcing of the systems took place and they do have deep knowledge on driving for NBE to outsource the system, challenges and benefits of the outsourcing of information system development function. These employees were purposively selected because they have reliable information about the Information system development while outsourcing of them took place. Therefore, purposive sampling is used to gain reach information and data which is suffice enough for the project by directly gathering data from the participants. Generally, the researcher made an interview with the above twelve people using semi-structured interview questions prepared for this purpose .The summary of respondents are presented below.

| <b>Positions</b>                       | <b>Responsibilities</b>   | <b>Number of Participants</b> |
|--|---|-------------------------------|
| <b>Chief Information officers</b>      | Responsible for over-all strategic planning, follow-up and make decision when required in outsourcing of ISD. Member of the top Management. | 1                             |
| <b>Manager</b>                         | Responsible for their respective system outsourced.   | 4                             |
| <b>Technical IT and Business staff</b> | Responsible for technical knowledge from RFP up to implementation.  |                               |
| <b>Contract Manager</b>                | Responsible for Procurement process, Contract management and Service Level Agreement follow-up.   | 1                             |
| <b>Total</b>                           |   | 12                            |

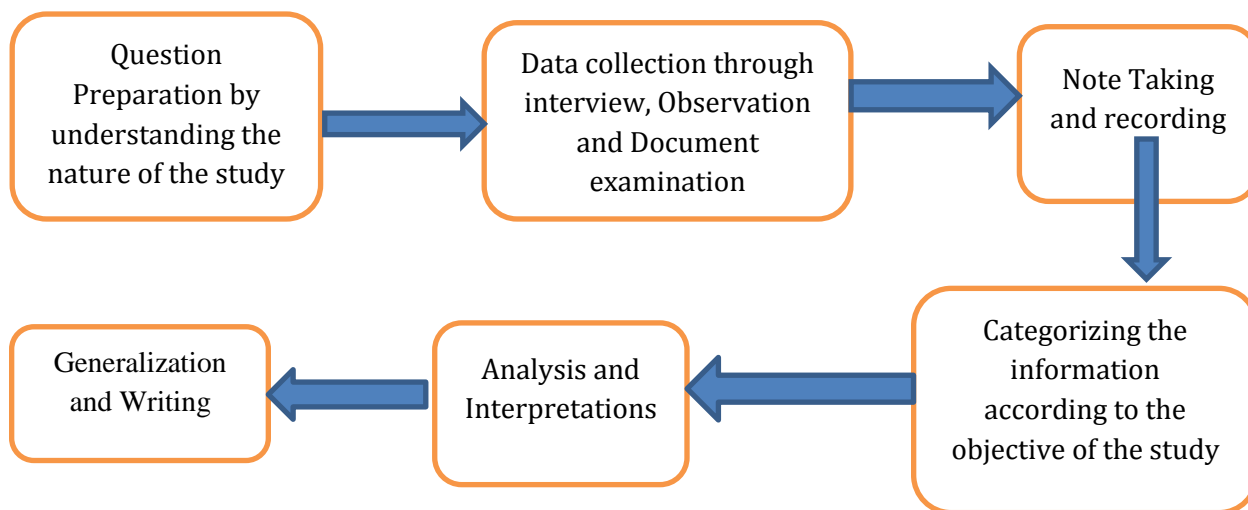
**Table 3.5-1 Respondents background**

### **3.6 Analysis of the data**

The data collected and gathered through interviews, observation and document analysis(project brief and proposal, Request for proposal, bidders/vendor responses, streaming committee discussions and minutes made while the discussion which enable the researcher to understand decision made ,words had been used during the discussion ,Negotiation made, Serves level

agreements signed between National Bank of Ethiopia and Different vendors) is described and summarized to gain clear understanding on outsourcing Information system development function benefits and major problems in outsourcing different system developments. From the interviews, observation and document analysis of the outsourced system, the researcher gained and established a meaning and understanding that assist to interpret benefits gained from outsourcing and challenges faced during the phenomenon of outsourcing Information system .Besides the researcher analyzed and interpreted the implementation level of agreements made on the software at support level after go live of the systems based on mean time to respond, escalation process , warranty , disaster time and gaps made .In general inductive data analysis is used by organizing the data from bottom to up, which helps the data to be more intellectual form of Information (Creswell, 2009).

The researcher has adopted Creswell qualitative data analysis steps to analyze and reach at conclusions. According to (Creswell, 2009) the first step in data analysis is understanding the natural behavior of the data to prepare question related to the research. The second step is collecting the data through appropriate data collection methods. In order to collect all the data without missing, recording and note taking are the important activity to be done which is the third step. Categorizing the recorded interviews and refining for analysis, applying inductive data analysis and writing the report are the fourth and fifth and sixth steps (Creswell, 2009). The following figures show the steps used by the researcher to analyze the data.



**Figure 3.6-1 Adapted from Qualitative Research Analysis steps (Creswell, 2009) and (Tayllor-Powell and Renner, 2003)**

**3.6.1. Question preparation:** Relevant Questions related to challenges and benefits outsourcing information system development function in National Bank of Ethiopia is prepared to get the required information related to benefits, major problems and driving forces for outsourcing the function.

**3.6.2. Data Collection:** Required data related to the research is gathered through interviews, observation and document investigation and assessments.

**3.6.3. Note Taking and recordings:** During interviews, observation and document evaluation notes are taken and records of some interviewee's voice are recorded so that data collected during data collection can be analyzed without missing the core and relevant information from those interviewees.

**3.6.4. Categorizing the data:** Data related to each category like driving forces for outsourcing, benefits and challenges of outsourcing, lessons learned from challenges of outsourcing information system development functions and outsourcing strategies are categorized to analyze from the perspectives of the objectives of the study to have consistence.

**3.6.5. Inductive analysis and interpretations:** To reach at conclusions and dig out the result of the study understanding the pattern and themes of the study from bottom to up is important .Therefore for each cases the analysis are made from bottom to up .Interpretations which is attaching a meaning is made based on the themes and patterns analyzed from the data.

**3.6.6. Writing:** is the final step where the analysis, discussion and understanding by the researcher are written as report.

### **3.7 Validity and Reliability of the data**

According to (Creswell, 2009) the data analyzed has to checked for accuracy of the finding and the research has to be consistent with other researches and projects which is validity and reliability respectively. To increase the validity and reliability of the research the following tactics has been used to minimize mistakes and decrease bias.

- Information systems outsourcing development was lead and followed by CIO, Team leaders of the systems outsourced, Technical teams from both technical and business

units in National Bank of Ethiopia who benefited and faced major challenges from the problems happened while outsourcing different applications . Therefore those mentioned members have provided detail data about the challenges, benefits, driving forces for outsourcing, outsourcing strategies devised and steps passed while the outsourcing of the system through face to face interviews utilizing the relevant questions prepared. To make the interview more valid their interview results are presented in quotations when required which has been checked by them.

- To triangulate the study observation using preliminary prepared checklists and document data also used which more validated the data to be reliable .The collected data changed to report and interpreted are seen against the collected data to see its accuracy. Besides, the report was sent to the interviewees to check the reliability through hard copy and softcopy. They commented for the researcher to exclude some issues related to security management as no reliable data to make the study practical. Therefore the data is reliable and dependable to attain the required objective.

### **3.8 Summary**

Information system Development function outsourcing study is a type of research which is behavioral and exploratory that requires qualitative types of research methods in order to investigate challenges of outsourcing, benefits gained from outsourcing, driving forces for outsourcing. The study is case study as it focuses on outsourcing of Information system development function outsourcing in National Bank of Ethiopia case by case for the key driving forces, benefits and outsourcing Information system development function. In such case to get detail investigation and explanatory information qualitative approach is better than other approaches. Besides since researches on outsourcing of information system development in National Bank of Ethiopia is too limited and no research was done in National Bank of Ethiopia before, qualitative approach is best to meet the intended objective of the research and provide answers to the questions.

Interviews, observation and document data related to request for technical proposal, Minutes, letters used between vendors and client, compliances of users are used as data collection methodologies from target population. The data collected are analyzed and interpreted to get the finding required and reach at conclusions.

# Chapter Four

## 4 Data Presentation, Analysis and Discussion

### 4.1 Over view of the Chapter

In this chapter the data collected through interviews, document analysis and observation are presented, analyzed and interpreted to find the challenges of outsourcing information system development brought to National Bank of Ethiopia, benefits the bank has gained from the outsourcing information system development, key driving forces for outsourcing, role of outsourcing strategies for the success of Information system development function outsourcing and lessons learned for future remedies. In order to make the analysis and data presentation suitable the researcher first identified the types of Information system developments outsourced in the bank and six types of Information systems are outsourced to external vendors. Besides, the interview questions which are general and directly related to specific objectives and research questions, are basically classified in to key driving forces for outsourcing information system development function, outsourcing strategies the bank devised, challenges the bank has faced while outsourcing information system developments, benefits the Bank has gained from outsourcing and lessons the bank learned from outsourcing so that the analysis results became good for understanding and meet the objectives the research need to address.

In addition related document supporting the outsourcing of Information system development function are seen deeply to support the interview results together with the observation checklist designed which the researcher actually observed the systems current status.

### 4.2 Data Presentation

Before analyzing, interpreting and discussing the data, it is important to describe the process of data collection and good to identify the basic themes. As indicated in the methodology section of this research the researcher intends to collect primary data through interviews, observation and secondary data through document analysis. To make effective the analysis, the analysis approach which was described in the methodology unit which is preparing semi-structured interview questions, collecting data using the tool devised, note taking and recording in some case , categorizing the information related with each other and analysis followed by interpretations are used to produce the final report.

