ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
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The prospects and challenges of implementation of Enterprise Performance Management System project. A case of Commercial bank of Ethiopia

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A Research Project Work Submitted to the School of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Requirements for the Degree of Master of Arts in Project Management

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Addis Ababa, Ethiopia

Statement of Declaration

I, **Ashenafi Mezgebe**, hereby declare that the research study entitled by: "**The prospects and challenges of implementation of Enterprise Performance Management System project. A case of Commercial bank of Ethiopia**", has been conducted by me under the guidance and supervision of Solomon Markos (PhD). I also declare that all materials and sources used for this project research have been accredited appropriately. I am also declaring that this work had not been submitted for the award of any academic Degree or Diploma Program in this or any other institution.

Ashenafi Mezgebe

Signature _____

Date_____

Statement of Certification

This is to certify that **Ashenafi Mezgebe** has carried out this research project work on the topic entitled "Practice of Communication Management in IT Projects: The Case of Commercial Bank of Ethiopia (CBE) under my supervision. This work is original in nature and it is sufficient for submission for the partial fulfillment for the requirements of the award of Masters of Art in Project Management.

Solomon Markos (PhD)

Signature: _____

Date: _____

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Acronyms and Abbreviations

CBE	- Commercial Bank of Ethiopia
EPM	- Enterprise Performance Management
PMO	- Program Management Office
ERP	- Enterprise Resource Planning
BI	- Business Intelligence
CRM	- Customer Relationship Management
RFP	- Request for Proposal

Abstract

To remain competitive and keep up with modern technology, organizations have to take a new look at the way they operate, achieve strategic business objectives and goals. Enterprise Performance Management System is a software solution designed to assist organizations and businesses in linking strategies to their planning and the execution of their strategies. Commercial bank of Ethiopia has adopted EPM system solution from a vendor called Oracle. The main objective of the study is to assess the prospects and challenges of Implementing Enterprise Performance Management System Project in the case of Commercial Bank of Ethiopia. The study adopted descriptive research design. Using a census survey method, data was collected from 44 EPM system project implementation participants, and users in Financial Reporting and Reconciliation office, Budget Control office, and Strategy Planning office through questionnaires and interviews. In addition to six interview questions, questionnaires with items of 33 were distributed and collected with a response rate of 83%. The collected data was analyzed using SPSS version 26. Presentation, interpretation and discussion also made using table, Frequency (N), Percentage (%) and mean to get ample findings. 11 items were used to examine the benefits, eight items were used to examine the critical success factors, 7 items were used to examine challenges during implementation, and addition 7 items were used to examine the post go-live challenges of EPM system. According to the findings, the majority of the respondents agree that the implementation of EPM system have positively influenced process level performance, and have helped the organization remain competitive. According to respondents, committed top management support, consultant and vendor support, and stakeholder engagement were topped the most critical success factors. Misaligned expectations, poor project management strategy, and lack of functional and technical expertise were identified as the most EPM system implementation challenges. Data quality and data volume challenges were among the main challenges during post go-live stages. The researcher recommends setting a clear and effective project governance/management strategy, which may include identifying decision makers, sign-off schedule on key deliverables and milestones, point of escalation, and others specific to each project implementation during the project-planning phase.

***Key words**: Enterprise Performance Management (EPM), EPM benefits, EPM critical success factors, EPM challenges, CBE*

CHAPTER ONE : INTRODUCTION

1.1 Background of the Study

Project Management Institute (PMI, 2013), defines a project is a temporary endeavor undertaken to create a unique product, service, or result. Project management covers several aspects of knowledge areas, such as project integration management, scope management, time management, cost management, quality management, human resources management, communications management, risk management, and procurement management (PMI, 2017).

Project implementation phase, the third phase of the project management life cycle, involves putting the project plan into action. In this phase the project manager will coordinate and direct project resources to meet the objectives of the project plan and handle any problems that come up. The project manager with the help of project team will do the project work to produce the deliverables. The deliverables of a project include all of the products or services that the project team are performing for the client, customer, or sponsor, including all the project management documentations (PMI, 2017).

According to Harold, (2017) project implementation is carrying out activities proposed in the application form with the aim to achieve project objectives and deliver results and outputs. Its success depends on many internal and external factors. Some of the most important ones are a very well organized project team and effective monitoring of project progress and related expenditures. This is the logical conclusion, after evaluating, deciding, visioning, planning, applying for finances, and finding the monetary resources of a challenge. The implementation degree of the project cycle is in many approaches the most critical, as it is miles in the course of this stage that planned advantages are delivered. All different stages within the cycle are therefore essentially supportive of this implementation stage. A task has to be implemented successfully while the allocation of undertaking obligations to the assignment team in the organization.

Over the last decades companies, which have increasingly seeking a business growth, process optimization, efficiency, and enjoy being competitive were advancing their business process from performance evaluation to performance management. Performance evaluation mostly focuses on financial aspects of an organization, such as cost and budget, revenue and profit. But performance

management, in addition to, how process performance looks internally, it assess how business is perceived by shareholders and customers and also the opportunity for learning and innovation. Daft (2003) defines management as the attainment of organizational goals in an effective and efficient manner through planning, organizing, leading, and controlling organizational resources. Evaluation refers to a process, whereas results are evaluated quantitatively by analyzing certain indicators, as cited by Judita and Aurelija (2018). Performance management includes proper planning, budgeting, forecasting, monitoring, evaluating and making corrective action, and hence Enterprise performance management system is a software solution that comprises the methodologies, metrics, processes, software tools, and systems that manage the performance of an organization. By adopting Enterprise Management System, organizations can achieve improved performance by monitoring and controlling financial and operational results against forecasts and goals and using analytics to recognize key trends and predict outcomes. Cockins (2004), summarizes the benefits of Enterprise Management System as "a system that enhances broad cross-functional involvement in decision making and calculated risk taking by providing tremendously greater visibility with accurate, reliable, and relevant information—all aimed at executing an organization's strategy."

Today, advances in data management, information management, and software tools for business processes, including EPM, ERP, BI, and CRM are well ahead of most organizations' abilities to harness what can be done with these tools. Today the impediment is not technology but rather the organization is thinking—its ability to conceptualize how the interdependencies can be modeled, to configure software, and to incorporate the right assumptions and rule-based logic.

The purpose of this research project work is to examine, comprehensively, the prospects and challenges of Enterprise Performance Management System implementation in the case of Commercial bank of Ethiopia. As a forerunner in the country's digital banking sector, CBE is procuring and operationalizing new state of the art technologies, via the bank's PMO office. CBE acquired and implemented Oracle Enterprise Performance Management System on January 2018.

