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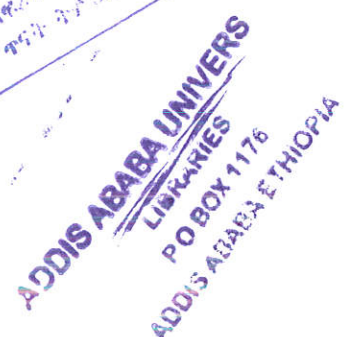
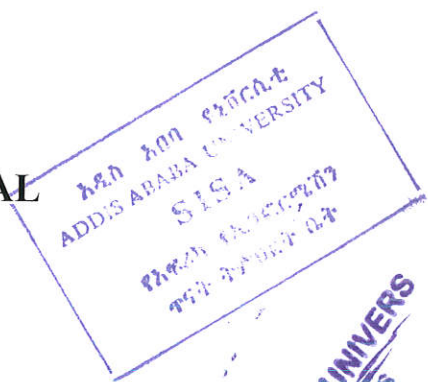
IT PROJECT MANAGEMENT PRACTICE IN ETHIOPIA:
THE CASE OF THE BANKING SECTOR

*A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE
STUDIES OF ADDIS ABABA UNIVERSITY IN PARTIAL
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MASTER OF SCIENCE IN INFORMATION SCIENCE*

By

MIHIRET YILKAL

JULY, 2001



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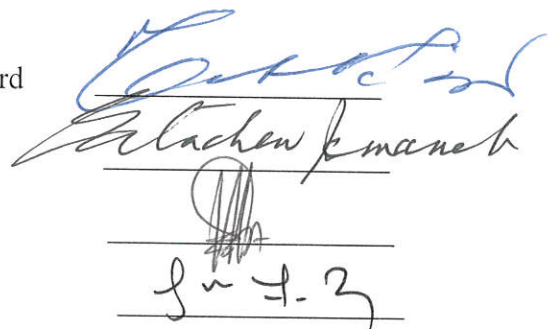
Name and Signature of Members of the Examining Board

Ato Tesfaye Biru, Chairman, Examining Board

Ato Getachew Jemenah, Advisor

Ato Ermias Abebe, Advisor

Dr. Lishan Adam, External Examiner



The image shows three handwritten signatures in blue ink, each written over a horizontal line. The first signature is for Ato Tesfaye Biru, the second for Ato Getachew Jemenah, and the third for Ato Ermias Abebe. The signature for Dr. Lishan Adam is not present.

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List of Abbreviations

APM	- Association for Project Management
ATM	- Automated Teller Machine
CBE	- Commercial Bank of Ethiopia
CPM	- Critical Path Method
DFD's	- Data Flow Diagrams
ERD's	- Entity Relationship Diagrams
IBD	- International Banking Division
IT	- Information Technology
MIS	- Management Information System
PDR	- Project Definition Report
PLC	- Project Life Cycle
PMBOK	- Project Management Body of Knowledge

PMI	- Project Management Institute
POS	- Project Organization Structure
RFP	- Request For Proposal
UNDP	- United Nations Development Program
WBS	- Work Breakdown Structure

IT PROJECT MANAGEMENT PRACTICE IN ETHIOPIA:

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Abstract

Information is considered the new organizational resource in business organizations. It supports problems solving, decision making, idea creation and innovation, thereby bestowing competitive edge to business organizations. To this end, Information Technologies are used for processing and managing information. In addition to accelerating improved management effectiveness and business performance, Information Technology (IT) also helps in achieving efficiency gains.

To reap the aforementioned benefits from using Information Technology, many companies in Ethiopia, including the Commercial Bank of Ethiopia, have undertaken Information Technology investment projects. However, it has been found that some of these benefits have not materialized. The cause for projects with such experience is generally regarded to be poor project management. The research, therefore, aims at exploring if the project management aspect of the Information Technology project of the Commercial Bank of Ethiopia to be one of the cause.

To address the research's objective, review and assessment of the Information Technology project management practice of the Commercial Bank of Ethiopia has been made. The general approach of the IT project management practice has been reviewed and assessed based on the applicability of the project management processes involved in the nine knowledge areas of the Project Management Body of Knowledge developed by the Project Management Institute. To determine the overall impact of the project management practice of the Information

Technology project, an overall evaluation has been made using a 'Success Barometer Rating' tool developed in the Enhanced Management Framework by the Treasury Board Secretariat of the Canadian government. The result of this study indicates that poor project management practice had an impact in the degree of success of the Information Technology project of the Commercial Bank of Ethiopia.

Chapter One

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Business organizations worldwide are changing to meet the challenges posed by the competitive business environment. Three powerful changes had been responsible for the alteration of the business environment, which are the transformation of industrial economies and societies into knowledge and information-based economies, emergence and strengthening of the global economy, and the transformation of business enterprises (Laudon & Laudon 4). These changes have been intensified by the use of information and Information Technology (IT), which supported in the offering of new opportunities to businesses, threats to domestic business firms, and changes in style of management.

Increase in size and complexity of business organizations has resulted in an increase in the amount of information being produced and communicated (Gordon 108). The significance of developing suitable computer based information systems is being stressed in many issues, as it determines the performance and competitive position of business organizations. However, many organizations have frequently been disappointed with the outcome of IT development projects, as the projects have often run out of time and budget or had been inadequate in terms of quality and ability to meet user needs. Many practitioners and academicians have found the major cause of such outcomes to be poor project management (Fidler & Rogerson 3).

Project management involves directing the activities associated with executing a project while controlling limited resources efficiently and effectively for the successful achievement of an end goal (Nunes). In IT projects, it involves a variety of different individuals and groups,

each of whom is required to make an effective contribution for the successful achievement of the project's objectives. Basically this includes the project manager, team leaders, users, the user group, the steering committee, the management sponsor and senior managers. From these individuals and groups, the project manager plays a key role in planning, integrating and controlling the contributions from the various internal and external contributors and is highly involved in managing interfaces between the organization and its external suppliers or distributors. Various tools and techniques are available for the project manager to support the management of a project.

The main reason of project management in IT projects, are to promote effectiveness and efficiency in the systems development process and outcome. Being effective helps in ensuring that the system (Ritchie et al. 313):

- meets the required needs of users or the other objectives that have been established
- is produced to specified quality standards to satisfy user needs
- is able to be integrated within existing organizational information systems, structures and processes
- is sufficiently flexible to respond to changes in the environment in which the system will operate, or to the changing requirements of users
- provides appropriate support to decision-makers at all level: operational, tactical and strategic.

On the other hand being efficient helps in ensuring that the system development project, including development, delivery, installation and final implementation is (Ritchie et al. 313):

- undertaken within manpower resources, costs and time targets or constraints specified at the outset
- exploiting the resources of the project team members and the users time as fully as possible by avoiding unnecessary idle time, delays or time wasted in undertaking unnecessary tasks or activities
- effective in integrating the activities within the project team and outside the project team including users, suppliers, consultants or managers
- capable of delivering hardware, software, services and training on time to avoid problems of storage, deterioration, unplanned fluctuations in cash flows or loss of benefits from training due to excessive time required for the users to apply the knowledge or skills acquired

The above primary objectives in the process of project management, efficiency and effectiveness, shows that the ultimate effectiveness of an information system is significantly influenced by the quality of project management (Schultheis & Sumner 694). Hence, IT development projects that are not carefully managed and orchestrated face substantial problems in the project process and outcome that are hard to resolve at a later stage. In such projects, the fact that IT projects possess a particular class of management difficulty than other projects is usually overlooked. The difference between IT projects and other projects lies in the issues of organizational effectiveness and user involvement, which are both complex and prominent (Morris 324).

Project management is part of Information Systems Management. Information Systems Management is the management of the development and operation of an organization's information system (Osterle et al. 8). Besides project management, other important parts of

Information Systems Management focus on the alignment of IT investments with corporate goals and the decision process for determining the viability of IT projects at various stages of a project.

In the last few years, IT investment in Ethiopia has been increasing. This change is especially evident in the finance industry and more specifically in the banking sector. This is because, more than most of the other industries, financial industries rely on gathering, processing, analyzing, and providing information in order to meet the needs of customers (Ferguson). However, the different financial institutions could not reap the expected benefits due to a number of problems. To assess these problems, various people undertook research in the area of Information Systems Management. Specifically, in SISA (School of Information Studies for Africa), two researches have been carried out on different financial institutions in Ethiopia. One is a work by Bante and the other by Libsneh.

Bante has undertaken a study related to the alignment of IT investments with corporate goals. Bante's work has stressed on the importance of Strategic Information Systems planning for the Commercial Bank of Ethiopia. After studying a number of factors, Bante has come up with a Strategic Information Systems plan that could be integrated with the business strategic plans of CBE. In his study, Bante has also pointed out some of the general problems faced in developing IT projects and has suggested as one measure improvement of project management in future IT projects of the bank in order to minimize risks of project failure (Bante 126).

The other study undertaken has been by Libsneh and had been carried out to assess the current practice of evaluating IT investments in order to identify problems associated with it and to recommend possible solutions (Libsneh 9). The research covered a survey of banks, insurance and real estate organizations. For a prototype evaluation, the feasibility stage of an IT project

of the Construction and Business Bank was taken into consideration. The study generally indicated the prevalence of less systematic, highly subjective, and informal evaluation practices. The main reason for this has been found to be lack of skilled and experienced manpower in the area of IT evaluation.

Given the significant role IT plays in handling and processing of information in banking and the high prospect for the diffusion of different IT applications, the focus of this research has been directed towards project management practices in the banking industry, specifically in the Commercial Bank of Ethiopia.

The Commercial Bank of Ethiopia is the largest commercial bank in Ethiopia, with more than 80% of market share. In an effort to modernize operations and upgrade its service quality, the bank decided to embark on a major Information Technology project, a bankwide automation project in 1994. During this time, the bank was operating on a mainframe-based system of the National Bank of Ethiopia, which had been in use for approximately 14 years and serviced four branches of the Commercial Bank of Ethiopia and the International Banking Division.

To realize the bankwide automation objective, a Request for Proposal was prepared inviting for the supply, installation, testing and commissioning of computer equipment and software for all sites included in the automation project. In response to this, various suppliers presented their proposals. In the process of assessing and evaluating the suppliers, the Y2K issue arose in mid of 1997, which was said would affect the computerized branches and the IBD. As the Y2K issue needed to be resolved on an urgent basis, a sub-project of the bankwide automation project, the Y2K project, was initiated. The finalist vendor was selected based on the proposal presented for the bankwide automation project.

The Y2K project involved introduction of a replacement of a system and the conversion of the existing branches and the International Banking Division to the new system. Various project

activities were undertaken and the project was implemented. However, the bank faced many problems and failed to realize some of the anticipated benefits from the Y2K project. It is the project management aspect of this project that is the focus of this research. In addition, as the Y2K project is considered part of the bankwide automation project, the project management practices involved at its initiation, i.e. in preparing the Request for Proposal and in assessing and evaluating vendors, is also considered taken into account in this research.

1.2 STATEMENT OF THE PROBLEM

Observation shows that organizations in different business industries in Ethiopia are investing on IT to reap the benefits that it offers. Despite the efforts involved in carrying out IT investment projects, many of these organizations are facing problems. As per the researcher's preliminary investigation, some of the problems include frequent system failures, inaccurate and inconsistent data in the system, lower productivity (under utilization of IT), high maintenance costs, a variety of technical problems, non-related output of the system to information needs, and others.

Among the factors responsible for the problems faced in information systems, scholars frequently cite project management as the prominent factor (Laudon & Laudon 13). Generally, poorly managed projects are said to exhibit certain features in common, which are reflected during the development process and in the project outcome (Laudon & Laudon 519). These features include cost overruns, time slippage, technical shortfalls and failure to obtain anticipated benefits.

Preliminary interviews conducted with some users and staffs in the Information Technology Department of the Commercial Bank of Ethiopia regarding the problems encountered in the project development process and outcome revealed similarity with the problems that poorly managed projects exhibit. These problems included cost overruns, technical shortfalls and

failure to obtain anticipated benefits. High expenditure for service support staff at some points in the project development process and high maintenance cost after implementation of the project were among the problems brought up related to cost overruns. Technical problems had also been raised during the preliminary interviews, which were reported as affecting not only the internal operations of the bank, but also as having an effect on the services the bank provides to its customers. Regarding completion time of the project, though the project under consideration in this research had been finished on the time planned, it had been so at the expense of quality and which in turn had resulted in high maintenance cost and a system that doesn't adequately satisfy users needs.

As per preliminary interviews with Information Technology Department staffs, the presence of the above mentioned problems have been the major cause for the delay of implementing the bankwide computerization aims of the bank. As a result of this delay, the extension of branch offices in different parts of the country, which had more or less been halted due to focus on bankwide computerization, had also been slowed down. Both of these give rise to expressions of concern. They result in a potentially unrecoverable external opportunity cost of being late to market thereby missing the rewards that an early presence in a market offers (Marcus).

Due to the seriousness of the aforementioned problems in the existing system, this research will be mainly concerned with assessing the IT project management practice of the bank to determine if the problems have been mainly a result of poor project management. The study will highlight the strengths and the weaknesses involved in managing the IT project and finally, an overall evaluation will be made to determine if one of the causes for the observed system problems is the way the project has been managed.

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1.3 JUSTIFICATION OF THE STUDY

IT plays a crucial role in banking. It helps in the reduction of operating costs through efficiencies of streamlining back-office processing and the elimination of error prone manual input of data. In addition, it also opens the doors for opportunities to serve current customers and attract new customers by offering new products and services as well as through enhancing the convenience and value of existing products and services. The use of IT has also extended to the development and implementation of management information systems (Liao 63).

The last few years have witnessed a phenomenal pace of new technology adoption in banks throughout the world, which has even been seen among the most conservative banks (Ferguson). The same has also been true for banks operating in Ethiopia. Preliminary investigation by the researcher showed that most of the private and government banks have made investment in IT projects. A continuation of this trend can also be felt in other banks, from their objectives of modernizing the bank through IT investments. These changes in Ethiopia and around the globe have been mainly due to the ever-changing environment created as a result of rapid advance in technology. Technology is now no longer seen as a revolutionary concept, but rather as survival tool without which businesses cannot remain competitive in the market place (Belasco 3).

As mentioned in the preceding sections of this research report, the Commercial Bank of Ethiopia has been one of the banks in Ethiopia that has invested in an IT project. This project, which is being carried out phase by phase, has not yet come to full completion. In addition to this project, the bank foresees other major changes in the operations of the bank such as introduction of Automated Teller Machines (ATMs), telephone banking, point of sale systems and introduction of credit cards. All these changes impel towards initiation of various IT projects in the future.

Given the size, complexity and business risk involved in prevailing and future investments, banks must ensure from every angle for the successful implementation of IT projects. Banks must understand and address the problems that are causes of IT investment problems. As project management has an acute effect on the degree of success of IT projects, it dictates the need to accentuate the strengths and weaknesses of the project management practices of a bank from a practical point of view.

This research, then, is believed to help banks in general and other organizations in Ethiopia and elsewhere to be aware of the importance and effect of project management in the development process and outcome of an IT project.

1.4 OBJECTIVES OF THE STUDY

1.4.1 General Objective

The general objective of this research is to assess the IT project management practice of the Commercial Bank of Ethiopia in order to determine if the observed system problems have been results of the way the project has been managed, and if so, to recommend ways of improving project management in future IT projects of the bank.

1.4.2 Specific Objectives

To achieve the general objective mentioned above, the research aims at attaining the following specific objectives:

- Review the purpose, scope and objectives of the IT project.
- Identify the major problems confronted in using the existing system.
- Investigate the evaluation process carried out for determining the feasibility of the IT project whose outcome has been the existing computer and network system.

- Investigate the project management practices carried out for the IT project throughout the development process.
 - Identify the weaknesses involved in the general approach of managing the project.
 - Identify, where possible, the effects of those weak or poor project management practices on the project development process and outcome.
 - Determine the benefits that would be gained from proper project management practices for those project management activities identified as being inadequate in assessing the general approach of managing the project.
-
- Identify the strengths of the actual project management practices that should be encouraged in future IT projects.
 - Determine if the overall IT project management practice had been a major cause for the observed system problems and if so, based on the above findings and assessment recommend ways of improving project management practices in future IT projects.

1.5 SCOPE AND LIMITATIONS OF THE STUDY

Owing to the intensive use of information in the financial sector and the critical role IT plays in the processing and management of this information, this research has been directed towards the banking industry in the financial sector. The banking industry currently in Ethiopia is composed of two government owned commercial banks, one specialized government bank and six private commercial banks. Preliminary investigation shows that some of the private banks and government owned banks have undertaken IT projects and experience some system problems that would be of interest to study.

As time constraint warrants the research to be made for a single Information Technology project only, the scope of this research will be limited to the government owned commercial bank, the Commercial Bank of Ethiopia. The huge amount of investment involved in the Information Technology project of this bank and the complexity involved in the project has made it to be of particular interest for this study. Besides, it is the oldest and largest bank controlling more than 80% of market share, unlike most of the other banks, which had been in the market for less than ten years. The amount of investment and the technical complexity involved in the Information Technology project of the Commercial Bank of Ethiopia has therefore been relatively higher due to the voluminous transactions and various features that the software must support.

The IT project under consideration in this research shall be the Y2K project. In addition, as the Y2K project is considered a sub-project of another project, the bankwide automation project, the study will also cover those project management aspects of the bankwide automation project that are considered relevant for the Y2K project.

The research had been constrained by limited availability of materials related to IT project management. It had particularly been difficult to get documents related to the project under consideration due to the confidentiality nature attributed to these documents by the organization under study.

1.6 DATA SOURCE AND COLLECTION METHODS

The following data collection instruments have been used in conducting the study:

1.6.1 Document Analysis

IT project documents such as Request for Proposal, Project Definition Report, project plans, documents related to the project human resource organization and other documents judged relevant to the study have been reviewed and examined.

1.6.2 Interviews

The interview method has been extensively used to get relevant facts related to the project in general and the project management practice of the IT project in particular. This method has been mainly used to cover those aspects of the project management practice that have not been captured from document analysis and also to augment those that have already been found during document analysis. Six CBE staffs who had been actively involved in the bankwide automation project and the Y2K project have been interviewed to get the relevant information. In addition, the interview method has also been used to gather information related to the problems of the existing computer and network system. For this purpose, thirteen users from different operation areas in the computerized branches and division of the bank and IT department staffs have been interviewed.

In both of the foregoing interview cases, semi-standardized interviews have been conducted involving implementation of predetermined questions. The semi-standardized interviewing structure has been used to support the interview process in a systematic and consistent order, while at the same time allowing the researcher the freedom to probe far beyond the answers to the standardized questions.

1.6.3 Literature Review

Literature review has been made in the area of project management, information systems management, banking and others that have been considered relevant for the research. Sources for literature review has been books, journals, Internet sites and other publications.

1.7 DATA ANALYSIS

Data captured using the aforementioned instruments have been used for assessing the Information Technology project management practice of the Commercial Bank of Ethiopia. Data has been analyzed using the Project Management Body of Knowledge developed by the Project Management Institute and a 'Success Barometer Rating' tool developed by the Treasury Board Secretariat of the Canadian government. As the Project Management Body of Knowledge tool is a standard applicable to all types of projects, it had been supplemented with other resources related to IT projects where considered relevant. The Project Management Body of Knowledge have been used to assess the general approach of the IT project management practice, based on the applicability of the project management processess involved in the various knowledge areas. The 'Success Barometer Rating' tool has been used to provide an overall evaluation of the project management practice in terms of their effect on the final project outcome.

1.8 APPLICATION OF RESULTS

The output of this research is expected to primarily benefit the banking industry. In addition, organizations in other industries undertaking IT projects could also benefit from the study. The research will serve as a basis for understanding the importance and effect of project management in IT projects by highlighting how each management practice affects the project development process and the final project outcome. Cognizance of the relevance of proper project management to the effective and efficient implementation of IT projects will help

banks and other organizations to gear efforts towards an organized approach to managing future IT projects.

