Assessment of Project Implementation Challenges and Conceivable Means of Resolution in Replacing the New Core Banking System in Wegagen Bank S.C.

By: Azmeraw Gebeyehu

GSD/9598/08

A Research Project Submitted To Addis Ababa University School of Commerce in Partial Fulfillment of the Requirement for the Degree of Master of Arts in Project Management

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ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

MASTERS OF ARTS DEGREE PROGRAM IN PROJECT MANAGEMENT

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Approved by Board of Examiners

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Statement of Declaration

I hereby declare that the study which is being presented in this project work entitled "**Assessment of Project implementation challenges and conceivable means of resolution in replacing the new Core banking system in Wegagen Bank S.C.**" is original work of my own. It had not been presented for a partial fulfillment for any educational qualification at this university or any other and in any projects by any means, and all the resources materials used for this project work had been accordingly acknowledged.

Azmeraw Gebeyehu

Signature: _____

Date: _____

Statement of Certification

This is to certify that this project work entitled "**Assessment of Project implementation challenges and conceivable means of resolution in replacing the new Core banking system in Wegagen Bank S.C**." undertaken by Azmeraw Gebeyehu for the Partial fulfillment of the award of Master's degree in Project Management at Addis Ababa University School of Commerce. This is original work and not submitted earlier for any degree either at this University or any other University.

Advisor: Solomon Markos. (PhD)

Signature: _____

Date: _____

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I would like to express my gratitude to my advisor Solomon Markos (PhD) for the useful comments, remarks and engagement through the learning process of this study.

I would also like to thank the management of Wegagen Bank S.C. who has permitted me to make a study on Core banking system replacement project.

Finally I would like to thank the project manager and team members of the projects for dedicating their time in filling questionnaire regarding to the topic of the study which is the foremost reason that enabled me to finalize the study.

List of Abbreviation

ATM	Automatic teller machines
CBS	Core banking system
CIO	Chief Information officer
CORE	Centralized Online Real-time Exchange
CSO	Customer service officer
CSS	Customer service supervisor
eCRM	Electron customer relation manager
EDI	Electronic data interchange
ETF	Electronic fund transfer
GPRS	General Packet radio service
HRM	Human resource management
ICT	Information communication technology
IS	Information system
NALA	Ethiopian national archive and library agency
NBE	National bank of Ethiopia
POS	Point of sale
QA	Question and answer
QC	Quality control
RBI	Research based institute
ROI	Return on investment
SD	Standard Deviation
SPSS	Statistical Package for the Social Scientists
TCO	Total cost of ownership
US	United States
$\bar{x}$	Mean Score

Abstract

The purpose of this research is assessment of implementation challenges and conceivable means of resolution in replacing the existing core banking system in Wegagen Bank S.C. Thus the researcher came up with a major research gap of which driving factors are pushed banks to replace the CBS, what factors having implications on project success and finally what are the strategies to avoid or reduce the challenges on the project progress. Raising research questions on the driving issues of CBS replacement project, different challenging factors on the process and overcoming strategies on the project progress were entertained to fulfill the objectives of the study. The data collection tools were questionnaires. The study was conducted on a census survey. Research questionnaires were distributed for all 32 members in the project office and individuals who participated in the data cleaning and migration process at branch level and 28 were returned back on time. The response rate was 87.5%. The findings of the study revealed that there is a drive factors that Wegagen Bank S.C. are replaced their core banking system (Omni Enterprise CBS) by the new Oracle Flex Cube Core banking system. New customer centric strategies requiring new technologies, to cope up with competition and organic growth in customer numbers and product range are driving factors for the bank. Whereas, the findings reveled also that data migration, understanding the function of the new core system environment and complexity of legacy system integration are a major challenges for the project. Generally, the outcome of the research confirmed that good cooperation and communication with the implementation partners, close interaction of business and IT, training the staff on skill gap and the bank culture has positive impact on the core banking system replacement project. Finally, recommendations are outlined at the end on what actions should be taken to improve this practice.

***Key words**: Core banking system, Replacement, Implementation*

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CHAPTER ONE - INTRODUCTION

1.1 Background of the study

Information technology has been providing solutions to banks to take care of their accounting and back office requirements. This has, however, now given way to large scale usage in services aimed at the customer of the banks. IT also facilitates the introduction of new delivery channels in the form of Automated Teller Machines, Internet Banking, Mobile Banking and the like. Further, IT deployment has assumed such high levels that it is no longer possible for banks to manage their IT implementations on a standalone basis with IT revolution, banks are increasingly interconnecting their computer systems not only across branches in a city but also to other geographic locations with high-speed network infrastructure and setting up local area and wide area networks and connecting them to the Internet. As a result, information systems and networks are now exposed to a growing number (Khajeh, 2011).

(Marinc, 2015) determines that IT developments will drastically change the way banking business is done. Banks may be lured into investing in IT technologies that create cost efficiencies. We argue that relationship banking may still be the right path ahead. Human decision-making still has an advantage over computers in uncertain environment weakened by information problems. There, bankers might still prevail in a struggle with artificially intelligent systems. In this view, IT should be used to increase relationship banking. Banks can use new technology to acquire additional information about their clients and to empower their customers.

There is a great deal of interaction between the customer and the bank, and technology plays a major role in that interaction. For example, the self-service technologies such as ATMs introduced into the banking sector have become both well-known and popular, since they were readily accepted by customers, who recognize their advantages in terms of efficiency, convenience and cost reduction.

CBS of a bank, an engine of the eBanking, determines what a bank going to offer and how efficiently they can meet it. CBS developers are constantly adding new features to make banks enable and gain competitive advantages in the market. However, a CBS implementation project is, like all other large IT investment projects, costly, time-consuming and complex. Due to that,

only 25% of the CBS projects were successfully implemented and rest 50% experienced cost and schedule overrun and other failed (Adamson, 1999).

1.2 Statement of the problem

Commercial banks around the world are seeking to upgrade their core banking systems to improve competitiveness, operational efficiency, risk reduction and regulatory compliance. However, such initiatives are challenging for most institutions. According to (Chairlonc et al., 2009) determine a regulatory demands grow in intensity and financial institutions face a competitive and challenging environment, running a modern and efficient core banking system has become essential to continued success.

Most of today's Core banking systems were originally built in the 1970s and 1980s and after countless modifications and add-ons have become so complex and convoluted that it may be difficult to fully understand them (Adamson et al. 2003). This can make it hard for banks to comply with regulations and determine adequate controls.

Indeed, over time so much additional capability has been heaped on these core systems, and they must exchange data with so many other applications, that any change in the core systems architecture can bring with it unforeseen consequences. A small change in a program in the core application can cause another bank application to crash. In short, making changes to core systems is difficult, expensive and downright dangerous. Despite these shortcomings, banks have been forced to continue to maintain and develop new functionality into their core systems at considerable expense. Indeed, a majority of most banks' IT budgets is dedicated to maintaining their existing legacy core systems, including minor upgrades, small pieces of new functionality, as well as necessary maintenance.

Wegagen Bank S.C has replaced its six years old core banking solution in an attempt to build a robust database system and widen its capacity of serving clients. It was fully implemented in all of the Bank's 239 branches within two months. It cost the Bank over 200 million Br. The newly adopted solution is endowed with ample, integrated, interoperable and modular solutions that enable banks to manage budding customer expectations, according to Oracle, a US multinational company that has earned over 37.7 billion dollars in the past three quarters (AddisFortune, Oct 22 2017).

The new solution, known as Flex Cube, is procured from Oracle, a known international database and software supplier, replacing its old solution OMNI Enterprise Core banking Solution. The system has been implemented in many countries in Africa with several successes and failures alike. In Ethiopia, Dashen, United, Enat and Abay Bank employed a similar type of system from the same company.

The replacement is part of the strategy by Wegagen, known for its capitalization policy with the second highest capital in the country, to double its customer base and branches, thereby implementing a new solution that caters to the existing capacity of the Bank. At present, the Bank has over 900,000 customers double of what it was two years ago.

Various studies have been carried out in Ethiopia in the area of IT and the banking industry. Negalign and Lisanework (2016) did an analysis of the development of core banking system in Ethiopia: Challenges and prospects on the case study of Ethiopian Commercial Banks and Yonatan (2016) the effect of core banking systems on non financial performance of Commercial Banks of Ethiopia. But I didn't get a known study conducted on replacement of Core banking systems in Ethiopia.

1.3 Background of the organization

Wegagen Bank S.C. was established as per the intent of the new policy and the Ethiopian investment code. It comes to existence by 16 founding members on June 11, 1997 as Share Company with an authorized and subscribed capital of birr 30 million with a mission to provide efficient and customer focused domestic and international banking service, overcoming the continuous challenge for excellence through the appropriate technology. As at June 30, 2017, the paid up capital of the bank reached birr 2,072,112,000. The number of shareholders is now 2,349 and has a network of 213 branches at present.

Wegagen Bank has a network of 322 branches of which 180 are in Addis Ababa and the remaining 142 are located in other cities and towns of the country. To expand its service coverage, the bank keeps on opening additional branches both in Addis Ababa and regional towns. Besides noticeable improvement in financial results, the bank performed also well in areas of capacity building and business development. Moreover, it continued to expand alternative banking services through ATM, POS, Mobile and Agency banking.

Wegagen Bank provides different kind of services to its customers, to mention some of the major ones, mobilizes various types of deposits in which interest is paid monthly, credit facilities to business, investment establishments who are engaged in profitable business, establishment like manufacturing sector, international trade ,agricultural sector, transport sector and building construction sector. The bank also provides international banking services like purchasin and selling of foreign currency, opening letter of credit for importers, money transfer services, cashing VISA card and many other related activities.

Wegagen Bank is a pioneer to introduce a core banking system as of July 2000, thereby managing to network the Head office and all branches. Through its ISO standard Core banking system, the bank is now delivering more efficient services to its customers. The system has also enabling the bank to provide technology based banking services such as Card payment service (through ATM and POS), internet banking as well as mobile banking services. Last year the bank has acquired another core banking software called Oracle flex cube. Flex cube is a compressive, integrated banking application, with the power to seamlessly integrate financial institution across retail, corporate and investment banking, treasury and mutual fund operations. It also supports high end business intelligence, internet banking and internet brokerage functions (Louis Jude, 2003). Currently all of 322 branches are connected to the new core banking system.