1.2 Background of the organization

Commercial Bank of Ethiopia, One of the predominant banks operating in Ethiopia, has more than 31.4 million account holders who can be entertained by a number of services. To entertain these customers, the bank is expanding its branch network, deploying different e-payment channels like

ATM, POS, Mobile banking, Mobile Money (CBE-Birr) and Internet banking. Now a days, CBE has managed to open more than 1,607 branches and deploy Over 3,091 ATMs and 4,350 POSs all over Ethiopia. In addition, the banks mobile banking and internet banking subscribers reached more than 5.233 million and 31 thousand respectively. CBE Birr User also reached more than 5.6 million. The bank is also a pioneer to introduce modern banking to Ethiopia and credited for playing a catalytic role in the economic progress and development of the country. It is also the first bank in Ethiopia to introduce ATM service for local users, Western Union Money Transfer Services in the country and currently working with more than twenty money transfer agents. CBE has reliable and enduring relationships with internationally recognized banks across the world. As of June 30th, 2021, the bank has total assets of Birr 999 billion. Commercial Bank of Ethiopia annual report (2021).

1.3 Statement of the problem

Enterprise Performance System has proven benefits such as organization effectiveness, alignment of business processes with the organization's business strategy, and enhancing the ability of measuring performance. Adoption of Enterprise Performance Measurement systems encourages involvement of top management, which is crustal in achieving the needed alignment between the long-term strategy of the organization and the day-to-day activities and operations. The effects of strategic analysis aligned to Performance Measurement System guideline managers to focus on the future, encourage a more accurate communication flow and optimize the coordination process as a whole. It also stimulates the dialog between the team by rationalizing instead of emotionalizing strategic decisions, supporting the acceptance of the set goals, the predisposition of managers to coordinate the teams in the pursuit of goals achievement as well as of the teams for their execution (Gimbert et al. 2010).

Consequently, companies today are investing considerable amounts of money on Enterprise Performance Management Systems. Even though, those companies are profiting by the remarkable benefits of such systems, many doubt whether these investments really do lead to productivity gains for the companies applying their solutions. Same question applies for the case of Commercial Bank of Ethiopia's EPM System project. The adoption of enterprise performance management system in CBE have transformed the traditional ways of planning, budgeting, forecasting, and

reporting on business performance as well as consolidating and finalizing financial results (often referred to as "closing the books"); this in turn have improved top management's involvement and decision making process. Today more than 1600 branch managers, 30 district offices, and over 200 head office unit managers are using the EPM system as a tool to plan their capital expenditure item needs, operational expenses, project expenses, incomes, workforce requirements, and other operational plans. Top management and respective division executives (i.e. Strategic and Business Development office, Branch and Digital Banking office, Finance office, Facilities Management office, Human Resource office, Resource, Credit Management office, and other concerned offices) can access, follow, and involve in the immediately aggregated proposed plans by just few clicks.

Alongside the benefits of the implemented EPM System, there exist many difficulties in utilizing the system to the optimum level. Some of the causes include; data dependency of the EPM systems on other systems like Enterprise Business Suit, Core banking system, and data warehouse systems, huge volume of data, poor level of communication among departments, data accuracy issues, organization's culture of collaboration, and lack of performance management experts.

While doing the preliminary literature review on implementation of Enterprise Performance Management system, the literatures the researcher was able to find, are studied in other countries, and in a sector other than banking and finance (Anastasiya (2017), Liesel (201), Tibor (2017), Mohammed (2011), Bititci. Besides, to the best knowledge of the researcher, no local study had been conducted on the Implementation of Hyperion Enterprise Performance Management System.

Considering the above research gaps, this master's project work, therefore, have tried to examine the benefits and challenges of Implementing Enterprise Performance Management System in the case of Commercial Bank of Ethiopia. This project work tries to identify the benefits, challenges, and critical success factors during and post implementation of Enterprise Performance Management System.

1.4 Research Questions

This project work attempts to address the below research questions

- What benefits have been achieved by implementing Enterprise Performance Management System?

- What are the challenges encountered during and post implementation of Enterprise Performance Management System?
- What are the critical success factors for implementing Enterprise Performance Management System?

1.5 Research Objectives

1.5.1 General Objective

The primary objective of this project work is to examine the prospects and challenges of Enterprise Performance Management System implementation project in case of Commercial Bank of Ethiopia.

1.5.2 Specific Objective

The specific objectives of this project work are;

- To list out the benefits achieved by implementing Enterprise Performance Management System project in Commercial Bank of Ethiopia.
- To outline the critical success factors in implementing Enterprise Performance Management System project in Commercial Bank of Ethiopia.
- To pinpoint the challenges faced during and post project implementation of Enterprise Performance Management System in Commercial Bank of Ethiopia.

1.6 Significance of the Study

This project work aims to benefit the bank, CBE, and those who have an interest on EPM system, planning to implement EPM System, already adopted EPM System. It provides the basics on benefits, challenges and key critical success factors of EPM System implementation. Apart from identifying the challenges this research study paper have come up with recommendation to the, to be identified, challenges.

Besides, the overall findings of this project work is also expected to increase awareness on the benefits, possible challenges, and critical success factors of EPM System implementation; and it paved the way for further research on EPM System implementation.

1.7 Scope of the Study

This research study was limited to identifying the benefits, challenges, and critical success factors of implementing Enterprise Performance Management System on the case of Commercial Bank of Ethiopia only, and it is limited to Hyperion Planning Plus, Hyperion Financial Management, Hyperion Workforce Planning, and Strategic Finance for Banking Modules of EPM System. In this research project, descriptive research design was applied, and an online questionnaire (survey) through Google form was distributed and an in-person interview with selected directors and managers was used as an instrument to collect primary data. Users of those EPM modules include all CBE branch managers, all CBE district offices, all unit managers and directors of the head office divisions. However, due to time constraint, the respondents was selected from Project Management office (i.e. among those who have participated in the project's implementation), Financial Reporting and Reconciliation office, Budget Control office, and Strategy Planning office.

1.8 Limitation of the Study

The purpose of this project work was limited to assess identifying the benefits, challenges, and critical success factors for adopting EPM System. As descriptive design approach was followed, the respondents are Commercial Bank of Ethiopia's employees, and therefore findings are going to be restricted to CBE. Commercial Bank of Ethiopia have adopted many system solutions (e.g. ERP, EPM, Core banking system, Switch system, CRM, BI, and auxiliary systems) to achieve better and competitive performance advantage on effectiveness, alignment of business processes with business strategy, and enhance its ability of measuring performance; however, this study did not assessed these system solution of the company.

Geographically, this study was also be limited Commercial Bank of Ethiopia's EPM System users located in a city Addis Ababa.

1.9 Organization of the Study

Structurally, this research study paper was composed of five chapters. Chapter one presents introduction materials, which includes background of the study, background of the organization, problem statement, research questions, objectives of the study, scope, limitation and significance of the study. Chapter two is contains a detailed review related to theoretical and empirical

literatures on topics specific to prospects and challenges of implementation of Enterprise Performance Management System. Chapter three presents the research design and methodology that includes research design and approach, sources of data, population of the study, method of data analysis, validity and reliability analysis, and the ethical consideration of the research. Chapter four contains data presentation, analysis and discussion of the study results. Finally, in Chapter five the report concludes by summarizing and recommending based on the research findings and suggestion for further research.