The Researcher identified to interview the Chief Information Officer, each system team leaders ,semi project manager who are also technical, contract and procurement manager and six technical and business staff who had detail knowledge on technical issues from both Information systems unit and business users side who have deep knowledge about the level of involvement of users in the outsourcing, to what extent requirements are gathered, what functions of the systems/applications are implemented and failed ,challenges they faced, benefits they gained from each systems as they are involved in the process of outsourcing strictly. The backgrounds of the respondents are presented shortly as below.

| <b>Positions</b>                       | <b>Key responsibilities</b>   | <b>Number of Participants</b> |
|--|---|-------------------------------|
| <b>Chief Information officer</b>       | Providing vision and leading the IS strategy, responsible for business and IS alignment and make decision when required in outsourcing of ISD and propose opportunities that is best for the bank. Member of the top Management | 1                             |
| <b>Manager</b>                         | Responsible for their respective system outsourced implementation and follow-up.  | 4                             |
| <b>Technical IT and Business staff</b> | Responsible for technical knowledge from RFP up to implementation.  |                               |
| <b>Contract Manager</b>                | Responsible for Procurement process, Contract management and Service Level Agreement follow-p   | 1                             |
| <b>Total</b>                           |   | 12                            |

**Table 4-1 Respondents background**

After identifying the required respondent and collection of the data, the researcher started the analysis, interpretation and discussion from semi structured interview from the notes taken with pen, pencil and records recorded as presented and integrated data obtained from documents analysis when to more validate the interview. The documents basically used and discussed with the data collected are: Letter written between National bank of Ethiopia and vendors to resolve

challenges of system failures ,Letters describing users Compliance on HRMS and PSMS, report showing list of systems to be developed without strategies ,document describing integration of the then Federal in land revenue the present Ethiopian Revenue and Customs Authority with National Bank of Ethiopia through FEMOS but not implemented, bid Evaluation report result for ECRB (H3290/IDA),Technical requirement document for ECRB and QBS.

Therefore the analysis result is both form integration of interview and documents to more strengthen the result. To get the basic knowledge the researcher identified critical systems the bank outsourced to external parties and basic themes of the cases at first for understanding purpose.

#### 4.2.1 Critical Information system developments outsourced in the Bank

The following types of Information systems are outsourced in the bank as listed below.

| S/N | Name of Information system                | Name of the vendor                                  | Year the system outsourced | Remark  |
|-----|---|---|----------------------------|---|
| 1   | Foreign Exchange monitoring System(FEMOS) | Hillmark-Ethiopia                                   | 2000 G.C                   | Partial requirements and objective to connect Banks and ERCA to get Data on Import and Export is missed and still used Manually |
| 2   | Ethiopian Automatic Transfer System(EATS) | Montran Information Technology PLC south Africa     | 2010G.C                    | Unless the limitation of considering future growth among all system outsourced it can be taken as success model.                |
| 3   | Human Resource management System(HRMS)    | Information Network Security Agency (INSA)-Ethiopia | 2010G.C                    | Totally it is not implemented though planned to be implemented in sixth months of the year 2010 G.C                             |
| 4   | Property and Service Management System    | Information Network Security Agency                 | 2010G.C                    | Totally it is not implemented though planned to be implemented in sixth months of the year 2010 G.C.                            |

|   |   |   |          |   |
|---|---|---|----------|---|
|   |   | (INSA)-<br>Ethiopia                               |          |   |
| 5 | Ethiopian Credit Reference System(ECRB) | Compuscan Information Technology PLC-South Africa | 2006 G.C | The proposal is to include Micro finances and Insurances but not included in the implementation.  |
| 6 | Quantum Banking System                  | Polaris Software Development PLC(India)           | 2010 G.C | Poor requirement gathering and proposal to interface the system with PSMS, HRMS, SWIFT, Counting, sorting and shredding machine is not still finalized. |

**Table 4-2 Critical systems outsourced in National Bank of Ethiopia**

### 4.3 Case study Analysis and Findings

In this section the cases for outsourcing information system development function are discussed in details which are derived from evidence collected from the interviews, document analysis and observation supported by checklist devised to achieve the research objectives.

Therefore the cases are analyzed from specific objectives of the study and research questions designed, which are described in summary formats in the below table.

|          |  |
|----------|--|
| <b>1</b> | <b>Driving forces for outsourcing Information system development function</b>  |
|          | <ul style="list-style-type: none"> <li>❖ External forces</li> <li>❖ Standardizations</li> <li>❖ Need for new services and technological advancement</li> </ul>                           |
| <b>2</b> | <b>Outsourcing strategies</b>  |
|          | <ul style="list-style-type: none"> <li>❖ Contribution and importance of outsourcing strategies</li> <li>❖ Type of outsourcing strategies devised by National Bank of Ethiopia</li> </ul> |
| <b>3</b> | <b>Benefits of Information system Development outsourcing</b>  |

|          |   |
|----------|---|
|          | <ul style="list-style-type: none"> <li>❖ Easy access to technology to obtain international best practice systems</li> <li>❖ Management of business process and transactions</li> <li>❖ To share risks with service provides and vendor</li> <li>❖ Technical talent and skill transfer on few systems outsourced</li> <li>❖ Choice of system that goes with National Bank of Ethiopia`s need</li> <li>❖ Business users satisfaction</li> </ul>   |
| <b>4</b> | <b>Challenges the Bank faced while outsourcing ISD function.</b>  |
|          | <ul style="list-style-type: none"> <li>❖ Absence of outsourcing strategies</li> <li>❖ Total and partial failures of projects</li> <li>❖ Absence of IT project manager</li> <li>❖ Poor contract and service level agreement management and the inability to understand them.</li> <li>❖ Instead of using outsourcing as strategy and focus on core areas, solving its issue became firefighting.</li> <li>❖ Relinquishing responsibility by business users</li> <li>❖ Lack of timely decision by management</li> <li>❖ Poor Communication with vendors and the inability to control them</li> <li>❖ Absence of business users commitment in the involvement of system Development</li> <li>❖ Loss of Internal capacity and total reliability on vendors resulting in absence of knowledge transfer.</li> </ul> |

#### **4.3.1 Driving forces for outsourcing Information system development functions**

As the respondent’s feedback National Bank of Ethiopia outsourced its information system development because of three main driving forces. The three driving forces are standardizations of the banks system, external forces, and the need for new services and technological advancements. All the three reasons are equally important for the bank to enter in to outsourcing of its system as the findings of the research.

According to the Chief Information Officer: “*National Bank of Ethiopia should have standard systems to lead financial sectors which support its mission of supervising banks and other financial sectors using systems like Ethiopian credit reference bureau system, Ethiopian*

*automatic transfer system ,Foreign Exchange Monitoring system and Quantum banking systems .”*

The Team Leaders of the system also explained the driving forces for outsourcing information system development function are:

*“Most of the National Banks application systems are mission critical and had international standards or best practices to be contained. Therefore system related to Ethiopian Automatic Transfer system that helps Banks to transfer bulk transactions sending messages and then after affecting accounts using National Bank of Ethiopia EATS system as an interface and control, Ethiopian Credit Reference Bureau system to follow-up the Financial Sectors credit healthiness and movement, Foreign Exchange monitoring System(FEMOS) to follow-up the utilization of foreign currencies for the intended permission and Quantum Banking System (QBS) for the internal Financial system and government accounts Management has to be outsourced by matured and experienced IT vendors. Having such system National Bank of Ethiopia, follow-up and supervises the financial sectors supported by Information system.*

External force is also another driving force for National Bank of Ethiopia to outsource its Information system development to external parties and it is also accepted by the respondent than the other driving forces.

Both the CIO and Mangers of the system development function of National Bank of Ethiopia explained the external forces as a reason as below:

*“The World Bank and International Monetary Fund (IMF) recommended National Bank of Ethiopia to have system supported by latest technologies that monitor the loan performance of Ethiopian Banks, so that the credit worthiness of borrowers can be regulated and those with bad loan performance are monitored timely to protect financial sectors from economic crises. In addition, bulk transactions transfer between banks also required to be started as recommendation of World Bank and Ethiopian government financial capacity building project. Because of these forces the bank outsourced its Information system Developments to suppliers so that National Bank of Ethiopia plays supervisory role for financial sectors.*

The CIO also added that :*“ the Business Process re-engineering done in the Bank recommended National Bank of Ethiopia to had state of the art systems that modernize its business process also a reason for the bank to outsource its information system development function.*

As to the business unit and the CIO response the third driving forces for National Bank of Ethiopia to outsource its information system development function is to gain access to technology.

The three respondent from business unit and CIO responded that *“because that the Bank outsourced its EATS system development, Banks able to transfer bulk money in real time easily between them. As a result of Ethiopian Credit Reference system outsourcing development loan performance of each bank is regulated easily. In addition, the foreign currency movement follow-up of each customer at each Bank is managed since Foreign Exchange monetary Application system outsourcing.”*

The following table summarizes the respondent feedback for the driving forces for National Bank of Ethiopia to outsource its Information system development function

| Respondents                      | Interview summary justifications briefly selected from respondents to describe driving forces  |  |
|----------------------------------|--|--|
| <b>Chief Information Officer</b> | “---the need for standardizations, external forces and business process re-engineering recommendations and access to new technology are the key driving forces for National Bank of Ethiopia to outsource its Information system Development functions”. |  |
| <b>Managers of the systems</b>   | “---National Bank should have standardized international best practiced system to effectively manage and modernize its business process.”  |  |
| <b>Technical business staffs</b> | “---to get access to new technology and manage business process using EATS, ECRB, QBS and FEMOS. Among all system EATS helped the banks users to manage its business process”.   |  |

From the above responses of the respondents National Bank of Ethiopia outsourced its Information system development function because of the need to have standard system, external forces, and easy access to technology and business process managements. (Davis and Knox, 2007) approves that, external force which can be termed as driving forces had an impact for organization to outsource their information system development to external parties.