For the Commercial Bank of Ethiopia, an organized approach to managing future IT projects will increase the chance of the project's success, thereby supporting the materialization of expected benefits from Information Technology investments. As interviews with Information Technology Department staffs revealed, at the operational level, a highly successful Information Technology project will assist in upgrading service quality and capacity, reduce costs and improve productivity of employees. At the managerial level, it will improve Management Information System (MIS), internal controls and audit.

1.9 ORGANIZATION OF THE THESIS

This research report is organized into six chapters. Chapter one presents the background, statement of the problem, objectives, justification, data collection methods, scope and limitations of the study. Chapter two provides literature review on banking and project management. Chapter three presents the methodology used for data analysis. Profile of the Commercial Bank of Ethiopia, an overview of its IT project background and findings related to the IT project management practice will be discussed in chapter four. Chapter five covers the review and assessment of the IT project management practice. Finally, chapter six presents a brief summary of the research process, its findings, conclusions and recommendations.

Chapter Two

Literature Review

2.1 Banking

2.1.1 General Overview of Banks and their Services

2.1.1.1 Definition and Classification of Banks

Despite the importance of banks to an economy, there is much confusion as to what a bank is. Traditionally, banks were differentiated from other financial institutions by their principal functions of accepting deposits—subject to withdrawal or transfer by check—and of making loans (Columbia Encyclopedia). However, presently, banks are engaged in diverse activities and offer a wide variety of services. The Encyclopedia of Banking and Finance gives the definition of a bank as ("Bank"):

Any organization engaged in any or all of the various functions of banking, i.e., receiving, collecting, transferring, paying lending, investing, dealing, exchanging, and servicing (safe deposit, custodianship, agency, trusteeship) money and claims to money both domestically and internationally.

The functions stated in the aforementioned definition are provided by different types of banks like Community Banks, Large Banks (regional or super-regional), Merchant Banks and International Banks. Most banks are organized in corporate form and are owned either by private individuals, governments, or a combination of private and government interests. It is the group of all these banks that constitute the banking sector.

Banking operations may be unit banking or branch banking. Unit banking is a bank operating in a single office, whereas branch banking is a single bank conducting its business in many offices located in the same or different cities, states, or nations (Koch & Scott 41). Unit and branch banks may be part of a bank holding company owning controlling interest in subsidiary banks.

Banks may be classified in various ways. A common way of classifying banks is according to their commercial or noncommercial nature. Commercial banks are engaged in diversified operations, which includes credit, savings and time deposits, mortgage lending, other forms of home financing, consumer loans, personal loans, trust business and other personal financial services ("Commercial Banks"). Commercial banks are the most heavily regulated and supervised businesses for the purpose of controlling deposit growth and safety of customer deposits. The central banking and other governmental authorities normally implement this regulation and supervision. While commercial banks are engaged in various diversified activities, non-commercial banks are depository institutions engaged in narrow banking functions of savings and loan deposits. They include such institutions as savings and loan associations, mutual savings bank, and credit unions ("Noncommercial Banks"). Noncommercial banks are also called thrift institutions.

2.1.1.2 Banking Services

Today the banking sector is an industry in change. Banks are continually becoming new rather than something in particular. Banks are offering new services, merging and consolidating, adopting newer technologies, and facing a new set of changing regulations than ever before (Belasco 3).

As banks are financial service firms, increased competition is forcing them to identify the financial services the public demands, produce the demanded services efficiently and sell

those services at competitive price. Banking services can be seen from the viewpoint of two time scales, services banks have offered throughout history and services banks have developed more recently (Rose 8).

Early in their history, and still now, banks had been offering set of banking services to the general public. History shows that these services were started either during the early years of banking history, during the Middle Ages, or in the early years of the industrial revolution. These services included carrying out exchange rates, discounting commercial notes and making business loans, offering savings deposits, safekeeping of valuables, supporting government activities with credit, offering checking accounts, and offering trust services (Rose 8-9).

In recent years banks are offering a wide array of services and new services are also emerging rapidly. New types of loans and deposits are evolving, new service delivery methods are expanding, and whole new lines of services are being launched every year. The services banks have developed more recently include granting consumer loans, financial advising, cash management, equipment leasing, making venture capital loans, selling insurance services and retirement plans, offering security brokerage investment services, mutual funds and annuities, investment banking and merchant banking services (Koch & Scott 13).

2.1.1.3 Recent Trends in Banking

The wide array and expansion of banking services imply banks are undergoing sweeping changes in function and form. The key trends affecting the banking industry today include technological revolution, consolidation, geographic expansion and globalization, rising competition and service proliferation, deregulation, and rising funding cost and increasingly sensitive mix of funds (Rose 17-20). These changes are affecting the banking sector today

in a way that many industry analysts refer to these changes as the banking revolution (Rose 17). This revolution may well leave banks of the next generation almost unrecognizable from those of today.

2.1.2 Overview of Banking in Ethiopia

2.1.2.1 Brief History

Banking has a relatively short history in Ethiopia. The first bank, the Bank of Abyssinia, was established in 1905 under an agreement with the National Bank of Egypt for a period of 50 years (Belay 68). The bank had the function of both central and commercial banking. Ten years after the Bank of Abyssinia has been established, some foreign banks opened branch offices. These foreign banks and the Bank of Abyssinia lasted till Emperor Haile Selassie came to power in 1930.

In 1931 the Bank of Abyssinia was replaced by an entirely indigenous bank called the Bank of Ethiopia, which bought up the former foreign banks (Pangaea Partners). The Bank of Ethiopia hence became the first indigenous bank not only in Ethiopia but also in the whole of Africa. The bank continued operation till 1936, when Italian invaders put an end to it (Belay 72).

The Italians brought with them branches of Italian banks. However, many of these banks closed down when British troops along with Ethiopian fighters drove the Italians out. In 1942, a banking business was started by a British based bank, Barclays Bank, which however withdrew a year later from the country (Pangaea Partners).

In the aftermath of liberalization, the Ethiopian government resumed reorganizing the monetary and credit conditions of the country. It then established the State Bank of Ethiopia in 1942 (Belay 73). The bank was fully government owned and was a state monopoly

carrying on both central and commercial banking. Besides, the bank had also authorization for administering the country's foreign exchange. During this time, specialized banks like the Development Bank of Ethiopia, Imperial Savings and Home Ownership Public Association and the Investment Bank of Ethiopia came into existence (Pangaea Partners).

With the introduction of the monetary and banking proclamation of 1963, the State Bank of Ethiopia was split into two separate bodies: the National Bank of Ethiopia and the Commercial Bank of Ethiopia (Pangaea Partners). The former took up central banking functions while the latter assumed commercial business of the earlier bank. During segregation another event took place, the opening up of a branch to handle savings and loans function. This branch developed into a corporation and latter into a bank, now called the Construction and Business Bank. Few other government owned banks also operated during this time.

Coming to private ownership, the first Ethiopian privately owned bank, the Addis Ababa Bank S.C., was established in 1964 in association with National and Grindlays Bank of Britain (Belay 84). Two foreign Italian banks were also operating during this time. However, these two banks were later absorbed by Addis Ababa Bank, during restructuring under the name Addis Bank in 1976 (Belay 85). Addis Bank was nationalized and merged with the Commercial Bank of Ethiopia under proclamation no.184 of 1980.

During the Derg's regime (1977-1991), all banks were government owned. Generally, banks were operating under administratively set rates of interest and restrictive credit policy based on rationing and sectoral priority significance. In addition, banks had to operate on strict credit ceiling beyond which approval from central bank was required (Pangaea Partners).

2.1.2.2 Present Day Banking in Ethiopia

The economic reform program launched in 1994 allowed different financial liberalization measures and the restructuring of different financial institutions. Commercial Bank of Ethiopia was reestablished in 1994 under a Proclamation No.202 taking over the rights and obligations of the Commercial Bank of Ethiopia, which was established under the previous Proclamation No.184/1980. The Construction and Business Bank has also been established under a new proclamation taking over the rights and obligations of the Housings and Savings Bank. The Development Bank of Ethiopia had also been established by a new regulation and this bank took over the rights and obligations of the Agricultural and Industrial Development Bank. In addition, with the coming into effect of a new Licensing and Supervising Banking Business proclamation, six private banks have emerged gradually and joined the market since 1994. However, no foreign national is still permitted to undertake banking business in Ethiopia as per the Licensing and Supervision of Banking Business Proclamation No.84/1994.

The National Bank of Ethiopia is the central bank and regulatory authority of financial institutions. In addition, it also provides certain commercial bank activities like holding government departments' and ministries' accounts and facilitating government import Letter of Credit and foreign exchange business.

At the present, two proclamations, the Monetary and Banking proclamation No.83/94 and the Licensing and Supervision of Banking Business proclamation No.84/94 govern all commercial and specialized banks in the country. The Monetary and Banking proclamation defines the power and responsibilities of the National Bank of Ethiopia and the Licensing and Supervision of Banking Business proclamation frames the conditions under which commercial banks can be licensed and the supervisory requirements they should observe in the course of their operation.

2.2 Project Management

2.2.1 A Project: An Overview

Prior to describing what project management is, it is important to first define what is generally meant by a project. The Project Management Institute's guide to the Project Management Body of Knowledge defined a project as "a temporary endeavor undertaken to create a unique product or service. Temporary means that every project has a definite end. Unique means that the product or service is different in some distinguishing way from all similar products or services." (PMI 4)

As per the foregoing definition, a project is therefore a one-time set of activities that ends with a specific accomplishment and originates when something out of ordinary has to be accomplished. Projects range in size, cost, scope, and time and generally have the following basic features in common: a start and finish, a life-cycle, a budget, activities that are essentially unique and non-repetitive, use of resources, a single point of responsibility (the project manager), and team roles and relationships (Burke 2-3).

Projects generally vary on their longevity. Some projects may require a lengthy timeline while others may grow into institutionalized functions. Based on longevity, projects can be classified into two types (Belasco, 11-12):

1. Terminal projects: These are ventures undertaken exclusively for implementing specific set of tasks and events. There is no residue after completion. Examples include implementation of regulation updates and changes, conversion and mergers, etc.
2. Developmental projects: These projects can be characterized as leading to other projects or forerunners to new permanent functions or activities. An instance of this type of project is a project dealing with end-user computing system.

2.2.2 Project Management: An Overview

Project management is defined as the application of knowledge, skills, tools, and techniques to project activities to meet stakeholders' needs and expectations from a project (PMI 6).

Project management first came in the Management literatures in the 60's and early 70's, though it had its first origins in a number of other distinct fields. History on the application of project management can be traced back to the 1950's during the development of the first atomic bomb of the Manhattan project (Hodgson). Substantial groundwork for this project was done in the US defense and Aeronautics, including the oil and chemical industries. It is after use of project management techniques in these institutions that its application is said to have proliferated within technology, engineering, education, health and social services (Hodgson).

Project management activities are generally applied throughout the process of project work. The process of project work is usually delineated in a general model to reflect the conceptual, definitional, production, operational, and divestment phases (Burke 24). Project management plays a significant role in each of these phases and contributes to the successful accomplishment of activities in each phase.

The conceptual phase involves structuring an analysis of the existing or potential system and helps in the development of the Work Breakdown Structure (Hodgson). The WBS is a breakdown of the list of activities to be carried out during a project's life and acts as a framework for timescale and manpower planning, budgeting and future monitoring and evaluation of a project. Many techniques from different fields of study are applied in this phase depending on project type. In IT projects, the most commonly used techniques are Data Flow Diagrams (DFDs) (which is constituted of systems processes) and Entity Relationship Diagrams (ERDs) (which is constituted of events within a system). These techniques are

usually complemented with other decision-making tools and techniques like cost benefit analysis and cash flow forecasting to structure the choice of solution to be implemented.

After the conceptual phase comes the definitional phase, which involves planning the project with the aid of WBS developed in the conceptual phase (Hodgson). Many project management techniques are available in this phase that operationalize the WBS for control and evaluation purposes. Among the available techniques, Gantt Chart and Critical Path Method (CPM) are the most commonly used. Gantt Chart is a bar chart with activities represented downside and timescale and responsibilities for each activity at the top. CPM is a more sophisticated technique than Gantt Chart and it displays the interrelationships between project elements, which help in the calculation of project duration and slack time.

In line with the plan developed in the definitional phase, the administrative and technical aspects of initiating the project are carried out in the production phase (Hodgson). Project management application in this phase assists in organizing the infrastructure for the project by providing for the required human and material resource for project work.

After initiation of project work in the production phase, the operational phase of the project continues. An important aspect of project management in this phase involves controlling the project development to ensure visibility and accountability (Hodgson). Prior established techniques such as Gantt Chart, CPM, or costed version of WBS could be referred to during this phase for the purpose of comparing planned versus actual progress and performance.

Finally, the divestment phase involves the formal termination of the project development process. Project management activities in this phase involve tasks to formally end project work and disband project participants.

Inadequate or improper application of project management tools, techniques and practices in the aforementioned phases of a project is likely to face problems in the development process and outcome of a project. Poorly managed projects are usually late -by months or years, greatly exceed budget and produce a system that does not meet the required objectives (Laudon & Laudon 519). Such projects usually have unrealistic deadlines, inadequate scheduling and resourcing, non-existent control mechanisms and unskilled manpower.

To simplify the project management process, applications have been developed to support the planning, organizing, controlling and communication of project related events (Lowery 3). Among the significant support that these applications provide are the quick creation, analysis and revision of schedules, quick and easy production of outputs and presentation of these outputs in different formats and summary. The availability of these applications have also made it possible for the prompt availability of information required to track progress and control schedules, resources, and costs.

2.2.3 Benefits of Project Management

The successful implementation of projects demands various needs. The benefits of the project management approach arise from addressing these needs. These benefits include (Burke 8-9):

- Estimation: Estimation forms the basis of project plan and helps in communicating what is expected and when it is expected and in measuring performance.
- Project integration: Project integration assists in the coordination and integration of the contribution of all project participants.
- Effective reporting interfaces: Structuring the planning and control system database around work breakdown structure and organization breakdown structure provides the means for project participants and corporate reporting respectively.

- Fast response time: Timely response help in effective project control.
- Effective control of trends: Regular monitoring of the progress trends of time, cost and performance aids in controlling projects.
- Single point of responsibility: Responsibility of the project being with the project manager limits scope overlap and scope underlap.
- Development of procedures related to the needs of the project: The planning and control system enables the development of procedures and work instructions, which are tailored to the specific needs of the project.
- Effective client communication: The planning and control system support in the provision of information about every aspect of the project to the client.

2.2.4 Project Management in Banking

Project management in banking revolves around a number of common areas. Among the common areas in which project management is applied are mergers and conversions, platform automation, hardware installations, software changes and upgrades and miscellaneous implementations like implementation of consultant recommendations (Belasco 5).

Current trends in the banking industry have seen a rapid advance in technology creating an ever-changing environment. There is continual need for analyzing/evaluating software and vendors, implementing new equipment, converting old equipment, and managing multiple tasks and events (Belasco 3). These activities have become the norm of the industry necessitating sound project management. Banks lacking the approach or skills for managing technological projects will experience rework, delays, and budget overages, resulting in the eradication of any proposed savings or opportunity originally considered by the project.

Consequently, such banks will be more exposed to failure in the marketplace corresponding to what will happen if the technology has not been used at all (Belasco 3).

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Chapter Three

Methodology

The aim of this chapter is to provide a general description of the tools and techniques that have been used in this research for analysis purpose. These tools and techniques include the Project Management Body of Knowledge and the 'Success Barometer Rating' tool.

The Project Management Body of Knowledge (PMBOK) has been used for assessing the general approach of the Information Technology project management practice of the Commercial Bank of Ethiopia. PMBOK has been selected for the purpose of this research as it is a globally recognized standard for managing projects, is established by the leading professional association in the area of Project Management and owing to its wide applicability worldwide. An extensive survey of standards use and best practices for assuring successful completion of information resource projects on time, within budget and with intended benefits showed PMI's PMBOK to be one of the standards being used to guide the development of information resource projects in governmental and private organizations in the US (Brotbeck et al). PMBOK has also been used as a basis in developing an Enhanced Management Framework for IT projects by the Canadian government, which is currently being used by many private and governmental organizations in Canada. In addition, international standard groups such as the American National Standards Institute and IEEE software engineering standards are increasingly recognizing PMBOK as a standard for sound project management (Brotbeck et al).

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currently being drafted and evaluated (Brotbeck et al). Therefore, for the purpose of this research, PMBOK has been supplemented with other resources related to IT projects.

As to other 'Bodies of Knowledge', at the present there is only one established by the UK-based Association for Project Management (APM). However, this body of knowledge is relatively young and as a result, is not widely used as PMBOK (Hodgson). Although the 'Bodies of Knowledge' established by the PMI and the APM differ, both take into account knowledge of techniques and management skills that are similar. Other 'Bodies of Knowledge' are yet in the process of development by countries such as Australia and Germany (Hodgson).

The other tool used, the 'Success Barometer Rating' tool has been used to provide an overall evaluation of the project management practice of the Information Technology project of the Commercial Bank of Ethiopia. The findings of the general approach assessment indicated this tool could be used for providing an overall evaluation. Other tools could not be used for reasons of availability.

3.1 Project Management Body of Knowledge

The Project Management Body of Knowledge is a guide that is published by the Project Management Institute (PMI), a well-established professional organization founded in 1969 and based in the US. With over 80,000 members in 120 countries worldwide, PMI is the leading nonprofit professional association in the area of Project Management (PMI). PMI establishes Project Management standards, provides seminars, educational programs and professional certification.

The Project Management Body of Knowledge (known as PMBOK) has been published in the early 1980's and included nine areas of project management knowledge (PMI). The nine areas are Project Integration Management, Project Scope Management, Project Time Management,

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Project Cost Management, Project Quality Management, Project Human Resources Management, Project Communications Management, Project Risk, Management, and Project Procurement Management.

Following, the nine knowledge areas and the activities involved in each knowledge area will be discussed.

3.1.1 Project Integration Management

Project integration management is a subset of project management and includes processes required for ensuring that the various elements of a project are properly coordinated (PMI 39). It consists of project plan development and project plan execution.

3.1.1.1 Project Plan Development

Project plan development involves taking the results of all planning processes and putting them into a coherent, consistent document for managing and controlling projects (PMI 39). The project plan documents the pertinent information associated with the project. If the planning processes have been properly carried out, it will include brief project summary, WBS, project organization chart, schedule, project approach, list of identified risks, estimated budget and cost, list of deliverables, description of planned quality activities, and others for which planning has been made (Nunes 4). The project plan also includes relevant supporting details related to the planning processes in the project.

3.1.1.2 Project Plan Execution

Project plan execution involves carrying out the project plan by executing the activities included therein (PMI 39). Focus of project participants during execution shifts from discovery to participating, observing, and analyzing that what was said in the project plan would be done and is being done.

3.1.2 Project Scope Management

Project scope management is a subset of project management, which includes the processes required for ensuring that the project includes all the work, and only the work required for completing a project successfully (PMI 47). Project scope management includes scope planning and control.

3.1.2.1 Project Initiation

Initiation is the process of formally recognizing that a project exists or that an existing project should continue into its next phase (PMI 49). Formal initiation links a project to the ongoing work of the performing organization. The outputs of the project initiation process include a project charter describing business need and product description, an identified project manager, constraints and assumptions made for the project.

3.1.2.2 Project Scope Planning

Scope planning involves developing a written scope statement, which is to be used as a basis for future project decisions (PMI 51). This scope statement is a written comprehension of the boundaries within which the project will remain and determines what will be affected, where changes will occur, and what will be accomplished (Belasco 16). Scope statements for projects should be formal and documented separately in accordance with a given structure. A formal scope statement should include project justification, project product, project deliverables, and project objectives. In addition to a formal scope statement, other outputs of the scope planning process includes supporting details for the scope statement and scope management plan describing how project scope will be managed and how project scope will be integrated into the project.