1.10 Definition of key terms

Project: a temporary endeavor undertaken to create a unique project service or result." Projects are temporary and close down on the completion of the work they were chartered to deliver (PMI, 2008a, p. 434).

System: a set of interdependent components, which will operate in such a fashion that these components will complement one another in the performance of their defined function to a greater degree than they would be able to as separate, independent components, which accomplish a predetermined goal.

Implementation: is the process of: defining how the information system should be built, ensuring that the information system is operational and used, and ensuring that the information system meets quality standard.

Performance Management: In contrast to the traditional approach to management, which focuses on management by command, performance management focuses on the theory of managing by agreement in advance on goals, standards, and competence requirements. Daft (2003).

Enterprise Performance Management System: Evolves formal and informal mechanisms, processes, systems, and networks used by organizations for conveying the key objectives and goals elicited by management, for assisting the strategic process and ongoing management through analysis, planning, measurement, control, rewarding, and broadly managing performance, and for supporting and facilitating organizational learning and change. Ferreira and Otley (2009)

EPM benefits: the benefits achieved within an organizations by adopting Enterprise Performance Management System. Anatoliy (2011)

EPM key critical success factors: are the limited number of areas in which results, if they are satisfactory, will ensure successful competitive performance for the organization. They are the few

key areas where things must go right for the business to flourish. If results in these areas are not adequate, the organization's efforts for the period was less than desired. John F. Rockart, of MIT's Sloan School of Management.

EPM system challenges: is a situation that threatens to deter or disorganize an implementations' pursuit of success. Anastasiya (2017).

CHAPTER TWO : LITERATURE REVIEW

2.1 Theoretical Literature Review

This chapter provides a theoretical overview of the global perspective of performance management systems in general. Moreover, a review of related literatures helped to adopt the best methods and approaches on the implementation of EPM system implementation practice. As Creswell (2013) defined literature review is a piece of a recap of journal articles, books, and other documents that define the past and the current state of information on a specific research study. Therefore, the literature review enables the researcher to discover existing knowledge in a specific area, which is EPM system implementation in this research.

2.1.1 Enterprise Performance Management

The definition of Enterprise Performance management is the combined definition of Enterprise Performance and Performance Management. Fekete M., and Török L. (2011), defined Enterprise Performance as the objective economic category, which characterizes the degree of achievement of general and specific objectives of the enterprise, getting results on the optimal use of all resources. And Performance Management as a special management approach that aims at ensure the effective functioning of the enterprise, and describes the methodology, measurements, processes, methods, techniques, systems and software that are used for diagnosis (estimation), analysis, control and ensuring the growth of performance in different enterprises.

Before balanced scorecards (BSC) found its way into the literature, performance management mostly focused on financial aspects of an organization such as costs and budgeting. From the perspective of performance management, BSC then crossed the borders of internal organizations by looking at how business is perceived by shareholders and customers and also what is the origin for learning and innovation and how process performance looks internally (Aho, 2009). Kaplan (2009) pointed out that BSC is only a part of organizational performance as a whole which among traditional financial measures takes into account also other measures from areas such as customers, internal processes and learning and growth (Kaplan, 2009). Nevertheless, performance of BSC on the operational level is not very good (Aho, 2009).

Enterprise Performance Management is of crucial importance for companies in order to survive and compete on the market where there is constant change in the conditions under which they compete (Ljubljana, 2017). In order to achieve better results and goals in a more efficient way companies have to understand their performance and monitor it constantly. The other important thing is that organizations must not just take the right decisions but also that they need to take them at the right time (Artley & Stroh, 2001). In order to deal with this challenging environment that companies operate in, they need appropriate tools to plan, execute and refine their performance management strategy. In sense, the most important tool of performance management in this case are timely, reliable and accurate data. Performance management is meant to support decision making and is part of business management which also means that it represents procedures and methods that are used by an organization in order to effectively manage personnel so that their actions are aligned with organization's strategy. That being said, in order for performance management to be effective, it has to integrate these measures, methods and procedures into one management system across organization (Aho, 2012). According to Cokins (2009) most of organizations were already practicing performance management and has therefore become for what we consider it today. Aho (2012) points out that processes, information, measures and intangible assets are integrated by performance management which therefore support phases that are involved in strategy implementation. This way it provides decision makers with relevant information. Additionally, in his paper from the context of performance management, technology is presented as an integrator and enabler which supports the overall initiative of performance management. Performance management is presented purely from an information and knowledge management point of view. Many times organizations only achieve automation of existing processes that are finance oriented and are not able to change or improve performance management processes (Aho, 2009). Simply, performance management can be addressed as a process that manages the strategy of a company or even process of achieving the results and goals by executing the plans (Cokins, 2009). As it can be seen from the figure 2, performance management is further divided into two levels:

- Operational level and
- Strategic level.

Operational level deals with monitoring and optimization of processes whereas strategic level is where strategic key performance indicators (KPIs) and business goals are defined and redesign of processes is started (Aho, 2009).

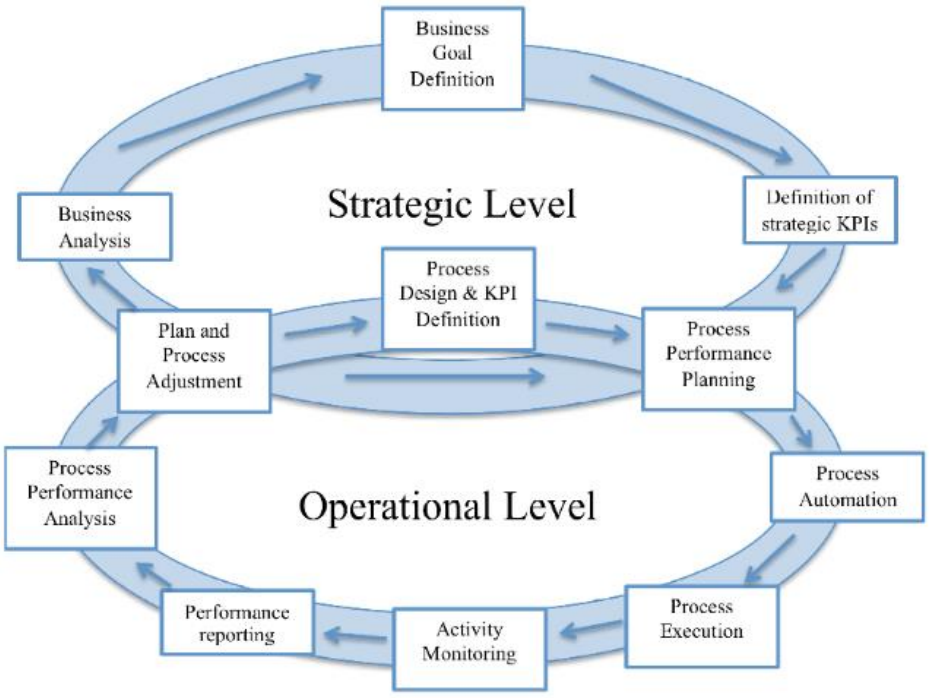

Figure 2.1 Levels of performance management

Source: Melchert, Winter and Klesse (2004).

