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RESEARCH ARTICLE

Challenges and Prospects of Core Banking System Implementation in Commercial Bank of Ethiopia

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ABSTRACT

This study was conducted with the objective of analyzing the challenges and prospects of core banking system implementation in case of Commercial Bank of Ethiopia. The study has employed both quantitative and qualitative research design. The data used for the study was primary and cross sectional type of data. The data was collected through structured questioner. The determinant challenges of core banking system implementation project was measured by using quantitative project measuring criteria (in terms of cost, time and performance). Accordingly, the project was meet challenges in terms of budget and cost. Descriptive statistics was used to identify critical challenging factors of core banking system implementation. As a result, seven challenging factors were found in core banking system implementation, where as five variables were prospects contributed to Commercial Bank of Ethiopia due to the implementation of core banking system. Task interdependence, inexperienced consultants, Fear of past implementation experiences, Lack of sufficient training and re-skilling, Data migration problem, Poor IT infrastructure and Customization problem were found the challenging factors in core banking system implementation in Commercial Bank of Ethiopia. On the other hand, faster process and real time data, improved business process, Goals and objectives consensus, Support strategic planning and Increase customer satisfaction were identified as prospects of core banking system implementation contributed to Commercial Bank of Ethiopia. The other challenges Commercial Bank of Ethiopia faced in the core banking system implementation project were identified by using open ended questions were emanated from implementing bank and vendor supporter and external factor.

1.1. Background of the Study

The rapid advancement in Information and Communication Technology has had a ret1ective impact on the banking industry and the wider financial sector over the last two decades. It has now become a tool that facilitates banks' organizational structures, business strategies, customer services and other related functions. The banking sector was one of the first to embrace rapid globalization and benefit significantly from information technology development within the financial service industry. The technological revolution in banking industry started in the 1950s, with the installation of the first automated book keeping machines at banks. This was well before the other industries became information technology know-how. Automation in banking industry will became widespread over the next few decades as bankers quickly realized that much of their labor-intensive information handling processes could be automated with the use of computers (Jayamaha, 2008).

Financial institutions face intense competitive pressures. The industry is more global in nature today than it was even just a few years ago, as banking industries entered into new markets. Financial service providers that once targeted particular geographic regions now find themselves operating in new spheres, serving new customers and dealing with new competitors. Fonnerproduct or demographic specific organizations are moving into uncharted areas, adopting a more universal service approach and, in the process, opening the door to improved revenue opportunities and greater competitive threats. Customer loyalty is more important than ever financial providers increasingly aim to provide a wide range of products to better their chances of attracting and retaining clients in a fiercely competitive industry. Thus, these businesses need to operate as effectively as possible and they need technologies that will help them to accomplish these goals (Microsoft, 2009). Nowadays, the Ethiopian banking sector in general and Commercial Bank of Ethiopia in particular are increasingly going through a major and rapid modernization of their information

technology based solution to give better service for their customers. This illustrates that the role of information technology has become so integrated and pervasive with banking industry which is impossible to think banking industry without an effective information technology system in place. Having recognized the importance of information technology, Commercial Bank of Ethiopia has recently been launching different projects on information technology that has been expected to highly improve its service delivery and helps in achieving its vision. Of these, the newly introduce core banking system (integrated banking solution) is the one currently' implemented in many branches of the bank's.

1.2. Statement of the Problem

Banking systems are business enablers, which provide efficient service to bank customers. The organizational growth and customer touch points are mainly dependent on Information Technology used in banking Industry (Sadan, 2011). Therefore implementing a suitable banking system is a mandatory requirement for the banks to meet its organizational goals and aspirations. The successful implementation of information systems innovations remains a theoretical and managerial challenge. Academicians and practitioners alike have studied software implementation trouble. Anyone involved in a software implementation project knows about the stress, frustration, and disappointment experienced when the project exceeds its budgeted cost and preset time limit, let alone the deficiencies in expected functionality. There are many cases and statistics across time and industries that elaborate on software implementation challenges.

Amarasinghe (2008) evaluated the technology transfer based on core banking system changes in three local 'commercial banks in relation to a single vendor. The research identified the problems with all implementations, and provided particularly useful information related to banking system changes.

According to his research, one out of the three local commercial banks could not achieve their objective expected out of the project. It further

indicates that a considerable time overrun has taken place to complete all three projects. Harris (2001), claims that successful implementation of new technologies is particularly important in an increasingly competitive banking environment, where the major players are also under threat from new market entrants. This study cites three banks, where the technology transfer had failed with one being successful. According to the study the main reason for the failure was reluctance to learn from the mistakes of earlier projects. The considerable resources devoted to information technology projects rarely extended to measure the effectiveness, or to analyze why mistakes had occurred.

As far as my knowledge is concerned there is no research paper that identifies challenges and prospects of core banking system implementation in Commercial Bank of Ethiopia. With this in mind this project paper is intended to see the critical challenging factors influencing core banking systems implementation in Commercial Bank of Ethiopia and prospects contributed to Commercial Bank of Ethiopia due to the implementation of core banking system.

1.3. Research Objective

1.3.1. General Objective

The general objective of the paper is to analysis determinant challenges and prospects of core banking system implementation in Commercial Bank of Ethiopia.

1.3.2. Specific Objective

1. To assess the determinant challenges of core banking system implementation in case of Commercial Bank of Ethiopia.

2. To assess the prospects of core banking system implementation in case of Commercial Bank of Ethiopia.

1.4. Research question

This study going to address the following questions:

1. What are the determinant challenges (factors) for successful core banking system implementation?

2. What are the prospects of core banking system implementation?

1.5. Significance of the Study

Implementation of core banking system in both private banks and publically owned bank is a newly introduced concept in the country. Because of this fact, there is no research paper conducted on the challenge and prospects of core banking system implementation so far before this project paper. Therefore, the finding of this project paper helps Commercial Bank of Ethiopia in identifying critical prospects that contributed by core banking system implementation and challenges faced during implementation of the project. In addition, this project paper serves as source of material for those individuals and organizations who are interested to conduct their study on this area in the future.

1.6. Scope of the study

A typical core banking system project involves a diverse group of people selected across bank from technical, business and training & rollout departments of the bank. Therefore, the necessary and required information used for this project paper was collected from those staffs who participated in core banking systems implementation project.