3.1.2.3 Scope Definition

Scope definition involves subdividing the major project deliverables into smaller, more manageable components (PMI 52). Scope definition is made in order to improve the accuracy of cost, time, resource estimates, define a baseline for performance measurement and control and facilitate clear responsibility assignments. The major output of the scope definition process is the Work Breakdown Structure, which is a deliverable-oriented grouping of project elements that organizes and defines the total scope of the project. In addition to being used for defining activity definition, Work Breakdown Structure is also used to develop or confirm a common understanding of project scope.

3.1.2.4 Scope Verification

Scope verification is the process of formalizing acceptance of the project scope by stakeholders (PMI 56). It involves reviewing work products and results to ensure that all were completed correctly and satisfactorily. The output of scope verification process is a formal acceptance document by relevant stakeholders, which indicates that the client or sponsor has accepted the product of the project.

3.1.2.5 Scope Change Control

Scope change control involves influencing the factors creating scope changes to ensure that changes are beneficial, determining that a scope change has occurred, and managing actual changes when and if they occur (PMI 57). The outputs of the scope change control process include modifications in WBS and other related plans, corrective action to bring expected project performance into line with the project plans and documentation of lessons learned for future use which includes causes of variances and the reasoning behind the corrective action.

3.1.3 Project Time Management

Project time management is a subset of project management, which includes the processes required for the timely completion of a project (PMI 59). Project time management includes activity definition, activity sequencing, duration estimation and schedule development and control.

3.1.3.1 Project Activities Definition

Project activities definition includes identifying specific activities that must be performed to produce the various project deliverables (PMI 59). The activity list must include all activities, which will be performed on the project and should be organized as an extension to the WBS to ensure that all activities for each deliverable are recorded and accounted for. Supporting detail for the activity list should also be documented and organized as needed to facilitate its use by other project management processes. Identification of the activities should be a collaborative effort encompassing the project manager(s), members of the project team and their team leaders (Belasco 53).

3.1.3.2 Activity Sequencing

Activity sequencing involves identifying and documenting interactivity dependencies (PMI 62). Efficient organization of interactivity dependencies makes scheduling and resource allocation easier. A major output from the activity sequencing process is a project network diagram, which is a schematic display of the project's activities and the logical relationships (dependencies) among them. A summary narrative that describes the basic sequencing approach should accompany the diagram.

3.1.3.3 Activity Duration Estimation and Schedule Development and Control

Activity duration estimation involves determining the number of work periods needed to complete individual work activities (PMI 64). Activity duration estimates should always include some indication of the range of possible results and assumptions made in developing the estimates should be documented.

Schedule development involves analyzing activity sequences, activity duration and resource requirements to create project schedule (PMI 66). Supporting detail for the project schedule should be documented. In addition, a schedule management plan defining how changes to schedule will be managed should also be made and documented.

Schedule control involves influencing the factors which create schedule changes to ensure that changes are beneficial, determining schedule change, and managing actual changes when and as they occur (PMI 71). The outputs of the schedule control process include schedule updates, corrective actions to bring expected future performance into line with the project plan and lessons learned including causes of variances, reasoning behind corrective action chosen and other types of lessons learned.

3.1.4 Project Cost Management

Project cost management is a subset of project management which is used for ensuring that the project is completed within approved budget (PMI 73). Project cost management includes resource planning, cost estimating and budgeting and cost control.

3.1.4.1 Resource Planning

Project resource planning involves determining the physical resources to be used to perform project activities (PMI 75). These resources include human resources, physical floor space, office equipment, products required for final project outcomes and basic supplies and

equipment that personnel on the team will need to perform their assignments (Nunes 3). The quantities of each resource and facility to be used for performing project activities should also be determined.

3.1.4.2 Cost Estimation and Budgeting

Cost estimation is an essential activity that involves development of the costs of resources required to complete project activities (PMI 76). Outputs of cost estimation include quantitative assessments of the likely costs of resources required to complete project activities, supporting details for the cost estimation and a cost management plan describing the management of cost variances.

Cost budgeting is the allocation of the overall cost estimate to individual work packages to estimate a cost baseline for measuring project performance (PMI 78). The cost baseline is a time-phased budget that is used to measure and monitor cost performance on the project and is developed by summing estimated costs by period.

3.1.4.3 Cost Control

Cost control involves influencing the factors that create changes to cost baseline, determining change of cost baseline and managing actual changes when and as they occur (PMI 79). Cost control activities include monitoring cost performance to detect variances from plan, ensuring that all appropriate changes are recorded accurately in the cost baseline, preventing incorrect, inappropriate, or unauthorized changes from being included cost baseline and informing appropriate stakeholders of authorized changes. Outputs of cost control include revised cost estimates, corrective actions, estimate at completion and lessons learned.

3.1.5 Project Quality Management

Project quality management is a subset of project management, which includes the processes required to ensure that the project will satisfy the needs for which it was undertaken (PMI 83). Project quality management includes quality planning, quality control and quality assurance.

3.1.5.1 Quality Planning and Control

Quality planning involves identifying the quality standards that are relevant to a project and determining ways to satisfy them (PMI 85). The existence of effective and well-documented quality procedures raises the credibility of the project team and confidence of stakeholders (Riordan). The major outputs of the quality planning processes are the quality management plan, which describes how quality policy will be implemented and operational definitions that describe what something is, and how it is measured by the quality control process. Another tool produced from quality planning activities is a checklist that is used for verifying the performance of a set of required steps.

Quality control is the monitoring of specific project results to determine their compliance with established quality standards and identifying ways to eliminate causes of unsatisfactory performance (PMI 89). Based on the monitored activities, those project results that do not conform to quality standards will usually result in rework so as to bring the non-conforming item into compliance with requirements or specifications. In some cases, process adjustments are also made involving immediate corrective or preventive actions as a result of quality control measurements. In cases where checklist had been used during conducting quality control activities, the completed checklist should become part of the project records.

3.1.6.3 Team Development

Team development involves developing individual and group skills to enhance project performance (PMI 99). The primary output of team development is improved project performance.

3.1.7 Project Communications Management

Project communications management is a subset of project management that includes the processes required to ensure timely and appropriate generation, collection, dissemination, and storage of project information (PMI 103). Project communications management is a determinant factor for the success of a project. According to one management expert, the greatest threat to the success of any IT project is a failure to communicate effectively to all pertinent individuals or groups (Hildebrand). Project communications management consists of communications planning, information distribution and performance reporting and recapping or administrative closure.

3.1.7.1 Communications Planning

Communications planning is the determination of the information and communication needs of stakeholders. This involves determining who needs what information, when they need it, and how it will be given to them (PMI 105). Communications planning helps in ensuring the timely and appropriate generation, collection, dissemination and storage of project information.

3.1.7.2 Information Distribution and Performance Reporting

Information distribution is making needed information available to stakeholders in a timely manner based on communications management plan, whereas performance reporting involves collecting and disseminating information related to performance (PMI 106). The output of information distribution includes project records of correspondence, memos, reports, and

documents describing the project. The output of performance reporting includes performance reports providing various types of information and level of detail as required by various stakeholders and may include status reporting describing where the project stands, progress reporting describing what the project team has accomplished and forecasting future project status and progress. Information distribution and performance reporting are generally directed at four primary areas: senior management, project participants, users and customers (Belasco 139).

3.1.7.2.1 Senior Managers

Senior managers are the key communication points throughout a project process. They are usually the group that commits the funds necessary to see the project through. Senior managers are interested about a project's progress and of major issues and concerns affecting the project. Communication to senior management should be prepared in a format that provides the maximum benefit with the least amount of effort.

3.1.7.2.2 Team Members

Team members are the persons involved closely with the detail of the project as they are the ones doing the project tasks (Belasco 37). Hence, communication to and from team members needs to be regular and timely.

3.1.7.2.3 Users

Users compose an important section of communication. Users are employees of the bank who will be operating the new system. User communication in many cases is complex because of their large number (Belasco 146).

3.1.7.2.4 Customers

Virtually most projects undertaken in service giving organizations have effect on external customers. This effect may be in the form of faster service, expanded service, or in any other

After risk identification, risk quantification involving qualitative and quantitative analysis of risks should be made as appropriate to prioritize the effects of the identified risks on project objectives. The major output from risk quantification is a list of opportunities that should be pursued and ignored and threats that require attention and those that do not.

Based on the analysis, risk response planning should be made involving development of procedures and techniques to enhance opportunities and reduce threats from risks to the project's objectives (PMI 119). Outputs of the risk response planning process include documentation of procedures to be used to manage risk throughout the project and inputs to other processes in the form of selected or suggested alternative strategies. In addition, other outputs include contingency plans (consisting of pre-defined action steps to be taken if an identified risk event occurs) and reserves to mitigate cost and/or schedule risk.

3.1.8.3 Risk Monitoring and Control

Risk monitoring and control is the execution of risk management plan in order to respond to risk events over the course of the project. Activities in risk monitoring and control process involve monitoring residual risks, identifying new risks, executing risk reduction plans, and evaluating their effectiveness throughout the project lifecycle (PMI 121).

3.1.9 Project Procurement Management

Project procurement management is a subset of project management that includes the processes required to acquire goods and services to attain project scope from outside the performing organization (PMI 123). It consists of procurement planning, solicitation planning and solicitation, source selection and contract administration and close out.

3.1.9.1 Procurement planning

Procurement planning is the determination of what and when to procure (PMI 125). Procurement planning is made after determining the resources required for carrying out project activities. Outputs of procurement planning include a procurement management plan describing how the procurement processes will be managed and a statement of work describing the procurement item in sufficient detail to allow prospective vendors to determine if they are capable of providing the item.

3.1.9.2 Solicitation Planning and Solicitation

Solicitation planning involves documenting product requirements and identifying potential sources (PMI 127). Outputs of solicitation planning process include procurement documents to solicit proposals from prospective sellers and evaluation criteria for rating or scoring the proposals.

Solicitation is obtaining bids, quotations, offers or proposals as appropriate (PMI 129).

3.1.9.3 Source Selection

Source selection involves choosing from among potential sellers (PMI 130). Output of source selection process consists of a contract. A contract is a mutually binding agreement that obligates the seller to provide the specified product and obligates the buyer to pay for it. A contract is a legal relationship subject to remedy in the courts.

3.1.9.4 Contract Administration and Closeout

Contract administration involves management of relationship with the seller (PMI 131). The project management processes that must be applied during contract administration include performance reporting to monitor performance, quality control to inspect and verify the adequacy of the contractor's product and change control to ensure the proper approval and

communication of changes. Outputs of the contract administration process include correspondence of buyer/seller communications and contract changes, if any.

Contract close out is the completion and settlement of the contract including resolution of any open items (PMI 133). It involves both product verification and administrative closure. Outputs of the contract closure process include a contract file, which is a complete set of indexed records and formal acceptance and closure with formal written notice that the contract has been completed.

Critical to contract administration and closeout is the ongoing validation of performance data through the use of software metrics and auditing the results (Goldfarb and Heller).

3.2 'Success Barometer Rating' Tool

The 'Success Barometer Rating' tool is part of the Enhanced Management Framework developed by Treasury Board Secretariat of the Canadian government. The Enhanced Framework has been developed for government owned business organizations in Canada undertaking large IT projects in order to meet the needs of business functions, deliver all expected benefits and complete projects on time and within budgeted limits (Treasury Board of Canada Secretariat). The framework has been developed after making extensive research in government and private business organizations in Canada. It includes and supports the concepts outlined in the PMBOK and delivers unparalleled benefits to many interested parties (Treasury Board of Canada Secretariat).

The 'Success Barometer Rating' developed in the Enhanced Framework has been developed as a guide for determining the success position of projects at various phases. This rating tool addresses four key areas: support for business, accountability, project manager discipline and risk management. Support for business is related to business directions and includes such

practices as alignment of a project with business goals, performing business case analysis and end-user involvement in a project. Accountability is associated with the specific and explicit accountabilities of multiple stakeholders, explicit roles of project sponsors, project leaders and project managers, and competencies of project team members. Project manager discipline relates to the prerequisite knowledge, skills and experience that project managers must possess. Risk management is concerned with identification of risks, development of mitigation plans and application of practices, methods and tools that would minimize risk in a project.

The 'Success Barometer Rating' tool uses a checklist of questions related to factors that are critical to a project's success based on the aforementioned key areas. The entire project phases are divided into two major phases: initiation and planning phase and implementation/execution and control phase. For each of these phases, totals of issues addressed and not addressed for each key area will be calculated, rated and plotted in a success scale.

Following, summary of the questions that are related to the critical factors of a project's success in each phase and under the four key areas are discussed.

3.2.1 The Project Initiation and Planning Phase

The following are the summaries of the questions under each key area that are critical to a project's success in the initiation and planning phase of an IT project:

3.2.1.1 Support for the Business

Questions relating to support for the business in the project initiation and planning phase attempt to address issues regarding a project's feasibility and project sponsor and users commitment. Questions related to a project's feasibility attempt to address such issues as

alignment of the project with business plans and performance of adequate and documented business case analysis. Questions reflecting project sponsors and users commitment raise issues regarding responsibility of project sponsors for project scope and definition, review and approval of requirements by project sponsors and presence of formal documented plans in place to involve appropriate levels of users throughout the project.

3.2.1.2 Accountability

Questions related to accountability in the initiation and planning phase focus on determining the presence of a formal structure and well defined responsibilities, accountabilities and authorities for the project sponsor, project manager and team leaders. Related to this, such issues as the presence of positions and clearly defined, documented and understood responsibilities, accountabilities and authorities of project sponsors, project leaders and project managers are raised. In addition, questions regarding team members' capabilities are also raised. In this regard, questions are raised regarding team members' sufficient expertise in the project domain and prior history of success implementation of a similar project.

3.2.1.3 Project Manager Discipline

Inquiries relating to project manager discipline in the project initiation and planning phase attempt to determine if the project has been within the project manager's capacity and if adequate authority and control has been given to the project manager. Such questions as the project manager's prior experience on a project of similar size, scope and complexity, sufficient control of the project manager over human resources, and the project manager's freedom and ability to act when warranted are raised. Questions are also raised regarding the project manager's approach to potential problems at the planning phase. These questions raise such issues as the presence of pre-determined criteria for problem escalation and if so, if these escalation criteria are clear and documented.

3.2.1.4 Risk Management

Questions raised regarding risk management in the project initiation and planning phase basically attempt to determine if risks associated with work breakdown, task duration, project control, project cost and project approach have been addressed. In addition, the questions also include risks associated with critical resources for project success such as technology and human resources. Also, questions are raised regarding risk identification and mitigation. Related to this, the questions attempt to address if all known management and technical risks have been assessed and whether mitigation strategies are in place for all identified risks.

3.2.2 The Project Implementation/Execution and Control Phase

The following are the summaries of the questions under each key area that are critical to a project's success in the Project Implementation/Execution and Control Phase of an IT project:

3.2.2.1 Support for the Business

Questions raised regarding factors that support the business in the project implementation/execution and control phase address if the project sponsor representing users have taken accountability and responsibility for keeping the project within scope and if end-user commitment have been ensured throughout the project. Issues related to whether review and revalidation of business case have been made at certain points and during changes in the project or business function are also raised. In addition, the questions also address issues relating to changes in project specification. Regarding this question is raised if significant changes to project specifications have been documented and approved by appropriate stakeholders.

3.2.2.2 Accountability

Questions regarding accountabilities that are critical to a project's success in the project execution and control phase address issues relating to communication, reporting relationships,

adequacy and performance of team members, project scope and time and independent review of project management activities. Generally, questions are raised about the presence of regular status/progress meetings, management of project scope, the presence and use of a matrix structure throughout the project and if an independent party has reviewed the project management activities.

3.2.2.3 Project Manager Discipline

The questions related to the project manager discipline in the execution and control phase attempt to address issues pertinent to problem management, project's image and communication of project performance and progress. Regarding problem management, questions are raised about the availability of information for decision-making and if prompt decisions have been taken in the event of serious problems. Concerning the project's image, a question is raised if the project is maintaining a positive project image or not. Questions are also raised to determine if complete information on project performance and progress are being provided.

3.2.2.4 Risk Management

Questions under this section relate to factors regarding risk management that are critical to a project's success in the project execution and control phase. These questions attempt to determine if planned activities that would minimize project risk have been executed. Specifically, the questions attempt to determine about the presence of formal mechanism and tools for monitoring project schedule, if team leaders are held to budgetary constraints, if independent reviews are being held as scheduled and if review are being carried out by the steering committee.

Chapter Four

The Information Technology Project of the Commercial Bank of Ethiopia

4.1 Company Profile

4.1.1 Historical Background and Current Position

The Commercial Bank of Ethiopia (CBE) is a commercial bank involved in branch banking and is the oldest and largest bank in Ethiopia. It is owned by the government and was established in 1964 during the Imperial regime, following the segregation of the central and commercial banking of the State Bank of Ethiopia (Belay 73). With the coming of the socialist government, CBE was re-established in 1980 under proclamation No. 184 and merged with Addis Bank (Belay 73). Thus, CBE became the only bank rendering universal banking services to the public. The objective of the bank during the socialist regime was rendering commercial banking services to the public, with special favor for public enterprises and service co-operatives while denying appropriate attention for the private sector (Pangaea Partners).

With the coming of the present government to power, CBE was re-established as public enterprise per regulation No 202/1994 of the Council of Ministers of Ethiopia. Under this regulation, the capital of the bank has been raised. Besides, the bank had also been entrusted with engaging in all banking activities as customarily carried out by commercial banks.

Presently, CBE employs 6568 employees (as of March 2001) and has 171 branches nationwide, one branch office in Djibouti and a majority owned subsidiary, Commercial

Nominees Private Limited Company. According to the most recent published annual report of 1997/98, the bank has total assets amounting to Birr 18.6 billion and total income of Birr 1, 292.5 million.

CBE remains holding its dominant market share (more than 80%) in terms of resource mobilization and credit provisions. However, this share tends to diminish with the entry of private banks in the country (CBE Annual Report 1997/98).

4.1.2 Mission Statements and Functions

CBE is a service giving organization that has basically been established to carry out financial activities. To carry out its activities, proclamation No. 184 of 1980 sets the objectives of the bank, and regulation No 202/1994 the purposes. Based on these two, the management of CBE has framed the mission statements of the bank to be (CBE Promotion Department):

- securing high business growth and maintaining market share in the Ethiopian financial market;
- improving profitability by providing high quality financial product/services;
- maintaining leadership in product and service development;
- establishing credibility and creating favorable image with correspondent banks all over the world;
- assuming technological leadership;

To meet the aforementioned mission statements, CBE separates its activities into various functional areas: Finance, Marketing and Corporate Planning, Operations, Human Resource and Property Management and Credit and Risk. As per the organizational structure (See Appendix VII), the bank is headed by one President, one Executive Vice President for

Operations, four Vice Presidents for Credit and Risk, Finance, Marketing and Corporate Planning, and Human Resources & Property Management. The Director for Information Services is also accountable to the president of CBE with status of assistant vice president.

CBE offers a wide range of commercial banking services. Its domestic services include savings account, current account, fixed or term deposit account, overdraft, foreign currency accounts, short-term loans, agricultural loans, medium term loans, personal loans, special loans, merchandise loans, and domestic money transfer. Its international operations include international money transfer, documentary credit, inward and outward bill collection, bank guarantees and foreign exchange.

4.2 The IT Project: Background

4.2.1 Overview of Computer Operations Prior Initiation of the IT Project

To meet its objectives of attaining high market standing through the provision of quality service to its customers, the need for an advanced IT for the bank was apparent. Cognizant of this fact, top management of CBE decided to undertake a major IT project investment project. At the time the IT project was initiated, the operations of CBE were partly computerized through the deployment of both on-line and batch based procedures on a mainframe-based system (NCR 8568). The system, located at the data processing center in Addis Ababa, had been in use for approximately 14 years and serviced five branch offices: Addis Ababa Branch, Finfine Branch, Andinet Branch, International Banking Division and the National Bank of Ethiopia (supported as 'branch'). The application software running was the Total Concept Banking System (TCBS/2 from Baton Rouge International, USA). The branch offices operated NCR 2262 financial terminals and NCR 7900 non-financial terminals (for data entry and inquiries). The terminals were connected through dedicated telephone lines to the mainframe.