In most of the cases EPM is directed towards corporate level since the performance management scope is quite wide (Stevens, 2008). EPM tries to enhance corporate performance and it integrates different concepts that were used by organizations in the past such as total quality management, performance management, BI and data warehousing. EPM makes it possible for some organizations to find connection between operation and strategy. This is possible with support of hard data for decisions making and better performance (Aho, 2009).

Based on the data from their research Williams and Williams (2010) argue that in terms of managerial toolkit, EPM has become mainstream tool. EPM is mostly used for budgeting, planning, forecasting and preparation of dashboards and scorecards. That being said, companies mostly exploit it for its basic value proposition which is usage of advanced planning and control methods in a systematic way. EPM enables a closed-loop system for performance control which is able to align, measure, manage and improve main parts of business performance (Williams & Williams, 2010). Different organizations perceive the concept of performance management in a different way. In some cases, performance management is perceived as a mean to deal with data for predefined KPIs and standards. This of course means that companies which perceive it in this way leave many

potential data on the table and do not use them. On the other hand, companies can add analytical functions to their traditional measurements and therefore proactively seek for the trends also by monitoring processes. This way they can also create different scenarios for what can happen. This means that they establish a comprehensive strategy for performance management (Aho, 2012). Nevertheless, measurement as such can be used to assess how the company is progressing on its path to achieve its goals. Furthermore, to assess how business strategy and operations of a company are aligned, performance measurement comes into effect. In order to transform business strategy to results, measurement plays a big role (Frolick & Ariyachandra, 2006).

2.1.2 The business value of Enterprise Performance Management

Performance measurement is the "heart and soul" of the performance-based management process. Flowing from the organizational mission and the strategic planning process, it provides the data that was collected, analyzed, reported and ultimately used to make sound business decisions. It directs the business function by justifying budgetary expenditure, documenting progress towards established objectives, identifying areas of both strength and weakness, providing an ongoing assessment of the current organizational climate, and driving business improvement (Artley & Stroh, 2001).

EPM can help an organization better manage its business by connecting financial and operational metrics to provide comprehension and understanding to push strategies and plans for the future, thus optimizing overall performance within the organization. Financial and operational outcomes can be measured compared to goals and objectives, using specific analytics to discover trends and forecast outcomes (Amaratunga, D., and Baldry, D. 2002).

Liesel, (2013) insist besides providing one source of the facts regarding an organization's data, other benefits to utilizing EPM may include any of the following:

- ✓ Verified data from one consolidated source.
- ✓ Consistent metadata.
- ✓ Scalable and retrievable information.
- ✓ Dash boarding capabilities.
- ✓ Flexibility to endure disruption.
- ✓ Capabilities for data accumulation and analysis.

- ✓ Improve overall agility to make critical business decisions.
- ✓ Better and faster budgeting and forecasting.

2.1.3 **Planning, Budgeting, Financial Reporting, and Monitoring practices in CBE**

Commercial Bank of Ethiopia, One of the predominant banks operating in Ethiopia, has more than 31.4 million account holders who are currently being entertained by a number of services. To entertain these customers, the bank is expanding its branch network, deploying different e-payment channels like ATM, POS, Mobile banking, Mobile Money (CBE-Birr) and Internet banking. In addition to adopting customer centric (front-end) system solutions, CBE stays the top indigenous organization to invest in billion dollars for back-office system solutions, including EPM, ERP, CRM, E-learning, Internal help desk, internal portal, internal mail server, and many other auxiliary systems. CBE was the foremost national organization to adopt EPM system solution. CBE implemented oracle EPM system in the year 2018. Oracle EPM software helps analyze, understand, and report on organization's business. EPM refers to the processes designed to help organizations plan, budget, forecast, and report on business performance as well as consolidate and finalize financial results (often referred to as "closing the books"). EPM solutions are primarily used by CFOs and the office of finance, while other functional areas, such as HR, sales, marketing, and IT, use EPM for operational planning, budgeting, and reporting. From the available modules of EPM suite, CBE have selected and implemented the below listed modules only.

Hyperion Planning

Oracle's Hyperion Planning software is a centralized, Excel and Web-based planning, budgeting and forecasting solution that integrates financial and operational planning processes. Planning provides an in-depth look at business operations and its related impact on financials, by tightly integrating financial and operational planning models (Oracle, 2020).

Hyperion Workforce Planning

Oracle Hyperion Workforce Planning is a Web-based workforce planning and budgeting solution. It gives corporations a tool to model future headcount and related expenses, and provides a reliable source of up-to-date information about workforce expenses. By planning salary expense in direct correlation to headcount, planners can effectively manage one of their largest variable expenses. With Workforce Planning, all decision-makers and front-line managers can communicate which

course of action to take and ensure budget holders collaborate, which optimizes and streamlines the headcount process. When a material event occurs that causes a change in direction, planners have the flexibility to adapt rapidly, ensuring that plans are relevant and useful (Oracle, 2020).

More specifically, Workforce Planning:

- Calculates workforce-related expenses, including headcount, payroll, salary, taxes, and health care benefits
- Includes employee transfer functionality, facilitating headcount management across dynamic organizations
- Provides a framework for customizing planning, meeting the needs of global enterprises
- Provides drill-through from summary values to underlying detailed data
- Includes event-based activities, such as new hires, that trigger expenses for space allocation, equipment, and hiring bonuses
- Integrates with Oracle Hyperion Planning, Fusion Edition data for reconciliation, forecasting, and reporting
- Integrates with other systems to load information: with flat files for Oracle Hyperion EPM Architect, Fusion Edition applications, and typically with Oracle's Hyperion® Data Integration Management Adapter for Planning for Classic applications
- Supports working with Workforce Planning data forms using Oracle Hyperion Smart View for Office, Fusion Edition, both online and offline

Hyperion Financial Management

Oracle's Hyperion Financial Management is a web-based Financial Consolidation, reporting and analysis tool. It provides financial stakeholders with the ability to rapidly close and report financial results, meet global regulatory requirements, reduce the cost of compliance and deliver confidence in the numbers. (Oracle, 2020)

Hyperion Strategic Finance

Hyperion Strategic Finance is a feature rich financial forecasting and modeling solution with on-the-fly scenario analysis and modeling capabilities. It helps users quickly model and evaluate financial scenarios, and offers out of the box treasury capabilities for sophisticated debt and capital structure management. When used in conjunction with other Hyperion Enterprise Performance

Management (EPM) applications and Oracle Essbase, it provides a compelling solution, which is used to set targets, perform quick financial impact analysis, and present focused financial information for informed decision-making. (Oracle, 2020 Doc ID 2520739.1)

Hyperion Financial Data Quality Management

Oracle Hyperion Financial Data Quality Management Enterprise Edition allows business analysts to develop standardized financial data management processes and validate data from any source system—all while reducing costs and complexity. Fully integrated with Oracle Enterprise Performance Management applications, Oracle Hyperion Financial Data Quality Management Enterprise Edition is the only enterprise-class system of its kind for managing the quality of financial data.