To validate the standardization as driving forces, the researcher assessed the banks documents and from the documents related to outsourcing information system development function to improve the financial sector capacity building and the document clearly shows that external forces are the driving forces for National Bank of Ethiopia to outsource its Information system development functions to be best leading National Banks.

In addition, business process reengineering is another driving force for National Bank of Ethiopia to outsource its Information system development function to modernize its business process and had technologically advanced systems. (O.Martikainen,P.Tyrvainen,E.Luoma, 2009) supports and validate that organizations outsource their information system development function because of business process re-engineering studies output .

According to the respondent besides to standardization and external forces there is the third driving force for National Bank of Ethiopia to outsource its Information system development function which is the necessity of new services development that solves complex process which increases service delivery of the bank. (Jerzy Kazmierczyk and Przemslaw Macolaki, 2011) supported that, through technological advancement the banks get flexibility, stability and performance improvement which help them to obtain improved satisfaction by customers and better services by outsourcing its information system Developments.

Therefore, EATS, ECRB, FEMOS and QBS system started implementation totally and partially as the result of outsourcing of Information system development by National Bank of Ethiopia for the reason to acquire new services and technological advancements.

As the letters written between National bank of Ethiopia and vendors, minutes and discussion made, business requirements proposal explanations, National Bank of Ethiopia outsourced its Information system development for the reason to gain technological advancements and to acquire new systems.

#### **4.3.2 Outsourcing strategies**

Outsourcing strategies are the key for organization to decide when and what to outsource (M.A.Suhaimi, 2005).But National Bank of Ethiopia has no stepping in relation to outsourcing strategies to reach the goal of outsourcing Information System Developments.

The Chief Information officer justified the absence of outsourcing strategies as :

*“So far the bank has no clear and precise Information system outsourcing strategy that shows what type of applications to be outsourced in a planned and managed ways, to whom to outsource and to which country to outsource .Even the bank has no Information system strategy where outsourcing of technology services is part of that. He added that the bank has done its own five years strategy in many areas of the banks process but in any of the studies Information system outsourcing strategy has not come to our mind which may have helped us to guide, control our projects and had successful projects that protect us from different challenges and project failure we are encountering at present time in National Bank of Ethiopia.”*

Though the Bank has no outsourcing strategies until now it has to understand its importance .The CIO validated its importance as the following responses. *“ From previous information system outsourced projects failures and challenges, the bank understood how much outsourcing strategy is important and will have Information system strategy that contains Information system outsourcing strategies inside itself to address the issues the bank is now facing in outsourcing Information System development function.*

Table 4-3 describes absence of outsourcing strategies in NBE and its importance in short

| Respondent Category              | Interview response selected as an evidence for the contribution of outsourcing Information system development function and its existence in the Bank.  | Key Findings                       |
|----------------------------------|--|------------------------------------|
| <b>Chief Information officer</b> | “--- it is agreed that outsourcing strategies had great contribution for the success of Information system outsourcing. But National Bank of Ethiopia has no outsourcing strategies that contribute much for outsourcing of IS success. From our previous challenges we understand that outsourcing strategies had a great contribution for the success of IS development function outsourcing”. | Absence of outsourcing strategies. |

**Table 4-3 Outsourcing strategies importance and its absence in NBE**

From the above responses it can be clearly understood that the bank has no strategy to run IS outsourcing .But according to (M.A.Suhaimi, 2005) (Berbee, 2005) and (Elena, 2016) outsourcing strategies contains the following:

- Means of introduction of Innovations.
- What to outsource by identifying core and none core business activities.
- Holistic or selective outsourcing.
- When to outsource that contains long term and short term plan.
- Where to outsource.
- Who controls or the role of project Managers.
- Contract Management issues.
- Potential vendors.
- Benefits that can be gained from outsourcing.
- Challenges will be encountered while outsourcing.
- Capacity Building.
- Communication and relationships made between vendors and client organization should have.

As the a researcher`s made a document assessment analysis whether the bank had outsourcing strategies, the researcher seen a document that describes list of information system requirements the bank will had in future , 38(thirty) eight types of Information system to be outsourced are listed without any strategy descriptions.

In addition, as the researcher reviewed the five years strategy of the bank done in January 2016 the bank has an strategy to enhance modernization of Information system but no explanation that describe the type of IT strategy to have for the success of IS outsourcing success. The respondent also justified that the bank has no universal IT strategy that contain outsourcing strategies that contain inside it details of what to outsource and when to outsource.

### **4.3.3 Benefits of Information System Development functions outsourcing**

From the interpretation of gathered data information system development outsourcing has brought benefits for National Bank of Ethiopia. The following table summarizes basic themes

extracted from the respondent interview on benefits National Bank of Ethiopia gained in outsourcing its information system development function.

| S/N | Interview responses drawn respondents           |  | Themes from literature    |  |                  |  |
|-----|---|--|---------------------------|--|------------------|--|
| 1   | Easy access to technology                       |  | Technological Advancement |  |                  |  |
| 2   | Management of business process and management   |  | To focus on core areas    |  |                  |  |
| 3   | To share risks with service provider and vendor |  | To increase flexibility   |  | <b>Key Theme</b> |  |
| 4   | Technical talent and skill transfer             |  | Cost saving and quality   |  | <b>Benefit</b>   |  |
| 5   | Choice of the system that goes with NBE's need  |  | Knowledge transfer        |  |                  |  |
| 6   | Business user satisfaction                      |  |                           |  |                  |  |

**Table 4-4 Summary of key themes in outsourcing ISD benefits**

In line with the benefits the respondent actively responded that the bank has benefited from outsourcing its information system development function. They explained that access to technology which enabled the bank to gain International best practice system and managing the business process or transaction repeatedly as the top benefits in changing the banks performance delivery.

The team leaders and business user gave their response as *“the bank has no system that helps to manage its business process easily and effectively before outsourcing of information system took place, the bank was suffering in managing its business .But after the development of the system through outsourcing the bank relieved from long time consuming process and data processes which is the result of access to technology”*.

Particularly, the respondent from business users of EATS and ECRB said that *“easy management of business process and transactions is achieved within a short period of time which enabled the bank to improve its service delivery. As a result of the development of Ethiopian credit reference*

*bureau system the National Bank of Ethiopia and commercial banks able to get the following information easily and accurately.*

- 1. The loan disbursed by each banks*
- 2. The healthiness of the loan given by the banks*
- 3. On the other hand the commercial banks also benefited from system to get an accurate credit history of the customers before they disburse the loan to them.”*

Therefore, because of outsourcing of the system developed, the bank benefited easy access to technology in interconnecting banks to transfer transactions in real time through real time gross transfer system sending message first and affect the needed account, to manage the credit worthiness of borrowers in Ethiopian banks both governmental and private, to manage the scarce foreign currencies whether they are used for required purpose while services and goods are imported based on their permit information. (Perry and Yu chen , 2003) also identified that since outsourcing services brings to organization well experienced technology, organization outsource their information system development to gain such benefits which is also applicable to National banks too .

According to CIO of one of the benefit the Bank has gained from outsourcing ISD function is the possibility of sharing risks with service providers to minimize failures may be obtained.

The CIO explained his comment as *“since vendors do have ample experience in management of outsourcing Information system development function they did not enter in to risks as inexperienced client organization who had not been entered in to information system development outsourcing. One of the risks shared with them is data migration which was very difficult to be done alone by in-house.”*

(Davis and Knox, 2007) also supports this view, as in outsourcing risk management, the service provider had better ability to weigh risks and search for the alternatives to easily minimize the challenges’ related to outsourcing. From both the literature and the respondent the researcher understood that since vendor’s objective is to maximize profit they care of risks which indirectly enabled National Bank of Ethiopia to achieve its objective.

Skill gaining and knowledge transfer is also another benefit the bank gained from outsourcing of Information system development but it is only seen on EATS by which the vendors to some

extent willing to transfer the knowledge. Though the transfer of knowledge is not up to the expected, some amount of knowledge that helps its employees to provide first-hand support is gained from outsourcing.

The respondent from both IS technical staffs and business users said that, *“it is very difficult to get talented and experienced staff and if obtained the internal staffs cannot develop such critical system .Even employees those gained the knowledge and experiences obtained the knowledge from the vendors in hard ways. Though, the knowledge is gained in difficult ways, outsourcing helped its organization in replacing the lack of internal knowledge National Bank of Ethiopia is facing”*. (Davis and Knox, 2007) also backs the benefits stated by respondent as outsourcing can afford access to resources not available internal to an organizations and can also provide greater access to skilled employees generally .Further, outsourcing can enable access to expertise and capabilities and this can be particularly important when expanding operations and entering new market opportunities or segments.

As a result of outsourcing of Information system development National Bank of Ethiopia has got an opportunity of choosing or selecting for systems that qualify the bank to achieve its objective.