Twenty-one branch offices were using NCR DMV 8086 personal computer systems in stand-alone mode. The application software running in this system was locally developed. The operations were in back office configuration for the sole purpose of transaction processing. The rest of the branch offices operated either manually or used carrier driven bookkeeping machines (NCR 299).

4.2.2 Problems of Computer Operations Prior to Initiation of the IT Project

While operating the systems working in different platforms, CBE encountered critical problems that reflected on its operation. One problem was that data processing for the 21 branch offices took 3-5 days before being captured due to transport and communication problems over long distances. The solution to this problem, an online system that had originally been planned for, could not be implemented due to technical problems. In addition, as per interviews with IT Department staffs, the 8086 personal computers posed problems of disk space due to high volume of transactions.

Another problem with the prevailing computer system was that it was getting obsolete with the rapid advance in technology. New technologies were emerging in the market that highly reduced operational costs, improved service quality and provided for MIS for improved decision making. However, the system in place did not accommodate many features that most of these new technologies in the market provided for.

The aforementioned problems forced management to envision an IT investment that would alleviate the problems and seize opportunities from new technologies. This vision of management was facilitated and turned to reality by another factor, which will be discussed in the following section.

4.2.3 IT Project Initiation

Various economic reforms affecting different sectors of the Ethiopian economy has been made in 1994, in response to the decision for transforming the economy from command to market economy. As part of the economic reforms launched in 1994, different financial liberalization measures and restructuring of financial institutions have been undertaken. These reforms affecting the financial industry had the aim of promoting a competitive environment and efficient banking, insurance and other financial services to the public.

The embarking of the government of Ethiopia upon financial liberalization measures were expected to bring about sweeping changes in the organization of the banking systems and the services they deliver. This enabled the management of CBE to expedite the idea of modernizing operations and acquiring state of the art systems and equipment, with the objective of improved service to customers and also to substantially improve the Management Information System of the bank. To realize this objective, the management decided to embark upon an IT project, which would involve the selection and implementation of the most optimal and suitable IT solution.

4.2.4 IT Project Scope and Objectives

The scope of the IT project at initiation was to have a bankwide centralized data processing system. The project was expected to cover 80% of the banking operations of branch offices, 30 Addis Ababa city branches and 27 outlying branches. In addition, the project was also expected to embrace the International Banking Division and 7 other Head Office divisions.

It was also expected that the project would allow autonomy and independence for the branch offices as well as accommodate for adequate central monitoring and consolidation of data. The branch offices in Addis Ababa were envisaged to have on-line status through dedicated

telephone lines, constituting a WAN with LANs installed in each branch office. On the other hand, the operations of outlying branches were expected to be carried out through independent branch-based LAN only, as there was usually either no communication line available or were of inadequate quality. Communications to and from outlying branches were expected to be carried out in diskettes/tapes or through public switch network if possible.

The wider scope of the project was changed in mid of 1997 when the Y2K issue was brought to the attention of management through the NCR newsletter "RoseGate". The newsletter announced that NCR mainframes would fail by the end of 1997 due to Y2K problems. As NCR mainframes were being used for operation in the National Bank of Ethiopia and CBE at the time, the issue was given high priority and attention not only by CBE but also by the government as well. As a result, a board was established with representatives from the Prime Ministers Office, National Bank of Ethiopia and CBE. The board was responsible for following up and deciding on matters related to the Y2K problems.

Accordingly, consultants from NCR and Baton Rouge were hired to study the hardware and software of the system that existed then and determine as to exactly when the system was expected to fail. The output of the study from the consultants reported that the system would continue to operate without the effect of Y2K until June 1998, which was 6 months longer than what was originally announced in the RoseGate newsletter.

Meanwhile, CBE had already decided on two finalists for the supply of hardware and software for the bankwide IT project. However, due to the critical nature of the Y2K problem and the aggressive time frame that must be met to solve it, it was decided by the management of CBE to narrow the scope of the project. Hence, it was decided for a separate project to be established that would address the introduction of a system and the conversion of the existing branches to the new system. Specifically, the scope of the project was narrowed down to

transferring the NCR mainframe data to an open platform. The new project was not considered a replacement of the bankwide IT project but was anticipated as a sub-project that would provide a solid foundation for the bankwide IT aims of the bank

CBE informed the other representatives of the board of its position and requested for proceeding with the selection of the final supplier who would be awarded the project. The representatives from the Prime Ministers Office and the National Bank of Ethiopia approved CBE's request and decided that the solution should be not only for CBE but also to the National Bank of Ethiopia as well.

4.2.5 IT Project Implementation

On approval to proceed with the selection of the finalist supplier by representatives from the Prime Ministers Office and the National Bank of Ethiopia, the two finalists were approached and requested for project completion within a limited time constraint. One of the prospective vendors rejected the offer on the ground that they could not meet the time limit, while the other accepted. The finalist vendor who accepted was comprised of two suppliers, Kindle Banking Systems for the software and NCR for the hardware, who came jointly on a consortia basis.

The Y2K project was started at the end of September 1997 and was planned to be completed by December 1997. To carry out the project activities, various teams were formed from the vendor's side and from CBE's side. These teams included the business team, technical team, training and procedure team, testing team, conversion development team, environment support team, and conversion support team (See Appendix IV for Project Organization Structure). A team leader led each team and the team leaders were under the project managers from Kindle Systems, NCR and CBE. The lead project manager role was played by the

project manager from Kindle Systems. Project coordinators were also available that supported the project manager from CBE.

The foregoing project participants executed the various project activities and the project was implemented as per the time planned. However, after implementation, team members from CBE's side detected various problems, mostly related to the software. Few of these problems were solved during post-implementation activities and during maintenance calls. As some of the problems were unresolved, they are still reflected in the existing system of CBE.

4.3 Major Problems of the Existing System

At the present, there are four branches (Andinet, Addis Ababa, Finfine and Africa Hall) and one division (the International Banking Division) in CBE that are computerized. These branches and the International Banking Division (IBD) use the software BANKMASTER Database Management System. The software is used for handling various operations of the branches and the IBD such as saving accounts, current accounts, loans and international transactions. The software has been in use since 1998.

Even though the computerized branches and the IBD are not facing major problems in the hardware, they face various problems in using the existing software. Information related to these problems had been gathered through interviewing end-users and staffs from the IT department (See Appendix II). The presence of these problems reflect that the project has been less successful in adequately creating the anticipated benefits of service quality and operational efficiency and effectiveness. The major features of these problems and their effect in the operations of the bank will be discussed below.

4.3.1 Downtime

Downtime is the periods of time in which the computer and network system is not operational. Interviews with branch users and staffs from the IT department revealed that the existing computer system in CBE faces frequent disruptions in operation and that downtime during each disruption usually lasts one to three days.

As the computerized branches depend highly on the technology for carrying out many transactions, operational disruptions positions the bank in a deleterious condition and has also serious and frustrating impact on end-users. Interview with users working in the back office and front office revealed that during operational failures most of those working in the back office remain idle whereas those working at the front office shift to the use of manual methods. According to the interviewees working in the front office, manual operations have been greatly inconvenient to the bank's customers, as it is very time consuming.

The deleterious conditions created during downtime do not end even after the system starts operation again. As a matter of fact, most of the users interviewed reported that the aftermath effect is much worse than the periods of time in which the system has not been operational. During the first few days the system has started operation, users usually encounter errors associated with the transactions dealt with in the day the system failed. To correct these errors, reversals are made and the entire transactions are entered again. In addition to these transactions, the backlog created during downtime would have also to be dealt with during the first few days of the systems operation. All these transactions and the ongoing operations creates work load on the users and places them in a condition where they are more prone to make errors during the first few days of the system operation. Besides, to deal with the workload, users have to work over time and this creates additional cost to the bank.

4.3.2 Program Code Defects

According to interviews with some IT staffs, the present banking software used in CBE suffers from some serious program code defect or bug problems. The bugs result in program termination or prohibit the proper functioning of certain functions. As a result, end-users have shifted to the use of manual methods, which is more time consuming and more costly for performing those operations that are affected by bugs. These problems are having a major impact in the business operations of the bank, thereby causing end-users dissatisfaction and complaint.

One instance of a serious bug problem worth mentioning here is the problem faced in the local banking area. There are some transactions in local banking, which involve conversion of foreign currencies to the Ethiopian currency. When the present software is used to handle such transaction, the program terminates and the whole system stops responding. The computer system would have to be restarted again for continuing operations.

Though users have reported the aforementioned problem and others similar problems to the Information Technology Department, no effort has been made on the part of the department to fix the problems. This is due to fear that an attempt for resolving the problems would introduce new bugs or series of bugs having a much worse impact than the previous ones. Though external maintenance call to the software supplier could have alleviated some of the problems, the department has avoided taking such measure due to high cost (professional fee and accommodation fee for the vendor's staffs) involved in maintenance support. As a result, according to interviews with IT staffs, the program suffers from unresolved program code defects at the present.

4.3.3 Deficient Functionalities

The software presently in use in CBE has many functionalities for handling different types of transactions of the various operations of the bank. However, the software has also various functionalities that are deficient for handling the various transactions of the bank. Most of these functionalities are the most critical ones in any banking applications and their proper functioning has an acute impact in the operations of the bank.

One instance of deficient functionalities in the existing software cited by some interviewees working in the back office had been about those used for calculating interest and updating balance on loans. These functions do not take into account the prevailing loan payment conditions in the country, whereby principal and interest on loans are not repaid as specified in the repayment schedule calculated by the software. However, as the system has been programmed to assume repayment as scheduled, it reduces the principal and interest scheduled to be paid from the outstanding balance of previous month end and updates the loan and revenue accounts, usually long before actual payment is made by the customers. As a result, at the beginning of each month reversals are made for the entries that are already passed by the system and it is when the customers make actual payment during the month that the correct entries are passed.

All in all, the above types of deficient functionalities problems obligates users to extend to the use of manual methods, which is more time consuming and costly. Besides, it also creates unnecessary workload on users when dealing with rectifying conditions.

4.3.4 Under Utilization of Software

The software in place in CBE has many features that support the efficient and effective handling of transactions of the bank. However, many of these features are not being used in

most of the computerized branches. One such feature observed by a user who has been transferred from one computerized branch to the other, has been regarding the use of a reversal functions that is already available in the software. The user reported that in the branch he was previously working with, the in-built reversal function in the software was used to handle reversals. However, in the branch he is working with now, though the same software is being used, manual reversals are made for each account, which are to be reversed. This and other features that are underutilized places the bank in a contrary position of upgrading its service and operations through computerization, thereby giving it a reputation of less prolific investment.

4.3.5 Non-integration with long-term IT plans

Short term IT plans and implementations should be consistent with long term IT plans to avoid additional efforts of integration. The existing computer and network system of CBE, though originally intended to be in line with the long term IT plan of the bank, has many unused features that would have facilitated the long term plan of the bank. For instance, to be integrated with the future bankwide online system, the existing system should advance favorable conditions that would facilitate the adoption of the online system. However, at the present only few branches are using the online system due to conflicting conditions in the prevailing system. One such conflicting condition created has been problems of interpost between branch accounts in the centralized system. This has been due to absence of a control system that would allow a single branch to access only its own accounts and the high similarity of the codes for the various branch accounts.

Another significant instance of failure of integration with long term IT plans is the use of scanners to capture signature. At the present, it is only one branch that is using the scanner system. However, its application in the other branches would have facilitated one of the

objectives of the online system of the bank, which is allowing customers to make withdrawals from any other computerized branch of the bank in Ethiopia. Failure to address the aforementioned problems results in the further prolongation of the implementation of the long-term plan.

4.4 IT Project Management Practice of CBE

The aforementioned problems in the existing system of CBE are features that are generally exhibited when there are problems in management of IT projects. As the objective of this research is to find out if the IT project management of CBE has been a major cause for such problems, this part of the research report first aims at providing a general picture of the IT project management practice of CBE, before actual analysis is presented. The findings presented encompass the project management aspects of both the bankwide automation project (at initiation) and the Y2K project. These findings are based on document reviews and interviews with CBE staffs that participated in the bankwide automation and the Y2K project.

The findings are presented following the actual order of the project management activities carried out at initiation of the bankwide automation project and in the Y2K project.

4.4.1 Bankwide Automation Project

4.4.1.1 RFP Preparation

Upon decision of CBE's top management to embark on a bankwide automation project, it was planned and decided to have a service from an external expert who would assist the bank in preparing the Request for Proposal (RFP) for the bankwide automation project. Based on this decision, a project assistance call was made by CBE to the World Bank. In response to this call, the World Bank provided an expert who had prior experience of preparing RFPs for various banks worldwide.

Along with the World Bank expert, two other CBE staffs were recruited to assist the expert. Hence, a team was formed which was composed of one external expert and two CBE staffs.

Total timeframe for completing the RFP preparation had been set by top management of CBE at the outset and communicated to the RFP preparation team. To complete the preparation process within the established timeframe, weekly planning was made by the expert. No formal tools have been used to plan the weekly activities. These weekly plans were communicated to team members in weekly meetings through memos. Based on the weekly plans, team members' used to carry out the activities included therein. Issues and concerns were also raised in these meetings for which minutes were taken and documented.

The culmination of the team effort, the RFP, included various elements that prospective vendors would have to take into account and satisfy in preparing and presenting their proposals. Among these have been included elements that would facilitate the proper management of the bankwide automation project. Related to this, the following elements have been identified through review of the RFP:

Project Scope

- Branch, head office organs and specific areas of operations to be affected by the project had been identified.
- Final project outcome had been determined to be computerization and networking of the various branches and head office organs.
- Benefits for branch operations had been determined to be provision of adequate control and supervision, and also promotion of communication among branches and head office organs.

- Benefits for head office organs had been determined to be improved management information, internal control and audit.

Demonstrated Capability of the Vendor

- Vendors had to have experience and track record in the supply, installation and commissioning of sizable computer projects in the banking sector, preferably in Africa.
- List of reference installation and clients performance in African countries and study visit by CBE personnel to agreed reference site had to be made.
- CV of senior personnel to hold key position in project implementation.
- Vendors had to be established in Ethiopia or had to be prepared to be established in Ethiopia.

Project Cost

- Details of all costs/fees had been required under specified headings of equipment, software, delivery and installation, on-going support and advice, training, customization, etc.
- For each of the above, purchase price in unit and total, annual maintenance fee, license fees for the software, annual service and maintenance charges for the hardware, and any other charges had also been required.

Functional Requirements

- Requirement analysis for each function of the various operations of the bank had been identified and listed.
- Report facilities that should be available had also been identified.

General Software Requirements

- It had been required to have a standardized package solution that supports all existing retail and wholesale banking services and the head office functions.
- Preference of operating software, guarantee/warranty conditions and provision of source code, development tools and functional specification documentation had also been specified.
- Support that would be provided during set-up installation and on-going support after installation with detailed response time by level of support urgency had to be specified by the prospective vendors.
- Outline of proposed design and justification for customization had also been required.

General Hardware Requirements

- Specification of the hardware had to be made.
- Provision of details of components, peripherals, communication equipment, ups, etc.
- Hardware had to be at industry standards and justification for application of particular standard had to be made.

General Networking Requirements

- Cabling and all necessary equipment requirements had to be specified
- New topology had to be designed
- Dedicated telephone lines had to conform to criteria set by the Ethiopian Telecommunication Authority

Quality Testing

- Pilot phase had to be conducted to test the total functionality and interfaces between the systems various parts, and which would constitute grounds for acceptance test necessary before serial installations.

Time and Activity Plans

- Complete time and activity plan provision in detail for pilot phase and an outline for serial installations to follow.
- All activities had to be chartered in a Gantt chart also indicating responsibility of CBE or the Vendor.
- Starting date and total number of months for completing pilot phase had to be established.
- Outline of serial installations had to include start and finish date.

Documentation

- All documents to be supplied by the vendors upon project completion had to be identified and listed.

4.4.1.2 Assessment and Evaluation of Vendors

Upon completion of preparing the RFP, potential vendors had been notified in a magazine, The Economist and in a newspaper, the Ethiopian Herald, through announcement of a request for proposal. In response to this, various hardware and software vendors bought the documented RFP from the bank and based on it prepared and presented their proposals to CBE.

For assessing and evaluating the proposal presented by the various potential vendors, it was once more decided to use an expert service. This time a project assistance call was made to the United Nations Development Program (UNDP). In response to this call, UNDP provided

an expert that would assist CBE in the assessment and evaluation process. Besides, it was also planned and decided to recruit individuals from within the country with past experience on vendor assessment and evaluation. Based on this decision, nine other individuals in higher positions of various governmental institutions and organizations were recruited. Hence, a team was formed which was expected to work under the leadership of the expert from World Bank.

Assessment and evaluation was to be done based on pre-established criteria set forth in the RFP. To carry out the assessment and evaluation, each individual was expected to work on a full time basis and was assigned to work on a single proposal at a time. After completion of individual assessment and evaluation of all potential vendors, group reviews of individual assessments and evaluations were made and final evaluations were decided.

During assessment and evaluation of vendors, all relevant documents related to the assessment and evaluation process such as assessment forms, and proposals submitted by prospective vendors have been well documented.

4.4.2 Y2K Project

4.4.2.1 Planning Activities at Initiation: By CBE Staffs

The finalist vendor for the Y2K project had been selected based on the proposal submitted for the bankwide automation project. As per interview with project participants, the proposal of the finalist vendor included the following aspects related to project management:

- WBS with detailed activities along with the total timeframe for completing each activity.
- Planned hardware, software and cables requirements along with actual cost of these resources that were to be used for the final project outcome.

- Planned number and qualifications of human resources from the vendor's side along with daily rate of payment for each individual.

As planned requirements for hardware and cables set forth in the proposal of the bankwide automation project had to change for the Y2K project, the first planning activity undertaken at initiation of the Y2K project had been for the hardware and cables to be used in the final project outcome of the Y2K project. This planning was done based on the proposal submitted by the finalist vendor for the bankwide automation project and on requirements of the existing system. CBE staffs had made this planning and it was also intended to use these resources for carrying out project activities.

4.4.2.2 Planning and Other Activities at Initiation: By the Vendor

Review of a Project Definition Report (PDR) submitted by the vendor at initiation of the Y2K project revealed planning had been made for the following:

- Project scope: The scope of the Y2K project had been defined in general statements in different section of the PDR, by stating what was to be done, what was to be affected and where changes were to occur.
- Total timeframe: The total timeframe within which project was to be completed had been established and set in the report.
- Project roles and responsibilities: The project responsibility of the major parties in the project, i.e. Kindle Systems, NCR and CBE, had been outlined and documented in the PDR.
- Project implementation approach: The general approach for implementing the project had been established in the PDR by referring to the phases the project will follow and the time that need to be minimized for the major events.

- Software components: The various software components had been identified along with the operating environment each software was to operate in.
- High-level project plan: The high-level project plan included a WBS of the activities to be carried out in the project, under various major events. In addition, it also includes duration and schedule dates for each activity. The high-level project plan had been documented in the PDR using the project management tool, Gantt Chart.

In addition to the above planning activities made, the PDR also included various assumptions made related to the project. These assumptions include:

- Project will receive priority in the bank and full backing and cooperation of senior management.
- Presence of a steering committee to define and adhere to priorities
- Full time functional and technical team members, which will include representatives of each of the user areas.
- Approval will be solicited and obtained from users before confirming the system design.

4.4.2.3 Human Resource Organization Planning

Upon review and approval of the PDR by top management of CBE, according to interviews with project participants, various teams were formed with staffs from Kindle Systems, NCR and CBE. The interviews also revealed that staffs from CBE had been selected based on available staffs working in related areas of the project they were to be assigned on.