2.1.4 Performance Management Components

Important part of Performance Management Index Model (PMI) model are the components that are built in the performance management. Performance management's key areas are actually explained by these components. Aho (2012) identified five main components:

- Information,
- Intangible assets,
- Performance,
- Strategy and business and
- Technology.

Usually a central component of most of the processes in performance management is technology. Together with other main four components is presented in the figure 3:

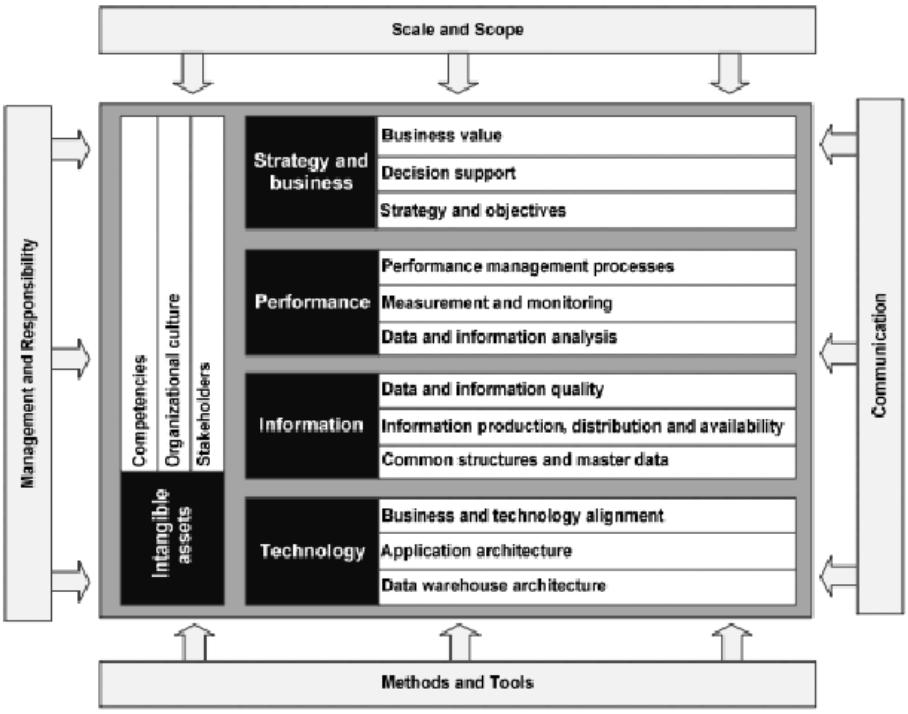

Figure 2.2 The components of performance management

Source: Aho (2012)

As we can see from the figure 3 there are also subcomponents in which each of the components is divided in. There are three subcomponents for each of the components. Also, on the edge of the figure there are four components that support five main components and can be used together with any of them. These are: management and responsibility, communication, methods and tools, and Scale and scope.

In his earlier work Aho (2009) explained a capability maturity model for EPM which was based on four components where each of the components had four subcomponents. Unlike his later model (2012), this model consists of six different maturity levels since it has additional 0 level (unaware). These four components are used to describe each of the EPM maturity levels and characterize management activities that are of a high importance for enabling EPM. Aho (2009) listed the four components:

- Management and organization,
- Technology,
- People and culture and

- Processes.

Management and organization component addresses strategic decisions that were set, explains how EPM is managed and what are its benefits for a company. Aguinis, Joo, & Gottfredson (2011) claim that many times companies do not recognize the potential benefits of performance management because focus of systems is usually very narrow and they only focus on certain aspects such as performance appraisal. Technology component takes into account IT point of view and how is it providing flexible infrastructure, enable business processes and share quality information in an organization. Third component People and culture deals with how people perceive EPM, how are they trained, how decisions are made and actions taken from the perspective of EPM and how people communicate in an organization and share information. Processes component includes EPM initiative scope, processes of EPM, and how different methodologies are used. It also raises a question about how an organization measures its performance (Aho, 2009). Each component with its subcomponents is presented in the table 3.

Table 2.1 EPM maturity components

Component	Subcomponent	Description
Management and organization	Strategy and objectives	Describes how decisions are made in the organization (based on instinct vs. based on analytics). Encompasses also the consistency in shared focus and metrics. Defines how EPM strategies are linked to risk management and productivity targets.
	Organization	Defines the extent of support from C-level executives. Discusses things such as how the EPM initiative is organized? Is BICC set up? Is there local control or enterprise wide standards? How the partnership between IT, finance and business users is being established?
	Governance	Choices that organization make when allocating decision rights for EPM activities such as selecting and prioritizing projects, assuming ownership of technology, and controlling budgets and EPM investments. How governance policies are defined and enforced?
	Business value	Importance and contribution of EPM to the organization in terms of investments becoming efficient, ROI becoming positive, and EPM becoming indispensable.
Technology	Infrastructure	Encompasses the EPM architecture, its extent, analytical tools in place, and data warehousing.

	IT-business alignment	Encompasses how well IT capabilities are used to share information across the organization. Practices that address the extent to which IT is able to drive or enable transformation.
	Data governance	Defines how the data is being managed, are there common data definitions, what is the scope of common enterprise data.
	Data	Encompasses the quality of data, and data redundancy.
People and culture	People	Encompasses how knowledge workers are empowered with timely information and insight. How much staff is needed to consolidate the information?
	Competencies	Encompasses the people's awareness of EPM, their understanding the value of information, and whether people can make actions based on EPM understanding.
	Communication	Encompasses the effectiveness of sharing information for mutual understanding, the methods used to promote information sharing and the partnership between IT and business.
	Culture	Encompasses the information sharing culture.
Processes	Scope	Encompasses the scope of EPM solution (silos vs. enterprise-wide solutions).
	Methodologies	Encompasses how well an organization is adapting methodologies such as Activity Based Costing (ABC), Total Quality Management (TQM), and Balanced Scorecards (BSC).
	Process definition	Defines how EPM processes are planned and managed. Are EPM processes documented, understood, and being used in a decision making?
	Performance measurement/ metrics	Defines if metrics and rules are aligned with the organization. How EPM objectives are measured and tracked? Are key metrics reviewed on a periodical basis?

Source: Aho (2009).

2.1.5 Implementation Phases of EPM System Project

The Performance Management Process is the process by which the company manages its performance in line with its corporate and functional strategies and objectives. The objective of this process is to provide a proactive closed loop control system, where the corporate and functional strategies are deployed to all business processes, activities, tasks and personnel, and feedback is obtained through the performance measurement system to enable appropriate management decisions. Bititci S, Carrie S, McDevitt G (1997).

The development of a performance measurement system can be divided into three main stages: design, implementation and use of performance measures (Bourne et al. 2000). A fourth and fifth stages might also be considered: the review and learning.

This is the sequence a performance measurement system should evolve, however, stages may overlap and some stages be implemented before others (Bourne et al. 2000).