1.4 Basic Research Questions

This study is answering the following research questions;

i. What are the factors led to replacement of the existing core banking systems in Wegagen Bank S.C?
ii. What challenges do Wegagen Bank face in the process of core banking systems replacement?
iii. What are the possible strategies to overcome the challenges in CBS replacement process?

1.5 Objectives of the study

1.5.1. General Objective of the study

The main objective of this study is evaluate the major leading and challenging factors of replacement of a core banking system project in Wegagen Bank S.C.

1.5.2. Specific objectives of the study

The specific objectives of the study are to investigate core banking system replacement in Wegagen Bank S.C. to;

i. Determine the drives to replace new core banking system.
ii. Determine challenges in core banking system implementation process.
iii. Determine the effect of organizational structure, human resource and technical competency factors for effective replacement of core banking system projects.
iv. Evaluate the strategies to overcome the challenges on CBS replacement process.

1.6 Significance of the study

The studies was find the leading factors of replacing the existing core banking system by the new one, especially those commercial banks when it replace the existing by Oracle core banking solution and indicates a mechanism to simplify the replacement process.

This study's findings were proving major challenges to face on the implementation process and possible resolution methods to overcome the existing factors. It was help to others to identify the problems that hinder on the replacement process. This study's finding was proving to be important to commercial bank management, other organizations in the country and even policy makers on the area of ICT.

The studies were also adding more knowledge on core banking systems and replacement of system thus making it of value to scholars, students and researchers. Core banking systems are known to be the backbone of any bank for the reason that this research is important for future researchers as a reference material to develop a literature framework.

1.7 Scope of the study

The scope of the study was bounded on the extent of identifying, describing and interpreting the project implementation challenges and conceivable means of resolution in Wegagen Bank S.C. by relating with literatures. Based on findings possible recommendations were given.

Geographical location was be delimited in head office IT department and Project implementation office; because the issues is rounded on ICT and core banking system. CBS implementation process and those CBS issues are administered centrally. So, the researcher is aimed better to concentrate on Head office.

1.8 Limitation of the Study

In order to finalize this study there were a number of limitations. The first and most important one is lack of cooperation from respondents to complete the questionnaire and return back. From the total of 32 distributed questioners 28 were return back on time. The remaining four respondents were not included on the study. This is mainly due to the workload in Project office and IT department. The other limitation was be lack of organized document of the progress of project and unwilling to disclose those lesson learned files.

The respondents were bounded on three offices. The findings, conclusions and recommendations are only limited to Wegagen Bank S.C. Core banking replacement project. In order to make generalization further research is highly recommended on the topic.

1.9 Organization of the Study

These research project works was have five chapters. The first chapter; deals with introduction, statement of the problem , research objectives and research questions, significance of the study, scope of the study and limitation of the study. The second chapter addresses the review of related literature to the topic of the study. The third chapter deals with the research design and methodology, sources of data, target population and tools of data collection and analysis. Under chapter four, result and discussions have been presented. And the last chapter (chapter five) contains the summary of the findings, conclusions and recommendations. In addition to these, references, and other relevant documents are attached to the last part of the research project.

CHAPTER TWO – REVIEW OF RELATED LITERATURE

2.1. Banking and Information & Communication Technology (ICT)

Information & Communication Technology (ICT) is the automation of processes, controls and information production using computers, telecommunications, software's and other gadget that ensure smooth and efficient running of activities. ICT has surpassed the role of support services or only electronic data processing; its fields of applications are slightly global and unlimited. ICT devices include data recognition equipment, factory automation hardware and services, telecommuting and teleconferences using real time and online system (Adeoti, 2004).

(Irechukwa, 2000) itemized that some bank services that have been revolutionized through the use of ICT as including account opening, customer account mandate, and transaction processing and recording. Information and Communication Technology has provided self-service facilities (automated customer service machines) from where prospective customers can complete their account opening documents direct online. It assists customers to validate their account numbers and receive instruction on when and how to receive their cheque books, credit and debit cards. ICT products in use in the banking industry include Automated Teller Machine, Smart Cards, Telephone Banking, Electronic Funds Transfer, Electronic Data Interchange, Electronic Home and Office Banking.

(Harold et al. 1995) contend that financial service providers should modify their traditional operating practices to remain viable in the 1990s and beyond, they claim that the most significant shortcoming in the banking industry today is a wide spread failure on the part of senior management in banks to grasp the importance of technology and incorporate it into their strategic plans accordingly, (Woherem, 2000) claimed that only banks that overhaul the whole of their payment and delivery systems and apply ICT to their operations are likely to survive and prosper in the new millennium. He advices banks to re-examine their service and delivery systems in order to properly position them within the framework of the dictates of the dynamism of information and communication technology.

2.1.1. IT project in banking sector and related challenges

There are a number of IT projects in banking sector. Both projects are linked with core banking system, but it is installed in supportive purpose. For example eCRM has developed for credit department when to processes customer relation management document.

The concept of CRM in the context that e-commerce becomes eCRM. According to (Lee, 2003) as cited by (Thuy et al. 2016) *"Taking advantage of the revolutionary impact of the Internet, e-CRM expands the traditional CRM techniques by integrating technologies of new electronic channels, such as Web, wireless, and voice technologies, and combines them with e-business applications into the overall enterprise CRM strategy"*.

(Thuy et al, 2016) identify eight factors of affecting the successful implementation of *e*CRM solutions in banking sector.

Thuy describes that eCRM strategy has a positive impact on success of eCRM. eCRM strategy is consistent with the development strategy of the banks, based on the mission & core values of banks. Top management commitment is another factor for this project; vision determination, a willingness of senior management of the bank to provide adequate and necessary resources in the process of implementing and operating *e*CRM.

Business process has proportional impact on IT project. Enterprises must constantly change in the design of business process to meet the continually changing needs of customers based on behavioral information and feedback of customers. Competencies, skills and experiences of consultant team will give a solution, or persuade banks to use the solution, and direct bank's staffs perform solutions in the business procedure of the bank.

According to (Thuy et al, 2016) the banking culture has positive impact on the project success or failures. Cultural environment have great influence on the success of the Bank's development as well as success in implementing any solution by the collaboration, sharing, consensus in implementation. Data quality has another impact that the input data are complete, accurate, consistent and timely to ensure system provide valuable information; therefore, quality of input data affect greatly the success of eCRM.

Technological infrastructure has a vital role in IT projects. Infrastructure, systems and communications network related to the operation of eCRM will directly affect the operation of system, whether it ensures stable, timely or not. Monitoring, controlling, measuring in the process of implementation and operation has the last factors on the project. Operation of policy system, surveillance and measurement is a feedback channel evaluating system, thereby having improvements and timely adjustment.

2.1.2. Failure and Success Factors in ICT Project

(Davies, 2017) set down the failure factors of ICT project. The common reasons are delay in deadline, cost overburden and some of the projects will not reach the expectation levels. There are six types of IS failure are identified by Davies. These are technical failure, environmental failure, project failure, developmental failure, organizational failure and user failure.

Failure factors in ICT projects

Barriers can be considered as those occurrences that hinder ICT implementation. Some of those factors for failure are IT infrastructure, skilled personnel on the area of information system, availability of finance , leadership style or culture, poor data system and lack of compatibility and attitudes.

(Davies, 2017) listed ten critical success/failure factors on information technology projects. These factors are information factors relating to provision of content, technical factors such as user friendliness of hardware and software, the capacity of use different hardware and software platforms, people factors such as availability of knowledge persons, proper guidance in use of hardware and software, management factors which is proper administration and organizational practices for bringing the required modifications through ICT projects and process factors such as desired changes or to make the project successful in reaching its objectives a new process will design.

Cultural factors, such as improvement in organizational culture for successful implementation of new projects, structural factors that structural inflexibility in traditional organizational structures that may be a cause for failure of ICT projects, strategic factors that cover a wide range of services, political factors which is political and stakeholders support and environmental factors

that changes in the overall external environment of the project are the last five critical factors who listed by Davies.

The ten critical factors are categories into seven critical dimensions: they are Technology, Information, Processes, Objectives and values, Staffing and skills, Management and structures, and other resources.

Inhibitors of ICT project

(Davies, 2017) states inhibitors do not necessarily prevent the implementation of the ICT projects but they do prevent advancement and restrict successful implementation and sustainability. Some of these failures factors are user needs, policy and procedure on ICT, technology, transfer of ICT idolizers, coordination between different stakeholders and donor push.

(Chaamwe, 2017) identify four barriers as inhibitors to the sustainable implementation of ICT; as a subject particularly in Zambia. These barriers are cost of general ICT Infrastructure, lack of knowledge, skill and qualified teachers to teach ICT in schools, high cost of implementation and poor timing and poor planning.

Enablers of ICT project

Even in developing countries, there are several active elements present in society, which help overcome the potential barriers. (Chaamwe, 2017) listed five major factors on ICT projects. These are effective project coordination, open source software, availability of skills and training, good practice and change management.

2.2. Core banking system

Core banking refers to a centralized system established by a bank which allows its customers to conduct their business irrespective of the bank's branch. CORE is an acronym for "Centralized Online Real-time Exchange", thus the bank's branches can access applications from centralized data centers (Khanvilkar, 2016).

By core systems, we mean those applications responsible for the crucial task of processing and posting transactions of performing deposit accounting, maintaining loan accounts, keeping securities positions, clearing payments, etc. These systems form the backbone of a bank's

technical infrastructure, and constitute a mission critical element in the financial services industry. Simply put, without core banking applications, most banks would instantly come to a grinding halt. Core banking system is a solution which reduces manual work and increases efficiency. It is an application which is accessed by all of a bank's branches and manages customers' accounts (Shernish, 2011).

2.2.1. Core Banking Services and Products

Core banking products and services are methods used by banking organizations to carry out their transactions at a center through centralized banking services. These services include;

- ✓ Internet banking

Internet banking is an electronic payment system which enables customers to conduct financial transactions without referring to the bank, just through their PCs or communications networks (Taghavi et al. 2012).

- ✓ Automatic teller machines (ATM)

Automated teller machine is an electronic telecommunications device that enables the customers of a financial institution to perform financial transactions. ATMs are often located inside a specific place which may be accessible 24 hours a day (Maleki et al. 2010).