1.7. Limitation of the Study

Some of the respondents did not willing or lack of interest to fill and reply the questionnaires. Lack of some documents which was critical for this project paper was not available because of confidentiality by the bank. The other limitation of the paper is lack of empirical literature review on the core banking system implementation in Ethiopia context.

2.1. Theoretical Review

2.1.1 Definition of Core Banking

Core banking is a banking service provided by a group of networked bank branches where customers may access their bank account and perform basic transactions from any of the member branch offices.

Core banking is often associated with retail banking and many banks treat the retail customers as their core banking customers. Businesses are usually managed via the Corporate banking division of the institution. Core banking covers basic depositing and lending of money.

Normal core banking functions will include transaction accounts, loans, mortgages and payments. Banks make these services available across multiple channels like ATMs, Internet banking, mobile banking and branches.

2.1.2 Core Banking Solution

Core banking solutions is jargon used in banking circles. The advancement in technology, especially Internet and information technology has led to new ways of doing business in banking. These technologies have reduced manual work in banks and increasing efficiency. The platform where communication technology and information technology are merged to suit core needs of banking is known as core banking solutions. Here, computer software is developed to perform core operations of banking like recording of transactions, passbook maintenance, and interest calculations on loans and deposits, customer records, balance of payments and withdrawal. This software is installed at different branches of bank and then interconnected by means of computer networks based on telephones, satellite and the internet. It allows the banks customers to operate accounts from any branch if it has installed core banking solutions.

Gartner defines a core banking system as a back-end system that processes daily banking transactions, and posts updates to accounts and other financial records. Core banking systems typically include deposit, loan and credit-processing capabilities, with interfaces to general ledger systems and reporting tools. Core banking applications are often one of the largest single expense for banks and legacy software are a major issue in terms of allocating resources. Strategic spending on these systems is based on a combination of service-oriented architecture and supporting technologies that create extensible architectures.

Core Banking Solution (CBS) is networking of branches, which enables customers to operate their accounts, and avail banking services from any branch of the Bank on CBS network, regardless of where he maintains his account. The customer is no more the customer of a Branch. He becomes the Bank's customer. Thus CBS is a step towards enhancing customer convenience through anywhere and anytime banking. Core Banking System or Core Banking Solution is a term that we hear very often these days. For IT and Banking folks, this doesn't need any explanation but for those who want to know a bit, here is a brief overview of what it means. Previously a bank's core operations such as keeping a ledger of various transactions, maintaining customer information, interest calculation of loans and deposits, adjustments to accounts on withdrawal and deposits of funds etc. were done manually. With the advent of ICT (Information Communication Technology), efforts were done to automate various banking processes using software applications so as to make them simple, efficient, effortless and cost effective. Thus, the platform where ICT is used to perform the core operations of a bank, like those mentioned above, is known as Core Banking System. Thus, Core Banking System has radically changed the way in which banks function. The greatest advantage of having a Core Banking System is that new features and functionalities can be easily added to the system that customers will have a whole lot of services that they can use. Electronic funds transfer between banks, online trading in the stock markets etc. are examples of this, which were unheard of in banks pre Core Banking System era.

Core Banking and Run the Bank are synonymous for most part. Core Banking is the meeting point of the largest banking services augment namely Retail and Commercial Banking, cutting edge Information Technology and the advancing Communication Technology. It is the heart of a modern financial service organization and is all about providing the banking customers with the right products at the right time through the right channels 24hours a day,7 days a week through a multi-location, multi branch network. Core Banking

Solution are banking applications on a platform enabling a phased, strategic approach the lets people improve operations, reduce costs, and prepare for growth. Implementing a modular, component-based enterprise solution ensures strong integration with your existing technologies. An overall service-oriented-architecture (SOA) helps banks reduce the risk that can result from multiple data entries and out-of-date information, increase management approval, and avoid the potential disruption to business caused by replacing entire systems. Core Banking Solutions is new jargon frequently used in banking circles. The advancement in technology, especially internet and information technology has led to new ways of doing business in banking. These technologies have cut down time, working simultaneously on different issues and increasing efficiency. The plat form where communication technology and information technology are merged to suit core needs of banking is known as Core Banking Solutions. Here, computer software is developed to perform core operations of banking like recording of transactions, passbook maintenance, and interest calculations on loans and deposits, customer records, balance of payments and withdrawal. This software is installed at different branches of bank and then interconnected by means of communication lines like telephones, satellite, internet etc. It allows the user (customers) to operate account from any branch if it has installed core banking solutions. This new platform has changed the way banks are working. Normal core banking functions will include deposit accounts, loans, mortgages and payments. Banks make these services available across multiple channels like ATMs, Internet banking, and branches. Previously banks core operations such as keeping a ledger of various transactions, maintaining customer information, interest calculation of loans and deposits, adjustments to accounts on withdrawal and deposits of funds etc. were done to automate various banking processes using software applications so as to make them simple, efficient, effortless and cost effective. Thus, the platform where ICT is used to perform the core operations of a bank, like those mentioned above, is known as Core Banking System. In Core Banking System, software applications record transactions,

maintain customer information, calculate interest on loans and deposits etc. The data, instead of huge ledgers, are stored in backend databases in digital form. Now, the same software can be installed in various branches of a bank and can interconnect through the internet or telephone lines to form a core banking network of the bank. The advantage, a customer can operate on his account from any branch of the bank and if the bank owns Internet Banking or ATM facilities, then the customer can operate on his account from virtually anywhere.

2.1.3. Measuring Project Success

To measure the success of the project, it is essential to have a project success measurement Criteria. The primary goal of any information technology projects would be to meet the business objectives by implementing a suitable software package. Bhatti (2005) has mentioned in his research work the importance of having clear success measurement criteria to evaluate success of information technology projects. Project Management Body of Knowledge (2004) indicates that completion of a project achieving project objectives and goals within the agreed time frame, and within the budgets at the successful completion of the project. Therefore, the project success of core banking system implementation in Commercial Bank of Ethiopia is measured based on the intended time, cost and functionality which is indicated in the following figure 1.
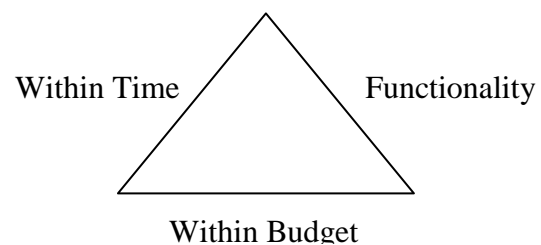
Within Time   Functionality

Within Budget

Figure 1: Measuring project success.