Based on document review, it has been found that human resources have been organized in matrix structure. This had been displayed using a Project Organization Structure (POS). The POS (See Appendix IV) shows that teams were composed of the business team, technical team, training and procedure team, testing team, conversion development team, environment support team, and conversion support team. Each team had a team leader, and the team leaders were under the three project managers (the lead project management role played by staff from Kindle Systems) from the vendor's side and from CBE. These project managers were under the steering committee, which is composed of senior managers from the various operational areas of the bank. Interviews with project participants also revealed that the POS had been communicated to team members, project managers and the steering committee in a memo.

4.4.2.4 General Areas of Responsibility Planning

As per document review, the general areas of responsibility of each team have been identified and communicated using a memo.

4.4.2.5 Kickoff Meeting

According to interviews with project participants, prior actual execution of planned activities, kickoff meeting had been conducted which included team members, project managers, steering committee and senior managers of end-user branches and the IBD. The lead project manager from Kindle Systems had acted as the facilitator of the meeting. Interview with project participants revealed that the meetings had created general awareness about the project among those who participated in the meeting. They also stated it had helped in gaining commitment from senior managers of end-user branches and the IBD for providing the human resources and other supports as required.

4.4.2.6 Weekly Project Planning, Execution and Communication

Interview with project participants revealed that weekly meetings were conducted with the lead project manager as the facilitator. At the beginning of each meeting, the lead project manager provided a brief review of the project timeline and discussed with team leaders about the status of the tasks they were assigned and due to be completed. After status update, tasks were assigned to each team by the project manager to be completed for the coming week, which was communicated in a memo. It was based on this that team leaders assigned particular tasks for team members to carry out during the week.

During the weekly meetings new and outstanding issues and problems were also raised and discussed. To capture the issues and problems raised and discussed, minutes were taken by the lead project manager, which had been useful for timely discussion and for follow up purposes.

Other than the weekly meetings, it has been observed from document reviews that memos were used by the lead project manager to formally communicate other matters related to the project. Memos had been used to communicate such matters as, general tasks and areas of responsibilities of each team, strategy and approach for major events, and for other similar matters related to the project.

4.4.2.7 Data Cleanup

Review of the high-level project plan revealed that under the post-conversion support section of the plan, 'data cleanup' activity had been planned for. The activities related to data cleanup had been carried out by the project managers, project coordinators and team members.

According to interviewees, it was the team from CBE that had been assigned to identify and analyze issues and problems. The team after working with users, used to present outstanding issues and problems to the attention of project managers and other project participants in a

weekly post implementation meeting. However, according to interviewees, conflicts used to occur most of the time between team members of CBE and the vendor due to resistance on the part of the vendor to accept and resolve the issues and problems. As a result, most of the issues and problems remained unsolved during data cleanup.

Chapter Five

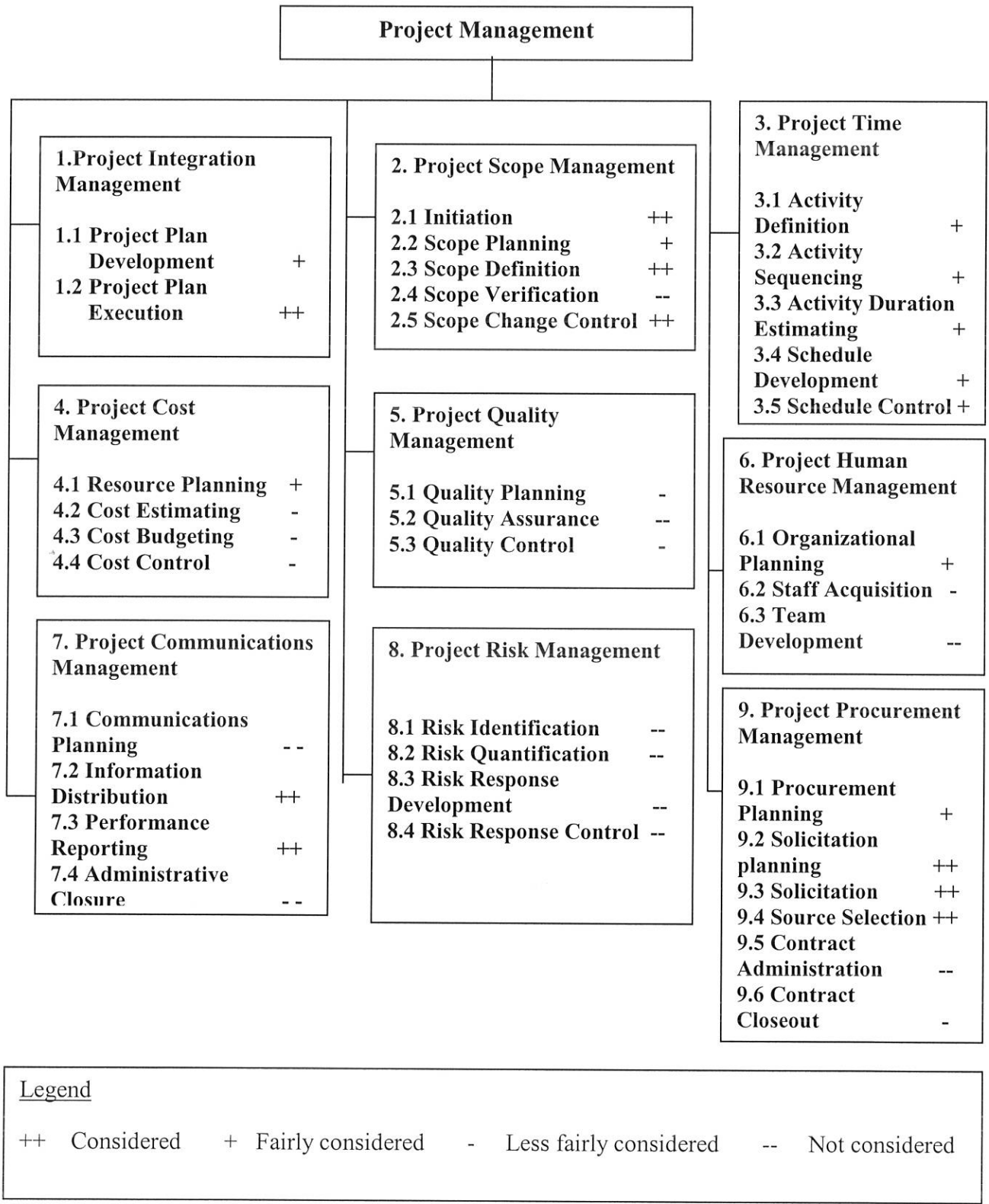
Review and Assessment of the IT Project Management Practice of CBE

5.1 General Approach of CBE's IT Project Management Practice:

Review and Assessment

The general approach of the IT project management practice of the CBE has been reviewed and assessed based on the applicability of the project management processes involved in the nine knowledge areas of the PMBOK (See Figure 1 for an overview), supplemented with other resources related to IT projects. The assessment involved determining if the project management activities in the various processes identified in the PMBOK have been addressed or not. Based on this, for each activity that has not been addressed or adequately addressed, the problems faced as a result (if any) and the specific benefits that could have been derived from carrying out the activities in the PMBOK has been discussed. Besides, for those activities identified in the PMBOK that have been carried out in the IT project of CBE, the advantages that had been obtained from carrying out such activities has also been discussed.

Figure 1: Overview of CBE's General Approach Assessment



5.1.1 Project Integration Management

5.1.1.1 Project Plan Development

The PMBOK requires the results of all planning process to be integrated into a coherent and consistent document for the purpose of managing and controlling projects. The output of the planning process of the Y2K project at initiation included resource planning for hardware and cables, project summary (scope and total time frame), work breakdown structure, schedule, software components, POS and project approach. Except for the resource planning for hardware and cables and the POS, the rest had been included in the PDR submitted by Kindle Systems. As the resource planning had been executed prior arrival of the vendor, it had been only the POS that had to be integrated with planning documented in the PDR, to form the project plan. However, there has not been a separate project plan document that has integrated these two planning processes. Though the project plan forms the basis for managing and controlling projects, developing a project plan for the Y2K project would not have had that much effect on the project management effort as it is only the POS that has not been integrated. Development of project plan would have especially proved more had the outputs of the planning process included many other activities such as plans related to risk, cost, quality, deliverables and others as all these require to be integrated in a coherent and consistent manner.

5.1.1.2 Project Plan Execution

Project plan execution, according to the PMBOK, involves carrying out a project plan by executing the activities included therein. In the Y2K project case of CBE, the actual project has been carried out by executing those planned activities found in project plan memos, which have been based on the high-level project plan. Status and progress reporting resulting from this project plan execution used to be communicated among team members, project managers,

and project coordinators during project participants weekly meetings. Communication on the project's progress used to also be made to senior managers on a weekly basis.

In the Y2K project of CBE, the practice of employing plans for the execution of actual project activities, had been of great use for accomplishing planned activities on a timely basis. This practice would have been more useful had the outputs of the planning process included all the other essential planning processes such as those related to quality, risk, cost and others, as it would have ensured implementation of these planned project activities, thereby accelerating the project's success.

5.1.2 Project Scope Management

5.1.2.1 Initiation

As per PMBOK, initiation is a process of formally recognizing that a project exists. For the bankwide automation project, the RFP and for the Y2K project the contract, served as a charter, which formally recognized the existence of the project. As to the other outputs in the initiation process, for the Y2K project, a project manager had been identified and assigned early in the project process, project constraints have been included in contractual provisions and various assumptions have also been made related to the project.

5.1.2.2 Project Scope Planning

As the PMBOK states, scope planning involves developing a written scope statement, which is to be used as a basis for future decision. The scope statement describes what will be accomplished, what will be affected and where changes would occur. No formal scope statements have been developed both for the bankwide automation project as well as for the Y2K project, after change in scope of the bankwide automation project. Though no formal scope statements have been developed, all the details included in a formal scope statement have been covered in different sections of the RFP for the bankwide automation project and in

the PDR for the Y2K project. However, having a formal project scope statement could have been used for confirming or developing a common understanding of project scope among stakeholders. Besides, it would have also have ensured in restricting the realm of possibilities had conflicts related to project scope arose during the course of the project, by providing exhaustive definition on matters related to scope of the project. As to the other outputs of the scope planning process, which are documented supporting details for project scope statement and scope management plan, there had been none both for the bankwide automation project and the Y2K project.

5.1.2.3 Scope Definition

According to the PMBOK, scope defining involves subdividing the major project deliverables into smaller, more manageable components, the output being WBS. Scope definition has been made both for the bankwide automation project and the Y2K project. For the bankwide automation project, the proposal submitted by Kindle Systems and NCR in response to the RFP included WBS. However, due to change in scope of the bankwide automation project, this WBS could not be put into use. As a result, another WBS had been developed for the Y2K project, which had been included as part of the high-level project plan. As this plan had been used as a basis for developing the weekly plans of the project, it has aided in defining the weekly activities to be carried out in the project.

5.1.2.4 Scope Verification

PMBOK requires scope verification to be made, which is a process of formalizing acceptance of project scope by stakeholders. In the Y2K project of CBE, there had not been formal review of initial project scope against actual achievements by stakeholders from CBE's side. However, preparing and distributing scope verification document would have revealed the dissatisfaction created among some stakeholders related to the work products and results of the Y2K project.

5.1.2.5 Scope Change Control

Scope change control, as described in the PMBOK, involves influencing the factors creating scope changes, determining occurrence of scope changes, and managing actual changes when and if they occur. In the Y2K project of CBE, there had been cases where changes in scope had occurred. During these changes in project scope, appropriate modifications had been made in the WBS and corrective actions had also been taken to bring future performance in line with project plan. However, causes of variances, reasoning behind corrective actions, and other types of lessons learned from scope change control had not been documented for future use.

5.1.3 Project Time Management

5.1.3.1 Project Activities Definition

According to PMBOK, project activities definition involves identifying specific activities that must be performed to produce various project deliverables. In the bankwide automation project of CBE, all activities to be carried out for the project could not be determined in advance, as total outsourcing was being contemplated. However, activities that should be carried out for facilitating the outsourcing venture were known and had been determined to consist of two project deliverables, the first of which had been the RFP.

Preparing the RFP involved various activities like functional requirement analysis, concept design, developing contractual terms and obligations, conducting vendor site visits, and others. However, these activities have not been formally identified in advance of preparing the RFP. Formal definition would have ensured in accounting for all activities to be carried out. Without activity definition, other time management processes important for organizing and controlling project activities such as activity sequencing, schedule development and others could have not been made in advance even if desired.

Though all the activities necessary to produce the RFP have not been identified at the outset, activity definition had been done during the process of the weekly planning in preparing the RFP. These weekly plans have facilitated the identification and assignment of the tasks to be accomplished for the coming week. However, due to lack of categorization of activities under major events, most of the final planned outcomes have been overshadowed to team members, resulting in confusion as to where they are heading for. Contribution that would have been gained from team effort in the identification and raising of issues related to the weekly activities had also been lost due to the sole exercise of defining the activities to be accomplished by the team leader.

The other deliverable intended to be produced in the bankwide automation project of CBE after RFP preparation had been the result of vendors' assessment and evaluation. Assessment and evaluation of vendors also involved various activities like preparing assessment forms, individual assessment of vendor's proposal, group review of individual assessments, board presentation, and other related activities. However, all these activities had not been formally identified and planned for at the outset. Had formal identification and planning of these activities been made, it would have ensured not only the identification and sequencing of activities, but also for the proper assignment of tasks and schedule development.

For the Y2K project, activities have been defined in the high-level project plan concurrently with WBS. However, no supporting details have been documented and organized for the activities defined and listed to facilitate its use by other project management processes. The high-level project plan had been used as a basis for defining and planning the tasks to be carried out on a weekly basis during project execution. As defining of activities in the high-level project plan as well as in the weekly plans had been done only by the lead project manager, contribution that would have been gained from team effort for ensuring that all activities would be accounted for had been lost.

5.1.3.2 Activity Sequencing

Activity sequencing, as stated in the PMBOK, is said to involve identifying and documenting interactivity dependencies. For the activities involved in preparing the RFP and in assessing and evaluating vendors for the bankwide automation project, activity sequencing had not been made at the outset. As activities have not even been defined at the outset, planning the activity sequencing would have been impossible, even if desired. For the Y2K project, interactivity dependencies have been identified and together with duration estimation have facilitated the determination of schedule dates for activities in the high-level project plan. This in turn had supported in the identification of activities to be carried out in the weekly plans. However, there has not been documented project network diagram displaying the project's activities and their logical relationships.

5.1.3.3 Activity Duration Estimation and Schedule Development and Control

The PMBOK describes activity duration to include determining of the number of periods for completing individual work activities. It also describes schedule development and control to involve analysis of activities sequences, activity duration and resource requirements to produce schedule and controlling and conducting activities so that they meet project schedule. For preparing RFP for the bankwide automation project, total timeframe for completion had been established and set by management. However, there had not been formal duration estimation or schedule planning at the outset (as activities had not been defined in the first place). The same had been true in assessing and evaluating vendors. It is only the total timeframe that had been determined and formally set by the team leader. However, in both of the foregoing cases, had activity definition and sequencing been made at the outset, duration estimation of activities would have been used as input for schedule development and facilitated the allocation human resources.

In the Y2K project, the high-level project plan had incorporated duration estimation for each activity. However, assumptions made in developing the duration estimates have not been documented. Documenting and communicating basis of estimates by the vendor could have revealed to CBE project participants some factors that would have to be rejected prior to actual project execution.

Scheduled dates have also been identified and documented for the Y2K project. However, supporting detail for the project schedule and schedule management plan defining how changes to project schedule will be managed have not been formally made and documented. This had, however, created little problems during the course of the project.

Based on the schedule dates weekly detailed plans were made. In carrying out the activities in the weekly detailed plans, there had been cases where activities had not been executed as planned and as a result, were to affect the high-level project plan schedule. In such cases the schedule in the high-level project plan used to be controlled by bringing into light the issues and problems behind the unmet plan. These issues and problems were discussed and resolved so that they meet the planned schedule. However, in cases where this had been impossible, planned dates for the specific activities were rescheduled. In all cases, no formal reports had been produced reflecting actual versus planned schedules. Production of this type of report would have helped in tracking and monitoring progress by interested stakeholders. Another output that had not been produced during schedule control process is documentation of lessons learned describing causes of variances, reasons behind the corrective actions and other similar lessons.

5.1.4 Project Cost Management

5.1.4.1 Resource Planning

According to the PMBOK, resource planning involves determining the resources required for the project. These resources include physical floor space, office equipment, basic supplies, human resource and products required for final project outcome. For the initial steps of the bankwide automation project, i.e. for preparing the RFP and for assessing and evaluating vendors, no formal planning for resources had been made. Though there had not been formal resource planning, little problems were encountered as slack resources like office space, office desks and others were already available in the bank. As for human resources, a plan had been in place to call for an expert service, and recruit individuals with relevant background and experience.

In the case of the bankwide automation project, resources planning had been made in the proposal submitted by the finalist vendor (for the Y2K project) for hardware, software and cables to be used for final installation purpose. In addition, the number and qualification of individuals to be involved from the vendor's side had also been planned for in this proposal. However, in this proposal, resource planning for other resources like office space, office equipment, infrastructure to support the development effort and basic supplies and equipment that will be needed for carrying out project activities have not been documented. Besides, hardware and software tools that would support the development effort have not also been documented.

For the Y2K project, the vendor had made no formal planning for resource requirements such as office space, office equipment, basic supplies and the like. However, this had created little problems, as slack resources had already been available in the bank. As for other resources like software, hardware and cables to be used for the final project outcome, planning had been

made by the vendor and by CBE staffs. As it had been decided to use these resources for carrying out project activities, this planning had supported in getting the required resources for carrying out project activities before the arrival of staffs from the vendor's side, thereby avoiding delays that would have occurred otherwise.

A critical resource for the Y2K project that has not been well planned for had been for human resources from CBE's side. Failure to develop a plan incorporating teams that possesses the skills required to perform the project work had resulted in the recruitment of various team members with less sufficient skills for carrying the tasks they were assigned. This is believed to be one of the problems, which has created a negative impact on the final project outcome. Besides, optimal size of project team in terms of man-hour or days for staffs from the vendor's side had not been formally planned for. This planning would have helped as an input to cost estimating and later cost budgeting for control purpose.

5.1.4.2 Cost Estimation and Budgeting

PMBOK requires cost estimation of required resources to be made for the purpose of allocating overall cost estimate to individual work packages and establish a cost baseline. For preparing the RFP, cost estimation for the planned resources, i.e. human resource, had not been required as the expert had been provided in the form of project assistance and the two CBE staffs were working on their regular salaries. As a result, there had been no need for cost budgeting, i.e. for managing and controlling cost. The same had been the case for assessing and evaluating vendors. One expert had been provided in a project assistance basis, the nine individuals from various organizations had been hired on fixed payment terms and the two CBE staffs were expected to work on their regular salary basis.

For the bankwide automation project, details of actual cost for the planned resources of hardware, software and cables had been determined. However, for human resources, it is only

the rate per day that had been provided. Hence, for the Y2K project, cost estimation for hardware, software and cables had not been essential as their cost have been determined to be actual and fixed. However, for human resources planned to be provided from the vendor's side, cost estimation and cost management plan, though essential had not been formally made. As optimal size of project team in terms of number of days have not been determined, cost estimation would have been less possible even if desired. As a result, cost of human resources had not been allocated to individual work packages and a cost baseline has not been established. However, establishing a cost baseline would have helped in controlling the excess expenditures made for retaining unnecessary staffs from the vendor's side during post-implementation.

5.1.4.3 Cost Control

According to PMBOK, cost control involves influencing the factors that create changes to cost baseline, determining change of cost baseline and managing actual changes when and as they occur. In the case of CBE, cost control activities would have been essential for expenditures related to vendor's staffs in the Y2K project. However, cost control activities have not been carried out as adequate cost control mechanisms like cost baseline and actual cost performance reporting had not been in place. Had cost budgeting of human resources been made to individual work packages, cost baseline been established and actual cost performance reporting been made, cost control activities would have revealed any changes to cost baseline and would have necessitated appropriate actions to be taken.