The Procurement Manger and CIO supported this benefit as *“ outsourcing brought a chance in the choice for National Bank of Ethiopia to select system that goes with the banks process and modules by approaching internationally experienced vendors that has the capability to study system requirements,gap analysis between existing technology, implementation and delivery mechanisms .The Procurement manager said that based on our requirement we have got the opportunity to assess local and international technology suppliers that had National banks information system development outsourcing experiences.”*

The Central objective of systems outsourcing is to satisfy users of the systems and customers .In line with the Benefits of outsourcing Information system from users perspective National Bank of Ethiopia achieved users ultimate satisfaction from Ethiopian Automatic transfer system outsourcing results.

The Business user’s respondents supported this benefit as they are very satisfied with Ethiopian Automatic transfer system as, *it enabled their customer to transfer their transaction sitting at their home offices. Before the development of the system by external vendors, every bank physically move to each banks and effect payments and other related and national Bank clear the*

payments between banks manually as an interface. Because the system alleviated such problem they are satisfied by the system developed. (Narasimhaiah Gorla and Ananth chiravuni, 2011) states that, for system to be successful it has to satisfy the users in delivering the required quality..

#### 4.3.4 Challenges the Bank faced while outsourcing Information system development function

In Outsourcing there are challenges and it is not risk free processes. The basic and specific objective of this research is to deeply investigate the challenges National Bank of Ethiopia faced while outsourcing Information system developments function took place .Table 4.3.4 summarizes the basic themes identified as per the respondent feedback in relation to challenges National Bank of Ethiopia faced while outsourcing ISD function to external parties.

| S/N | Basic interview feedback from respondents used as evidence   |  | Themes from literature                         |  | Key themes        |
|-----|--|--|--|--|-------------------|
| 1   | There is absence of outsourcing strategies that shows clearly what to outsource and what to be done in-house |  |  |  |                   |
| 2   | Total and Partial failures of projects clearly happened on some systems.                                     |  | Lack Compliance with the contract              |  |                   |
| 3   | Absence of IT project manager.   |  | Loss quality                                   |  |                   |
| 4   | Poor contract and Service Level agreement management and the inability to understand them.                   |  | Providers inability to adapt to new technology |  |                   |
| 5   | Outsourcing became firefighting rather than helping the Mangers to focus on core strategic areas of the Bank |  | Absence of knowledge transfer                  |  | <b>Challenges</b> |
| 6   | Absence of timely decision by management   |  | No easy exit                                   |  |                   |
| 7   | Poor communication with Vendors and the inability to control them.   |  | Security problems                              |  |                   |
| 8   | Lack of business users Commitment in the involvement of system.  |  |  |  |                   |
| 9   | Relinquishing responsibility of business users on Information system unit.                                   |  |  |  |                   |
| 10  | Loss of Internal capacity and total reliability on vendors resulting in loss of internal knowledge.          |  |  |  |                   |

**Table 4-5 Summary of challenges in ISD Function outsourcing**

According to the respondents feedback the bank faced challenges which are absence of outsourcing strategies, total and partial failures of projects, lack of Information system project manager, the inability to understand contracts and service level agreements and reverse firefighting result of outsourcing of system development are repeatedly raised by the respondent's.

In line with absence outsourcing strategies the CIO justified the challenges as *“because of the lack of Information system strategy we discussed above, the bank has not seen and identified the types of challenges will come in future in connection with outsourcing Information system development.”*

As the researcher assessed the documents on outsourcing that lists the number of Information system the bank planned to outsource more than thirty five systems but the it does not contain any strategies to be utilized to achieve the goal of information system planned to be outsourced. But according to (M.A.Suhaimi, 2005) organization should have outsourcing strategies and it is a means by which organizations decide what to outsource, where and when to outsource and detail components of the outsourced system .

All the respondents except EATS Manager, total, partial failures and delay of the projects outsourced are the basic challenges. They commented their feedback as *“the total failure of the projects made National Bank of Ethiopia the inability to meet the strategic objective of an organization which is modernizing the banks all process and interconnecting with financial sectors. Particularly Human Resource management system and property and services managements were outsourced in 2010 G.C to a local vendor to be completed with six months. But still the project is not finalized which took seven years.*

The CIO officer and manager of ECRB, QBS and FEMOS commented that there are also partial failures on some system outsourced .The respondent justified the partial failures from the perspectives of their own system.

The Manger of Ethiopian Credit reference bureau commented as *“the project was to include information system development and implementation that enable the National Bank of Ethiopia to manage Micro finances loan performance and Insurances to see how they manage the collateral borrowers registered for the amount they have borrowed but it is still not implemented*

*and totally failed. As the Manger of the system, interconnecting of Micro finances with National bank of Ethiopia is started and outsourced to another company as a new project.*

The Manger and business staffs who had been participating while Foreign exchange monitoring System said that, *“the system faced partial failures, the system was planned to include Ethiopian Revenue and Customs Authority to gain information whether the business man utilized the foreign currency for the intended goods and services permitted but it is not implemented .As to the respondent the main cause for the failure of the projects are lack of outsourcing strategies, poor project management, absence of follow-up and lack of project manager who follows the project status on by one.”*

On a document that lists the number of information system development to be outsourced Interconnecting Commercial Banks, Insurances and Microfinance was to be done at once under Ethiopian Credit reference Bureau system and as researcher made an observation on Ethiopian Credit reference Bureau system Insurances and Micro Finances are not included in the project and both of them are separately done as a new project where Micro finances are outsourced to other company and Insurance supervision system outsourcing is under study to be outsourced.

There is also other document, which NBE has made an agreement with a vendor of FEMOS to develop a system that connect NBE with Ethiopian Customs and Revenue Authority but as to the observation of the researcher the system that connect both organization is not implemented.

Further there is also other document that clearly shows that HRMS and PSMS started in 2010 G.C to be completed in six months but still not implemented as to the observation of the researcher.

Partial failures, also seen from the side of Quantum Banking system development outsourcing missing some requirements. The respondent from Quantum Banking system also added that: *“the system faced six major failures .The First failure was absence of its integration with Human resource management in order to manage the benefits the employees gain from the bank and Payroll system .As explained above, HRMS is failed and therefore the interface is not implemented. In addition, integration of Quantum Banking system with sorting, counting and shredding machine for both domestic and foreign currencies that reports the amount of currencies removed from market, integration with Society for Worldwide Interbank Financial*

*Telecommunication (SWIFT), Interfacing with Property and services management where the interface should consider payment related to procurement of services and goods, fixed asset, maintainance cost, Petty cash ,contract based payments, claims and insurance and others also not implemented. Besides,*

In order to support more the above failures, the researcher assed the technical requirement document of the bank from page 96-98 all the above systems are clearly stated one by one with detail specifications to be interfaced with Quantum Banking system. But the only system interfaced with Quantum Banking system is Ethiopian Automatic system which is one of the system well developed by the vendor among all system outsourced to external parties.

According to the Managers of the systems and the CIO of Information system Unit, lack of Information system project manager is a big challenge the bank has faced while outsourcing Information system Development.

They considered as basic thing the bank should have but missed and they supported this challenge as” *one of the basic reasons for the failure of projects is the absence of project manager. The technical staffs who are assigned for requirement gathering and to gain technical knowledge are acting as project manager without any project management knowledge. They explained this issue as” we replaced the role of project manager wrongly without capability and required skill. They said that they have missed both, technical knowledge that helps them to manage the system and project management.”*

But according to (AXELOS, 2009) in PRINCE2 principles, the role of project manager is many which includes monitoring and running the project, enhancing team work, producing planning, cost management, Quality assurance, looking in to project status and suggesting solution which is missed in HRMS and PSMS, communication management with technical teams and mangers, following user need and producing best requirements.

According to contract and procurement manager poor contract and service level agreement management and the inability to understand both contracts and service level agreement are the top challenges brought to National Bank of Ethiopia.

The contract manager commented the challenge as *“poor contract and Service level agreement management is a key challenge because they do not have an ability to understand the content of both contracts and service level agreements. As the contract management is considered as the only duty of contract department the business unit and other department has no need to understand what the contract says. We have no capacity to understand technical terms other than contract process. Besides the Service level agreement is completely prepared by the vendors in a manner to satisfy their objectives and need. The contract manager at the end said that, everything defined in the contract should have been seen by the bank to achieve the banks requirement.*

As an assessment is made on the document of outsourcing there are violations of contracts which are the result of the inability to understand the contracts. But according to (Daniel A. , 2011; Kishore and Tejaswin, 2010) the contract document is a type of document that defines the type of services given by the vendor which has to be clear, understood well and balanced between both service provider and client organizations. In addition both parties should know the feature written inside, time it will start and end .Even if possible challenges of both contract and SLA has to be studied before both contract is signed.

According to (Perry and Yu chen , 2003) outsourcing enables organizations which in our case National Bank of Ethiopia free them to concentrate on core areas of their strategic functions. But in National Bank of Ethiopia the reverse is seen and outsourcing itself brought additional firefighting.

The CIO, team leaders of the systems responded as:

*“Instead of using outsourcing as strategy and to focus on core organizational areas outsourcing became routine duty and put the Bank into firefighting rather than helping them to sit down and strategically think to be creative and they added that this is highly observed in Quantum Banking System outsourcing, Human Resource Management system outsourcing and Property Management systems .Users of the system are complaining to us as the system is delayed and the system still un implemented for long years.*

From the document analysis the CIO of the Bank spends most of its time in writing letters with the vendors of HRMS, PSMS and Quantum Banking System and as to the observation of the

researcher there are long discussions over the telephone with system users for long time on issues unsolved to get solution on the three systems which hinders from strategic thinking and focus on core areas.