2.1.4 Determinants of Information Systems Implementation.

Any typical project related to acquiring a software system involves two phases namely;

software selection and implementation of the selected software. Selection of appropriate software matching the organizational goals and aspirations are an important aspect of the selection process, as failure in this phase alone could affect the success of the project. Evaluating the software to suit the organizational requirement is another key aspect in the selection phase. Learning from the experiences of the organization itself as well as from the experiences of other similar organizations would be helpful during this phase. Once the selection of suitable software is completed, the implementation could begin. The implementation strategy is largely dependent on the Software selected and the capabilities of the vendor. Many factors could affect the success of the implementation phase including the project management best practices and the way he/she managed the project, commitment of the vendor and the support of the top management and so on. Project Management Body of Knowledge (PMBOK) identified critical success factors that determine information systems implementation success. These critical success factors are indicated below in Table 2.1.Factors identified as critical success factors in information systems implementation were used as proxy in core banking system implementation project. Therefore, the success factors described in Tables 2.1 has been taken as a base for this study to analysis determinants of core banking system implementation in commercial bank of Ethiopia.

Table 2.1 Critical Success factors that determine information systems implementation

Number	Critical Success Factors
1	Top Management Support
2	Vendor Support and Commitment
3	End-user Training
4	Frequent Communication with Stakeholders
5	Project Management Best practices
6	Use of External Experience Consultants
7	Task Interdependence
8	Technical Complexity of the project
9	Clear Organizational Goals and objectives

2.1.5. Challenges of Information Systems Implementation

According to Welch and Kordysh (2007) there are seven key challenges for information systems implementations. These are:

2.1.5.1. Inadequate Executive Alignment: It is reflected in terms of lack of top management commitment to robust up front road map to guide the organization's change process exists.

2.1.5.2. Weak Post implementation governance: It is the situation in which Management fails to follow through and deliver continuous process improvement. Process managers/owners are not appointed, their accountability is ill defined, or they lack real power to make decisions. Weak decision making among process owners from different business units results in diverging process designs and systems configurations.

2.1.5.3. Lack of Focus on Business Processes: it is the situation in which Performance metrics and targets are not used or are poorly defined, resulting in weak linkage between the process design and the business case

2.1.5.4. End User Adoption Challenges: It is result from lack of adequate training indicating that Change management process for moving end users to new roles and new processes is inadequate. User-support structure and resources (e.g., no specialized competency center to carry on after initial super users migrate) are inadequate. In addition, there is no accountability and support for ongoing knowledge management and training.

2.1.5.5. IT Configuration Issues: it is the system in which roles and security are defined too rigidly, limiting the ability to access data and use system. The system involves too many screens and complicated menu paths for simple transactions, resulting in users operating outside the system. Data warehouse is not implemented, which limits effective, timely use of available data and finally, the system is heavily customized during installation, thus

handicapping upgrades and maintenance and making it difficult to keep pace with version upgrades.

2.1.5.6.Organizational Inadequacies: it is resulted from either the organization fails to implement changes in role definitions or organization design required to achieve the expected business case or the organization fails to address talent gaps (e.g., through recruiting and/or training).

2.1.5.7.Infrastructure Shortcomings: it is the situation in which operating costs are initially underestimated, thus weakening original business case. The system response time is slow, hampering adoption and eroding productivity.

2.1.6. Core Banking System implementation Challenges

The implementation process on an average can take anywhere between 6 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. This process is called 'going live'. The challenges a bank tends to face during implementation are numerous including technical and at a business level. But more than the technical challenges it is the business challenges like BPR that might throw a spanner in the implementation of CBS. Business Process Reengineering BPR basically implies that the current processes used to perform a function are inefficient. With the implementation of CBS the processes have to be aligned with the 'best of the breed processes' that comes along with the CBS. Hence BPR means review of current processes. It might be possible that a process can be scrapped altogether, combined with another process and make it a single process, replacing anentire process with a new process. All of this necessitates that the bank revisits each and every process, identify the bottlenecks and prepare for a change. Invariably implementation of CBS is accompanied by BPR and the banks must be ready for this change.

Another challenge is the 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. Saad (2011) identified the following challenges of implementing core banking systems: Inadequate executive alignment, Lack of focus on business processes, End-user adoption challenges, Organizational flaws or inadequacies, IT Configuration Issues, Infrastructure shortcomings, Knowledge transfer, Technology acceptance, Diffusion of innovations, Geographic distance, time separation, organizational differences, functional diversity, and cultural differences

2. Research Methodology

Research methodology deals with a systematic and scientific methods that can be adopted to solve research problems. Methodology is a crucial step in any research for the reason that it directly influences the whole research and its finding. Thus, this chapter describes in detail research methodology used in this project paper.

3.1 Research design

This section describes the research design which outlines the activities that were undertaken during the study. The study was conducted in 4 steps. Step 1 involved an in-depth literature review which familiarized the researcher with the previous research work on core banking systems. This provided direction on developing the survey instrument in step 2. A data collection instrument was constructed to collect data relating to challenges and prospects of core banking systems implementation. Step 3 involved administering the survey questionnaire whereby it was distributed to individuals who were involved in the CBS implementation project as stated in section 3.3. Finally, data obtained from the survey questionnaires was analyzed and inferences made.

Research design is a blueprint of research, dealing with at least four problems: what questions to study, what data are relevant, what data to collect, and how to analyze the results (Yin, 1994). In qualitative studies research design, data collection

and analysis are simultaneous and continuous processes (Bryman& Burgess, 1994).

Exploratory research: practical if you wish to clarify your understanding of a problem (Saunders, Lewis &Thornhill, 2006). Robson (1993, cited by Saunders, Lewis &Thornhill, 2006) describes exploratory studies as a method of finding out "what is happening; to seek new insights; to ask questions and to assess phenomena in a new light". .. Explanatory researchis useful when you wish to establish causal relationships between variables. The emphasis in this sort of study is to examine a situation or a problem in order to explain the relationships between variables (Saunders, Lewis & Thornhill,2006).Descriptive research: aimed at providing further insight into research problem by describing the variables of interest.