- ✓ Point of sale (POS)

Point of sale is the place where a retail transaction is completed. It is the point at which a customer makes a payment to the merchant in exchange for goods. At the point of sale the retailer would calculate the amount owed by the customer and provide options for the customer to make payment (Habib et al. 2011).

- ✓ Mobile banking

Multidimensional services such as GPRS which are accessible through mobiles enable customers to conduct financial transactions like getting account balance and financial statement, requesting check and transferring from one account into other accounts (Farnoud et al. 2008).

- ✓ Electronic money

Electronic money involves the use of internet or other networks to store or transmit money. This type of money can be stored on smart cards or computer's hardware. Electronic money falls into different types as follows: electronic card, electronic wallet, electronic check, digital money, and virtual card (Maleki et al. 2010).

2.2.2. Benefits of upgrade Core Banking System

Benefits of an upgrade project span the functional and technical as well as cost savings and efficiencies. (Temeneous, 2017) describes detail benefits which realized from upgrade projects. Functional benefits of upgrading CBS are new modules and latest enhanced functionality supporting business innovation and expansion, re-engineered business processes including model bank best practice and enabling streamlining of operations and functionality to support rapid development and launch of new products, with business agility to respond quickly to market and customer demand.

Technical and operational benefits on CBS upgrading are improved architecture, scalability and system performance, simplified and easier access to new product updates and periodic fixes, access to latest technology platforms from our key technology partners, new and improved performance monitoring tools and consoles and reduced operational risk from old systems and customizations.

Cost benefits related to upgrading core banking system are unlocking the benefits from your investment in Core Banking, reduced TCO through business and technical efficiencies and no extended maintenance costs.

2.2.3. Leading factors to replace the existing Core Banking System

During the last few years, banks across the world have turned their attention to the need to replace their legacy core banking systems with solutions that are functionally and technologically superior.

(Ramakrishnan, 2008) determine the key reasons for banks to move to a new core banking solution. The first and most important one is legacy systems do not allow banks to manage the growth in business. This has become an issue of strategic importance in a merger and acquisition scenario. The second reason is a disparate set of application components undermines the efficiency of the overall solution architecture. Loss of competitive advantage is another factor to replace the CBS system. Commercial banks are updating their Core system to increase the competitive advantage on the banking industry. Lastly, governance, risk and compliance issues are pushed banks to replace the core system continuously.

According to (Dawson et al. 2008) CBS replacement has driven by an external and internal pressure. An external pressure to replace the CBS is also being driven by a number of market forces and external pressures. This includes increased regulatory requirements: In recent years, financial institutions have experienced a significant increase in regulatory requirements. To help ensure the integrity of their regulatory reporting, banks must confirm that their systems are properly integrated. The second external factor has increased competition: Banks face increasing pressure to bring new functionality and products/services to market quickly. Existing IT systems hinder product development and time-to-market because every new product requires custom coding and significant integration effort. And the third one is increased customer demands: Customers want to purchase products and view accounts across applications, channels and geographies. The challenge of integrating ancillary solutions with today's heavily customized core systems can hamper a bank's ability to provide customers with a unified view of their financial information.

Internal pressures driving banks to replace their core systems include need for greater system flexibility: Expansion into new geographies and new product lines requires a platform that is flexible and easily extensible. Outdated and costly systems and processes is another internal factor for banks. Many banks are still running on technology developed in the 1970s and 1980s. Front and back office staffs often face redundant tasks and inefficiencies, including excessive processing, re-keying of information and slow system response times. The third driven factor is need for improved system stability: Legacy systems are performing poorly in response to today's complex demands, which include expanded data volumes and proliferation of product lines and channels. Diminishing legacy technology skills has the last internal factor stated by Dawson.

(Capgemini, 2014) believe that Core banking replacement is driven by the need for responding to internal and external business drivers. Internal business imperative, such as growth and efficiency are product and channel growth. There are an increasing number of products to cater to different customer segments. Furthermore, the number of channels is expanding with time, which is increasing the complexity of multi channel banking. Legacy system management is another internal business driver. As legacy technologies are fast becoming obsolete, fewer resources are available with knowledge on legacy technologies and banks are forced to move to new technologies. The introduction of these new technologies provides banks with real-time

system, flexible business process setup and reduced platform costs through hosted and cloud based solutions. Cost reduction is a major driver to replace the existing core system. Banks looks to improve internal IT efficiency in the current macroeconomic environment, they are turning to core banking systems transformation as a way to gain more internal cost saving. External business imperatives, such as regulations and competition are the same with (Dawson et al., 2008) concept**.**

2.2.4. Evaluation criteria of selecting the core banking system

A change in core banking system can have a significant impact on banks and can be a career-altering event for CIOs. Not unlike other high visible projects, the success or failure of core banking system replacement projects can often be traced back to the due diligence efforts performing during the evaluation process (Free, 2011).

Gartner's extensive research of bank requirement and core banking system selection projects have identified eight key criteria that have the most impact on core banking decisions. The first is functionality of prospective applications. Functionality of prospective applications is a critical step in core banking system discovery efforts, there are other equally important areas of discovery such as the core application's capacity to align with future marketing participation and at a bare minimum, review the marketing, review the marketing plans that span the next three years if they exist. Secondly are flexibility of core banking solutions should provide flexible that includes applications connectivity and data integration, workflow and component based architectures. Cost is the third important criterion, but it does not solely define the true value of IT investments. A more practical measure is the business value of IT, which takes into consideration ROI, as well as other important factors, such as strategic alignment, architecture, risk and business process impact. Fourthly the viability of a vendor is a crucial element in the search for replacement system. In this consolidating core banking system market, it is especially important that banks assess the likelihood that a given product will survive an acquisition how likely is it that the new owner will keep supporting and investing in that package. Operational performance is a fifth measure for selecting the CBS systems. Design elements associated with scalability, resilience, data centralization and real time enablement have true business value and merit special attention. Program management, partner management and customer references are the last three criteria's for selecting the core system on the market. Vendors will have their

targeted list of references for use in the sales cycle. However, banks should be aware that the banks on these lists often receive preferential treatment from the vendor.

(Sandmann et al., 2018) states four main success factors should be taken into account when selecting a core banking system:

Focusing on the relevant solution scope

Many solutions can be discarded simply by applying a small number of exclusion criteria (e.g. references in the relevant market segment, operating system offered, etc.) connected to an institution's core requirements. It is recommended to limit the relevant solution scope at an early stage and to compare only the remaining two to (at most) four options in as much detail as possible regarding the fulfillment of the requirements.

Comprehensive look from all perspectives

Implications for IT architecture, organization, costs as well as strategic aspects should also be looked at. For this purpose, a comprehensive catalogue of requirements and assessment criteria is necessary.

Close interaction of business and IT

Double staffing the roles of project and sub-project manager and establishing joint project teams made up of business and IT staff is highly recommended.

Bringing the organization on board

Small proportion of staff is directly involved in the selection project, broad and target group specific communication regarding the objectives and implications of the change in core banking system and the reasons for the final selection decision are important. By this means, uncertainties can be prevented and subsequent resistance reduced.

2.3. Core Banking System Replacement

According to (Roche, 2012) banks around the world face huge economic and regulatory challenges. New competitors are wooing customers with non-traditional business models. New platforms could sideline banks altogether. In addition, the pressure on banks to cut costs and build income has not and will not let up.

Core banking transformation refers to the replacement, upgrade or outsourcing of a bank's core banking systems which are an integrated suite of software applications for processing and posting of transactions and managing the accounting processes of settlement. These applications

perform mission critical operations for a bank related to accounts, loans, payments and securities and constitute the heart and backbone of the banks information technology (IT) infrastructure (Capgemini, 2014).

(Aggarwal, 2006) states to start an affective core banking replacement program, the bank must manage the expectation of all parties involved. Therefore we believe that it is very important to clearly understand what a core banking replacement really is. In some cases, a bank might not even need to change the CBS but just refresh an ageing front end system. In other cases, a bank might need to do both, i.e. replace the CBS and simultaneously replace the front end systems of the bank. Core banking system replacement is becoming a hot topic in banking sector because of the following perceived needs. The first and most important one is ageing technology infrastructure is increasingly difficult and expensive to maintain and support the current operational activities. Secondly no common customer view on the existing core system. Multiple customer views and complex processes are not easily integrated with the existing technology infrastructure. Thirdly no product factory: innovate, highly interdependent product bundles are not supported by the existing core banking system; it is laborious to launch new product and services and the last one is long development cycle: technological inflexibility demands lengthy development cycles.

2.3.1. Key consideration for success in replacing core banking system

In order to make core banking transformation a success, banks must carefully evaluate key business and technology parameters including vendors and integration partners (Capgemini, 2014). Capgemini grouped the success factors in internal and external consideration. Banks must evaluate their own ability to take on a large transformation project in a few key internal areas. Business goal is a major success factor on CBS replacement process. Banks must align their IT strategy to their business goals such as operational improvement, ROI, revenue growth and cost reduction. The second internal consideration on CBS project is stakeholders support. Strong leadership support and change management focus are critical for core banking transformation success. There should be effective communication and active management of stakeholders with well defined roles and responsibilities. Package selection is another important role on the selection process. The package selection process must also take into account the degree of maintenance support and customization required over a period of time. Vendor selection is the

last and most important ones. Banks must access vendor's tools, methodologies, business process models and past experience in implementing similar core banking transformation projects.

When working with vendors for core banking transformation project, banks should look at a few factors as an external consideration. Contract definition the first external issues. The contract should contain clauses on support and maintenance post-transformation, user training and transfer of training, service level agreements and quality assurance programs. Risk mitigation strategies for time and cost overruns should be included in the contract. Secondly managing expectation on the business case should be containing agreed upon measures on improved efficiency ratios, as well as agreed upon IT milestones over the transformation timelines. Communications roles and responsibilities need to be clearly identified for all stakeholders who are involved with the transformation project from the bank and from the vendor, so as to facilitate communication among all stakeholders.

Deployment strategy on a modular or phased approach to deployment significantly reduces the risk of core banking transformation. For a multi site implementation, a cluster based approach can mitigate risk over a single large rollout. Change management the fifth external consideration in order to make core banking transformation a success. The bank should put a strong governance mechanism in place and any scope change to requirements must be properly managed to prevent slippages.