Lack of timely decision by the management to solve vendor, user and higher level technical problems, Poor communication with vendors and the inability to control them, absence of business users commitment in the involvement of system development, relinquishing responsibility of business users and loss of internal capacity and total reliability on vendors resulting in absence of knowledge transfer are second level challenges the bank faced while outsourcing Information system developments.

Concerning Lack of timely decision by the management to solve vendor, user and higher level technical problems the Chief Information officer justified and explained it as:

*“The bank defined committees that oversees the status of systems outsourced to external parties and the committees are steering committees. Those issues that need lasting solutions are decided by steering committee for approval sending to project board but there is delay in decision which can be seen from the delay of HRMS and PSMS projects and even when decision is made most of the time the decision is made only from the side of cost rather than looking whether objective is met or not”*. According to (AXELOS, 2009) the project board, project manager and management decision is very important for project success and its structure include project board that provides last solution for projects, taking issues from steering committees and at the same time the project board guides and monitors the steering committees whether they are properly following the project. Once decisions are made executions are easy for Technical team and project manager. But since most of the time decisions delay HRMS and PSMS still exist without of any contribution for the Bank.

As the letters written from the users of the HRMS and PSMS on January 17, 2009 E.C and others the managements of National Bank of Ethiopia who can be seen as project board are aware of the delay in projects by the copy of the letters but no action is taken for the projects taking long time more than seven (7) Years.

Poor communication Management is also another challenge the bank faced while outsourcing the systems to external parties. Among the other respondent team leaders and Contract manager justified this challenge as:

*“The communication management is not clearly defined and no policy and procedures when to meet with management, channel of communication, who directly contacts the business users, penalty if vendors misses not to meet agreement made on meetings, who makes lasting solution on disagreements and disputes are challenges the bank was facing when vendors not produce expected output on time and as requirements. As a result communication between the vendors with bank is not smooth and there are violations. When disputes rise over requirement and others, the bank has no policy and procedure to refer and force the vendor to smoothly settle issues.*

The managers of systems who had been strongly working with vendors commented on this challenge as:

*“The vendors miss critical modules and when they are communicated and requested to replay through discussion sometimes they are not responsive as required. When reported to the steering committee since no developed procedure as a management they do not force both parties to resolve issues on time. The contract manger added that most of time communication with vendor is poor.”* But according to (Smuts, 2009) communication between vendors and client organization is the most critical for the success of Information system development outsourcing. (Ucar and Bilgen , 2012) also added that, Management of vendor relationship is very important for the effective success of Information system development outsourcing function and a productive relationship with vendor will enable an added value for the whole success of an organization objective required from outsourcing.

Outsourcing of Information system development can be achieved when requirements are gathered well with involvement of users .But users are not committed to involve in the process of outsourcing when took place in National Bank of Ethiopia.

The technical staffs from both IS unit and business users gave their feedback *“lack of business user’s commitment in the involvement of system development while outsourcing took place in providing required and basic requirements was highly seen. Those representatives assigned from*

*systems users to follow the technical design, process and gather requirements said, that users and customer are not willing and they are not committed to provide the right business requirements that the system should had in order to improve performance of the bank. As to the respondents, those users required to provide requirements for systems to be developed through are not willing to participate in requirement gathering as a result, the systems are developed by requirements given by those technical staff assigned to follow-up system design and how the system is developed. But according to (Soares & Jose, 2014) for the successful implementation of Information system development outsourcing user participation is critical and very essential. As the researcher analyzed the documents and letters sent between National Bank of Ethiopian and the vendor there are many comments moving between them which shows the resistance of users and dissatisfaction at the systems which the researcher identified from the documents.*

The Business users relinquishing responsibility to Information system unit is the second order level challenges the bank faced while outsourcing Information system development function.

The Manager, the technical staffs who are assigned to follow-up the outsourcing of system development justify this challenge as *“though the systems are developed to improve their activities, the business users or system users totally assume and believe that from the beginning to the end those process of the systems outsourced to external parts including requirements gathering are the duties of Information system Department unit”* but according to (Soares & Jose, 2014) without the involvement of business user’s success of Information system development outsourcing is impossible.

Absence of proper knowledge transfer in management and administration of the system for internal staff and the inability to provide proper training for the user by vendors are the other challenge the Bank faced from outsourcing of Information system development function which brought internal capacity building loss for the bank .The mangers of all systems supported that *“ vendors are not willing to transfer required knowledge for the internal staff to the level they can manage the system .Besides the Mangers added that proper training is not given for the users on how to utilize the system which injected technological phobia to the users and made them to resist changes in technology. Even such training is given by Information system staff who had been participating in the outsourcing of Information system development on how to use the system which is not exhaustive”*. (Soares & Jose, 2014) also supports that one of the challenges

in information system Development outsourcing organization face from vendor is ineffective knowledge transfer from vendors to customers which makes organization to depend on vendors and according to (Kronke, 2013) one of the disadvantage of Information system outsourcing is no easy and free withdrawal once contractual agreement is made and the system are implemented. This is because that important knowledge is in the mind of vendors, not with the employees so it is expensive and challenging to change vendors.

From the document Analysis RFP of Integrated QBS on page 72 the type of training to be given for Management of the system, end user on how to use each systems, developer on how to customize the system source codes and super user the way to administrate the system and control including duration it will take is listed in the request for proposal. But as the observation of the researcher users and the Information system technical staffs are not equipped with the required training and knowledge to utilize and Mange the system. The technical staffs of Information systems expect everything from vendor for any minor issues and they have no confidence to trouble shoot systems.

#### **4.3.5 Observation results**

As to the observation of the researcher which he examined against observation checklist devised, the bank has got some benefits on some of the system partially implemented like Ethiopian Credit reference bureau system which are using its data to follow up credit worthiness of bank and loan performance to supervise them. But the system was designed to help National Bank of Ethiopia to supervise Microfinances and Insurance companies' loan and collateral utilization data by interconnecting them but still they are doing these processes using manual system. Besides the researcher observed that Ethiopian Automatic transfer system is benefiting the Bank to transfer bulk transaction which one of the system developed by National Bank of Ethiopia outsourcing it to external companies. Among all system development outsourced to external companies Ethiopian Automatic transfer system can be taken as a model in its success among all system outsourced to external companies, even interface integration with QBS or Core Banking system which was failed with other systems is implemented with this system.

As practically the researcher observed integration of the six systems like HRMS, PSMS, SWIFT, FEMOS, Integrated Financial Management system and sorting, counting, and shredding machine

with QBS is failed and the four systems are done separately as HRMS and PSMS totally not implemented or not functional.

Besides as the researcher observed both Human resource Management system and Property are not implemented totally until present where the users are dissatisfied in the delay of the system outsourced.

In lines with the Training the researcher observed that proper training are not given for the users and technical staffs as they are not well equipped with the required knowledge in utilizing and managing the system respectively particularly the users of Foreign exchange monitoring system (FEMOS) and Ethiopian Credit Reference Bureau system (ECRB).The users of the system call for support for Information system staffs and the Information system staff chat and call with vendors fore long time to get response. Even the users don't know most of the functions of the system ,which shows that they are not participated at required level in requirement gathering while the system are outsourced and that they are not trained well .

#### **4.4 Discussions**

National Bank of Ethiopia has got benefits from information system development function and it has also challenges which hinder the bank from meeting the objectives modernizing its business process within the scheduled time. Therefore, in the previous section of the analysis part, the main driving forces for NBE to outsource its information system development function, benefits and challenges of outsourcing information system development function in National Bank of Ethiopia was analyzed from the perspectives of selected interviewees, document analysis and observation checklist guide lines.

In this section how the objective of the research is discussed in relation to the specific objectives, research questions, and how the research is related with others literatures and studies. Therefore, the specific objective of this research is to identify the reasons National Bank of Ethiopia outsourced its Information system development function and the research is aimed to answer what are those reasons for the bank to outsource its Information system development function.

The following table summarizes the discussion as below.

| S/N | Outsourcing Information system development function challenges, benefits and Key driving forces | Evidence collected from the interviews   |
|-----|---|--|
| 1   | Key Driving forces  | The driving forces for National Bank of Ethiopia to outsource its ISD function is the need for standard systems, need for new services and external forces recommendations   |
| 2   | Benefits the Bank has gained.   | The Bank has gained access to technology, easy business management, Knowledge transfer on some systems, sharing risks, opportunity to select internationally experienced vendors and business users satisfaction on some systems outsourced  |
| 3   | Challenges the bank has faced.  | While outsourcing information system development function National Bank of Ethiopia faced challenges which are: Absence of outsourcing strategy, poor contract management and the inability to understand contract and service level agreement, absence of business user commitment in the involvement of requirement gathering, absence of knowledge transfer, relinquishing responsibility to Information system unit and delay in project implementation. |
| 4   | Outsourcing strategy  | National Bank has not devised outsourcing strategy that clearly defines what to outsource when to outsource and where to outsource by assessing the internal business process to align with the banks business strategy.   |
|     |   |  |

**Table 4-6 Summary of Outsourcing ISD Function challenges and Benefits**

#### **4.4.1 Driving forces for outsourcing Information system development functions**

This study identified and examined the key driving forces for National Bank of Ethiopia to outsource its Information forces which are internal and external. All the identified respondent clearly stated that because of the world bank and International Monetary Fund recommendations the bank outsourced the Ethiopian Credit Reference Bureau and Ethiopian Automatic Transfer system which made the bank to perform its regulatory role in order to keep the healthiness of borrowers loan performance and to enable Banks to transfer directly transaction and Finances in real time using National Bank of Ethiopia as interface .In this regard (Davis and Knox, 2007) validated that because of political reasons organization outsource their information system developments. As the researcher assessed no local research identified that external forces has an impact on organization in outsourcing their information system functions .Therefore, this study contributes for organization to consider and understand that external forces has an impact on them to outsource their information system development.