Design

The design stage usually starts with an overview of the business in order to identify the demands of stakeholders and clients as well validate the alignment with the organization's strategy before listing a new set of objectives for the business (Bourne et al. 2000).

Thus, the design stage can be further sub-divided into: identification of key design objectives and measures design (Bourne et al. 2000).

Several articles have discussed the performance measures design establishing different approaches and recommendations. Through a literature review of 10 books and articles these approaches and recommendations were summarized and listed in a table by Neely et al. (1997). The recommendations say that performance measures must: derivate from the strategy; provide updated feedback; be quantifiable; reflect the business; be specific, relevant, simple, objective; have visual impact; focus on improvement; etc.

Furthermore, authors proposed a framework – the Performance Measure Record Sheet, which seeks to specify what a good performance measure constitutes. The proposed framework, besides previous recommendations, emphasizes that the measures must be clearly defined as well based on clearly formula and data source (Neely et al. 1997).

Table 2.2 The performance measure record sheet

Details
Title
Purpose
Relates to
Target
Formula
Frequency (N)

Who measures?
Source of data
Who acts on the data?
What do they do?
Notes and comments

Source: Neely et al. (1997)

According to the academic literature there is not a framework or complete tool to use in a performance measurement system. Each one has specific features and specific focus, addressed more to a certain purpose than another, with advantages and disadvantages, resulting in positive and negative points.

While SMART is strong in integrating corporate with operating objectives it does not provide a mechanism to identify key indicators nor integrates the concept of continuous improvement. Neither PMQ provides a mechanism to identify areas for improvement in the company. As the Balanced Scorecard, it integrates important perspectives of performance and is easy to use but is more directed to support the top management level not being adherent to the operational level (Ghalayini and Noble, 1996).

Thus, it is up to the head or group responsible for the development of PMS a deep business analysis and identification among available frameworks or tools, and the task of selecting and applying those most pertinent to the business and organization's objectives.

Table 2.3 Key proposals of PMS models

PM MODELS	KEY ATTRIBUTES
Performance Measurement Matrix (KEEGAN et al., 1989)	- performance measures internal and external, financial and non-financial - performance measures linked to strategy
SMART - Performance Pyramid (CROSS & LINCH, 1990)	- performance measures of internal efficiency and external effectiveness - performance measures deployed from organization's strategy
Balanced Scorecard (KAPLAN & NORTON, 1992, 1996)	- performance measures grouped into four perspectives - cause and effect relation between perspectives reflecting the strategy
Integrated Performance Measurement System (BITITCI et al, 1997)	- strategic development for business, business unit, processes and activities generates measures considering requirements of stakeholders, external monitoring, objectives and performance measures
Performance Prism (NEELY & ADAMS, 2000)	- performance measurement of stakeholders satisfaction - strategy communication - approach for the management of business processes

Source: Attadia and Martins, (2003)

Implementation

The implementation is defined as the stage in which systems and procedures are put in place in order to collect and process the data that will generate the measurements (Bourne et al. 2000). It might be a new process that involves new procedures, or a computer programming for data extraction.

Each organization will set up its own system or procedures, depending on the available resources and according to the strategy defined.

Use

The use of performance measures can be divided in two sub-divisions: evaluate the success or failure of the implementation and challenge the strategic assumptions (Bourne et al. 2000).

Evaluating the success of the implementation means that the PMS fits in the operation and provides the scores that allows the top management, managers and employees to visualize if the goals were achieved or not. In case of failure, the review stage must take place.

By challenging the strategic assumptions, we can understand that through the results of the implemented PMS and extracted measures the organization can guideline the actions towards improvements or changes to be made.

Review

In a review process the organization have a better understanding of performance measurement system in several aspects, increasing its expertise on measures applicability.

There are two aspects to be considered towards the review stage: the preparation for the process review in order it to be effective and a system for understanding the flaws or weaknesses in the performance measurement system that need to be corrected or optimized.

According to Farris et al. (2011) the research of Meekings (2005) offers some guidelines to set up an effective review process based on three case studies:

- Structure the process review by defining: "what, when, why, where and how";
- Ensure review meetings to be productive;
- Pilot the review at a unit that is more susceptible to accept the process.

Farris et al. (2011) research involving a number of organizations, listed questions that initially support a systematic process review to understand the failures and necessary improvements in the PMS review stage:

- Has the organization an effective way of communicating the measurement framework, the process, the measures and the resulting actions required?
- Has the organization a robust performance achievement process established and driven by measures that identify the appropriate actions and recognize best practices?
- Has the organization successfully integrated PM approach in its culture and business?

Farris et al. (2011) article proposes a systematic process review consistent of:

- a list of evaluation criteria's divided into 04 dimensions: 1) approach (scheduled meetings involving the operational team and stakeholders); 2) deployment (critical results communication to internal and external stakeholders); 3) study (analysis results and action plans); 4) refinement (actions for improvement and deviations adjustments), where these evaluation criteria's are used as support for PMS analysis;

- a list of improvement opportunities extracted from the evaluation criteria's analysis;
- a final list with the key strengths which will guide the actions to optimize the PMS;
- the identification of root causes and action plans for process optimization;

Learning

From the organizational behavior standpoint view the individual learning happens when people assimilate new knowledge through experience in their daily lives and from other sources - this process increases the intelligence and the ability of the individual. When the learning process is absorbed between the members of the organization, a new culture is established and an organizational learning occurs (Yeung Lai and Yee, 2007).

According to Fried (2010) strategic learning does not result automatically from the implementation of a performance measurement system - but their development and use can lead to a strategic learning process. Similarly, the review of a PMS conducts to learning – by increasing knowledge about the current measures, the improvement opportunities identified that lead to change and innovation, and finally to better understand the PMS as a whole.

2.1.6 Benefits of Enterprise Performance System

Measuring organizational success is a continuous challenge for both managers and researchers (Maltz, Shenhar, & Reilly, 2003). Consequently, the Enterprise Performance Management system has received considerable attention over the last three decades (Bourne et al., 2002; de Waal, 2007; Kennerley & Neely, 2002). The EPM is now an established concept that is receiving renewed attention in a variety of organizations (Taticchi et al., 2010). There is evidence that EPMs are currently being implemented in approximately 70% of medium to large firms in the USA and Europe, as well as in many government departments (de Waal & Kourtit, 2013). There has also been an increasing volume of empirical work on EPMs in the public sector (Boyne & Chen, 2007).

The EPM is a critical factor for the effective management of an organization, which may be due to the fact that, without measuring something, it is difficult to improve it (Salaheldin, 2009). Historically, EPMs were developed as a means of monitoring and maintaining organizational control and to ensure that organizations pursued strategies that led to the achievement of their overall goals and objectives (Neely, 2005). The development of a EPM in management has followed a path that has been influenced by a general push to improve the quality of services while

also meeting strict cost parameters (Bititci, Turner, & Begemann, 2000). The design of an effective EPM, which includes the selection of appropriate measures and approaches for analyzing results, is central to aligning an organization's operations with its strategic direction (Kaplan & Norton, 2006).