2.3.2. Challenges on Core Banking System replacement process

Most core banking system implementations face challenges midway through the project. This can happen due to lack of coordination and communication between the vendors and the bank's project management team. According to (Kudav et al. 2013) inadequate information gathered during the requirement phase, inability of the banks to identify the important requirements and scope changes are additional challenges faced during a core banking system implementation.

(Capgemini, 2014) argue during a core banking replacement project, the risk and potential losses are very high due to data migration, integration of multiple process and the consolidation of multiple systems. Apart from the technological risk, there are various other implementation challenges associated with core banking transformation.

Time and cost management - core banking replacement projects usually have long project timeframes (spanning over years) and therefore there are inherent risks of slippages and cost overruns. Project governance structure and risk management should therefore be an inherent part of project management.

Measuring payback period - core banking transformation project usually have long term payback periods and therefore sometimes do not justify large upfront costs. It is therefore important to measure a core banking solutions return on investment (ROI) by measuring efficiency ratios, business process improvement and strategic gains.

Stakeholder management - it is a pre requisite to have buy-in from all internal stakeholders. Furthermore, since core banking transformation and replacement projects usually stretch into years, long term commitment from all stakeholders becomes essential to its success.
Resource requirement - it is important to adopt an appropriate transformation strategy that takes into account the available financial and human resources.

Change management - it needs to deal with organizational resistance to change, internal communication to all affected departments and retraining of IT and banking staff on the new system.

(Sandmann et al., 2018) states Migrations and especially a change of the core banking solution are amongst the most complex IT procedures. Managing the variety and complexity of the issues to be considered often at the interface of various disciplines (business, IT, regulatory, legal, etc.) represents a major challenge. At first glance, changing the core banking system primarily impacts the IT landscape. However, at the same time there are considerable implications for the business products and processes supported, costs of changing and running as well as future strategic options. Therefore, an informed decision on the 'right' core banking system has to take all perspectives into account.
IT perspective
The core banking system traditionally forms the "backbone" of the IT. It covers the main settlement functions and links the surrounding systems (satellites) via various interfaces. As a consequence, changing the core banking system bears considerable risks. Due to the sensitivity of the procedure it is necessary to obtain a complete picture of the system landscape and aside from the core functionality also take note of and assess the impact on surrounding functions and

systems. Taking into account all interfaces and satellites, a comprehensive target image must first be created and then implemented. The introduction and deployment of the new target system in itself is highly complex. For this kind of procedure, additional IT topics, such as the migration of data from the legacy system, cut-over management, data quality management and the archiving of data must be included in migration planning. On top of that, changing the core banking system is often accompanied by organizational changes within the IT. Especially in the case of changing from in-house development to standard software or from internal operation to an outsourcing model, the future service spectrum of the IT changes considerably. The required organizational changes must be assessed and implemented in parallel to the technical implementation.

Business perspective

Apart from the technical challenges for the IT, changing the core banking system often impacts the bank's service portfolio and the respective process organization. Every core banking system comes with its own standardized processes and functions that need to be customized, which leads to an increase in implementation and operating costs. In the course of selecting a core banking system it is therefore important to check in how far standard processes of a core banking system can be used or whether service reductions are feasible and in which cases a customized expansion may be sensible or necessary in order to hold on to competitive advantages. Especially when replacing custom solutions that are tailored specifically to an institution's requirements, significant process changes can be necessary.

Strategic perspective

A change of core banking system also brings up strategic questions. In particular, envisaged changes to the future direction of the business model, such as market positioning and product portfolio, must be included in the decision-making process. Conversely, in the course of a change in core banking system it is advisable to question the service and product portfolio in terms of costs, earnings and quantity structures and tidy it up in the sense of a proper "spring cleaning". Sometimes, the complexity and effort of a change in core banking system can thus be considerably reduced.

Economic perspective

Looking at costs, one of the decisions that need to be taken is which sourcing model (e.g. full service provider or merely outsourcing of the infrastructure) should be applied.

According to (Aggarwal, 2006) on the book of "Roadmap to successful core banking system replacement" report indicates the key challenges and critical success factors of CBS replacement project. The first is creating disruption on the bank operation and this lead to customer dissatisfaction and employees disappointment. Core system replacement or even upgrading is a major challenge that can create disruption of service, customer dissatisfying and employee disappointment. Transaction from one system involves not just technical complexities but a plethora of unforeseen problems in areas such as matching organization and change management. Secondly data cleaning and migration are a major difficulty on the replacement process. Some data may be very old and irrelevant. It also poses a significant risk of service interruption that can cause a dip in customer satisfaction. Resistance is another challenging factor for the project. Managing these emotions and ensuring that the project is not viewed as just an IT project would be a big challenge. Trained manpower has the forth and most influential challenge on the process. A few experts with the right experience and knowledge may prove to be more useful than an army of staff. Fifthly business environment, adaptability to change and commitment to the project are vital for success not just during implementation but also during and after deployment. Vendors should ensure that management is involved in the project from conception till final deployment.

(Alex et al., 2012) illustrate the major challenges of core banking system replacement on another end. Even though banks using the customized progressive approach have achieved great success, there can be challenges along the way, namely the following:

Roadmap is the first challenge for CBS replacement project: A roadmap with a long horizon plus a strong commitment of senior leadership to realize the roadmap. The roadmap should detail the progressive build of key architectural constructs and then retrofit the existing environment to use those constructs. Secondly, IT maturity with strong architectural discipline and technology governance must ensure that there is minimal non-compliance to standards. Banks also need an experienced pool of talent, including adept architects who can translate business objectives into architectural considerations in the roadmap. Thirdly, integrated development environment allows for tools to analyze the legacy environment and to identify assets that will be leveraged as well as those used for top-down service definitions. These elements are included in the design phase of the environment, which in turn provides the technology environment with the tools and technologies to build, integrate and test processes. Fourthly, governance provides a preemptive

view to risk and allows for proactive measures to mitigate those risks. Banks using federated governance, where pieces of architecture or application portfolio are owned and managed by different stakeholders, can have difficulty driving the transformation. Fifthly, strong architectural discipline: the architecture must be aligned at three levels of specificity: business, technology and infrastructure. At each level, changes to the architecture must be guided by architecture principles such as separating architectural concerns from data and externalizing business rules and logic.

(Laudon et al., 2012) describe the six key challenges of CBS implementation process. Functionality is a challenge on CBS projects. Capability of software has different functionalities to meet the requirements and expectations in the replacement of core banking systems. Another factor is reaching unanimity within the organization on what is needed mutual agreement of functional requirements within the management and the implementation team. Cost and financial terms are affecting the CBS replacement project. Information system's project costs also include the cost of hardware, software and workspace. Project management develops a budget for the project and monitors. Ability of the business to adjust to the new system, system flexibility and user friendliness of user interface are challenge the project on level of satisfaction that end-user feels about new systems.

(Imranadeel, 2009) describe that the problems of replacing core banking system are;

Lacks of knowledge about the proprietary technology - implementing people are not aware of the application and its underlying technology.

Lack of knowledge about the proprietary system - lack of knowledge poses a significant threat. Also, the application vendors are stretched themselves for delivery and cannot spend much time away from implementations and developing next versions/fixes/patches of the applications.

No QA Process - due to stringent timelines and over stretched resources, the implementers do not find it worth the while to have a QA process to ensure delivery as per the set standard; supposing that there were any defined standards at all.

Scope creep - occurs from the business users of the banks, as they do not have much idea about the new application and they are used to the older application. When they see things happening, that's the time when they realize that they didn't want things that way. That brings us to the next point.

Customizing towards the previous system - business users can actually make the new system look, feel and act like the old system. Worse, they may do it completely unaware. Therefore, this question must be posed at them time and again, so that they double-check everything before they ask for it.

Unrealistic timelines by banks - somehow each bank thinks that it has assessed the right timeline, and that it can handle things better. But as we know in the IT world, it is either late or it's not functioning.

Unrealistic timelines by implementers - to beat the competition and win the order, the suppliers of banking solutions also agree with the aggressive and unrealistic timelines that even they know cannot meet.

Lack of implementation resources (Functional and technical) - hits the implementers very hard. There are a lot of banks going for such solutions; locally as well as internationally.

Subjugating conditions on consultants/engineers - the implementer imposes such restrictive conditions on its people that many feel disgruntled and mistrusted. They look out for a chance to get out of there and they usually take that too.

Lack of IT resources with banks - the core banking solution vendors claim to offer lower overheads, advanced technology, lower maintenance costs etc. After all, such claims win the clients and especially their finance people, as they see IT as a big cost center instead of a strategic asset. Vendors are also aware of the fact that the banks will calculate a minimum of five years total cost of ownership (TCO) before they make any decision about a vendor and its solution.

Lack of experienced project managers - the project manager is expected to provide insight, skill, communication and foresight to steer the project in the right direction. While a project manager can bring skill and communication, if he/she is not from the banking area, the foresight, risk management and insight will be missing.

Missing comprehensive training programs - continuous trainings of fresh employees must take high priority in such cases. Application vendors and implementers are too stretched to move their consultants from clients to training labs.

No quality control - QC personnel's are picked up from the general IT industry, which means that they may not have the experience of the banking environment and applications. They may

not know or understand fully the requirements of a user. Also, it is possible that the QC personnel are hired after the requirements analysis is complete.

(Johny, 2016) explain a bank tends to face during implementation are numerous including technical challenges and business challenges. But more than the technical challenges it is the business challenges which have more impact on the organization. The following points are the major challenges for any CBS implementation project.

Prolonged project

The implementation project on average takes place anywhere between six months to a year depending, on the degree of customization required. If the vendor has in place good implementation processes, the implementation time can be reduced. Generally a few branches are chosen and networked under the new system and once all the issues are settled, it will be slowly extended to other branches of the bank.

Data migration; porting of legacy data to the new system

Since data is very crucial and secretive to a bank it is very important that the data is migrated from the current system successfully into the new system. Before the implementation the bank might share some of its data with the implementation partner for testing purposes.

Top management commitment

It is another aspect crucial for a successful implementation. The top management should be very committed and positive to the project. It should field its best employees from IT and business into the project and they should stay till the project is completed.

Ownership

Most of the bankers felt that core banking implementation is the project of the IT department. Technology department of most banks were not fully developed, this forced the management to depend on the external consultants for CBS implementation. There was always conflict between the bank IT team and the consultants.