As to the study standardizations was the second driving forces for National Bank of Ethiopia to outsource its Information system development function .From the international practices, National Bank should own critical system that other National Banks should own and at the same time National Banks of Ethiopia should monitor Financial sectors by having standard system like EATS and ECRB. The respondent also supported because of the need for standardizations National Bank outsourced its Information system development and owned the above mentioned critical systems for its mission achievement .The other reasons identified in this study for the bank to outsource its information system development is to have new services that enhances the banks performance or brings modernizations which is from internal need. Most researches like (Jerry and Prezemaslaw, 2011) supported that, because of the need for new services organizations outsource their information system development to external parties. From the document analysis were financial capacity buildings of Ethiopia (Grant No: H32090/ IDA) the bank outsourced its information system because of the three reasons discussed above.

#### **4.4.2 Benefits of Information System Development functions outsourcing**

The second objectives and the research question of the study are to identify and answer the benefits the bank gained from outsourcing information system development function. From the

discussion it is clearly identified that the bank benefited in getting access to technology and management of business and transactions because of EATS, ECRB, FEMOS and QBS system by which users are utilizing it which is the result of outsourcing Information system development. Besides by sharing risks with vendors, by gaining full technical talent on EATS, by having opportunity to select system that goes with its process and through the satisfaction of business users on some systems the bank gained benefits from outsourcing its Information system development functions. Literature written by (Perry and Yu chen , 2003) also supports that organizations outsource their information system development to have world class capabilities and well experienced technologies. (Davis and Knox, 2007) also supports this research in that outsourcing brings resources organizations not have internally which is benefit for an organization. With this respect this study has a relation with the literatures.

#### **4.4.3 Challenges the Bank faced while outsourcing Information system development function**

The third objectives and research question of the study is to investigate and answer the core challenges the bank faced while the outsourcing took place and to identify the type of outsourcing strategies the bank implemented to tackle the challenges. As to the study the bank has faced critical challenges while outsourcing its information system development functions. But the bank has no outsourcing strategies to mitigate challenges it has faced. The challenges the bank has faced while outsourcing this function are absence of outsourcing strategies. But as to (Elena, 2016) outsourcing strategies helps organization in relation to what, when and where to outsource .But National Bank of Ethiopia even has no Information system strategy which tells organization types of outsourcing strategies to have including initiatives.

The challenges are not only the lack of outsourcing strategies ,but also partial and total failure of project because of loss of controls, lack of project manager which is a key for organizations projects success and whose role is from monitoring project performance up to resolving issues in discussing with top management. Even the main cause of project failure is lack of project manager. (AXELOS, 2009) clearly described that the role of project manager is most important in bringing, team spirit, managing project status, monitoring of each project and answering users need. Therefore, this research identified the absence of project manager in National Bank of Ethiopia was key challenge which other researches of related works done has not seen before. In

identifying the role of project manager and its contributions National bank will learn from this research and will have project manager for its future project implementations.

The inability to understand the contracts and service level agreement and its poor management, becoming of outsourcing firefighting issues, lack of timely decision by management, weak communications with vendors, poor involvement of business user in systems outsourced and their responsibility relinquishing on Information system unit and absence of knowledge transfer in most of systems outsourced are the other challenges identified in this research.

From the document REF/F&A/014/2005, technical requirement document of Quantum banking system and financial capacity building document(Grant No: H32090/IDA) the bank made an agreement to had interface connection of FEMOS with Ethiopia Revenue and Customs Authority but as to the researcher observation it is not implemented which is partial failure of the project.

In addition as to the technical requirement proposal for QBS the system should have interface with HRMS, SWIFT, FEMOS, Integrated Financial Systems and PSMS, but all are not implemented as to the researcher observation. In addition as to the observation of the research Micro- Finances and Insurances part are not included in the project of ECRB which was part of the project as to the financial Capacity building RFP and Consultancy proposal. Surprisingly the two system development projects are given to another vendor as an independent project as to the researcher observation.

#### **4.5 Summary of data presentation, Analysis and Discussion**

Information system Development outsourcing had benefits and challenges for National Banks. To assess the benefits and challenges of Information system development outsourcing function the researcher took National Bank of Ethiopia as case organization taking outsourcing Information system Development Function benefits and challenges as an objective. In order to gain and meet the required objective of the study the Interview Questions derived from the objective, are analyzed and interpreted in this chapter. To manage the interviews analysis, the researcher organized the analysis and interpretation in to

- Reasons for outsourcing Information system Development functions
- Role of outsourcing strategies
- Benefits of outsourcing

- Core challenges of information system Development outsourcing
- Lessons learned.

Besides the Researcher compared interviews analysis with the document analysis and observation using checklists prepared to enrich the findings. Therefore, the researcher analyzed the interview made with respondents supporting by documents and observation.

# Chapter Five

## 5 Conclusion and Recommendations

### 5.1 Conclusion

Outsourcing Information system is currently growing at significant level in financial sectors particularly in banking sector. It is the practice that refers to shifting corporate activities of an organization to external party vendor either within the country or outside the country so that the organizations can concentrate on its core business .Information system development function outsourcing is also one of the functions which National Bank of Ethiopia outsourced to external parties because of several reasons. The main objective of the research is to identify reasons National bank of Ethiopia outsourced its information system development function to external parties, the benefit the bank gained from the outsourcing and challenges the bank faced while outsourcing information system development function so that problems identified for the research are seen. To identify benefits and challenges from the function outsourcing, the role and contribution of outsourcing strategy is seen for the success of information system development outsourcing.

In this research assessment of different literatures related to outsourcing information system development function are done to support the study with literature having direct connection to benefits of outsourcing such as technology transfer, its purpose serving as replacement in the absence of skilled personnel and challenges related to outsourcing which are hidden costs, project failures, the inability to meet organizational objective, poor contract and SLA management.

To achieve the objective of the study qualitative approach is used using interviews, document analysis and observation as data collection methods. Purposive sampling techniques are utilized selecting twelve Employees who had an ample knowledge and had been participating in the outsourcing of the six key areas of information system development function of the Bank. As to the interviews, document analysis and observation the bank outsourced six critical system to five international and local (country born) vendors because of political reasons, standard or

international best practices adoption and the need to acquire new services to improve performance.

The Bank has no outsourcing strategies that describe what to outsource, when to outsource and to which best vendors to outsource but it is a key for the success of Information system development outsourcing. The bank has prepared the five years strategic plan. In the strategic document it is stated that enhancing modernization of information system is described without what challenges and gaps the bank had in relation to Information system ,where the bank now and will go to achieve the goal. Therefore, the bank should asses the current IT infrastructure and business areas to be done in initiative step by step

From the outsourcing the National Bank of Ethiopia has got benefits which are access to technology in obtaining Ethiopian Credit Reference bureau system, Ethiopia Automatic Transfer system that helped all Ethiopian Banks to interconnect and able to transfer bulk system, to share risks with vendors which is very devastating if done only by the bank ,access to technological talent and skill because the bank had no well experienced staff, flexibility to select best systems that can handle its process as the bank has the opportunity to select the appropriate vendor and users satisfaction for some systems. Though bank had benefits from outsourcing Information system development the challenge the bank has faced is greater than the benefits which are failures of HRMS and PSMS system, Partial failure of Ethiopian Credit Reference bureau system by not including Microfinances and Insurance companies, the failure of FEMOS system missing the inclusion of Ethiopian Revenue and Custom system that enable the Bank to get data about the utilization scarce foreign currencies for the goods and services customer licensed for to import them. Besides to projects failure the absence of project Manager is another challenge the bank faced. The Bank outsourced and had a plan to outsource Information system Development function and the role of project manager in assuring its success is high which National Bank of Ethiopia Missed.

For the success of Information system development outsourcing, fast Management decision is important to move from one step to the second step but lack of timely decision is another challenge the bank faced in the past ISD outsourcing .Poor Communication management was another fourth challenge which is not respected by vendor was another critical challenge for the bank as the findings result. Poor Contract Management and Service Level agreements and the in

ability to understand both the contract and Service Level agreement is basic challenge which is accepting agreements as it is or what is provided by the vendors which has an effect on cost increase.

Lack of Commitment and low involvement from the Business users are also another challenge which had direct impact on the quality of systems developed through outsourcing.

As literatures (Gonzalez, Gasco, & Liopis, 2008) and results of most researches, outsourcing serves client organization to focus on core areas by transferring routine duties to external companies but as this research outsourcing became the reverse for National Bank of Ethiopia. Managing outsourcing problems of HRMS, PSMS, QBS and FEMOS are the day and night duty of CIO of the Bank and team leaders of the system missing strategies areas of the bank which is the basic aim to be done by them to transform the Bank .The other challenge was the Business users considering their duties as the duties of Information system unit by relinquishing their responsibility hiding themselves in side outsourcing of Information system Developments as a coverage.

From the discussion and analysis National Bank of Ethiopia should have outsourcing strategies. Because using it the bank can easily understands what to outsource and not. Once outsourcing strategy is devised, types of system that can be done internally and outsourced can be easily identified and the strategy can identify challenges that the bank may face.