5.1.5 Project Quality Management

5.1.5.1 Quality Planning and Control

According to PMBOK, quality planning, involving identification of quality standards relevant to a project and determination of ways to satisfy them, should be made. With appropriate

quality planning in place, specific project results should be compared with quality standards to determine their compliance and to eliminate causes of unsatisfactory performance. In the Y2K project case of CBE, though no quality system had been in place describing the organizational structure, responsibilities, procedures, processes, and resources needed to implement quality management, few planning and controlling activities related to quality had been made. For instance, some quality planning and control activities undertaken during testing and conversion period had resulted in corrective actions or rework based on acceptance decisions. Though such actions provide benefit to some extent, to ensure the overall quality of the project, quality goals encompassing project product and project management should have been considered early in the project and integrated into the overall project management plan. An independent quality team could have been included in the project team, which would report functionally to the Project Manager and also have a reporting chain outside the project to a higher management level if the project manager does not give sufficient attention.

Conducting quality activities with a formal and well-organized system in place would have minimized many of the problems that arose related to the Y2K project of CBE. For instance, quality planning on the two important factors for the success of a project, on project management and on the vendor, could have been made by identifying and planning some form of quality standards that are considered relevant for the success of the project. Then quality control mechanisms like reviews, walkthroughs, and others would have been used for monitoring the actual project management practice and vendor's profile against the set standard. This could have helped in verifying whether the project is organized effectively with the right competence and quantity of resources, whether the project is being carried out correctly and whether the vendor can fulfill the requirements and stipulations of the contract and complete the project within the specified time.

5.1.5.2 Quality Assurance

The PMBOK states that quality assurance activities involving evaluation of the overall project performance on a regular basis should be made for providing confidence that the project will satisfy the relevant quality standards. In the Y2K project case of CBE, as no quality system had been in place, no quality assurance activities involving evaluation of overall project performance against set standards had been carried out. However, with the appropriate quality standards in place, carrying out quality assurance activities would have been useful for assessing the overall project performance in relation to quality.

5.1.6 Project Human Resource Management

5.1.6.1 Organizational planning

Organizational planning as stated in the PMBOK involves identifying, documenting and assigning project roles, responsibilities and reporting relationships. In addition, staff management plan describing when and how human resources will be brought onto and taken off the project team should also be made. In preparing the RFP and in assessing and evaluating vendors, there had been no staff management plan and defined and documented assignment of roles, responsibilities and reporting relationships (individual participants were expected to report directly to the designated leader). However, having documented definition of roles and responsibilities would have provided each individual with a clear understanding of the authority and responsibility given necessary for the successful accomplishment of project activities.

In the Y2K project, roles and responsibilities of each major party involved (Kindle Systems, NCR and CBE) had been planned for and documented in the high-level project plan. On the other hand, in defining reporting relationships, team building and matrix management had been used. Various teams had been formed from different functional and control areas of

CBE, from Kindle Systems and from NCR based on the type of activities to be accomplished. Matrix structure had been applied to manage these teams and other project participants for whom no formal reporting relationships existed. POS had been established (See Appendix IV), communicated to project participants, and documented.

The project organizational structure of the Y2K project of CBE had, therefore, included many of the characteristics of a projectized organization, indicating strong matrix structure. The organization had included full-time staff from different functional departments and had also been operating outside the standard, formalized reporting structure. Besides, the lead project manager had also been engaged full-time and had high authority over project related activities.

In the Y2K project, staff management plan describing when and how human resources were to be brought into and taken off the project had not been made. With appropriate human resource planning in place, having this plan would have been useful throughout the project and would have helped in avoiding the cost incurred during post-implementation as a result of retaining unnecessary staffs from the vendor's side. In addition, having this plan and communicating it to team members from CBE would have reduced the likelihood of non-participation of CBE staffs during post-implementation activities.

5.1.6.2 Staff Acquisition

According to the PMBOK, staff acquisition involves getting the human resources to be assigned to and work on the project. Here, getting the available staffs with the skills required to perform given tasks is critical to a project's success. For preparing the RFP for the bankwide automation project and in assessing and evaluating vendors, staff acquisition had been made based on call for project assistance and available human resources. For preparing the RFP for the bankwide automation project, an expert was provided by World Bank in response to

CBE's request for project assistance. Two other CBE staffs were assigned to support the World Bank expert. For assessing and evaluating vendors, UNDP provided an expert for assisting CBE in the assessment and evaluation process. Nine other individuals in higher positions were recruited from various governmental institutions and organizations with past experience on vendors' assessment and evaluation process.

For the Y2K project, project participants had been from the vendor's side and CBE. Project participants interviewed from CBE's side reported that the actual performance of the project participants from the vendor's side revealed inadequate assessment seemed to have been made for determining their qualification for the project. From the side of CBE, selection had not been made based on formal human resource planning of skill and experience but rather from the available human resources in the bank that worked on related areas to the tasks they were to be assigned on. Had skills shortage been identified in advance and given due attention, additional time and resources for training could have been planned for or persons with the required skills or experience could have been hired or services contracted to perform those tasks where skill shortage would be expected. By recognizing resource shortfalls and providing the necessary training or recruitment, the project manager could have mitigated some level of risk.

5.1.6.3 Team Development

Team development, according to the PMBOK, involves developing individual and group skills to enhance project performance. In the Y2K project case of CBE, despite the significance of developing individual and group skills, an effort has not been made for team development by providing training or other development platforms. Had evaluation on qualification and experience been made, training would have been provided, which would have minimized the problems associated with skill shortage.

5.1.7 Project Communications Management

5.1.7.1 Communications Planning

Communications planning is the determination of the information and communication needs of stakeholders. As the PMBOK states, this involves determining who needs what information, when they need it, and how it will be given to them. In the Y2K project case of CBE, no formal communications planning has been made for specifying the information and communication needs of stakeholders. As a result, communications to some important stakeholders like users and senior managers had been done in less effective way. This had a negative impact on the project process and outcome. Detailed discussion of the communication aspect of the project will be presented in the following sections.

5.1.7.2 Information Distribution and Performance Reporting

Information distribution, according to the PMBOK, is making needed information available to stakeholders in a timely manner and performance reporting involves collecting and disseminating information related to progress and performance. These are generally directed at four primary areas: senior managers, team members, users and customers.

5.1.7.2.1 Senior Managers (project sponsors/steering committee)

Communication to senior managers/steering committee about the project in general had been made in the first team meeting, the project kick-off meeting. Thereafter communication to this committee about project progress had been made on a weekly basis and has been limited to the use of narrative progress reports. Status reports showing where the project stands have not been provided to this committee. For this purpose, other planning and communication tools like Gannt Charts, Time Matrices and Calendars could have been used for effective communication of actual versus planned performance. As communication to the steering

committee had been oriented towards reporting project progress, use of these tools could have also facilitated in directing the attention of the committee towards future major events.

5.1.7.2.2 Team Members

In the Y2K project of CBE, much of the communication occurring with team members had originated from the project participants meetings composed of team members, project coordinators and project managers. These meetings had been conducted weekly, except during software conversion period during which project participants met on a daily basis. The lead project manager from Kindle Systems had been facilitator of the weekly meetings.

Communication in the weekly meetings had been verbal and written, mainly emphasizing project details and had been conducted in a disciplined approach. At the beginning of each meeting, the lead project manager provided a brief review of the project timeline to draw the attention of project participants of the current time into the perspective of the project timeline. This type of review had been important as it had psychologically forced project participants to be cognizant of where they are in the project timeline, how far or near they are to conversion, and to be aware of the coming major events. After review of project timeline, the project manager was used to requesting team leaders about the status of the tasks they were assigned and due to be completed. Each team leader would respond to their area of responsibility assigned and after status update the project manager would assign tasks to each team to be completed for the coming week and provides them with a detailed plan in a memo. The foregoing communication activities had a positive contribution in getting the Y2K project to be completed on scheduled time.

In the project participants meetings, new and outstanding issues and problems were also raised. Raising issues and problems for discussion had helped them in bringing together a ground where all project participants can comment and come to realize how the turn of events

will affect them. However, in these discussions, project participants from Kindle Systems used to dominate in providing ideas for the issues and problems raised. As project participants from CBE were less aware of the software and were not experienced in such IT projects, they usually accepted the ideas raised from participants of Kindle Systems.

To capture the issues and concerns raised in the weekly meetings, minutes had been taken by the lead project manager. These minutes had been useful for timely discussion and for follow up purpose. The minutes had not been used for communication or historical record keeping purpose. However, using the minutes for communication purpose would have been important not only to project participants for keeping hands-on record of the issues and concerns raised, but also to the steering committee for informing them of major issues and concerns that requires their action. In addition, historical record keeping of minutes would have supported the formal documentation of the issues and concerns for future use related to the project.

As mentioned earlier, one way that project participants communicated has been mainly through meetings. Apart from these meetings, the lead project manager had used memos to formally communicate other matters related to the project. Memos had been written and distributed to communicate general tasks and areas of responsibilities of each team. Memos had also been used to communicate strategy and approach for major events where teams were advised to review and comment or present their queries to the project manager. Use of memos for formal communication had also been used for other similar matters related to the project.

5.1.7.2.3 Users

In the Y2K project of CBE, communication to user department and branch managers had been made at project initiation. This communication has been made in the form of project kickoff meeting with the lead project manager of Kindle Systems as the facilitator. The meeting was conducted to set the tone for the project and legitimize the project process. The meeting had

helped in creating general awareness about the project among user department and branch managers. It has also helped in backing support for providing all the required staffs and other supports necessary for bringing the project to a completion.

Another communication that had been made to user department and branch managers had been prior installation of the new system. This communication had been made to inform managers of when installation will take place and to prepare their users about the installation. In response to this, the managers had informed users about the new system and its installation date. However, prior to this, no communication has been made to users to make them aware of the project and to determine their needs. Even though the business team of the project was considered to represent users, this team was less effective in voicing the needs and opinion of the users, whom they were supposed to represent, since the team was composed of individuals in higher management position. These individuals had little know-how of the job details of the users who would be affected by the new system.

Non-participation of users throughout the project process has created problems both in the project development process and in the project outcome. After conversion period, team members of the project faced difficulties when working with users, as many of the functionalities were not working as desired. As a result, conversion had to be done again together with users. However, during this time only some problems were resolved due to the limited time devoted to correcting the problems. Many of the unsolved problems could not also be given due attention during the project wrap-up phase of the project due to the controversies created between project participants of Kindle Systems and CBE. Consequently, as these problems persisted in the course of normal operation of the new system, maintenance call had to be made for their solution. During this maintenance call, some of the problems were solved while others still remain unresolved even to this day and are affecting normal operations.

5.1.7.2.4 Customers

In the Y2K project of CBE, customers have not been informed of the change that will take place with the introduction of the new system and how it will affect them. The most obvious changes the new system will have on customers like faster service, expanded service, and others should have been communicated in advance to create awareness and impression. In a competitive banking environment, this provides an opportunity for the bank that is purely marketing, i.e., it is one way of selling the bank to its customers for embarking on projects that will improve not only operations but services as well. This should have been the effort of marketing and public relations, with the basic input from the project manager.

5.1.7.3 Recapping or Administrative Closure

According to the PMBOK, recapping or administrative closure should be made which involves the generation, gathering and disseminating information to formalize project completion. In the Y2K project of CBE, complete set of project records have not been organized and archived in a proper manner as part of the recapping process. Related to performance acceptance, recapping generally encompasses such activities as project activity wrap-up, walkthrough analysis and process termination.

5.1.7.3.1 Project Activity Wrap-up

In the Y2K project of CBE, the high-level project plan had included the project wrap-up event. Project wrap-up had been included under the post-conversion support section of the plan, as 'data cleanup'. However, this plan had not included details of the activities to be performed under this event.

The actual project wrap-up activities had been carried out by the project managers, project coordinators, team members. In order to identify and analyze issues and problems, it was the team from CBE that had been engaged in such activities. The team had been working with

users in order to give due consideration to the issues and problems left outstanding during conversion period. These issues and problems used to be brought to the attention of the project managers and other project participants in a weekly post implementation meeting. However, resolution to these issues and problems had been inadequate and disorganized. What team members from CBE reported as problems or loose ends, Kindle Systems staffs argued the contrary and reported that they should not have even been raised as issues and problems that needed resolution. People at CBE believed that project participants from Kindle Systems wanted to impose their practice elsewhere into the CBE environment. As a result, most of the issues and problems remained unsolved during project wrap-up.

5.1.7.3.2 Walkthrough Analysis

In the Y2K project case of CBE, assessment of actual functioning of operations, i.e. walkthrough analysis, has not been part of the project plan. This activity had not also been conducted. However, conducting walkthrough would have assisted in bringing to the attention of the steering committee the momentous nature of the unresolved issues and problems raised during project wrap-up and would have avoided the maintenance cost incurred later on.

5.1.7.3.3 Process Termination

In the Y2K project of CBE, process termination has not been formal. As a result, after implementation of the project, project participants from CBE were less participating in the post implementation project activities, though their participation had been essential. Planning formal termination of the project would have minimized this lower participation of project participants. In addition, circulating a formal project termination sign-off document to the project participants would have revealed the objection raised from CBE's project participants about the unsettled concerns and problems raised during project wrap up.

5.1.8 Project Risk Management

5.1.8.1 Risk Management Planning

Risk management planning, as stated in the PMBOK, involves deciding how to approach and plan for risk management in a project. In the Y2K project case of CBE, insufficient attention seems to have been paid to the problems that could materialize and threaten the project's success. The lead project manager has not maintained awareness and instituted risk management plan to the overall risks the project faces. As a result, no planning has been made on how risk management was to be approached. Application of risk management planning would have not only provided for a structured approach in risk management, but could have also served as a driving force for subsequent activities related to risk management, thereby increasing the chance of project success.

5.1.8.2 Risk Identification, Risk Quantification and Response Planning

The PMBOK states, risk identification involving determination of the risks that might affect a project, and documentation of their identified characteristics should be made so that contingency measures can be taken to mitigate their effects. After identification, risk quantification should be made involving risk analysis for the purpose of determining opportunities to be pursued, opportunities to ignore, threats to respond to and threats to accept. After risk analysis, PMBOK requires risk response planning to be made involving development of procedures and techniques to enhance opportunities and reduce threats from risks to the project's objectives. In the Y2K project of CBE, there has been no formal risk identification process. As a result, sources of risk, indirect manifestations of actual risk events and inputs to other processes that arise as a result of risk identification process have not been identified and documented. Risk analysis and risk response mechanisms documenting procedures to be used to manage risk throughout the project, contingency plans and provisions in the project plan to mitigate cost and/or schedule have not also been made.

However, the high project cost involved itself demanded effective planning and management of project risk. Identifying the risks, analyzing their effects and planning a response mechanism would have minimized or avoided many of the problems encountered throughout the life of the project. For instance, major problems encountered in the project related to inadequate project management, technical failures, and lack of skilled human resources could have been identified as risks that would affect performance, quality and cost of the project. Then with appropriate response planning for these risks, many of the problems could have been avoided or minimized.

5.1.8.3 Risk Monitoring and Control

The PMBOK states that risk monitoring and control involving monitoring of residual risks, identifying new risks, executing risk reduction plans, and evaluating their effectiveness throughout the project lifecycle should be made. In the Y2K project of CBE, as no risks have been formally identified, no risk reduction plans had been formally in place. However, had risks been identified and the appropriate risk reduction plans been in place, risk monitoring and control would have helped in ensuring that the risk reduction activities are being executed as specified in the plan. Besides, it would have also helped in assessing and correcting risk reduction measures when appropriate.

5.1.9 Project Procurement Management

5.1.9.1 Procurement planning

According to the PMBOK, procurement planning involves determining what and when to procure. Outputs of procurement planning include a procurement management plan and a statement of work.

In the Y2K project case of CBE, no documented procurement plan had been in place in advance describing the overall procurement management. As the Y2K project had been

considered a subproject of the bankwide automation project, statement of work prepared for the bankwide automation project had served as an input for the Y2K project. Based on the resource planning made for hardware and cables, the type, number and timings that these resources should arrive had been determined. As these resources were also planned to be used for carrying out project activities, it had been possible to make the hardware and cables in place before the arrival of project participants from the vendor's side. This had helped in preventing time lag and poor team morale. As for other project resources, no procurement planning had been made as they were used from what was already available in the bank.

5.1.9.2 Solicitation Planning and Solicitation

Solicitation planning, as stated in the PMBOK involves documenting product requirements and identifying potential sources while solicitation is the process of obtaining bids, quotations, offers or proposals as appropriate. There has not been separate solicitation planning in the Y2K project of CBE for documenting product requirements and identifying potential sources. As the Y2K project had been considered a sub-project of the bankwide automation project, the solicitation planning and solicitation made for the bankwide automation project had been used for the Y2K project. Solicitation planning and solicitation has helped in identifying as much as possible the best possible offers that meet project requirements in the market place. This has helped in reducing the time that would have been spent on identifying product requirements and potential sources if the bankwide automation project had not yet been started.

In the bankwide automation project, product requirements have been made and documented in the RFP. In addition, the RFP had also incorporated evaluation criteria for rating proposals. Potential sources had been notified through announcement of a request for proposal. Based on the RFP, potential sources have prepared and presented their proposals to CBE.

5.1.9.3 Source Selection

Source selection, according to the PMBOK, involves choosing from among potential sellers. Source selection for the Y2K project had been made based on those selected for the bankwide automation project. For the bankwide automation project, a formally documented evaluation system had been in place for qualifying prospective vendors. This evaluation system had been based on the product requirements and other technical requirements set forth in the RFP. Using this system, proposal of each vendor had been assessed and evaluated to determine the finalist vendor for the project.

At the time the scope of the bankwide automation project changed, two finalists had already been selected. Hence, for the Y2K project, the two finalists were approached and requested if they could complete the project within the limited time constraint. One of the prospective vendors rejected, while the other accepted. So, the project had been granted and a contract been signed with the one who agreed to complete the project within the limited time.

5.1.9.4 Contract Administration and Closeout

Contract administration, according to the PMBOK is the management of the relationship with the seller and contract close out is the completion and settlement of the contract including resolution of any open items. In the Y2K project of CBE, important aspects of the project like responsibilities of the vendor, the desired performance of software modules and others related to vendors performance have been stipulated in the contract. However, as adequate ongoing validation of contract performance through contract performance reporting and quality control activities have not been made, many contractual requirements have gone unmet during the project process. To mitigate this type of problems, a number of companies in Europe and in United States have found that this is best accomplished by a mutually agreed upon, unbiased, third party (Goldfarb and Heller). The third party will provide many services including performance validation, function point rule interpretation, conflict resolution and performance

comparisons to industry benchmarks. This level of commitment supports in ensuring contract compliance and promotes the use and acceptance of software metrics as a critical component.

The contract for the Y2K project has been closed and settled with many unresolved issues and problems. Though many of these issues and problems had been raised during project wrap-up phase and in a maintenance call, the staffs from the vendor's side disclaimed most of them, despite the opposition from some CBE project participants of the vendor's disclaim.

5.2 Overall Evaluation of the IT Project Management Practice of CBE

This part of the research report focuses at providing an overall assessment of the Y2K project of CBE, with the aim of determining the overall impact of the project management practice on the final project outcome. For this purpose, the 'Success Barometer Rating' developed by the Treasury Board Secretariat of the Canadian government has been adopted.

Following, summary of the issues that have been addressed and that have not in the Y2K project of CBE will be presented for the two major phases, initiation and planning and implementation/execution and control. Responses regarding the issues have been obtained through interviews with CBE staffs who have participated in the Y2K project and in assessing and evaluating vendors for the bankwide automation project (See Appendix V & VI for the questions). For each phase this has been presented under the four key areas, support for the business, accountability, project manager discipline and risk management. For each of the phases, total of issues addressed and not addressed have been calculated, weighed and plotted in a success scale.