Qualitative research uses a naturalistic approach that seeks to understand phenomena in context-specific settings, such as real world setting in which the researcher does not attempt to manipulate the phenomenon of interest and only try to unveil the ultimate truth (Golafashani ,2003). McMillan and Schumacher (1993) defines qualitative research as primarily an inductive process of organizing data into categories and identifying patterns (relationships) among categories. Focusing on organizations in real life context enables the researcher to investigate certain variables in depth and thus provide better understanding of my research area. Hansen and Cottle (1998), propose that researchers should not only consider which is the most appropriate method for their study or problem but also what combination of research methods might produce a better and deeper understanding of it. Therefore, in this study the research approach adopted was explanatory and descriptive approach.

3.2. Type and Source of Data

The data employed in this study was primary and cross sectional type of data. For the purpose of attaining the objectives of the project paper and answering research questions both quantitative and qualitative data were utilized. As well as open ended question were used to obtain more information

related to the subject, which would enable researcher to produce qualitative analysis.

3.3. Data collection methods

Data collection is a precise, systematic method of gathering information relevant to the research purpose, or of addressing research objectives, and research questions or hypothesis (Bums & Grove, 1993). A lot of methods are used in data collection like survey, interview, questionnaire, telephonic, company report, people, internet, newspaper etc.(Goddard and Melville,2004). The emphasis in data collection is to develop research evidence systematically, searching for a broad array of evidence which looks for both confirming and disconfirming data (Hartley, 2004). Data may be classified as primary and secondary data. Primary data is collected by the researcher while secondary data is gathered from secondary sources. The researcher used questionnaires to gather primary data about challenges and prospects of CBS implementation. Selection of appropriate method or technique is an imperative criterion in research methodology. The data used for this project paper was collected through structured questionnaire. The questionnaire plays a central role in the survey process in which information is transferred from those who have it (the respondents) to those who need it (the users). It is the instrument through which the information needs of the users are expressed in operational terms as well as the main basis of input for the data processing system for the particular survey. Questionnaire is proven to be a suitable tool to collect data for survey based research as it allows the collection of large amount of data within a short period of time (Powel and Connaway, 2004).

3.3.1. Primary Data

This is data gathered by the researcher. As this data is collected by researcher, this makes it more expensive and time consuming than secondary method (Boba, 2005).

3.4. Sampling Techniques

Sampling techniques is one of the most crucial steps in any survey research. The primary objective

of the sampling is to select elements that represent accurately. The survey method used in this project paper was Convenience sampling. It is a non-probability sampling technique in which units are selected based on the easily access/availability. I preferred this sampling techniques because of lack the exact lists of the entire populations who participated on the implementation of the project to use probability sampling techniques. Therefore, convenience sample was used to gather data and information that would not have been possible using probability sampling techniques, which require more formal access to lists of the entire populations.

3.5. Method of Data Analysis

The researcher has employed both a quantitative and qualitative data. The interpretation is done with the help of frequency and percentage. Also, the data collected through open ended questions were presented and analyzed qualitatively by supplementing the data gathered through close ended questions, and categorized and discussed in line with close ended question. Each finding was interpreted and its organizational implication also addressed. In addition, modern statistical data analysis software called SPSS version 20 was used for analyzing data. After data has been presented and analyzed, the findings are used to draw the necessary conclusion and recommendations.

Data Presentation, Analysis And

4.1. General Information about Respondents

The background characteristics of respondents as referred to in this section deals with the presentation on the overview and number of respondents who filled the questionnaire for the study. This part gave general information about respondents like gender, age, educational level, service year and qualification. The demographic information enabled to have a better understanding on the respondents and the topic.

The demographic statistics shown in table 4.1 below show that the distribution of respondents by gender. As stated in the below table and figure 34% of the respondents were females while the remaining

66% were male. Majority of the respondents compromised of males. Participants were asked to indicate their gender by selecting the appropriate option provided (male or female).

Table 4.1: Response rate by gender

Gender	Frequency	Percentage
Male	33	66%
Female	17	34%
Total	50	100%

Source: own computation from survey data, June 2016

Figure 4.1 above summarizes the gender distribution of the respondents. Clearly this indicates that the sample population was dominated by male respondents. Table 4.2 below illustrates the distribution of respondents based on levels of experience in the banking sector. The researcher chose to consider respondent's level of experience in the banking sector, which is vital towards knowledge of banking operations and CBS.

Table 4.2 Experiences of respondents

categories(in years)	Respondents	
	Number	Percentage
1-5 years	6	12%
6-10 years	17	34%
11-20 years	26	52%
More than 20 years	1	2%
Total	50	100%

Source: own computation from survey data, June 2016

According to table 4.2 above, majority of respondents (52%) possessed between 11 – 20 years of experience in the banking sector, whereas 17 respondents (34%) possessed between 6 – 10 years of experience in the banking sector. Least of the respondents (6 out of 50) or 12%, possessed 1-5 years of experience in the banking sector, while 1

respondents (2%) possessed more than 20 years of experience in the banking sector. Clearly this indicates that majority of the respondents possessed above 5 years of experience in the banking sector hence more accuracy and validity of the research data.

Table 4.3 Educational background of respondents

Level of Education	Respondents	
	Number	Percentage
College Diploma	`1	2%
Degree	41	82%
Masters	8	16%
Total	50	100%

Source: own computation from survey data, June 2016

Educational categories of respondents as revealed in Table 4.3 shows that 82 percent of the respondents had bachelor's degrees. This is followed by those with master's degrees which constitute about 16 percent of the respondents. The remaining respondents were a diploma holder.

Figure 4.2 Age distribution of respondents
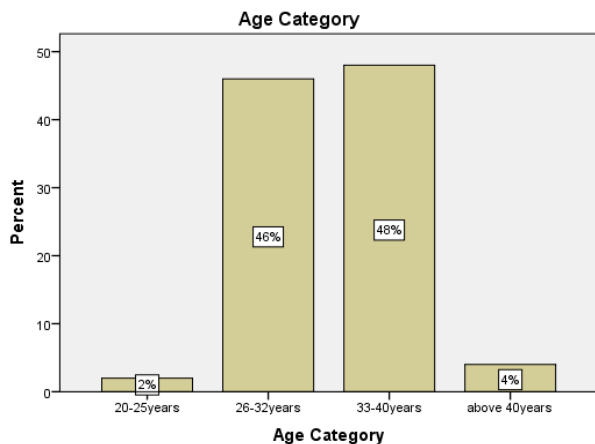
Source: own computation from survey data, June 2016

Respondents' distribution by age as depicted in Figure 4.2 above shows that about 48 percent of respondents were in the age group of 33-40 years, whereas about 46 percent of respondents were in the

age categories of 26-32years, and also 2 percent of respondents were in the age categories of 20-25 years. Meanwhile, the remaining 4 percent of respondents were above 40 years old.