Therefore it is a must and preferable for National Bank of Ethiopia to outsource those critical system as they are critical and international best practice system that cannot be developed by internal staffs. These is because such system requires matured and experienced expertise as the systems manage transaction which has to be secured to protect public resources. But systems like Human resource Management and Property and services management system should have not been outsourced to external vendors because they can be done internal capacity because once the internal staffs are trained well they can develop such systems.

## **5.2 Recommendations and Future Research**

### **5.2.1 Recommendations for practices**

Outsourcing strategy is a key for the success of outsourcing Information system development and National Bank of Ethiopia should design its outsourcing strategy so that the present challenges can be tackled easily. In outsourcing Strategy National Bank of Ethiopia can identify what to outsource and what to be done internally. Had it been the Bank had an outsourcing strategy systems like HRMS and PSMS would have been done internally equipping the internal staff with required training. In addition the role of Project Manager is very high and National Bank of Ethiopia should have a unit that manages the project from day to day and follow-up its status.

Before the quick-off an outsourcing of Information system developments National Bank of Ethiopia first should assess types of information to be outsourcing aligning the banks long term strategy with an IT strategy which should also contain outsourcing strategies that assess challenges and problems before launching outsourcing IS. In this research one of the driving forces for the bank to outsource its Information system development is because of external forces but the bank should not wait until external forces commands to have a system .The bank should see international best practices from other model National Banks to lead effectively financial sectors having best system.

To solve the problem caused by contract and Service Level agreement management and increase the understanding of the content of both contracts and service level agreements a unit containing professional from Information system, Law areas and procurement department has to be formed so that the bank effectively gain benefits from contracts and Service level agreements.

### **5.2.2 Future Research**

For future research studies the following research areas are suggested to be done by another researcher:

- Outsourcing Security Management Function, Infrastructure Management and Implementation, Research and development function can be studied for Nation Bank of

Ethiopia to see benefits and challenges the bank faced in relation to those functions. Because from the view of these functions benefits organizations and challenges they have faced can be seen in another direction which helps organizations to gain benefits and learn from challenges for their future outsourcing plan.

- Success factors for outsourcing Information system in financial sectors particularly on Micro-Finances and Insurance sectors are another open areas need future research. As to the researcher investigation researches related to these sectors is not done totally from the perspective of outsourcing success.
- This study is conducted considering a single organization following benefits and challenges National Bank of Ethiopia is gained and faced respectively from outsourcing Information system development function, thus doesn't represent the general outsourcing management in the country. Hence other studies can be made considering different organizations for understanding the similarities and differences of the Benefits gained experiences they had, challenges, and causes for the challenges across the organizations in the country.
- This research is conducted considering the client side benefits and challenges of outsourcing factors. However it is understandable that the vendors' side also had other side benefits for the success of projects and also there are challenges from them for the failure of an outsourcing of Information system developments. Thus future studies can be made considering both the vendor and the customer to more investigate the benefits and challenges.
- The role outsourcing strategies for the success of Information system development outsourcing is one of the untouched research areas to be done by another researcher. As the findings of this research no outsourcing strategies devised before outsourcing took place. But other literature describes the importance of outsourcing strategies for the success of Information system development outsourcing.

## **Bibliography**

- Arshad, N. H., May-Lin, Y., & Mohammed, A. (2009). ICT outsourcing :Inherent risks ,issues and challanges. *wseas transactions on Bussiness and Economics*, 117-125.
- Avison. (2008). Outsourcing and offshoring Information systems projects., (pp. 351-376).
- AXELOS. (2009). *Managing Sucessful Projects witt PRINCE2*. Crown(TSO).
- Bediretin, Y. (2015). *Three Approaches to case study methods in Education*. Alabama: University of Alabama.
- Bendixen, M. (2007). Outsourcing for Financial Services Providers : A decision frame works.
- Berbee. (2005). *Berbee Information Network Corporation:An inside Guide to outsourcing :Research Park drive*.
- Berg, B. (2007). *Qualitative Research Methods for social Sciences*. California State University.
- Birritu. (2011). *Licensing and Supervision of banking bussiness*. Addis Ababa: National Bank of Ethiopia.
- Bradely, A., Brown, F., Deboer, J., & Tai, D. (2012). *Global Technology Audit Guide:Information Technolgy outsourcing*. The Institute of Internal Auditors.
- Brain, H. (2012). *Information Technology outsourcing by large Australian organizations*. Victoria: Victoria University.
- Chiravan, G. a. (2011). Information System Outsourcing Sucess: A Review. *2010 International Conference on E-Bussiness Management and Economics*.
- Clark, T. D., Zmud, R. W., & Mccry, G. E. (1995). The outsourcing of Information services :Transforming the nature of bussines in information industry. *Journal of Information Technology*, 221-223.
- Creswell, J. (2009). *Research Design:Qualitative,Quantitative ,and Mixed Research Approaches*. LosAngles: SAGE.
- Dangoli, S. k. (2011). The Impact of Information Technology in Banking system(a case study in Bank Kehshavarz Iran). *Elisiver Social and Behavioral Sciences*.
- Daniel, A. (2011). *Risk and Risk Management practices within Informaton system outsourcing*. Linnaeus University.
- Daniel, B. (2010). Information System outsourcing ;Risks and risk Management practices :An investigation in to some selected higher learning institutions in Ethiopia.
- Darke, P. (1998). Sucessfully implementing case study research.
- Davis and Knox. (2007). The Reasons why organizations outsource Information systems.
- DeJohnson, D. G. (2010). The Impact of Information systems on Commercial Bank of Ghana.

- Dellotie MCS limited. (2013). *The outsourcing Hand book a guide to outsourcing* . United Kingdom.
- Demaria, A. D. (2011). *Risk and Risk Management Practices within Information system outsourcing*. Lineas University.
- E.Johnsen, R., Johnsen, T., & Angeli, R. (2006). Coping with outsourcing :An interaction and Networking Perspective. *problems and Perspective in Management*, 78-85.
- Eck, P. V., & Poniso, M. L. (2008). Information Technology Projcet Management from a system Thinking perspective. *International Research workshop on IT project*.
- Elena, D. (2016). Is outsourcing strategic tool to enhance the competitive advantage . *A review of General Management Vol 23 Issue 1*.
- Factor, D. (2001). Information System outsourcing prespective.
- Fitoussi and Gurbaxani. (2012). Information Technology outsourcing Contracts and performance Measurement. *Information system Research*, 129-143.
- Fraihat, H. (2006). Theoretical and pragmatic framework for outsourcing of Information Technology and Information Management. *Journal of International Technolgy and Information Management*.
- Glass, L. R. (1996). The end of outsourcing Era. *Information System Management*, 89-91.
- Gonzales, A., Dorwin, D., & Gupta, D. (2006). *Outsourcing past,present and future*.
- Gonzalez, R., Gasco, J., & Liopis, J. (2008). Informatin system outsourcing reasons and risks:An Emperical study. *World Academy of Enginering Science and Technology vol 41*, 381-390.
- Halvey and Melby. (2005). *Information Technology Outsourcing Transactions :Process,strategies and Contracts 2nd ed*. Jon Willey and Sons,INC.
- Hancock, D. D., & Algozzine, B. (2006). *Doing case study research*. New York: Teachers College Press.
- Hanock, B. (2009). *An Introduction to Qualitative Research*.
- Hirschheim and Dibben. (2014). Information System outsourcing :Towards sustainable Bussiness Value. (pp. 132-151). Newyork: Springer.
- IBMCorporation, A. (2002). *IBM Global Services : A brief History*.
- James A Obrien and George M Marhas. (2010). *Management Information System*. M Graw Hill.
- Jerzy Kazmierczyk and Przemslaw Macolaki. (2011). Outsourcing in Banking sectors :The polish Banking case. *The IAFOR Journal of polotics ,Economic and Law*, 14-27.
- Kawulich, B. B. (2005). Participant observation as a data collection method.
- Kim and Miranda. (2001). Information Technology Outsourcing as organizational sense making in city governments. *Acadamy of management proceedings*.

- Kishore and Tejaswin. (2010). Offshore outsourcing: Risk, challenges, and potential solutions. *Information System Management*, 312-326.
- Koszewska, M. (2004). Outsourcing as Modern Management Strategy: Prospects for its Development in the protective clothing Market.
- Kronke, D. (2013). *Towards Information system outsourcing*. Pearson prentice.
- Lacey and Duff. (2007). *Qualitative Research Analysis: The National Institute for Health Research*.
- Lacity and Hirschheim. (1993). Information Outsourcing, Myths, Metaphors and realities.
- Lacity, e. (2009). A review of the Information Technology outsourcing literature: Insights for practice. *Journal of strategic issues*, 130-146.
- Linder, J. C. ((2004)). Outsourcing as a strategy for driving transformation: strategy and Leadership. 26-31.
- Loh and Venkatraman. (1992). Determinants of Information Technology Outsourcing: A cross Functional Analysis. *Journal of Management Information Sciences*.
- LP Bladwin et al. (2001). Outsourcing Information Systems: drawing lessons from Banking Case study. *European Journal of Information System*, 15-24.
- LP Bladwin, I. Z. (2001). Outsourcing Information systems: drawing lesson from Banking case study. *European Journal of Information System*, 15-24.
- M.A.Suhaimi. (2005). Information Technology outsourcing as innovative strategy: The experience of Malaysian Banks. *The Second International conference on innovations (IIT '05)*, (pp. 50-62). Kuala Lumpur.
- M.Gupta and B.Gulla. (2009). Information System Outsourcing in India.
- McFarlan and Nolan. (2005). Information Technology and the Board of Directors. *Harvard Business Review* (pp. 1-12). Harvard: Harvard Business School Publishing.
- Meresa, M. (2007). *Outsourcing in Ethiopia*. Addis Ababa: Addis Ababa University.
- Mogalakwe, M. (2006). The use of Documentary research methods in social research. *African social Review* (pp. 221-230). Gabrone: University of Botswana.
- Moghimi, B. (2008). *Information Technology Outsourcing advantages and risks: A study of ISPs in Tehran*. Lulea University of Technology.
- Moore, M. L. (2005). An Examination of Information Technology offshore outsourcing and the challenges of working effectively with suppliers.
- Moura, I. C., & Grover, V. (2001). *Examining the outsourcing of Information Systems: Functions from Diverse Theoretical perspectives*.