5.2.1 The Project Initiation and Planning Phase

5.2.1.1 Support for the Business

At project initiation, the bankwide automation project has generally been in line with the business plan of CBE, which is that of modernizing operations by acquiring state-of-the-art technology. As the Y2K project had been considered a subproject of the bankwide automation project, at its initiation the Y2K project had also been in line with the business plans of CBE. However, no formal tools and techniques like Cost Benefit Analysis and Return on Investment (for analyzing the cost, benefit, risk and return) have been used for determining the feasibility of the bankwide automation project.

At initiation of the Y2K project, commitment had been obtained from project sponsors and branch managers of user departments. Project sponsors made up the steering committee that would overlook the project's progress and performance, while branch managers were committed to provide the required staffs and other supports necessary for the project in a kickoff meeting. However, little effort seems to have been made in the initiation and planning phase to gain support and commitment from end-users. This is reflected from the fact that little communication has been made to users in this phase to get them involved throughout the development process. As a result, requirement specifications have been less precisely defined in this phase.

5.2.1.2 Accountability

In the Y2K project, the positions of project sponsors, team leaders and project managers had been occupied and a matrix defining relationships between them have been established. However, there has not been documented definition of responsibilities, accountabilities and authorities for each of these positions. Regarding the adequacy or capability of team members, from CBE selection had been made solely on the availability of staffs and not on

qualification or experience. Whereas from the vendor's side interviewees believe that qualification and experience had been given little attention. Overall, as actual performance shows, it seems that at the project initiation and planning phase, the capability of team members had been given little consideration.

5.2.1.3 Project Manager Discipline

The lead project manager had been given sufficient authority to have sufficient control over human resources in CBE's Y2K project. In addition, the project manager had also been given the freedom to act independently when warranted. However, as per interviews with project participants revealed, the lead project manager had not managed a project of CBE's size and complexity. Related to problem management, the project manager had not established a formal plan in place for escalating potential problems.

5.2.1.4 Risk Management

The activities undertaken pertinent to handling risk are the application of work breakdown structure and estimation of task duration. All the other areas in which risk is associated with such as project control, project cost, project approach, technology and human resources have not been dealt with in the project initiation and planning phase of CBE's IT project.

5.2.1.5 'Success Barometer' Rating - Project Initiation and Planning Phase

Issues that have been addressed and that have not, in relation to factors that are critical for a project's success in the initiation and planning phase have been summed up and weighed for the Y2K project case of CBE. This weighed total point has been plotted in a success scale (as shown in Figure 2) and has been found to fall in the 'Likely to Fail' region. This shows that if this evaluation had been made in the project initiation and planning phase, it would have indicated that the project would be less successful as most of the issues related to factors that are critical for a project's success have not been addressed.

Totals Calculation	'Yes'		'No'
Totals from 1.1: Support for the Business	<u>3</u>		<u>7</u>
Totals from 1.2: Accountability	<u>4</u>		<u>4</u>
Totals from 1.3: Project Manager Discipline	<u>3</u>		<u>4</u>
Totals from 1.4: Risk Management	<u>1</u>		<u>7</u>
Totals	<u>11</u>		<u>22</u>

Table 2: Totals Calculation - Project Initiation and Planning Phase

Project Total:

'Yes' total 11 x 15 = 165

+ 'No' Total 22 x (-10) = (-220)

PROJECT TOTAL = (-55)

Plotted Project Total for the Project Initiation and Planning Phase in the Success Scale:

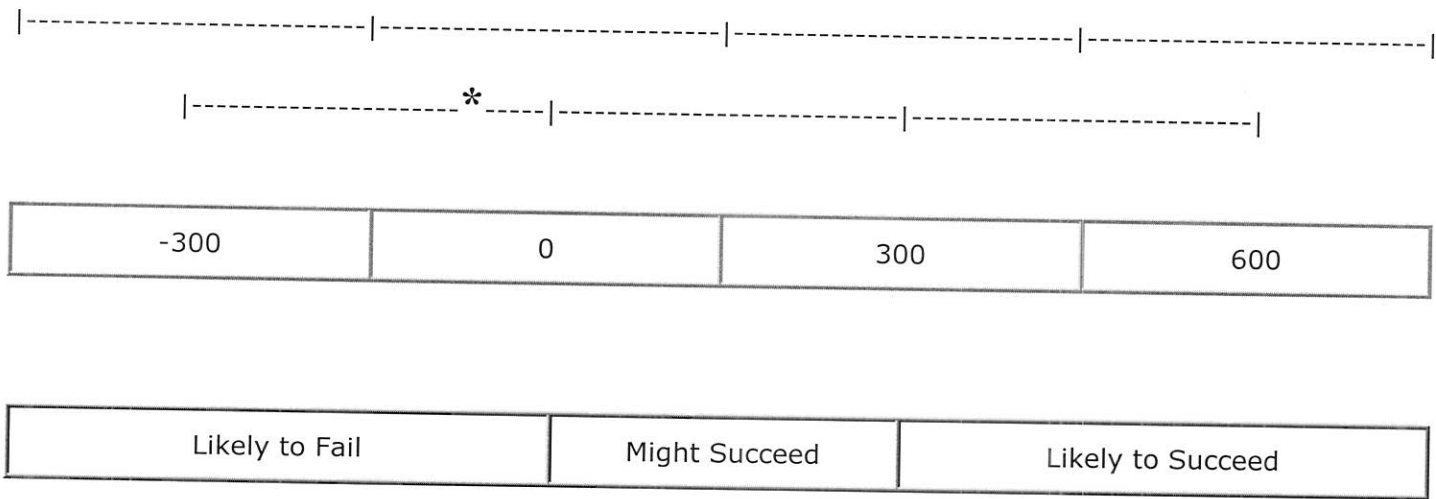


Figure 2: Success Scale for Project Initiation and Planning Phase

5.2.2 The Project Implementation/Execution and Control Phase

5.2.2.1 Support for the Business

The only critical factor that provided support for business in the project execution and control phase has been the accountability and responsibility assumed by the project sponsors to keep the project within limited scope. As per interviewees, all the other factors that provide support for the business including end-user commitment, review and revalidation of business case, and documentation, communication and approval of changes to project specifications have not been addressed in the Y2K project of CBE.

5.2.2.2 Accountability

Most of the issues related to accountability during project execution phase have been addressed in the IT project of CBE. Status and progress meetings have been made regularly and issues had been raised and dealt with during these meetings. Besides, actual reporting relationships have been according to the matrix of relationships defined at the project planning phase. Changes in project scope have been managed by executing planned activities as per WBS and the project had been completed on scheduled time. Among the factors related to accountability not addressed in the Y2K project of CBE are adequacy of team members and independent review of project management activities by an external party.

5.2.2.3 Project Manager Discipline

Issues that have been addressed regarding project manager discipline include the sufficient control exercised by the project manager over human resources and the prompt decisions that used to be taken in the event of serious problems during project execution. All the other issues related to the project having positive image, appropriate use of funds by the project manager and provision of complete performance and progress information have not been met.

5.2.2.4 Risk Management

Most of the activities that would minimize project risks have not been addressed in the Y2K project of CBE. These activities include management of new risks, accountability of team leaders to budgetary constraints, independent review of project progress and performance, availability of formal mechanism and tool to monitor project schedule by all interested stakeholders and regular review sessions on project relevance and potential problems. The only issue that has been addressed is the performance reviews made by the steering committee.

5.2.2.5 'Success Barometer' Rating - Project Implementation/Execution and

Control Phase

For the project implementation/execution and control phase, issues that are addressed and that are not in the Y2K project of CBE regarding factors that are critical for a project's success have been summed up and weighed. This weighed total point has been plotted in a success scale (as shown in Figure 3) and has been found to fall in the 'Halt' region. This indicates that had this evaluation been made during the project's execution and control phase, it would have been decided to halt the project. This is because most of the issues related to the factors that are critical for a project's success have not been addressed and the project is less likely to succeed.

Totals Calculation	'Yes'		'No'
Totals from 1.1: Support for the Business	<u> 1 </u>		<u> 4 </u>
Totals from 1.2: Accountability	<u> 5 </u>		<u> 3 </u>
Totals from 1.3: Project Manager Discipline	<u> 2 </u>		<u> 4 </u>
Totals from 1.4: Risk Management	<u> 1 </u>		<u> 5 </u>
Totals	<u> 9 </u>		<u> 16 </u>

Table 3: Totals Calculation - Project Implementation/Execution and Control Phase

Project Total:

'Yes' total 9 x 15 = 135

+ 'No' Total 16 x (-10) = (-160)

PROJECT TOTAL = (-25)

Plotted Project Total for the **Project Implementation/Execution and Control Phase** in the Success Scale:

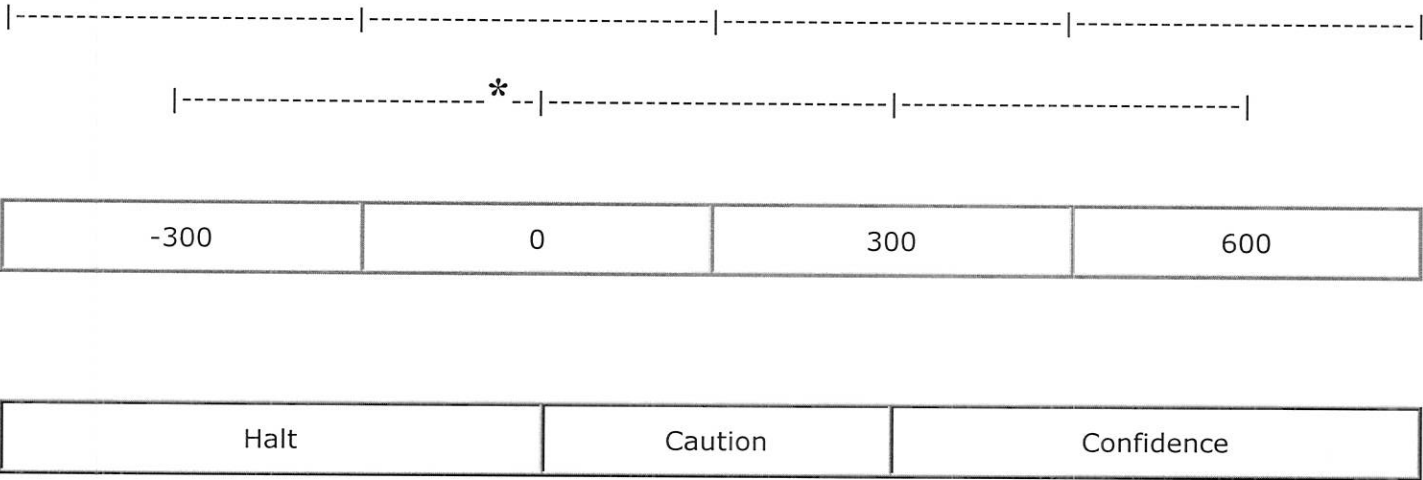


Figure 3: Success Scale for Project Implementation/Execution and Control Phase

Chapter 6

Conclusion and Recommendation

6.1 Conclusion

One of the most significant technological developments in recent years has been the emergence of IT. The potential benefits that organizations can derive from utilizing IT are extensive. These benefits take a number of forms including efficiency gains, increased management effectiveness and improved business performance. The materialization of these benefits heavily depends on how well a project has been managed. Poorly managed projects usually are not likely to obtain the anticipated benefits and suffer from technical shortfalls resulting in performance that is significantly below estimated level.

Preliminary investigation by the researcher revealed that various organizations in Ethiopia that have undertaken IT projects are facing problems of obtaining anticipated benefits and are also suffering from various technical shortfalls. Generally, it is regarded that the presence of these types of problems reflects poor project management as a cause. As a result, the researcher aimed at studying the project management practices, for determining if the project management aspect of the IT projects have been the major cause for the problems. For this purpose, CBE has been selected, which is one such organization facing the same problems.

The purpose, scope and objectives of the IT project of CBE have been reviewed. Major problems reflected in the existing system whose outcome is the IT project under consideration have also been investigated and found to be downtime, program code defects, deficient functionalities, under utilization of software and non-integration with long-term IT plans.

After carrying out the aforementioned activities, the IT project management aspect of CBE, has been reviewed, assessed and evaluated using document analysis and interviews. Assessment has been by taking into account project management processes identified in PMBOK, supplemented with other resources related to IT project management. The assessment has uncovered the weaknesses involved in the general approach of managing the IT project. In addition, where apparent, the effects of these weak or poor project management practices in the project development process and outcome, and the benefits that would have been gained from proper project management practices have been determined. Related to these issues, the results of the study revealed the following:

- Feasibility study for the bankwide automation project had been found to be inadequate as it had been based solely on management intuition rather than formal evaluation processes like cost benefit analysis, return on investment, etc.
- Formal scope statement has not been developed for the Y2K project. Having a formal scope statement would have helped for confirmation and developing understanding of project scope among various stakeholders.
- Scope verification involving review of project scope against actual results has not been formally made by CBE project participants for the Y2K project. In addition, scope verification document has not been prepared and distributed by the vendor to get formal acceptance of the final project scope. Preparation and distribution of scope verification document would have revealed the dissatisfaction of team members from CBE's side related to the project product.
- The lead project manager had been the only one involved in defining activities in the high-level project plan and the weekly plans for the Y2K project. As a result,

contribution that would have been gained from team effort in the activity definition process has been lost.

- Basis of duration estimation for the Y2K project has not been documented and communicated. Documenting and communicating basis of duration estimation could have revealed to CBE project participants some of the factors assumed implicitly by the vendor such as minimized customization effort and others, that would have to be rejected prior actual project execution.
- Report reflecting actual versus planned schedule has not been produced. Production of this type of report would have assisted appropriate stakeholders in tracking and monitoring progress.
- In the Y2K project, human resource planning for team members from the bank's side had not been based on formally planned and documented qualification and experience criteria. As a result, most of these team members had faced difficulties in carrying out their assigned tasks. Proper human resource planning would have revealed resource shortfalls and appropriate training, other development platforms or other options could have been taken to alleviate the problem.
- Team development effort such as training and other development platforms, though essential, had not been made in the Y2K project.
- Human resource planning from the vendor's side had not included total man-hours/days required for the project. Without this information, it would be impossible to make cost estimation and budgeting of the human resources. Determination of total man-hours/days, cost estimation and budgeting would have been useful for controlling expenditure for project staffs from the vendor's side.

This would have supported in avoiding or minimizing the unnecessary expenditures made on staffs from the vendor's side as a result of retaining unneeded staffs during post-implementation.

- Communication planning showing who needs what information, when and how it is to be provided has not been formally made and documented. As a result, communication to some important stakeholders like users and senior manager had been done in less effective way.
- Actual communication to senior managers on project performance had been done only in the form of narrative progress reports. Using other communication tools like Gannt Charts, Time Matrices and others, could have been used for more effective communication.
- User participation and communication had been inadequate. As a result, many requirements had gone unmet in the final project outcome.
- No formal and documented quality planning, control and assurance activities had been undertaken. Carrying out appropriate quality management processes would have avoided or minimized many of the problems reflected in the other project management processes.
- No formal and documented risk identification, analysis, response planning, and risk control activities had been undertaken in the Y2K project. Carrying out appropriate risk management processes would have avoided or minimized many of the problems reflected in the other project management processes.

- Project plan had not been developed for the Y2K project. Development of project plan would have been more useful had the planning process included all essential activities and all planning related to these activities had been done in a proper way.
- Administrative closure for the Y2K project had been inadequate. As a result, many issues and problems had gone unresolved during project activity wrap-up. Other administrative closure activities like walk through and preparation and distribution of formal project termination sign-off documents have not been carried out. Proper administrative closure could have revealed and opened the door to resolution of many of the problems before actual project closure.
- For all the processes carried out in the Y2K project, no documentation had been made for lessons learned, causes of variances and reasons behind corrective actions taken. Having well documented information on such issues would have been useful for use in future IT projects.
- Contract administration for the Y2K project had been performed inadequately, as there had not been an on-going validation of project performance against the contract. As a result, the contract had been closed with many issues and problems unresolved. On-going performance validation during the project's progress would have helped in identifying non-satisfactory performances.

In addition to revealing the aforementioned weaknesses in the IT project management practice of CBE, the study has also identified some of the strengths in the general approach of managing the project, of which the following are included:

- Human resource planning for preparing the RFP and assessing and evaluating vendors had been made by recognizing resource shortfalls and hence, planning for outside expert services.
- The lead project manager had been assigned early in the project process and before plan execution.
- Conducting kick-off meeting at initiation of the Y2K project has helped in creating general awareness about the project among branch managers. It has also helped in gaining commitment from these managers for providing human and other resources required for the project.
- The project organizational structure of the Y2K project of CBE had many of the characteristics of a projectized organization, indicating strong matrix structure. The lead project manager had been engaged full-time and had high authority over project related activities. Team members had also been working on a full-time basis. Besides, the project had been operating outside the standard, formalized reporting structure.
- Project constraints and assumptions for the Y2K project had been identified and documented early in the project process.
- Weekly meetings of project participants had been carried out in a disciplined approach involving review of timeline, status update and communication of future plans.
- Development of WBS in the Y2K project has helped in developing the high-level project plan, which had been used as a basis for planning of weekly activities.

- Following the high-level project plan for determining weekly activities to be carried out has helped in the completion of the project as per time planned.
- Bringing into light issues and problems for discussion in the weekly meetings has helped in controlling of project schedule.
- Project roles and responsibilities of each major party have been identified and documented early in the project process.
- For all project participants where no formal reporting relationship existed, matrix management has helped in defining reporting relationships.

Ensuing assessment, an overall evaluation of the project management practice has been made for the purpose of determining the overall impact of the project management practice on the project outcome. For this purpose, the 'Success Barometer Rating' tool developed by the Treasury Board Secretariat of the Canadian government has been adopted. The tool is based on a number of factors related to project management that are critical for a project's success. The findings indicated that most of these factors have not been addressed in the IT project of CBE, and as a result, the final scaling showed the project's tendency to being less successful. Among the most critical factors that have not been addressed are included the following:

- Adequate feasibility study for the project
- User commitment
- Presence of a formal documented plans in place to involve appropriate level of users throughout the project
- Sufficient expertise of team members from within CBE in the area of the project domain

- Presence of clear and documented pre-determined problem escalation criteria
- Assessment of all known management and technical risks and presence of formal risk mitigation strategies
- Documentation and communication of changes to project specification

Overall, the research indicated poor project management practices in the IT project of CBE. From the result of the assessment and evaluation of the project management practices, it can be concluded that poor project management aspect of the IT project of CBE had been one of the causes for the project's being less successful.

6.2 Recommendations

The study revealed that poor project management practices had been one cause for the observed system problems in CBE. In view of the impact that poor project management practices have on the project development process and outcome, the following recommendations are made for a general approach that CBE should follow regarding management of future IT projects.

- As the analysis in this research revealed, there is shortage of skilled manpower in CBE in the area of IT project management. To overcome this limitation, it is recommended that CBE should take measures in establishing staff development programs like training, seminars, etc that are related to IT project management. This program should support in equipping relevant staffs with the knowledge in the area of project management, general management and IT.
- As there is scarce human resource in the area of IT project management, for managing its short term IT projects it is recommended for the bank to secure external project management services with essential skills and expertise on IT project management. Together with this, owing to the high levels of technology benefits, internal integration tool that ensures that project team operates as a cohesive unit should be supported. Among other things, this tool should warrant:
 - Project teams to be under the leadership of a manager with a strong technical and project management background.
 - Team members to be highly experienced.
 - Frequent team meetings and regular status reviews to be held.

- Team members' participation in setting up of goals and establishing target dates.
- To insure that the above conditions are satisfied, an independent party is recommended to be hired that is capable of assessing and monitoring the qualifications and activities of the external project management service provided.
- Favorable conditions should be established for relevant staffs from CBE to join the external project management services so that they will gain real life project management experience from them.
- With appropriate external support, it is also recommended for IT project management framework to be established that will enhance the degree of success of future IT projects in CBE. It is recommended that this framework should ensure application of the activities in the various areas of the PMBOK and use of formal planning and control tools in managing IT projects.
- To accomplish the aforementioned recommendations require strong management support and commitment. So, it is recommended for awareness programs to be set for senior managers that will help them to get an insight on the importance and impact of IT project management on a project's development process and outcome. Seminars, workshops, and other similar programs could be planned for to achieve this.