Delay in finalizing the user requirements

There was a lot of delay from the bank side in finalizing the user requirements; this was mostly because of the inability of the banks to distinguish between “wish list” and “must-haves.”

Resistance to change

The banking staff’s preference for existing processes and their reluctance to adopt newer, out-of-the-box functionality processes from new solutions was a common problem in all the banks.

Resistance to change was mainly because the branch users were mostly not involved in the system development stage.

Expectation management

Stake holders at different levels have different expectations from the implementation of CBS.

Ambiguous roles and responsibilities

Change in the project management team at the bank level, during the project lifecycle; this often results in inadequate knowledge transfer, which in turn results in requirements and key issues not being addressed properly.

Coordination and communication

Many core banking transformation programs face challenges midway through the project due to lack of coordination and lapses in communication between the vendor and the bank project management teams.

Documentation

No proper documentation on the implementation process and the people involved. Lack of historical information on geographical customizations made on the legacy core systems has resulting in the existence of multiple versions of the legacy system.

There are six key challenges, according to (Das, 2015). The first one is legal and regulatory hurdles. There are restrictions on hosting data across international borders; some cross-border transactions may require prior approval while some may not be allowed at all in certain countries. Besides, some countries may have data privacy laws to hide customer data. Labor laws for banking services will vary in different geographies. Secondly technical challenges challenge the CBS replacement project in terms of availability of hardware and software support. Local interfaces such as clearing and settlement, payments, etc. may be different in different countries, which may require special hardware and software support. Thirdly geographical and cultural challenges include support for local languages and local practices (i.e. provide passbooks instead of account statements). The challenge lies in enabling the bank to adapt to both global and local practices and to find synchronization between the two. Lack of knowledge is another factor for CBS project. Employees implementing the core banking system face a steep learning curve in understanding new applications and the underlying technology. Often, the implementation team

is different from the original application developers; as such, the team might not have a holistic understanding of the intricacies of the application.

Stakeholder management has a vital impact on the replacement process at different levels have different objectives. The business analyst plays a vital role in managing the various stakeholders. To get the various business users to arrive at a consensus for defining the needs of the system is one of the biggest challenges in the requirements definition process. The last challenges which discussed by (Das, 2015) is Challenges in a multi-country environment. Conflicts may occur between internal group reporting needs and external statutory reporting requirements. Mergers and acquisitions initiated during the multi-country implementation may pose their own challenges. Banks need to adapt to the multiple evolving regulatory scenarios in a multi-country environment. A common mistake banks make is to find solutions to all regulatory changes in the core banking implementation, thereby risking the critical success factors of the program.

2.3.3. Success factors of replacing Core Banking System

(Aggarwal, 2006) states the most critical success factor in implementation is thus to test at every stage. Banks should develop pilot projects, divide large project into phases and conduct user acceptance tests or rather business acceptance tests to ensure a match between deliverables and expectation. Also critical is having strong internal teams with good communication skills and decisions making capability. There should be a strong steering committee with a clear objective to guide the project to successful completion.

In addition, it is important to provide user training and manage resistance to the change in process that accompanies such a project. There should be helpdesks ready to handle enquiries and complaints from users which are likely to be plenty. Along with processes, the work culture would also have to be changed to ensure optimal returns from the project.

Banks need to develop a detailed schedule of implementation and ensure its strict adherence at all levels. For a large bank with hundreds of branches, the project will be a multi-year initiative.
In many such projects, trained manpower for new system may not be readily available within the bank. It is for this reason that some banks have resorted to outsourcing their man power. But the

banks need to remember that a few experts with the right experience and knowledge man prove to be more useful than an army of staff.

Finally the bank's business environment, adaptability to change and commitment to the project are vital for success not just during implementation but also during and after deployment. Vendors should ensure that management is involved in the project from conception till final deployment. We cannot stress enough the importance of strong managerial support and business ownership for a replacement project which could go miles in motivating people in the organization to achieve success.

(Ragnar et al., 2013) state that general success factors are IT project management factors known from almost any software project. More importantly, specific success factors are those that apply in particular to banking standard software implementations. The general success factors are includes top management support, high motivation of project staff, rigid project management, early involvement of business units, mixed teams including IT and business functions, management of expectations and open communication.

Success factors not identified as such in studies on other industries and thus apparently specific to core banking software introduction were mainly: step-by-step introduction to control complexity and risk, thorough definition of requirements and target architecture, extensive test management, cross-project coordination to reflect the complex interdependencies typical of banking software support processes across business units, release management coordinating the roll-out of new releases across multiple modules and business units, good cooperation with the implementation partners and process redesign reflecting the standard processes as supported by the standard software.

(Imranadeel, 2009) explain the success factors of implementing new core banking system are;

Train your teams

Ensure that your teams are trained to the max. There must be functional as well as technical training delivered to your teams. There is no other shortcut; there is no other way. This has to be done. The teams have to be trained to the max.

Introduce quality assurance and quality control

QA and QC are different: QA deals with measures to ensure quality; it is proactive and is planned before the project begins. QC is reactive, and happens during or after the deliverables is churned out. There is a need of having people who could define the quality standards, with the help and input of business users.

Effective source and version control

While source control tools are available for modern languages, systems like Temenos T24/Globus come with their proprietary languages. You can still use version control software, and a procedure for file check-in and out.

Scope finalization

Things will always evolve. The users would think of new possibilities, or realize that they were mistaken in mentioning the requirements the way they did. Therefore, the requirements document will be a living document (if there is one).

Unrealistic timelines: Induce reality

The business people and users would want the application yesterday, and the implementers will promise it to be delivered somewhere around the same time. After all, they need to win the contract. You should know that things can and most probably will get delayed. While the implementer is the right party to give a timeline, we have experienced that they don't. They have to live up to their promise of delivering in a certain time-span. To avoid surprises, you must invoke reality.

Use some quality control tools

There is a wide variety of tools available in the market: IBM Rational, HP LoadRunner, Validata, FrontOffice Technologies and WebLoad. Use them to test your applications' operating limits. It may happen that one fine day your implementer may tell you that your hardware is not sufficient to meet with the computing requirements that your users have asked for in the form input validations and lists of values etc. At this time, you must verify the network usage, Disk IO, processor consumption and memory utilization of the application.

Keep an audit trail of requirements and features

Record every piece of information that related to the project, its modules and the user requirements. Use some tool to collect and classify information. This tool should be able to offer some bit of workflow for management approval of features and issues, some file management

ability to store docs, spreadsheets and images with features, assign priorities, offer a space for providing comments (for users, developers, analysts, QC people and management etc.), and keep track of progress. It should also provide you with reports about the pending, assigned, resolved and closed issues.

Take care of the human aspect of things

Ultimately, it is more of people management than technical management. If you have the right people, you should be able to pull through unscathed. Ensure that your team is performing at its optimum and there are no frictional issues between them. Keep the environment lively but professional.

CHPTER THREE - RESEARCH METHODOLGY

3.1 Research Design

This research was carried out using a descriptive survey design. The survey research design was applied to obtain the relevant data which was used to determine the drivers behind core banking system replacement, challenges that are encountered there to.

The research approach was being used quantitative approach. It was used quantitative research methods, because those required data were collected on closed ended question.

3.2 Types and Sources of Data

Both primary and secondary data was being use for fulfilling the objectives of the study. Structured questionnaire was designed to collect data pertaining to status of core banking replacement project, challenges and possible resolution methods etc.

3.2.1. Primary Source

Primary data were collected by means of structured questionnaires which are designed using five point Likert Scale and were distributed to Project Managers and project team members. The questionnaires were administered by the researcher during the study period.

To enable collecting the data which can supplement the data being collected in written format and to gather experiences of the bank in implementation of CBS, issues faced etc.

3.2.2. Secondary Source

Data available in various publications by RBI such as Trend and Progress report, various committee reports etc also there were be used wherever found appropriate. Further, the relevant information was being collected from libraries of NALA (Ethiopian national archive and library agency), Wegagen Bank documentation section, Internet, etc...

3.3 Target Population

The research conducted by a census survey. The total population of the study was the total number of 32 employees in the project office. All project team members were participated on this study.

3.4 Data Collection Instrument

In order to collect the intended amount of data, questionnaire and document review were use. The questionnaire contains closed ended questions. The main focus of the tools was to collect information about the practice of CBS replacement project and to answer the research questions. Questioners' format was prepared based on (Rahman, 2016) study and those questioners elements are listed by own from literature. Questionnaire was distributed for project office team members.

3.5 Data Distribution and Collection Method

The major technique was used to collect the data from the respondents were structured questionnaire which is developed using five points Likert Scale from No extent, little extent, Moderate extent, Great extent and Very great extent.

3.6 Research Ethics

Ethics are standards of behaviour that guide the moral choices about our behaviour and our relationship with others. All parties in research should observe ethical behaviour. Research ethics were put into consideration when develop and administer data collection tools and techniques, to avoid any form of destruction or violation. This was being done through obtaining consent before the research; ensuring confidentiality of data obtained and learning more about the organization's culture and project before the research and where necessary absolute sensitivity and caution was exercised.

3.7 Data analysis methods

Data collected using questionnaires were analyzed through descriptive statistics such as percentage, ratio, table Mean and Standard deviations was use .Statistical Package for the Social Scientists (SPSS) were use as a data analysis tool. It helps to describe what the data look like, where there center (mean) is, how broadly they are spread in terms of one aspect to the other aspect of the same data. The SPSS were used to find out percentages, mean values, frequencies, correlations, etc. as main means for summarizing the data. Validity and reliability were assessed by Cronbach's Alpha, the most common measure of scale reliability test.

Mean is the average of a set of data. It is determined by adding all the data points in a population and then dividing the total by the number of points. The resulting number is known as the mean.

(Rumsey, 2017) Determine the standard deviation that measures how concentrated the data are around the mean; the more concentrated, the smaller the standard deviation. Basically, a small standard deviation means that the values in a statistical data set are close to the mean of the data set, on average, and a large standard deviation means that the values in the data set are farther away from the mean, on average.

The standard deviation is affected by outliers (extremely low or extremely high numbers in the data set). That's because the standard deviation is based on the distance from the mean. And remember, the mean is also affected by outliers.

Finally the output of the SPSS result presented and interpreted in light of research objectives and literature review.