4.2 Analysis of determinant challenges of CBS implementation

In this section, determinant challenges for successful CBS implementation is provided. The analysis is based on Likert scale, open ended and closed ended questions. This section of the chapter deals with presentation, analysis and interpretation of the primary data collected through questioner. Tables, graphs and percentages were used to analyze the data.

4.2.1 Core banking system implementation challenges in terms of cost, time and performance

An attempt was made to see challenges faced during core banking system implementation project based on the project measuring criterion. The three project measuring criteria (on budget, on time, and expected functionality) were used to measure the respondents' responses on the core banking system implementation challenge. Table 4.4 below indicates the outcome of analysis based on the respondents' responses. In terms of cost, depending on the perception of respondents, about 92 percent of respondents replied that the project cost more than its budgets, whereas about 4 percent of respondents respond that the project was implemented within its budgets (normal), and 4 percent respondents respond that the project was implemented less than its budget. Majority of the respondents had similar perceptions on the whether the project was implemented within its intended time or not. Accordingly 88 percent of respondents responded that the project took more than intended time, while only 12 percent of respondents replied that the project was implemented within its intended time.

Regarding the performance, about 46 percent of respondents mentioned that the overall performance of core banking system after implementation was as expected; whereas about 46 percent of the respondents responded that the performance of the

project was more than expected. To opposite of this, eight percent of the respondents replied that the overall performance of the project after implementation was less than expected. The research outcome indicates that a clear challenges of CBS implementation project measurements, which are not achieving project goals, within agreed time and budgets, but success on the criterion of performance. (See table 4.4).

Table 4.4 Perception of respondenton cost, time and performance

Challenge measures	Respondents		
	More than high	No rmal	Less than
Cost	46(92%)	2(4 %)	2(4 %)
Time	44(88%)	6(1 2%)	_
Performance	23(46%)	23(46%)	4(8 %)

Source: own computation from survey data, June 2016

4.2.2 Analysis of determinant challenges related to learning to use CBS has been easy for employees

This part covers the data presentation and analysis on learning to use CBS has been easy for the employee or not.

Table 4.5 perception of respondents on learning to use CBS has been easy for employees

Categoriz ation	Freq uency	Pe rcent
Disagree	13	26 %
Neutral	11	22 %
Agree	24	48 %
strongly agree	2	4 %
Total	50	10 0%

Source: own computation from survey data, June 2016

As per the respondents view concerning, whether learning to use CBS has been easy for the employees or not, 48% of the respondents replied that the learning to use CBS were easy for the employees. On the contrary, 26% of the respondents believe that learning to use CBS is not easy for the employees since it was completed system. On the other hand 22% of the respondents were neutral for their respond. Although the remaining 4% of the respondents strongly agreed on the learning to use CBS has been easy for the employees.

Thus, from the above table we can conclude that learning to use CBS by employees were not challenging factor for the implementation of CBS.

4.2.3 Analysis of determinant challenges related to CBS vendor support

First, we have to clear with the word "vendor support". It refers to the software firm that owns the package or an agent of that firm with qualified people to assist in the implementation of project. The vendor could also play an important role in training several super trainers from among the bank's employees who, in turn, would transmit the knowledge thus acquired to the rest of the users of the newly introduced CBS.

Table 4.6 perception of respondents on CBS vendor support

Categoriz ation	Freq uency	Pe rcent
Disagree	2	4 %
Neutral	11	22 %
Agree	27	27 %
strongly agree	10	10 %
Total	50	10 0%

Source: Own computation from the survey data June, 2016

Accordingly, as indicated in Appendix 10 below and Table 4.6 above, about 27% of respondents agreed the vendor supports to the CBS

implementation project. In addition, about 22% of respondents also neutral on the vendor supports to the CBS implementation project. Although about 10% of respondents strongly agree and 4% of respondents disagreed on this issue.

From this it is possible to infer that vendor support is not determinant challenges in the core banking system implementation.

4.3.3 Analysis of determinant challenges related to effective communication

To identify whether effective communication through sharing information, thoughts, feelings and so on were one of a challenging factor in the CBS implementation project or not, in the CBE, one question was provided for respondents. As a result, as indicated in Appendix 25 and Table 4.7 below about 38 percent the respondentsstrongly agreed on the effective communication among the participants on the project. And also 38 percent of the respondents agreed on the effective communication among the participants. Of the total respondents, only two percent of the respondents strongly disagree on the issue of effective communication challenging factor in the CBS implementation project, while the remaining 22 percent were neutral on the issue raised.

This result indicates that effective communication among participants on the project is not considered as one of the challenging factor in the CBS implementation.

**Table 4.7 perception of respondents on effective communication**

Categorization	Frequency	Percent
strongly disagree	1	2%
Neutral	11	22%
Agree	19	38%
strongly agree	19	38%
Total	50	100%

Source: own computation from survey data, June 2016

4.3.4 Analysis of determinant challenges related to project management best practice

Since a term is a little bit confusing, first let us understand the term project management best practices. It is a standard approach to follow that has been proven to work within a business industry or environment and then gets adopted by most people within that specific context. In order to know this, one question was given for the respondents on the project management best practice that illustrates project management best practice is one the determinant challenge in the implementation of CBS in CBE.