As CBE is a government owned organization, the following recommendations are also made for the government to ensure the success of IT projects in government-controlled organizations:

- Development of manpower resource in the area of IT project management and related fields.

- Securing external project management services for IT projects to be carried out in the short-term.
- Establishment of IT project management framework for government owned organizations, which are to be applied by these organizations as a requirement.

Finally, future researches are recommended to undertake a study on other financial institutions facing similar problems by employing other relevant tools and techniques so as to have in-depth insight of the impact of project management practice on the observed system problems.

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Appendix I: Interview Schedule - IT Project Management Practice

1. What is your current position in the bank and what role have you played in the IT project of the bank?
2. Is the project consistent and compatible with the IT department's objectives and priorities as described in the annual business plan? If it is, please state generally the objectives and priorities as related to the IT project. If it is not, please state how the project is not consistent and compatible with the department's plan.
3. Is the project consistent with the IT department's long-term capital plan? If it is, please state generally the plans as related to the IT project. If it is not, please state the reason.
4. Is the project approved based on cost benefit analysis? If not, on what basis has it been approved?
5. If the project is approved based on cost benefit analysis, does the cost benefit analysis demonstrate the benefits of the investment to the organization as a whole and to the business function directly?
6. If the project is approved based on cost benefit analysis, has the cost benefit analysis been reviewed where there has been significant change to the project or the business function? If it has not been reviewed, please state the reason.
7. If the cost benefit analysis has been reviewed, has the reviewed information been brought to the attention of the appropriate level of management as soon as possible? If it has not, please state the reason.
8. Could you please discuss the organizational structure of the project?
9. Has project participants (team members, management, users, etc) organization and responsibilities been identified and clearly communicated to the participants? If it has not, in what way(s) did the project participants carry out their duties?

10. Has overall departmental accountabilities been defined in the project? If it has, please discuss briefly.
11. Has there been an executive committee for approval and oversight of the project? If there had been, what is their composition? If there had not been, who had been responsible for approval and oversight of the project?
12. Have senior management of user departments been taking an active role in overseeing and monitoring the project?
13. Have roles and responsibilities been specifically assigned for the planning process?
14. Have different objectives been prioritized during the planning process? If so, please discuss briefly.
15. Have planning tools and techniques been applied during the planning process? If so, what tools and techniques have been used?
16. Has project cost estimate been made? If so, has the estimate been made by phase and by stage?
17. Has the projects requirements for facilities and resources been identified and planned for? If so, please discuss briefly.
18. Has procurement policies and procedures to be used within the project been established? If not, on what basis have procurements been made?
19. Are the project phases, the content of the phases in the form of activities and milestones, and objectives of each phase planned at the outset? If so, please discuss briefly. Have all essential activities been included in some phased plan?
20. Have formal tools and techniques been used to organize project activities and tasks (like Gantt Chart, CPM, etc)? If so, please discuss briefly.
21. Have application procedures, methods, and standards been identified for each life cycle?

22. Have end of phase reports/project deliverables and their contents been planned? If so, please discuss briefly. If not, on what basis has end of phase reporting been made?
23. Have capacity planning been made? If so, please discuss briefly.
24. Have deadlines been planned? If so, please discuss briefly.
25. Have plans for support activities like training, documentation support, etc been made? If so, please discuss briefly.
26. Has all project plans been communicated to all interested parties (board, senior management, team members, users, etc)?
27. Have plans been re-aligned overtime? If it has, has it been communicated to all interested parties?
28. Has the project been organized into teams? If not, in what ways has it been organized?
29. Have leaders been selected and organization and responsibilities been clearly identified? If not, please state the reason.
30. What is the composition of the members and on what basis were members selected?
31. Has reporting relationships and interfaces of members been set in advance? If not, on what basis did they communicate?
32. Has team/project effort estimate (in person days/months) been made (who does what in how many days/weeks/months)?
33. If team/project effort estimate has been made, has the members' productivity been measured against this plan?
34. Has outsourcing or the involvement of consultants been considered in areas of human resource shortage or for any other reason? If there has been, please discuss briefly about their involvement. If not, please state the reason.

35. Has a formal plan been instituted for skills training and career development for project members and managers with the long-term needs of the project? If there has been, please briefly discuss about the plan. If not, please state the reason.
36. Have users been involved in the project? If they have not, please state the reason why they have not been involved in the project.
37. If users are involved in the project, what types of users have been represented in the project and in what ways have they been involved?
38. If users are involved in determining the new systems requirements, are these requirements that are translated into practical vision been communicated back to users? If they have, in what ways have they been communicated? If they have not, please state the reason.
39. If users are involved in determining the new systems requirements, have the requirements been continually modified as appropriate? If it has not, please state the reason why not.
40. If users have been involved in the project:
- Have user names and explicit responsibilities been clearly stated in the project? If not, please state the reason.
 - Have users been involved in formally signing off reviews? If they have not, please state the reason.
 - Have users been involved in decision making related to the project? If they have not, please state the reason.
41. On deciding for in-house development or outsourcing, centralized or decentralized system, has various development alternatives and estimates and how they contribute to project cost been taken into account? If so, please discuss briefly. If not, on what basis have these decisions been made?
42. Has the project team conducted preliminary negotiations with suppliers to get an overview of the practical and financial implications of using external consultants and products?

43. Prior to defining requirements, has business process reengineering been facilitated internally or externally?
44. Have formal risk management techniques to anticipate and mitigate project risks, especially high-risk areas been used?
45. Have plans been in place to review and update the risk assessment over the course of the project when there had been significant change or at pre-defined times during the project?
46. Is what the project control should include planned at the outset (type and frequency of reports, frequency and attendees of project meetings, criteria for issuing Revised Version of the plan, etc)?
47. Have quality control activities (review of project plan, design reviews, unit testing, acceptance testing, etc) been planned and included?
48. Have there been scheduled reviews? If so, please discuss briefly.
49. Have contingency plans for potential problems at scheduled reviews been developed in advance?
50. Have regular sessions been held whereby project team members can review the continued relevance of the project, project performance and concerns about actual or potential problems in a non-incriminating way?
51. Has specific systems development methodology been used? If so, please discuss briefly.
52. What systems analysis and design tools, techniques and methods have been used in structuring, in designing and implementing the potential system?
53. What documentations are available on systems development and project management?
54. Throughout the life cycle of the project, have there been cases where the project had been suspended or extended? If so, please discuss briefly.
55. What are the major problems encountered throughout the development of the IT project?

Appendix II: Interview Schedule - Problems in Existing System

1. What is your job description in CBE and for how long have you been using the computer and network system?
2. For what purpose do you use the computer and network system related to your job?
3. What problems have you encountered in using the system?
4. Approximately for how long do the problems persist?
5. What is the impact of the problems on your daily job and on the operations of the bank?

Appendix III: List of Interviewees

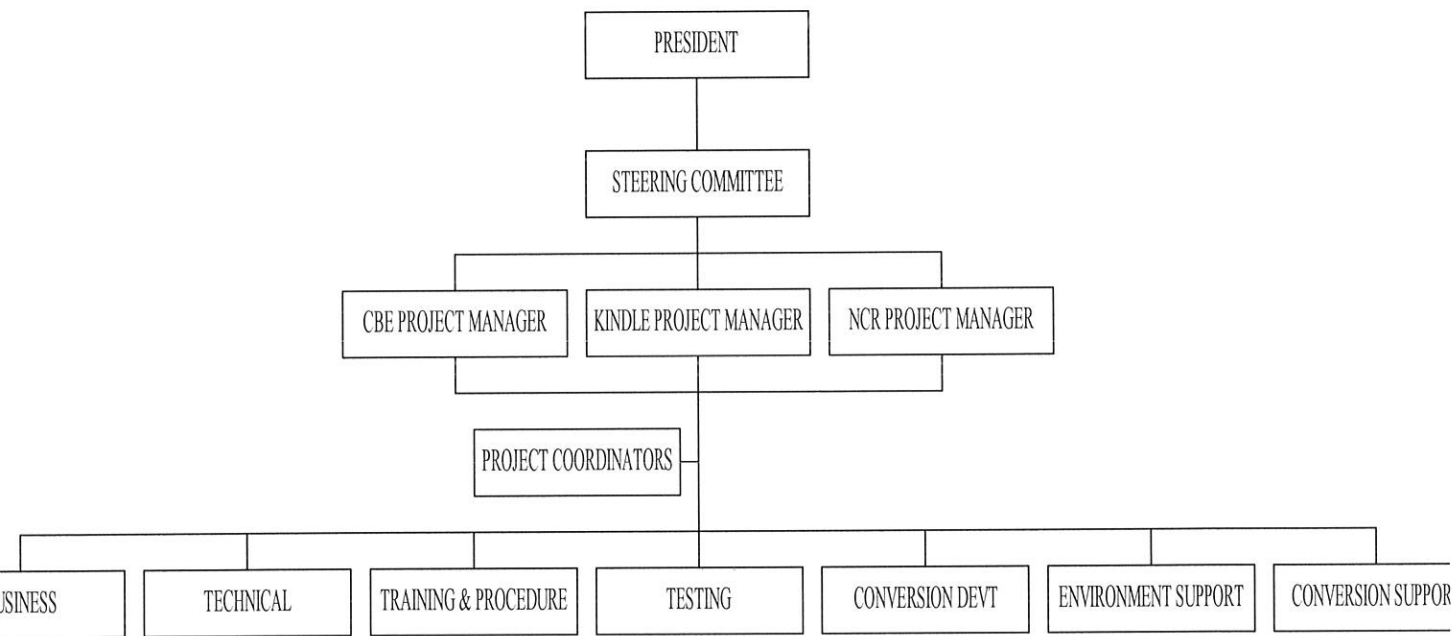
i) Related to IT Project Management Practice and Problems in Existing System

<u>No.</u>	<u>Name</u>	<u>Position</u>
1.	Ato Haileyesus Mezgebu	IT Technical Section Head
2.	W/zt Nigist Ayele	Banking Systems Manager
3.	Ato Agegnehu Berhanu	IT Operation Head
4.	Ato Mekonen Abebe	Senior Agro Engineering
6.	Name and Position withheld on request.	

ii) Related to Problems in Existing System

<u>Branch/Division</u>	<u>Number of Interviewees</u>
IBD	5
Finfine Branch	4
Andenet Branch	2
Addis Ababa Branch	2

Appendix IV: Project Organization Structure



Appendix V: Questions in Project Initiation and Planning Phase

Questions on Support for the Business - Project Initiation and Planning Phase	Yes	No
- At initiation, has the project been well aligned with business plans?	1	
- Has an adequate business case analysis been performed and the results well documented and available?		1
- Has the business case been based on full cost of the system from initiation through implementation and estimated annual cost of operation?		1
- Have the Project Sponsors taken responsibility for project scope and definition?	1	
- Have requirements been reviewed and approved by the Project Sponsors?		1
- Have there been formal, documented plans in place to involve appropriate levels of users throughout the project?		1
- Have the Project Sponsors ensured user commitment and support?		1
- Has the project justification been based on Return on Investment with an attractive projected return?		1
- Have requirement specifications been precisely defined?		1
- Has commitment been obtained from end-user branches and senior managers?	1	
TOTALS	<u>3</u>	<u>7</u>

Questions on Accountability - Project Initiation and Planning Phase	Yes	No
- Have the positions of project sponsors, project leaders and project managers been filled?	1	
- Have there been clearly defined and documented responsibilities, accountabilities and authorities for project sponsors, project leaders and project managers?		1
- Has a matrix defining the relationships of project sponsors, project leaders and project managers been set for the project?	1	
- Has the lead project manager identified human resources to allocate to the scheduled tasks at the scheduled time?	1	
- Do team members have sufficient expertise in the project domain?		1
- Have the project sponsors been at the correct level in the matrix organization? Have these sponsors been accountable for the realization of the project objectives?	1	
- Has the vendor successfully implemented a project of similar size, scope, cost or duration?		1
- Has the project generally been within the capability of the project managers, team leaders and team members at initiation?		1
TOTALS	<u>4</u>	<u>4</u>

Questions on Project Manager Discipline - Project Initiation and Planning Phase	Yes	No
- Has the lead project manager managed a project of this size, scope and complexity previously?		1
- Has the project manager from CBE managed a project of this size, scope and complexity previously?		1
- Has the lead project manager been given sufficient control over human resources in the project?	1	
- Has the lead project manager been given the freedom and ability to act when warranted?	1	

- Is the lead project manager prepared to escalate issues when warranted, based on formally documented pre-determined criteria?		1
- Is the necessary information on escalation available to support decisive action?		1
- Has the project been independent of other projects?	1	
TOTALS	<u>3</u>	<u>4</u>

Questions on Risk Management - Project Initiation and Planning Phase	Yes	No
- Has project work been broken down and task duration estimated?	1	
- Are formal mechanism or tools in place to monitor the project schedule?		1
- Have costs been allocated in accordance with work breakdown structures?		1
- Do team leaders sign off on schedule estimates and are they held to budgetary constraints?		1
- Have all known management and technical risks been assessed and have mitigation strategies been in place for all identified risks?		1
- Has project approach passed through reasonable checks for what is to be accomplished?		1
- Have top project risks been identified and documented?		1
- Did project staff from the vendor's side have sufficient experience in using the software and knowledge of it?		1
TOTALS	<u>1</u>	<u>7</u>

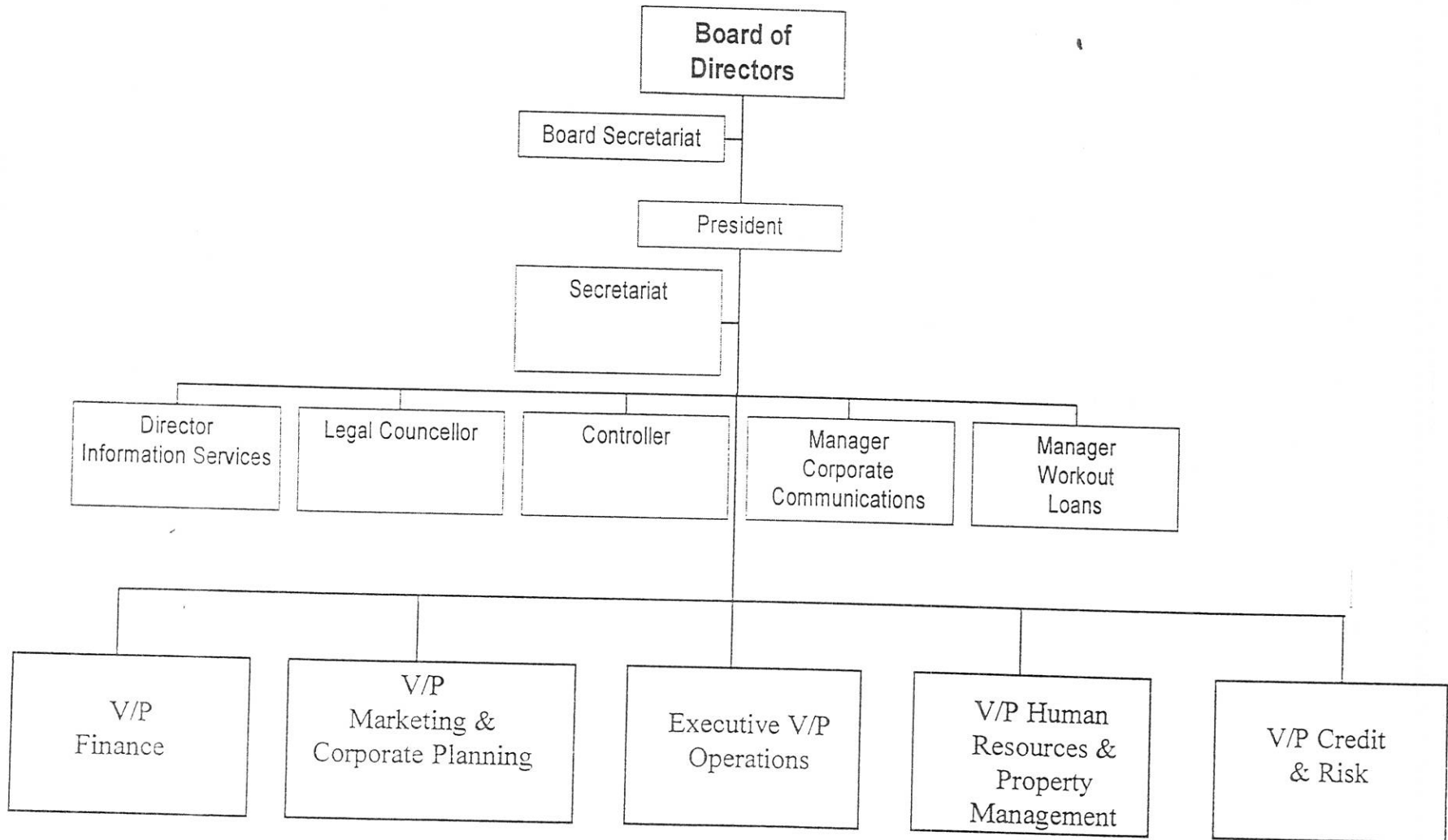
Appendix VI: Questions in Project Implementation/Execution and Control Phase

Questions on Support for the Business- Project Implementation/Execution and Control Phase	Yes	No
- Have the Project Sponsors, representing the users, taken accountability and responsibility for keeping the project within scope?	1	
- Have the Project Sponsors ensured user commitment throughout the project?		1
- Has the business case been reviewed and revalidated at each scheduled gate?		1
- Has the business case been reviewed and revalidated whenever there was significant change to the project or business function?		1
- Have changes to project specifications been well documented and approved by the appropriate stakeholders?		1
TOTALS	<u>1</u>	<u>4</u>

Questions on Accountability - Project Implementation/Execution and Control Phase	Yes	No
- Have status/progress meetings occurred regularly?	1	
- Have issues been raised and dealt with?	1	
- Have the project been completed on time?	1	
- Have changes in scope been managed?	1	
- Have adequate number of staffs been allocated to the scheduled tasks at scheduled time?		1
- Has the matrix defining reporting relationships been used in throughout the project?	1	
- Have all key players lived up to their responsibilities?		1
- Has an independent party reviewed the vendor's project management activities?		1
TOTALS	<u>5</u>	<u>3</u>

Questions on Project Manager Discipline- Project Implementation/Execution and Control Phase	Yes	No
- In the event of serious problems, has the necessary information on escalation been available to support decisive action?		1
- In the event of serious problems during project execution, have decisions been taken promptly to remedy the problems?	1	
- Has the project maintained a positive image?		1
- Is the lead project manager avoiding conditions that would result in premature, inordinate and inappropriate use of funds?		1
- Has the lead project manager maintained sufficient control over appropriate human resources?	1	
- Has the vendor provided complete information on project performance and progress?		1
TOTALS	<u>2</u>	<u>4</u>

Questions on Risk Management - Project Implementation/Execution and Control Phase	Yes	No
- Have new risks that have surfaced been addressed formally?		1
- Have formal mechanism and tools for monitoring project schedule been used?		1
- Have team leaders been held to budgetary constraints?		1
- Have independent reviews of the project in general been held?		1
- Have reviews by a senior steering committee been carried out?	1	
- Have regular review sessions been held to review the continued relevance of the project, project performance, and to raise concerns about actual/potential problems?		1
TOTALS	<u>1</u>	<u>5</u>



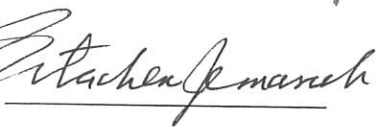
DECLARATION

The thesis is my original work, has not been presented for a degree in any other university and that all sources of material used for the thesis have been duly acknowledged.



Mihiret Yilkal Beyene

This thesis has been submitted for examination with our approval as university advisors.



Ato Getachew Jemaneh



Ato Ermias Abebe