CHAPTER FOUR - DATA ANALYSIS AND DISCUSSION

4.1. Response profile

The questionnaire were developed using five points Likert Scales ranging; where 1 represents 'No extent', 2 'Little extent', 3 'Moderate extent', 4 'Great extent' and 5 'Very great extent'. Among the 32 (100%) questionnaires that were distributed to project office staffs and individuals who participated in the data cleaning and migration process at branch level; 28 (87.5%) questionnaires were filled and collected. Descriptive statistics were used to analyze the 28 questionnaires collected. The collected questionnaires are inserted in to SPSS version 21 in order to make a descriptive analysis of the data, which enabled to present using mean and standard deviation. The questionnaires used are attached to this research paper under Appendix section.

4.2. Reliability

SPSS 21 was used to calculate Cronbach's alpha in order to determine how reliable the data collection instrument (questionnaire) was over the data collected. Cronbach's alpha (α) < 0.6 indicates unsatisfactory internal consistency reliability (Malhotra et al., 2007) and Cronbach's alpha (α) > 0.6 indicates satisfactory internal consistency reliability (commonly accepted level) (Nunnally al., 1994). The finding showed that overall Cronbach's Alpha value is 0.85.

Table 4.1 Reliability result

Reliability Statistics

Cronbach's Alpha	N of Items
.850	98

4.3. General Information

General information of the respondents was based on duration in the bank and the project, prior experience on CBS project, level of education and their working department on the position held by the respondents.

4.3.1. Duration of Service of Respondents in Banking Industry

The study requested the respondent to indicate their duration in the bank. From the findings, 23 (82.14%) of the respondent indicated that they have been working for the bank for a period of three and above years while 5 (17.86%) of the respondent indicated that they have been working for the bank for a period of less than three years. Additionally 24 (85.71%) of the respondents are working for more than one and above years on the project. This points out that it is recommended to have experienced project team members to form a strong project implementation team.

4.3.2. Experience on CBS implementation project

The study requested the respondent to indicate their prior experience on core banking system implementation projects, from the findings, it was found that most of the respondents as shown by 16 (57.14%) of the respondents were don't have any experience on CBS replacement project. Majority of the participants are new for core banking system implementation project.

4.3.3. Level of academic qualification

The study requested the respondent to indicate their highest level of education. From the findings, 20 (71.43%) of the respondent indicated their highest level as bachelor's degree, whereas 8 (28.57%) of the respondents indicated their highest level of education as master's degree, this is an indication that most of the respondents engaged in this study had bachelor's degree as their highest level of education.

4.3.4. Participants home department

The study sought to determine the working department of the respondent and therefore requested the respondent to indicate their home department. The study found that majority of the respondent as shown by 16 (57.14%) were comes from operational staffs (branches), whereas 12 (42.85%) of the respondent were comes from IT department, this is an indication that both necessary departments were involved in this study and thus the finding of the study did not suffer from functional bias.

4.4. Driving factor to replace the core banking system

The study had an objective of evaluating the major factors that lead to core banking system replacement in Wegagen Bank. Respondents were required to rate the provided specific factors on the extent they had influenced the replacement of core systems. Rating was on a scale of 1 - 5 where 1 represented 'No extent' while 5 represented 'Very great extent'. Data was analyzed using mean scores and standard deviations.

Mean scores of below 2.5 were interpreted to indicate that the factor affected replacement on a **'Small extent'**, those between 2.5 and 3.5 were interpreted to be '**Moderate extent'** while those above 3.5 were interpreted to affect on a **'Great extent'**. The higher the mean score, the higher the extent the factor led to replacement of core systems in the banks.

Table 4.2; - Drives of the bank to replace the core banking systems

	Drives of the bank to replace the core banking systems	Mean	SD
1	Phase out technology	2.4286	0.79015
2	Better risk management and compliance	2.5714	0.79015
3	New customer centric strategies requiring new technologies	4.1429	0.59094
4	To cope up with competition	4.4286	0.74180
5	Outdated platforms and technologies that restrict adoption of new technologies and systems	2.7500	0.79931
6	Focus on efficiency	2.6429	0.78004
7	Cost reduction	3.0714	1.56178
8	To incorporate new and increased business	2.6786	0.86297
9	Greater focus on business banking and personalized service	2.7500	0.64550
10	Organic growth in customer numbers and product range	3.6786	1.09048
11	Merger/acquisition	1.4643	0.79266
	Grand Mean	**2.9643**	

Findings on factors leading to core banking systems replacement indicate that factors which greatly led to replacement included having new customer centric strategies requiring new technologies – ($\bar{x}$=4.1429) and to cope up with competition – ($\bar{x}$=4.4286). Another factors leading to replacement of core banking systems were organic growth in customer numbers and product range – ($\bar{x}$=3.6786). Other factors which had affected the core replacement decision to a moderate extent and those which had little effect are shown in Table 4.2.

Merger and acquisitions are not the reason for replacing the core banking system for this project, because the mean is ($\bar{x}$=1.4643). Mean score is less than to 2.5.

The research finding agrees with finding from (Ramakrishnan, 2008) and (Dawson et al. 2008) that determine loss of competitive advantage is a major drives to replace the new core banking system. Banks are facing increasing competitive pressures from new entrants such as online and direct banks running on new core banking platforms.

(Capgemini, 2014) Argue that new customer centric strategies are requiring new technologies, and this leads to replace the existing ones. Capgemini is determine traditionally banking has been product centric but now products have become commoditized. Banking is now more customers centric and there is a new focus on customer service, single view of the customer and relationship based pricing.

The finding also concur with finding from (Dawson et al. 2008) to determine organic growth in customer number and request of new banking products channel are pushing the bank toward replace the new core banking system.

4.5. Challenges on Core Systems Replacement

The study had an objective of determining the challenges faced by Wegageen bank s.c. in replacing their core systems. Some listed challenges from reviewed literature were listed and respondents were required to indicate the extent the bank faced the challenge. Rating was on a scale of 1 - 5 where 1 represented 'No extent' while 5 represented 'Very great extent'. Data was analyzed using mean scores and standard deviations. Mean scores of below 2.5 were interpreted to indicate that the banks faced the challenge on a small extent, those between 2.5 and 3.5 were interpreted to be challenges on a moderate extent while those above 3.5 were interpreted to affect the banks on a great extent.

Table 4.3; - Implementation challenges in CBS replacement

Implementation challenges in CBS replacement		Mean	SD
1	Capability of software to meet requirements and expectations	2.3571	0.91142
2	Reaching agreement within the organization on what is actually necessary	2.0357	0.74447
3	Ability of the business to fit the new system	2.3929	0.62889

4	Complexity of legacy system integration	3.2857	1.08379
5	Vendor capabilities and credentials during implementation	2.0714	0.81325
6	Cost and financial terms of hardware, software and workspace	1.9286	0.71640
7	Bank's business goals and alignment	2.4286	0.83571
8	Data migration	4.1429	1.00791
9	Understanding the function of the new core system environment	3.8214	1.02030
10	Expectation management	2.9286	0.97861
11	User friendliness of user interface	2.3571	0.95119
12	Change management	2.7143	0.93718
13	Scope creep	3.0357	0.96156
14	Customer acceptance	2.5357	0.92224
15	Organizational culture	2.3214	0.77237
16	Reliability	2.4643	0.96156
17	Security	2.3214	0.90487
18	Weak relationship with customers	1.9286	0.85758
19	On line user manual is available for the CBS	3.1429	1.60357
	Grand Mean	**2.6429**	

Results presented in Table 4.2 indicate that the challenges that were encountered by most of the banks included reaching data migration ($\bar{x}$=4.1429) and understanding the functioning of the new core system environment ($\bar{x}$=3.8214).

The research finding result indicate that Complexity of legacy system integration ($\bar{x}$=3.2857), Expectation management ($\bar{x}$=2.9286), Change management ($\bar{x}$=2.7143), Scope creep ($\bar{x}$=3.0357), Customer acceptance ($\bar{x}$=2.5357) and Reliability ($\bar{x}$=2.4643) are a moderate extent toward the implementation challenge. Other challenges which were reported on a small extent are as indicated in Table 4.3.

The findings from this study agree with those from (Aggarwal, 2006) and (Laudon et al. 2012) those determines data migration is a crucial challenge for core banking system replacement project. Some data may be very old and irrelevant. Mass migration requires large capital investment and an implementation schedule stretching over several years. Additionally, (Capgemini, 2014) dictate during a core banking replacement project, the risk and potential losses are very high due to data migration, integration of multiple process and the consolidation of multiple systems.

Another study that concurs with the findings from this study was by (Imranadeel, 2009) Describe Understanding the function of the new core system environment is a big problem. Implementing people are not aware of the application and its underlying new technology the project has subject to mess.

4.6. Challenges related to Human Resources Management

The study pointed the extent to which human resource management influences core banking system replacement. It also sought to identify to what extent various human resource and performance factors influence the success of core banking implementation.

Rating was on a scale of 1 - 5 where 1 represented 'No extent' while 5 represented 'Very great extent'. Data was analyzed using mean scores and standard deviations. Mean scores of below 2.5 were interpreted to indicate that the banks faced the challenge on a small extent, those between 2.5 and 3.5 were interpreted to be challenges on a moderate extent while those above 3.5 were interpreted to affect the banks on a great extent.

Table 4.4; - Challenges related to human resources management

	Human resource factor	Mean($\bar{x}$)	SD
1	Empowering employees to use the new system	4.1071	0.91649
2	Helps employees to deliver output timely	2.6071	0.78595
3	Helps employees to reduce errors	2.5714	0.83571
4	Helps to achieve greater flexibility in work	2.5000	0.79349
5	Enhance performance of the employees	3.9286	0.97861
6	Training to understand the system with functional and technical features	4.1071	0.95604
7	Team building and skill development activities	2.4643	0.57620
8	Top management support	2.3214	0.77237
9	Staff motivation and personal ownership	2.4286	0.63413
10	Employee resistance to change	2.1429	0.65060
11	The project team representation from different departments	3.7143	1.15011
	Grand Mean	**2.9903**	

The research finding has established that human resource management has a high influence on core banking system replacement project. For this to be effective, empowering employees to use the new system – ($\bar{x}$=4.1071), Enhance performance of the employees – ($\bar{x}$=3.9286), training to understand the system with functional and technical features – ($\bar{x}$=4.1071) and the project team representation from different departments – ($\bar{x}$=4.1071) was crucial.