Figure 4.3 Project management best practices
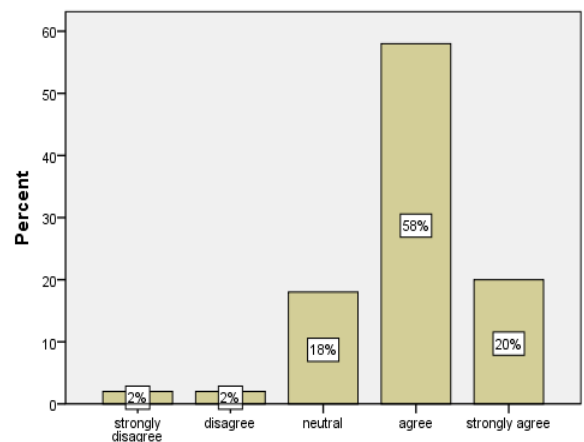
source:Own computation from survey data

percent of the respondents strongly agreed and agreed, respectively, on the issue that there exists project management best practice in CBS implementation project. While about 18 percent of the respondents remained impartial to whether there was project management best practice or the other way around. Nonetheless, about 2 percent of the respondents strongly disagree and 2 percent of the respondents responded that disagree on the determinant challenges of project management best practices in the CBS implementation. Based on this

result, as it is illustrated in the above figure project management best practice is not a critical challenge factor in the CBS implementation.

4.3.5 Analysis of determinant challenges related to task interdependence

Respondents were asked whether task interdependence encumbers CBS implementation project or not. Accordingly, as illustrated in Appendix 12 and table 4.7 below about 36 percent of respondents agree on the task interdependence obstacle to CBS implementation, whereas about 22 percent of respondents strongly agree on the affair of task interdependence hinders the CBS project implementation. On the other hand, two and six percent of respondents strongly disagree and disagree on the issue respectively. Of the total respondents, 34 percent of the respondents were not taking any sides. From this it can be inferred that task interdependence hinders CBS implementation, and, therefore considered as a critical challenging factor(determinant) that determine CBS implementation.

Table 4.7 perception of respondents on the task interdependence

Categoriza tion	Freq uency	Pe rcent
strongly disagree	1	2 %
Disagree	3	6 %
Neutral	17	34 %
Agree	18	36 %
strongly agree	11	22 %
Total	50	10 0.0

Source: own computation from survey data, June 2016

4.3.6 Analysis of determinant challenges faced by CBE

The following are findings from the survey questionnaire (Appendix 1) on the challenges of implementing core banking systems at CBE. Table 4.8 presents a summary of key findings with regards to challenges of implementing core banking systems at CB

Table 4.8 perception of respondent on the determinant challenges faced by CBE

Challenges	s trongl y agree	gree	eutr al	isagr ee	st rongly disagree d
Managers ignore best practical and warning sign		3(2 6%)	(16 %)	6(5 2%)	3 (6%)
Lack of top management support	1 (2%)	(8 %)	0(2 0%)	3(4 6%)	1 2(24 %)
Inexperienced consultant	1 (2%)	7(3 4%)	4(2 8%)	6(3 2%)	2 (4%)
Unskilled project implementation team	1 (2%)	(4 %)	0(2 0%)	2(6 4%)	5 (10%)
User resistance to change		(18 %)	5(3 0%)	3(4 6%)	3 (6%)
Fear of past implementation experiences	2 (4%)	8(3 6%)	3(2 6%)	4(2 8%)	3 (6%)
Insufficient training and re-skilling	7 (14 %)	2(4 4%)	(12 %)	2(2 4%)	3 (6%)
Data migration	1 (2%)	2(6 4%)	(12 %)	(18 %)	2 (4%)
Insufficient testing	1 (2%)	5(3 0%)	1(4 2%)	2(2 4%)	1 (2%)
Core Banking System is too complex		5(3 0%)	0(2 0%)	2(4 4%)	3 (6%)

Poor IT infrastructure	1 (2%)	0(60%)	0(20%)	(14%)	2 (4%)
Customization problem	1 (2%)	1(62%)	0(20%)	(14%)	1 (2%)

Source: own computation from survey data, June 2016

The data obtained from the survey questionnaire show that data migration was the most frequently mentioned challenge by the respondents during the core banking system implementation, with a response rate of 64%. Secondly, was customization problem with a response rate of 62% and the third one was poor IT infrastructure with a response rate of 60%. From the research findings, the case study organization encountered the following challenges during the implementation of its new CBS: Inexperienced consultant, fear of past implementation experiences, insufficient training and re-skilling, data migration, poor IT infrastructure and customization problem.

4.3.7 Analysis of determinant challenges faced by CBE during CBS implementation depending up open ended and closed ended questions

a. Unavailability of some data in the legacy system (lack of complete data). There is no complete data required by the CBS resulting in a problem of duplication of customers' data due to missing unique criterion.

b. Lack of skilled man power from CBE in some specific areas. These have negative consequences on the projects by delaying the project and hence, resulting in cost overrun.

c. High turnover of technical staff. A high level of labor turnover could be caused by many factors such as inadequate wage levels leading employees to move to competitors, poor morale and low level of motivation within the workforce. High turnover of technical staff are cost for CBE by prolonging implementation schedule and hence, resulting in project cost overrun.

d. Lack of organized training for end-user. The respondents indicated that there is no organized and planned training for end-users, resulting in difficulties in testing and checking the results.

e. Frequent failure of the vendor to keep their promises and word. Vendor support sent less experienced professionals that prolong the project schedule.

f. Lack of updated the best result in the master file regularly by vendor's representatives resulting in duplication of effort to repeat the finding repeatedly.

g. Post go live support in fixing problems on the system is not satisfactory from customer desk section of the vendor company.

h. Some consultants have no idea about the banking operation

i. Tele infrastructure (telecommunications corporations' failure to offer efficient services). It is manifested by slow net work or totally disconnection of net work.

4.4 Analysis of prospects of CBS implementation

In this section, prospects of CBS implementation are provided. The analysis is based on Likert scale, open ended and closed ended questions. The analysis is based on Likert scale, open ended and closed ended questions. This section of the chapter deals with presentation, analysis and interpretation of the primary data collected through questioner. Tables, graphs and percentages were used to analyze the data.

4.4.1 Analysis of prospects of CBS implementation related to consensus about the objectives and goals

Consensus on goals and objectives are important to the entire process. To determine this in CBE, one question was presented for respondents stating that there were consensus on goals and objectives of the CBS from the outset of its implementation. Accordingly, as demonstrated in Appendix 23 and

Table 4.9 below about 54 and 24 percent of the respondents agreed and strongly agreed, respectively, there were consensus about the goals and objectives of the CBS from the beginning of implementation. Whereas, about 18 percent of respondents were indifferent on the issue of whether the CBE have consensus on objectives and goals of CBS from initial point of implementation. On the other hand, about 4 percent of respondents disagreed on the issue.