- Muhidin, S. (2013, May). Enhancing Governance for Financial Institutions: Issues and Barriers. *Birritu*, pp. 5-9.
- Muller, N. J. (2010). *Outsourcing Network Management and Information Systems*.
- Muluneh, A. (2009). Information system Development outsourcing Management in Ethiopia: The case of National Bank of Ethiopia. Addis Ababa.
- Narasimhaiah Gorla and Ananth chiravuni. (2011). Information system outsourcing Success : A review. *International Conference on E-Business, Management and Economics* (pp. 169-174). HongKong: IACSIT press.
- Nduwimifura and Zheng. (2015). A review of Information system outsourcing in Africa . *Journal of Engineering Vol 05 issue 08*, 54-57.
- Newman, C. (2004). Information Technology Outsourcing Industries in the BRICS Countries – A Comparative Assessment.
- Nicholson, B. a. (2012). In formation Systems outsourcing :A literature analysis:. *Global IT outsourcing :Management of software :An international Jopurnal*, 3832-3840.
- Nowduri, S. (2014). Management Information System research for small and Medium Enterprises :A sustainability Perspective . *International Journal of Software Engineering and its Applications vol.8 No.8* , 201-208.
- O.Martikainen,P.Tyrvaainen,E.Luoma. (2009). *Reasons for ICT services outsourcing*. Information Technology Research Institute.
- O'Brein, A. J. (2010). *Management Information System*. McGraw Hill.
- Perry and Yu chen . (2003). Information Technology outsourcing : Aprimier for Health care mnagement.
- R.Johnston, C. (2009). *Some Reasons for Failed Information Technology outsourcing initiatives and how capital budgeting and value chain analysis can Help*. Texas: Midwestern state university.
- Richmond, M. (2011). The benefits of Outsourcing.
- Saini, V., Yen, D. C., & C.Chou, D. (n.d.). *Information Technology Outsourcing :Issues and Future Analysis*. Ohio: Miami Universit.
- Shifa, M. (2009). *Enhancing Governance for Financial Institusions :Issues and Barrieris*.
- Shifa, M. (2011). Enhancing governance for financial setors. *Birritu*, pp. 38-48.
- Siani, V. (2006). Information Technolgy Outsourcing:Reducing costs or Knowledge?
- Singh and Zack. (2006). Information Technology outsourcing :Reducing costs or Knowledge. *OLKC 2006 Conference* (pp. 1-31). Boston: University of warwick.

- Slaven and Blazekovic. (2007). Information System outsourcing in Croatia Central Banks: Developments. 259-270.
- Smojver and Blazekovic. (2015). Information outsourcing in Croatia Central Banks: Developments 2005-2012. *Economic Research*, 259-270.
- Smuts, H. (2009). *Critical success factors for Information systems outsourcing Management : A software Development Life cycle View*. University of South Africa, School of Computing.
- Soares, D., & Jose, A. (2014). A catalog of Information System outsourcing Risks. *International Journal of Information Systems and Project Management*, 20-42.
- Supervision, B. C. (2005). *Outsourcing in Financial Services*. Switzerland: Bank for International settlements.
- Tibour and Tukul. (2006). Outsourcing Decision Support : A survey of benefits ,risks and decision factors . *Supply Chain Management : International Journal*.
- Tinselboer, K. (2005). The present and Future of outsourcing : theory meets practice. *3rd Twent Student Conference* . University of Twent.
- Troaca and Bodislav. (2012). Outsourcing the concept. *Theoretical and Applied Economics*, 51-58.
- Ucar and Bilgen . (2012). Effectiveness of Information System outsourcing: An exploratory case study. *IADIS International Conference*, (pp. 383-387). Berlin.
- Vural, I. (2004). *Success factors in public Information system outsourcing : A case study*.
- W.Creswell, J. (2009). *Research Design; Quantitative, Qualitative and Mixed Methodologies Approaches*. Los Angeles: SAGE.
- Willcocks, L. (2013). Outsourcing Business Process for Innovation. *Mit Sloan Management Review*, 63-69.
- Yin, K. R. (2011). *Qualitative Research from start to Finish*. New York: The Guilford Press.
- Young-Mi Kim and Shaila Miranda. (2001). Information Technology Outsourcing as Organizational Sense Making in city governments.
- Zainal, Z. (2007). Case study as research method. *University of Technology Malesiya*.

## Appendix 1: Letter of Request

አዲስ አበባ ዩኒቨርሲቲ  
የተፈጥሮ ሳይንስ ኮሌጅ  
የኢንፎርሜሽን ሳይንስ ፋኩልቲ



ADDIS ABABA UNIVERSITY  
College of Natural Science  
School of Information  
Science

Date February 2, 2017

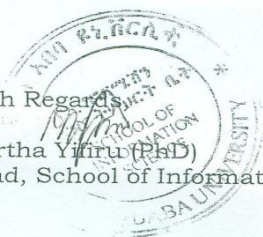
Ref: -SIS/35 /2017

To: National Bank of Ethiopia

Student Iyasu Teshome (ID. No. GSE/0107/07) is a graduate student at the School of Information Science, Addis Ababa University. He is currently conducting a MSc thesis research under the title "Outsourcing Information System Development in Banking Sector: Challenges & Benefits".

I would like to thank you in advance for all the assistance that you would provide to the student.

With Regards  
Martha Yifru (PhD)  
Head, School of Information Science



☒: 1176

☎: +251-(11)-122-91-91 ☎: 2122- 91-92

## **Appendix 2: Interview Questions, document and observation checklist**

### **Interview Question, document analysis and observation checklist guidelines**

- 1) Please begin by specifying your role in system development outsourced and for how many years are you been involved in the project?
- 2) Can you please tell us those types of the systems outsourced to external parties?
- 3) What are the basic reasons the bank outsourced its Information systems? Express them one by one?
- 4) Do you think all the system development function outsourced to external parties cannot be done by internal staffs?
- 5) Does the bank understood the importance of Information system outsourcing strategies and planned to have it in future?
- 6) What are the benefits the Bank has gained from out sourcing its Information system Developments? Specify them one by one from the perspectives of your system?
- 7) How the bank measures whether it has got benefits from Information system developments or does the bank identifies the success factors for outsourcing information system development for future use?
- 8) Are the users satisfied from the all developed system?
- 9) Does the bank have outsourcing strategies?
- 10) When the bank utilizes outsourcing strategies and do you think its importance understood?
- 11) Does the bank identify the types of challenges it will face while outsourcing Information system developments ahead of project initiation?
- 12) What are the challenges the bank has faced while outsourcing its Information system development function?
- 13) What types of outsourcing strategies the bank utilized to tackle the challenges?
- 14) Do you think the contract and service level agreements made are understood by the bank?
- 15) Do you think outsourcing is a solution for the bank to meet its objectives
- 16) Do you think outsourcing is a solution for the bank to meet its Information system need? If no, what other options do you propose?

## **B. Document Analysis**

- 1) Letters written between National Bank of Ethiopia and Vendors, Minutes, discussion made and Decisions passed by different committees.
- 2) TOR and Scope for ECRB.
- 3) Bid and RFP document for QBS, ECRB, HRMS, PSMS and FEMOS.
- 4) Contract and SLA agreement between National Bank of Ethiopia and Vendors.

## **C. Observation checklist**

- 1) The bank benefited from the systems as expected from outsourcing.
- 2) Some systems success can be taken as a model for other systems.
- 3) The bank faced and facing challenges from outsourced systems.
- 4) The system has been developed as per the requirements stated in the agreement.
- 5) All systems are successfully implemented within the scheduled time.
- 6) All the functions and interfaces are developed and interfaced with all systems, organizations and departments.
- 7) The outsourced system developed because of external forces.
- 8) Involvement of users was high in all the systems while outsourcing.
- 9) Business users and customers are satisfied with the system.
- 10) Trainings are given for the users and Information systems staffs and they are equipped with knowledge.
- 11) The bank has met all its objectives expected from outsourcing.

### **Appendix 3 List of Supporting documents**

- 1) Documents supporting some systems are outsourced because of External factors and both software and hardware's are contracted to a single company.
- 2) Documents supporting world bank is financing some outsourced systems.
- 3) Document supporting NBE outsourced its system to get new services.
- 4) Documents supporting inclusion of Microfinances and Insurances are in Request for proposal.
- 5) Minutes describing a bout the problem of systems outsourced to HRMS and PSMS Vendor
- 6) Report of users on different problems of HRMS and PSMS.
- 7) Report showing list of systems planned by NBE without strategy.
- 8) Letters and Minutes on the integration of FIRA with ERCA.
- 9) Documents supporting inclusion of Interfaces like HRMS but not actually implemented and types of training proposed by NBE but not delivered as knowledge for required staff.