This finding is agreed with (Imranadeel, 2009) who contends that lack of experienced project managers, missing comprehensive training programs, lack of IT resources with banks and missing comprehensive training programs are a major human resource challenge challenges on replacement project.

The implementation team is different from the original application developers; as such, the team might not have a holistic understanding of the intricacies of the application. The team members need to understand the intricacies involved in system management as well as project management knowledge.

4.7. Challenges related to Organization Structure

The study pointed the extent to which organization structures influences core banking system implementation. It also sought to identify to what extent various organization structures influence the core banking system replacement project.

Table 4.5; - Challenges related to Organizational Structure factor

Organizational Structure factor		Mean	SD
1	CBS replacement has change the future direction of the company business	2.0000	0.66667
2	Segregation of duties and responsibilities between stakeholders	2.5357	0.69293
3	The project can change the company working culture	2.0357	0.74447
4	Clear and enough authorization for project office on CBS process	3.6429	0.91142
5	Allocation of resource	1.8571	0.65060
6	No one confused about the boundaries between departments and project office. i.e IT dep't	3.2500	1.07583
7	Project team members are understand the chain of command	2.3214	0.86297
8	Formal communication of command	2.5357	0.74447

9	Enough authority on CBS replacement process	3.6071	1.10014
10	Delegation of power	2.3929	0.83174
11	Clear organizational structure (decentralization and formal)	2.3571	0.78004
12	Resource availability	2.1071	0.78595
13	Coordination and communication	3.6071	0.91649
	Grand Mean	**2.6346**	

The study requested the respondent to indicate their organization structure for project success, from the findings, it was found that most of the respondents as indicated the project has a clear and enough authority and authorization on CBS process participant – ($\bar{x}$=3.6429) and coordination and communication – ($\bar{x}$=3.6071) are crucial for this project success.

The findings from this study agree with those from (Aggarwal, 2006) to determine the project manager has enough and clear authority and authorization for project decision has better impact on CBS replacement project. Also critical is having strong internal teams with good communication skills and decisions making capability. There should be a strong steering committee with a clear objective to guide the project to successful completion.

Another study that concurs with the findings from this study was by (Johny, 2016) discuss that coordination and communication are a vital impact on organizational structure of CBS project. Many core banking transformation programs face challenges midway through the project due to lack of coordination and lapses in communication between the vendor and the bank project management teams. Additionally, (Ragnar et al. 2013) state that one of the success factors of IT project known from almost any software project are good cooperation with the implementation partners and open communication.

4.8. Challenges related to Technical Competencies

The study had an objective of determining the technical competency the CBS replacement project. Some listed technical factors from reviewed literature were listed and respondents were required to indicate the extent the bank faced the process.

Data was analyzed using mean scores und standard deviations. Mean scores of below 2.5 were interpreted to indicate that the factor affected replacement on a small extent, those between 2.5

and 3.5 were interpreted to be moderate extent while those above 3.5 were interpreted to affect on a great extent. The higher the mean score, the higher the extent the factor led to replacement of core systems in the banks.

Table 4.6; - Challenges related to Technical competency

	Technical competency factor	Mean	SD
1	Project team members have enough technical knowledge on Oracle core banking system	3.6429	0.98936
2	Stakeholders have better technical skill on CBS project	1.8929	0.68526
3	Prior experience on CBS implementation project	2.0357	0.79266
4	Project team comprised of individual with expertise and experience	2.1786	0.77237
5	Availability of the diverse skills required	2.1071	0.68526
6	Complexity of the replacement process	1.8571	0.80343
7	Project completion timelines	3.6857	1.01314
8	Availability of technical resource	3.3571	1.06160
	Grand Mean	**2.5946**	

The finding are indicate that project team members have enough technical knowledge on Oracle core banking system – ($\bar{x}$=3.6429) and unrealistic timelines – ($\bar{x}$=3.6857) have a very great extent on the core banking system process. Lack of technical resource – ($\bar{x}$=3.3571) has a moderate extent for the project process. Other factors which had affected the core replacement decision to a little effect are shown in Table4.6.

The finding also concur with finding from (Das, 2015) with technical challenges are a major factor for IT projects. Availability of hardware and software support may vary by country. Local interfaces such as clearing and settlement, payments, etc. may be different in different countries, which may require special hardware and software support. Regional language software support and specific levels of customizations are deterrents for core banking systems.

Another study that concurs with the findings from this study was by (Imranadeel, 2009) that is unrealistic timelines. Banks can set unrealistically ambitious timelines for the project completion. We have seen projects running into many years of delay due to any of the reasons we're discussing now. Somehow each bank thinks that it has assessed the right timeline, and that

it can handle things better. But as we know in the IT world, it is either late or it's not functioning.

4.9. Comparison of CBS replacement challenges

Wegagen Bank S.C. CBS replacement project has faced different challenges towards on the process of implementation, and it showed the problems grouped on Human resource, Organizational structure and Technical competency factors.

As a whole the grand mean of human resource, organizational structure and technical competency factors are shown on a moderate extent. The grand mean of human resource factors ($\bar{x}$=2.9903) has greater effect than organizational structure ($\bar{x}$=2.6346) and technical competency factor ($\bar{x}$=2.5946). This findings present human resource factor has a great challenge for the project. Empowering employees to use the new system, training to understand the system with functional and technical features and the project team representation from different departments have a higher mean score on the study. These factors have a very great extent on the process of replacement project. (Aggarwal, 2006) Focus on this issues when to determine that a few trained manpower more useful than any of other team members. Training for the implementer was enhanced the project team performance on technical and functional areas. The study finding indicates that Wegagen Bank CBS replacement project is challenged on human resource factor other than organizational and technical factors.

Organizational structure is a second factor relative to the grand mean score of others. Clear and enough authorization for project office on CBS process, enough authority on CBS replacement process and Coordination and communication between the project stakeholders have a great mean score on the research output. This finding indicates that Wegagen Bank organizational structure for CBS replacement project has a moderate effect relative to human resource factor. (Johny, 2016) Discuss that coordination and communication are a vital impact on organizational structure of CBS project. Many core banking transformation programs face challenges midway through the project due to lack of coordination and lapses in communication between the vendor and the bank project management teams. And (Ragnar et al. 2013) state that one of the success factors of IT project known from almost any software project are good cooperation with the implementation partners and open communication.

Technical competency was a third challenged factor relative to the above two. The study indicates that the project owner (Wegagen Bank) was better preparation on the technical competency factors. Project team members have enough technical knowledge on Oracle flex cube core banking system and project completion timeline has a great extension the replacement process. But as a whole, technical factors were ranked as a third level with human resource and organizational factors.

4.10. Strategies of overcoming the challenges

The study had an objective of determine the strategies to avoid or reduce the challenge on the process of core banking system replacement. Respondents were required to rate the provided specific factors on the extent they had overcome the challenges.

Table 4.7; - Factors Leading to successful Core Systems Replacement project

	Overcome strategies on challenges of CBS replacement	Mean	SD
1	Open communication	2.7500	0.70053
2	Extensive test management	1.8571	0.70523
3	Good cooperation with the implementation partners	3.6786	1.15642
4	Use some quality control tools	2.3214	0.90487
5	Avoidance	1.6071	0.56695
6	Competencies, skills and experiences of consultant team have a positive effect	2.7143	0.71270
7	Top management support	2.2857	0.76290
8	Close interaction of business and IT	3.6429	1.09593
9	Cross-project coordination to reflect the complex interdependencies typical of banking software support processes across business units	2.0000	0.72008
10	Scope creep	2.1786	0.72283
11	Training the staff on skill gap	3.8214	0.86297
12	Step-by-step introduction to control complexity and risk	3.1429	3.73883
13	Process redesign reflecting the standard processes as supported by the standard software	2.5000	0.69389
14	The banking culture has positive impact	3.9286	0.85758
15	Monitoring, controlling, measuring in the process of implementation and operation have positive impact	2.6071	0.56695
16	Bringing the organization on board	1.7857	0.62994
17	High motivation of project staff	2.6786	0.90487
18	Rigid project management	2.2143	0.68622
19	Early involvement of business units	2.1786	0.66964
	Grand Mean	**2.6259**	

Results presented in Table indicate that good cooperation with the implementation partners – ($\bar{x}$=3.6786), close interaction of business and IT – ($\bar{x}$=3.6429), training the staff on skill gap – ($\bar{x}$=3.8214) and the banking culture has positive impact – ($\bar{x}$=3.9286) are to avoid or reduce the challenge on the process of core banking system replacement. Open communication, Step-by-step introduction to control complexity and risk, monitoring, controlling, measuring in the process of implementation and high motivation of project staff has a moderate extent on the core banking replacement process. Other factors are affected the process on little extent.

The findings from this study agree with those from (Ragnar et al. 2013) agree that good cooperation with the implementation partners are a positive effect on the process on core system replacement project. And (Thuy et al, 2016) determines that banking culture has positive impact on the process of CBS project. The cultural environment in the bank have great influence on the general success of the bank's development as well as success in implementing any solution by the collaboration, sharing, consensus in implementation because the general goal of bank is the basic foundation for success.

The finding also concurs with finding from (Imranadeel, 2009) that train your teams are trained to the max. There must be functional as well as technical training delivered to your teams. There is no other shortcut; there is no other way. This has to be done. The teams have to be trained to the max.

Another study that concurs with the findings from this study was by (Sandmann et al. 2018) discus to close interaction of business and IT department has a strong impact for the CBS project. A sensible decision that takes all relevant aspects of a core banking change into account can only be made jointly by business and IT. In the context of project organization it is therefore important to ensure that there is no development of “parallel worlds”. To avoid this, double staffing the roles of project and sub-project manager and establishing joint project teams made up of business and IT staff is highly recommended.

CHAPTER FIVE - SUMMARY, CONCLUSION AND RECOMMENDATION

5.1. Summary

The study finding has indicates the major driving factor for replacing the existing CBS in Wegagen Bank has new customers centric strategies are requiring new core system technologies, to cope up with industry competition and the organic growth of customer number and product range. The above factors are pushed the bank to replace the previous core banking system (Omni enterprise) by the Oracle flex cube core banking solution. The research indicates that Wegagen Bank is implementing Oracle core banking system in terms of increase the competition advantage the banking industry, issued new banking product for customers and properly handling those customer information toward the growth of customer number in new branch expansion and new products.