The research outcome indicates CBE had consensus goals and objectives on the project from the beginning of the CBS implementation and hence having consensus goals and objectives by CBE on the project is considered as one of the prospect come to the organization due to the implementation of CBS project.

Table 4.9 perception of respondents on objectives and goals of CBS implementation

Categorization	Frequency	Percent
Disagree	2	4 %
Neutral	9	18 %
Agree	27	54 %
strongly agree	12	24 %
Total	50	100%

Source: own computation from survey data, June 2016

4.4.2 Analysis of prospects of CBS implementation related to faster process and real time data

Table4.10. perception of respondents on faster process and real time data

Categorization	Frequency	Percent
Neutral	4	8 %
Agree	39	78 %
strongly	7	14

agree		%
Total	50	100%

Source: own computation from survey data, June 2016

Concerning the question which was raised about prospects of CBS implementation related to faster process and real time data, 78% of the respondents said that the project bring faster process and real time data delivery for the organization. On the other side, 14% of the respondents strongly agreed on issue. Moreover, the remaining 8% of the respondent goes to those who neither agree nor disagree on the faster process and real time data. Therefore we can say that faster process and real time data is the prospects of CBS implementation in CBE.

4.4.3 Analysis of prospects of CBS implementation related improved business process

The result of the analysis on improved business process by CBS implementation project as depicted in Appendix 31 and Table 4.11 below show that more than half(78%) of the respondents agreed on prospects of CBS implementation related to improved business process. In addition, about 18 percent of the respondents also strongly agreed on CBS implementation improved business process. On the other hand, the remaining four percent of the respondents neutral on the CBS implementation improved business process. This result shows that improved business process was one of the prospects delivered to the organization due to the implementation of CBS project.

Table 4.11 perception of respondents on improved business process

Categorization	Frequency	Percent
Neutral	2	4 %
Agree	39	78 %
strongly agree	9	18 %
Total	50	100%

Source: own computation from survey data, June 2016

4.4 Analysis of prospects of CBS implementation related to centralized operational responsibilities

The result of the analysis on improved business process by CBS implementation project as depicted in Appendix 32 and Figure 4.4 below show that more than half(68%) of the respondents disagreed on prospects of CBS implementation related tocentralized operational responsibilities. In addition, about 20 percent of the respondents neutral on CBS implementation centralized operational responsibilities. On the other hand, the remaining six percent of the respondents agree and strongly agree on the CBS implementation centralized operational responsibilities. This result shows that centralized operational responsibilities were not one of the prospects delivered to the organization due to the implementation of CBS project.

Figure 4.4 Centralized operational responsibilities
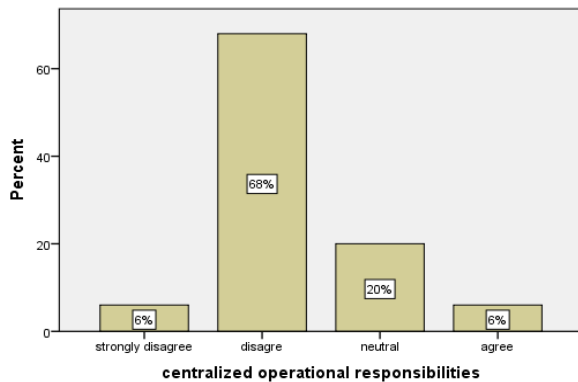
Source: Own computation from survey data June, 2016

4.4.5 Analysis of prospects of CBS implementation related to increase employees' productivity

To identify whether CBS implementation increase employee productivity were one of a prospecting factor delivered to CBE or not, one question was provided for respondents.

As a result, as indicated in Appendix 33 and Table 4.12 below about 66 percent the respondents disagreed on the prospects of CBS implementation related to increase employee's productivity among

the participants on the project. And also 8 percent of the respondents strongly disagreed on the prospects of CBS implementation related to increase employee's productivity among the participants. Of the total respondents, only six percent of the respondents agree on the issue of prospects of CBS implementation related to increase employee's productivity, while the remaining 20 percent were neutral on the issue raised. This result indicates that CBS implementation did not increase employee productivity.

5. Summary Of Findings, Conclusions And Recommendations

Based on the results of data analysis and interpretation in the previous chapter the following summary major findings, conclusions and recommendations are given.

1 Summary of the Findings

The major findings of the study related to challenging factor:

1.Respondents replied that CBS implementation project was not completed within agreed time and budget.

2.Task interdependence on the employees of CBE affects negatively the implementation process of CBS. Furthermore, the respondents agree on the task interdependence was one of the hindering or challenging factor for the implementation of CBS.

3.Inexperienced consultants supply from the vendor was a challenging factor, since they are not that much experienced, they couldn't understand the banking industry of our country. Additionally, they did not give efficient training for the employees of the bank about CBS.

4.Regarding fear of past implementation experiences, majority of the respondents replied that there was a fear by top management to implement CBS that is why the time of implementation elongated so many times and externalize the bank to additional cost.

5. The respondents have argued that the company did not deliver sufficient training and re-skilling for the employees on the CBS.

6. The finding indicated that the respondents agreed on the data migration problem were one of the challenging determinants.

7. The CBS was built without giving a proper attention for good IT infrastructure as an element of CBS implementation.

8. The respondents believed that customization problem was one of the challenging determinants for the implementation of CBS.

Among others, the following problems are identified as major challenges of CBE faced during the implementation of CBS.

1. The project was not completed within planned time and budget

2. Task interdependence

3. Inexperienced consultants

4. Fear of past implementation experiences

5. Lack of sufficient training and re-skilling

6. Data migration problem

7. Poor IT infrastructure

8. Customization problem

The major findings of the study related to prospecting factor:

1. As majority of respondents respond that faster process and real time data is one of the prospects contributed to CBE due the implementation of CBS.

2. The finding indicated that the respondents agreed on CBS implementation improved business process CBE.

3. The respondents believed that CBS implementation facilitates goals and objectives consensus within the bank.

4.Related with support strategic planning, majority of the respondents agreed that CBS implementation highly support strategic planning of CBE.

5. Furthermore, CBS implementation project in CBE also brings customer satisfaction increment.

Generally, the following are prospects contributed to CBE due to the implementation of core banking system project.