The Performance Management Process is seen as a closed loop control system which deploys policy and strategy, and obtains feedback from various levels in order to manage the performance of the business. The Performance Measurement System is the information system, which is at the heart of the Performance Management Process, and it is of critical importance to the effective and efficient functioning of the Performance Management System. Bititci S, Carrie S, McDevitt G (1997). A paper by Bititci (1995) asserted that performance management should be viewed as a key business process, which is central to the future well-being and prosperity of any manufacturing enterprise.

In addition to the above literatures, Oracle, among the top EPM solution providers, lists the following benefits of EPM system (Source: https://www.oracle.com/performance-management/what-is-epm/#:~:text=With%20EPM%20software%2C%20managers%20can,key%20trends%20and%20predict%20outcomes. Retrieved on May 12, 2022);

- ✓ **Optimize the financial close** - In a changing regulatory environment, organizations need to adapt quickly to new requirements and deliver faster, more accurate insights to all stakeholders. EPM helps organizations streamline the financial close and report with confidence and insight.
- ✓ **Streamline account reconciliation** - Account reconciliation is the number one reason for non-data-related delays in the financial close. EPM enables organizations to efficiently manage and improve global account reconciliation by exploiting automation and comprehensively addressing the security and risk typically associated with this process.
- ✓ **Drive accurate and agile integrated plans** - The digital economy demands more than spreadsheets and department-oriented planning processes. Truly effective planning should seamlessly connect your entire organization for a better vision. With EPM organizations can align planning across the enterprise, so that organizations can develop agile forecasts for all lines of business and respond faster and more effectively to change.

- ✓ **Manage and drive profitability -** To survive in uncertain times, organizations must be able to manage and drive profitability. EPM helps organizations gain insight into dimensions of cost and profitability to determine where to invest limited resources.
- ✓ **Align tax reporting with corporate financial reporting -** Changing tax laws are causing global organizations to plan and manage their tax affairs very differently than they have to-date. EPM supports effective tax reporting by connecting the processes, data, and metadata that tax and finance share, such as financial planning, financial close, and regulatory reporting.
- ✓ **Satisfy all your reporting requirements -**No matter how many reporting standards organizations have to comply with, they want to be sure that, the data provided in reports is accurate, complete, and the most current information available. EPM reduces the need for multiple reporting systems.
- ✓ **Manage change with enterprise data management -** Whether organizations are migrating applications to the cloud, managing applications in a hybrid environment, or spearheading major business and financial transformation, an enterprise data management platform provides data accuracy and integrity with the alignment of data and master data.

2.1.7 Critical success factors of EPM System Implementation

Daniel (1961) first introduced the concept of CSFs. Since then the concept has become known in both academic and business fields. According to Amberg, F. and Wiener (2005), several definitions for CSFs have been published in the last three decades, the most common of which was developed by Pinto and Slevin (1987). They defend CSFs as the factors which, if addressed, significantly, improve project implementation chances. Also, Leidecker and Bruno (1984) defined CSFs as those characteristics, conditions or variables that, when properly sustained, maintained, or managed, can have a significant impact on the success of a firm competing in a particular industry. Esteves (2004), however argued that these definitions are limited in that they fail to address the comprehensive concept proposed by Rockart (1979), which seeks to identify an ideal match between environmental conditions and business characteristics for a particular company. Thus, Rockart's definition remains the best-known: 'the limited number of areas in which results, if they are satisfactory, will ensure successful competitive performance of the organization'. Many previous studies were critically reviewed in the literature. The criteria used in this study to select the list of CSFs were the emphasis

given to them in the literature reviewed and the Frequency (N) with which they were mentioned. The CSFs that were most discussed are summarized in figure 1: the x axis shows the Frequency (N) with which individual CSFs were discussed in the literature reviewed in this study., while the y axis shows the 13 CSFs that were considered as potential CSFs for the field study investigation.

Table 2.4 CSFs group

CSF	Group
1. Linking PMS to organizational strategy 2. System design and integration 3. Continuous monitoring and reporting	PMS design and implementation
4. Clear targets and business benefits 5. Top management commitment and support 6. Staff involvement in the system 7. Skilled resources running the system 8. Staff training and awareness	People
9. IT infrastructure and support Technology	Technology
10. Effective data management system 11. Motivation and linking performance to incentives 12. Change management 13. Role of effective communication	Processes

Source: own compilation

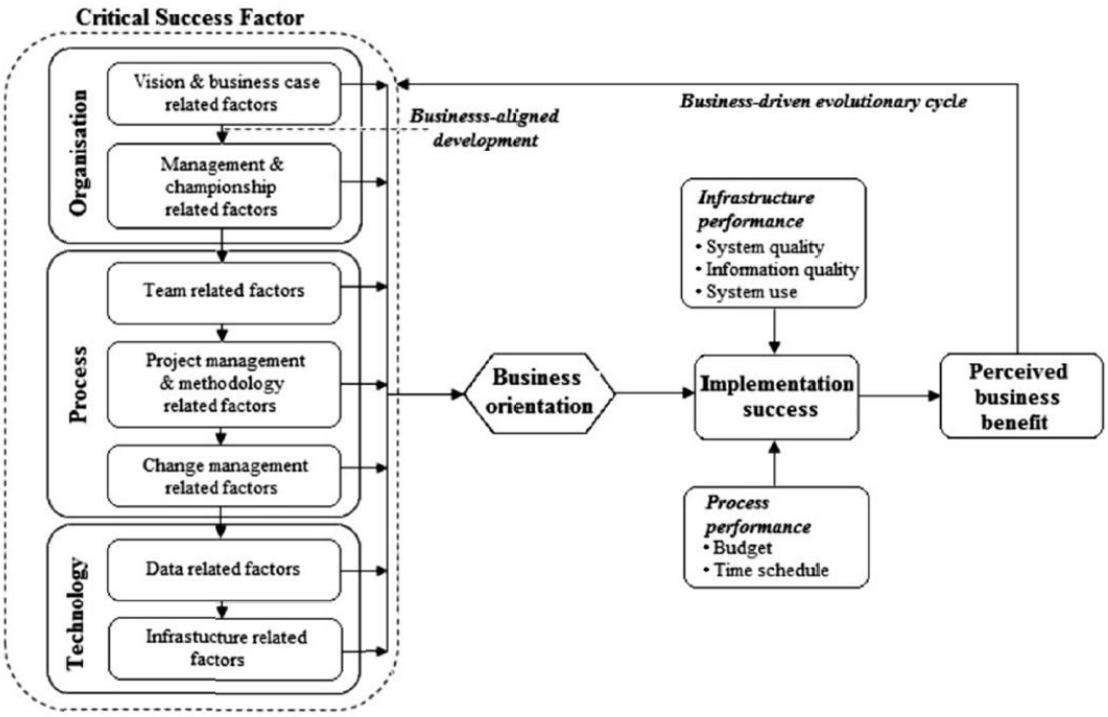

Figure 2.3 CSF framework for the implementation of EPM systems

Source: Yeoh and Koronios, (2010)

As illustrated in Figure 2, the proposed CSF framework for successful EPM System implimentation outline the contribution of different CSFs on the success of EPM System implimentation. In addition, the framework considers the impact of two key external dimensions, as per Ariyachandra and Watson's (2006) recommendations: process performance and infrastructure performance. According to Yeoh and Koronios (2010), this framework supports the efforts of the organization ans individual users to assess the benefits of EPM System implimentation. Furthermore the framework uses a closed feedback cycle to provide continous assessment of the results. Based on the assesment, the system can be modified, optimized and improved accordingly. Yeoh and Koronios'(2010) framework was found to be the most appropriate framework for modification and was extended to develop new CSF frameworks for PMS implementation.