During on the process of the project implementation CBS replacement project has faced different challenges due to human resource, organizational structure and technical competency factors.

Data migration is a big challenge for the project. Most of the previous core banking system data's are relatively old and irrelevant and it requires updated information to migrate to the new CBS. Other finding of this study has indicating that understanding the function of the new core system environment is a challenge for the project due to pull backward the project progress.

Human resource management factors are another section for this study to find out the challenges on the replacement process. Empowering employees to use the new system and enhance performance of the employees are major challenges. Other major factors are training to understand the system with functional and technical features and the project team representation from different departments.

The study finding indicates that Wegagen Bank organizational structure was challenged the project on the process of implementation due to the effect of clear and enough authority and authorization on CBS process participants and lack of coordination and communication between project stakeholders.

I observe that technical competency was a big challenge for core system and IT project for banks. Wegagen Bank CBS replacement project were faced the same problem on this project. The research output indicates project team members haven't enough technical knowledge on Oracle core banking system and the schedule was unrealistic.

5.2. Conclusions

The project implementations challenges and conceivable means of resolution was the main focus area of this research work and the following conclusions are made from the study objectives and findings. First, there are various driving reasons that make banks make the decision to replace the existing core banking systems. These include their technologies to enable adoption of new customer centric strategies requiring new technologies, to cope up with competition and the organic growth in customer numbers and product range. Other factors that included on a drive factor are need to incorporate new and increased banking business and cost reduction in today's banking.

Secondly, there are various challenges that Wegagen Bank face on the replacing process of their core systems. These include data migration, understanding the function of the new core system environment and complexity of legacy system integration are vital role on the process. Other major challenges during the implementation of CBS replacement project includes expectation management, customer acceptance, change management and available on line user manual for the CBS.

Thirdly, there are a number of human resource factors on CBS replacement project. This includes empowering employees to use the new system, enhance performance of the employees, training to understand the new system with functional and technical features and the project team representation from different departments. These factors are challenged the project on the process. Fourthly, clear and enough authorization for project office on CBS process, enough authority on CBS replacement process and coordination and communication are direct organizational effect on CBS replacement project. Organizational structures have a big role on the process of the project implementation progress. The study findings elaborate the issue as coordination and communication and enough authority and authorization for project participant

have a major challenge during the CBS replacement project. Fifthly, technical competency has a vital role on replacing the core banking system. Project team members have enough technical knowledge on Oracle core banking system and lack of technical resources is affecting the project.

Lastly, there are different strategies to avoid or reduce the challenges on the replacement process. These are good cooperation with the implementation partners, close interaction of business and IT, training the staff on skill gap and the banking culture has positive impact.

5.3. Recommendations

Based on the findings and conclusions of the study, the researcher forwards the following recommendations to commercial banks that have planned to replace the new core banking system and suggestion for other researchers and this study raised a number of research questions and developed hypotheses related to the study variables. The purpose of the study was to determine project implementation challenges and conceivable means of resolution in replacing the new core banking system in Wegagen Bank S.C. Based on the conclusions drawn above the following recommendations are forwarded for the concerned bodies:

Based on the findings of the study and above conclusions the CBS replacement projects are faced

- ✓ Data migrations are a big challenge for banks. Then commercial banks are prepared for clearing legacy system data's before data migrating process to the new core banking system. Some of the previous core system data's may include irrelevant and old type of information. This type of data's has to need more time for data migration and not easily integrating with the new core banking system.
- ✓ Training is a vital role for the process of replacing the new core system for commercial banks. The project team is well trained and they may have represented from different departments, avoid or reduce many challenges during the implementation process. Training for new core system are enhance employees capacity to use the new core banking system and empower the understanding of functional and technical features.

- ✓ Coordination and communication have a major role on the project implementation process. All project stakeholders are required the current information about the project progress. So, it needs a great attention to install the communication channel between the project participants. And again clear and enough authorization for project stakeholders is better for completing the project within time, scope and required quality of the project output.
- ✓ Lastly, banks that have not replaced their core systems should have plans to do so and should learn from the leaders. They should understand the challenges that those which have replaced their core systems have faced and be in a better position to roll out the replacement without many risks. Replacement of core systems to the latest level has been established to improve the bottom line: financial performance.

5.4. Recommendations for Future Studies

For future studies on use of core systems replacement, it is recommended that an intensive study should be carried out to find out which mode of dealing with core system is better to replace or update the existing core system. This is because in today's business environment, commercial banks are under pressure to survive on the banking industry. Many banks, however, have reached the limits of their ability to realize either of these goals, burdened by multiple, disparate, aging legacy systems that are expensive to run and inhibit the timely launch of new products. Core banking systems replacement has become an increasingly powerful option for helping banks achieve that goal. However, determining how and when to replace a core banking system is a big issue a bank will ever make.

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Appendix
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This questionnaire is intended to be used as primary data for Master's project work of my MA in project management at Addis Ababa University on the **Project implementation challenges and conceivable means of resolution in replacing the new core banking system in Wegagen Bank S.C**. As a member of this organization, your participation in this study will be valuable and greatly appreciated. Information gathered will be treated with utmost **confidentiality** and will not be used for any other purpose. The expected respondents of this questionnaire will be Professional staff of those randomly selected branches from each district in Addis Ababa area who are working in the position of Customer service officer, Customer service supervisors, Branch Manager, IT officer and project manager. The respondents will be expected to give accurate data to make proper analysis.

I would like to thank in advance for your cooperation.

I. General information

1. How many years have you worked for the bank?
   a. Less than one b. 1-3 years c. More than 3 years
2. How long they stayed on this project?
   a. Less than one b. 1 year c. 2 years
3. Have you prior experience on the CBS replacement project?
   a. Yes b. No
4. Level of education
   a. College diploma b. First degree c. second degree and above
5. Department
   a. Project Office b. IT c. Branch

II. According to your banking experience, what drives the bank to effect core banking system replacement? Rate the extent that the stated factors contribute to the decision to replace CBS using the following scale.

Factor		Rate				
		Very great extent	Great extent	Moderate extent	little extent	No extent
		5	4	3	2	1
Drives of the bank to replace the core banking systems						
1	Phase out technology					
2	Better risk management and compliance					
3	New customer centric strategies requiring new technologies					
4	To cope up with competition					
5	Outdated platforms and technologies that restrict adoption of new technologies and systems					
6	Focus on efficiency					
7	Cost reduction					
8	To incorporate new and increased business					
9	Greater focus on business banking and personalized service					
10	Organic growth in customer numbers and product range					
11	Merger/acquisition					

III. According to your banking experience, what challenges among the ones listed below, has the bank faced in its implementation of core banking system replacement?

Factor		Rate				
		Very great extent	Great extent	Moderate extent	little extent	No extent
		5	4	3	2	1
Implementation challenges in CBS replacement						
1	Capability of software to meet requirements and expectations					
2	Reaching agreement within the organization on what is actually necessary					
3	Ability of the business to fit the new system					
4	Complexity of legacy system integration					
5	Vendor capabilities and credentials during implementation					
6	Cost and financial terms of hardware, software and workspace					
7	Bank's business goals and alignment					

8	Data migration					
9	Understanding the function of the new core system environment					
10	Expectation management					
11	User friendliness of user interface					
12	Change management					
13	Scope creep					
14	Customer acceptance					
15	Organizational culture					
16	Reliability					
17	Security					
18	Weak relationship with customers					
19	On line user manual is available for the CBS					

IV. To what extent do the following factors on human resource influence success of core banking replacement process?

Factor		**Rate**				
		Very great extent	Great extent	Moderate extent	Little extent	Not at all
		5	4	3	2	1
Human resource factor						
1	Empowering employees to use the new system					
2	Helps employees to deliver output timely					
3	Helps employees to reduce errors					
4	Helps to achieve greater flexibility in work					
5	Enhance performance of the employees					
6	Training to understand the system with functional and technical features					
7	Team building and skill development activities					
8	Top management support					
9	Staff motivation and personal ownership					
10	Employee resistance to change					
11	The project team representation from different departments					

V. **To what extent do the following factors on organizational structure influence success of core banking replacement process?**

Factor		Rate				
		Very great extent	Great extent	Moderate extent	little extent	No extent
		5	4	3	2	1
Organizational Structure						
1	CBS replacement has change the future direction of the company business					
2	Segregation of duties and responsibilities between stakeholders					
3	The project can change the company working culture					
4	Clear and enough authorization for project office on CBS process					
5	Allocation of resource					
6	No one confused about the boundaries between departments and project office. i.e IT dep't					
7	Project team members are understand the chain of command					
8	Formal communication of command					
9	Enough authority on CBS replacement process					
10	Delegation of power					
11	Clear organizational structure (decentralization and formal)					
12	Resource availability					
13	Coordination and communication					

VI. To what extent do the following factors on technical competency influence success of core banking replacement process?

Factor		Rate				
		Very great extent	Great extent	Moderate extent	little extent	No extent
		5	4	3	2	1
Technical competency						
1	Project team members have enough technical knowledge on Oracle core banking system					
2	Stakeholders have better technical skill on CBS project					
3	Prior experience on CBS implementation project					
4	Project team comprised of individual with expertise and experience					
5	Availability of the diverse skills required					
6	Complexity of operation					
7	Unrealistic timelines					
8	Lack of technical resource					

VII. To what extent the following overcoming strategies are encounter the challenges on the process of CBS replacement

Factor		Rate				
		Very great extent	Great extent	Moderate extent	little extent	No extent
		5	4	3	2	1
Overcome strategies on challenges of CBS replacement						
1	Open communication.					
2	Extensive test management					
3	Good cooperation with the implementation partners					
4	Use some quality control tools					
5	Avoidance					
6	Competencies, skills and experiences of consultant team have a positive effect					
7	Top management support					
8	Close interaction of business and IT					
9	Cross-project coordination to reflect the complex interdependencies typical of banking software support processes across business units					
10	Scope creep					
11	Training the staff on skill gap					
12	Step-by-step introduction to control complexity and risk					
13	Process redesign reflecting the standard processes as supported by the standard software					
14	The banking culture has positive impact					
15	Monitoring, controlling, measuring in the process of implementation and operation have positive impact					
16	Bringing the organization on board					
17	High motivation of project staff					
18	Rigid project management					
19	Early involvement of business units					