1. Faster process and real time data

2. Improved business process

3. Goals and objectives consensus

4. Support strategic planning

5. Increase customer satisfaction

5.2. Conclusion

The following are the major conclusions drawn from the findings of the study:

1. As the respondents replied that, CBS implementation was not completed within planned time and budget. This shows that the bank was externalized to additional costs due to the deviation of the project from its budget and timely completion.

2. Task interdependence was one of the challenging factors in the CBS implementation in CBE. This may be because task interdependence on employees of CBE challenges CBS implementation and it may result for the dalliance of implementation.

3. Inexperienced consultants come from the vendor fail to give efficient training for the CBE employees, this results inefficient CBS implementation process.

4. Top management faces a problem to make a decision on the implementation of CBS project due to fear of past experience. Since the past experience shows that implementation of new system in the bank brings so many problems to the institution, the same thing was expected by the implementer team as well as the top management of bank to implement CBS.

5. Due to insufficient training and res-skilling of the end user the bank faces different challenges during the implementation of CBS. For instance, at the initial time the end users did not know how to use the menus of the system, such as LMTS (local money transfer) menu, CPO (cash payment order) menu, fund transfer menu etc. Because of the end user did

not know how to handle the menus due to lack of sufficient training and re-skilling still the bank faces a challenge in different branches.

6. Since there was mismatch of the system between the old and new (CBS) there was a problem of data migration. At the time of data migration even there was GL (general ledger) difference due to definition difference on two systems. Therefore, it is possible to conclude that data migration was one of the challenging factors to implement CBS.

7. As far as poor IT infrastructure concerned, the analysis reflected that the existing IT infrastructure was not as such capable to implement CBS, since CBS requires a strong network connection. Therefore, at the time of implementation disconnection of the network was a very challenging factor of CBS.

8. Since the system directly comes from Europe, customize it as of Ethiopian (local) bank standard was so difficult. For instance, LMTS (local money transfer) menu not found in the Europe banks, but when the system customized as per CBE standard LMTS menu was added, but it was not effective as expected. From this we can conclude that customization was one of the challenging determinants of CBS implantation.

9. CBS implementation in CBE faster the general process of the bank and real time data delivery for the concerned body.

10. As per the respondents of the questioner we can conclude that, after the implementation of CBS in CBE the business process is improved very well.

11. CBS implementation simplifies the process of strategic planning of the bank since the system delivers real data in proper way. From the respondents we can conclude that CBS implementation supports strategic planning of the bank.

12. Furthermore, CBS implementation increases customer satisfaction of CBE. Since the system helps to give safe, fast, reliable and efficient service for the customer, the level of customer satisfaction increases. As per employees respond we can conclude that increase customer satisfaction is one of the prospects contributed to CBE due to the implementation of CBS.

5.3. Recommendations

1. One of the challenges commercial bank of Ethiopia faced in core banking system implementation was Tele infrastructure (poor IT infrastructure). Therefore, to mitigate the problem the commercial bank of Ethiopia shall sign the service level agreements (is a service contract where the level of service is formally defined and legally binded) with the concerned body to alleviate the problem as a first way out. To mitigate the problem the bank shall also implement its own v-satellite connection as second way out, if these actions taken the bank can eliminate or minimize the network disconnection.

2. The findings of the study indicates that the end-user training significantly determine core banking system implementation in Commercial Bank of Ethiopia. However, majority of the respondents in their response indicates that though Commercial Bank of Ethiopia provides training for end-users, it was not in organized and planned manner stating who takes training when. Therefore, it is recommended that Commercial Bank of Ethiopia shall provide organized and planned training for end-users.

3. The finding of the shows that vendor support did not full filled their commitments in project implementation. This is one of the challenges Commercial Bank of Ethiopia faced in the core banking system implementation project, resulting in delay in project implementation and cost overrun. Therefore, to minimize this problem Commercial Bank of Ethiopia shall ensure that the vendor sends adequately experienced project manager and an implementing team by checking their background such as curriculum vitae and past work experience n the same area. In addition, joint review meeting between the bank and vendor representatives shall be held at regular intervals and all issues shall be resolved without any delay and without leading to strained relationships.

4. Turnover effects of some of technical staffs are challenges Commercial Bank of Ethiopia faced in the core banking system implementation. This in turn played its role in prolonging the project implementation. These are numerous reasons for an employee to leave a job. However, the reasons can become amplified by relatively low pay rates relative to competitors. Therefore, to mitigate the problem Commercial Bank of Ethiopia shall provide retention package for information system employees.

5. Lack of skilled man power from Commercial Bank of Ethiopia in some specific areas was one challenge observed in the core banking system implementation project. This has its own negative consequences on the projects by delaying the project time and hence, resulting cost overrun. Therefore, to solve the problem Commercial Bank of Ethiopia shall provide either capacity building training for the existing staff to upgrade their skills or hire competitive employees that fill the gap from the market.

6. Effective project management is a mandatory requirement for any project to be successful. However, in Commercial Bank of Ethiopia gap was observed when the managers of the project fear to launch the implementation of core banking system due to past experiences. Therefore, further review correction action should be taken to create effective and decision maker project managers.

7.The finding of the study illustrates that task interdependence significantly determine core banking system implementation. The result shows task interdependence obstacle core banking system implementation project. Therefore, the bank shall minimize it as much as possible to get the focus of the worker on the specific area.

8.To insure the successful implementation of the project within its time and budget, effective monitor and follow up mechanisms are essential. The measurement of core banking system implementation in Commercial Bank of Ethiopia indicates that the project was deviates from its intended time and budget. This may be due to lack of proper follow up and monitor. Therefore, to overcome the problem Commercial Bank of Ethiopia shall enhance effective monitor and follow up mechanisms so as to ensure the implementation of the project within its time and budget.

9. The finding of the study indicates that data migration was one problem faced by Commercial Bank of Ethiopia during the implementation of core banking system. Since there was poor network connection and mismatch of the old and new (core banking) system, there was a challenge when the data migrated. To minimize or solve this problem the researcher recommend that before implementation IT infrastructure and testing environment shall be facilitated by Commercial Bank of Ethiopia.

10. Since core banking system is comes from foreign it needs some customization as per Commercial Bank of Ethiopia working environment. Some customized menus of core banking system create different challenges to the bank; even it was difficult to control them. So to eliminate or minimize such like problem Commercial Bank of Ethiopia shall make efficient and effective testing before implementation.

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