2.1.8 Enterprise Performance Management System Implementation challenges

With the rapid growth of the banking industry, financial organizations are facing an increasingly challenging situation. Stakeholders' expectations are increasing and customer satisfaction is becoming more difficult to achieve. Thus, organizations are competing to create the conditions that

will enable them to perform better. Notwithstanding the complexities in implementing EPMs, there has been little empirical research about the CSFs, which affect the successful implementation of EPMs (Ariyachandra & Frolick, 2008).

According to James W. (2022), and Krishnan R. (2022) the main challenges on implementing Enterprise Performance Management system;

- Finding the right system
- Data dependency of the EPM systems on other systems like Enterprise Business Suit, Core banking system, and data warehouse systems,
- Volume of data,
- Level of communication among departments,
- Data accuracy issues,
- Organization's culture of collaboration,
- Resistance to change
- Commitment from unit managers
- Lack of performance management experts
- Expectation management

2.2 Empirical Literature Review

Owusu (2017) investigated the post-adoption effects of an IT system empirically on the organizational performance of Ghanaian banks. This was done through the BSC. The findings revealed that, indeed, such systems adoption affected the organizational performance of Ghanaian banks positively as the four dimensions of the BSC, i.e. learning and growth; internal business process, customer and finance were all found to be significant with EPM Systems adoption. Practically, this study has shown that the adoption of EPM systems can have both financial and nonfinancial effects on organizational performance. This has provided an insight to managers and policymakers that in evaluating the effects on an IT/IS such as EPM systems, they should take a comprehensive approach and consider both the financial and non-financial aspects due to the intangibility of some of the benefits.

Sujitparapitaya et al. (2012) discussed ten variables in the technological, organizational and environmental factors that influence adoption of EPM in private and public institutions of higher education (IHE) in USA. Data was collected through a survey method from 243 senior administrators of institutional research and information technology units at both two-and fouryear institutions. Their results showed that organization structure, institution size, absorptive capacity, organizational legitimacy, stakeholder support, perceived costs, and perceived complexity are significant determinants of EPM adoption in IHE and that executive support, competitive advantage, and perceived benefits have no significant effect on the adoption.

According to Helo, (2008) findings , the major problems of Enterprise Systems implementation are not technologically related issues such as technological complexity, compatibility, standardization, etc. but mostly about organization and human related issues like resistance to change, organizational culture, incompatible business processes, project mismanagement, top management commitment, not enough user training, weak internal processes, and not enough qualified consultants.

Goeun S. (2013) on his thesis on Challenges in Implementing Enterprise Resource Planning (ERP) System in Large Organizations, have showed that organizations were able to easily access to reliable information by integrating disparate legacy systems and reengineered business processes. According to his conclusion, top management support was one of the most frequently cited critical success factors during enterprise systems project implementation. In addition top management support, he argued change management, consultant relationship, organizational structure and culture also play roles that are more significant during implementation of such system solutions.

All the papers emphasize that the adoption of information technology systems affected organizational performance in many positive ways. However, there are integration, data quality and budget issues during the implementation of such systems.

CHAPTER THREE : RESEARCH METHODOLGY

3.1 Introduction

The purpose of this chapter is to describe the research methodology and approach that was used to gather and analyze the required data to address the research question. The chapter explains the research design and approach, target population, sources of data, method of data collection, method of data analysis, validity and reliability of the research study, and the ethical considerations for the study. In this study, a combination of questionnaires and an interview (qualitative and quantitative) have been used.

3.2 Research Design and approach

Research design is a plan, a proposal, or a blueprint, which depicts the procedures on how the research decisions on methods of data collection and analysis are made. Those decisions involve which design should be used to study a topic, procedures of inquiry, and specific methods of data collection, analysis, and interpretation. The selection of a research design is also based on the nature of the research problem or issue being addressed, the researchers' personal experiences, and the audiences for the study. (Creswell, 2013)

In an attempt to address the research question, this project work have adopted a descriptive research design, over correlational, quasi-experimental, and experimental, and a mixed-method approach, over qualitative, and quantitative, with high emphasis on the quantitative approach (questionnaire). Descriptive research design is an accurate and systematic description of something (an event, phenomena, or characteristics) or someone (an individual, group, or community) Dulock, (1993). In descriptive survey research design, objectives are predetermined allowing data collection relevant and sufficient to the study problem.

3.3 Description of the study variables

Research often concerns relationships between variables, a variable can be considered as a construct, operationalized construct or particular property in which the researcher is interested (Cohen, Maniaon, and Morrison, 2007). Lodico, Spaulding, and Voegtle (2006) also defined variables as attributes, qualities, and characteristics of persons, groups,

settings, or institutions, such as gender, social skills, socioeconomic status, exclusiveness, or achievement. In this study, to analyze the prospects and challenges of implementing EPM, the dependent variable; the benefits, critical success factors, and challenges in EPMS implementation are considered as independent variables.

3.4 Target population

The target population of this study are staff members, i.e. technical and business, from Budget Control Office, Financial Reporting and Reconciliation Office, Strategy Planning Office, and Program Management office (PMO). The targeted population consists of; Director Business Development and Strategy Management, Director Project Management, Manager Financial Reporting and Reconciliation, Manager Budget Control, Manager Strategy Planning, Manager Monitoring and Evaluation, Manager EPMS project, and all employees under the respective managers. The number of population considered for the survey was fifty-two. Data was collected via questionnaires and interviews, and hence a mixed approach have been used for this study.

The proposed questionnaire data collection technique was a Census survey method (i.e. straightforward way to get the most accurate and thorough information from every member of a population). However, due to some unexpected reasons, forty-four respondents have participated from fifty-three target population. Census method is the method of statistical enumeration where all members of the population are studied. This research study attempted to get the required data regarding the prospects and challenges of EPM system Implementation by approaching each member of the population to fill out the survey questionnaire.

For the qualitative data collection method, a purposeful sampling/selection technique was used. As cited by Palinkas et al (2015), purposeful sampling is a technique widely used in qualitative research for the identification and selection of information-rich cases for the most effective use of limited resources. This involves identifying and selecting individuals or groups of individuals that are especially knowledgeable about or experienced with a phenomenon of interest. Therefore, respondents with more experience on Project

Management and respondents had have high influence on the project implementation processes are selected.

3.5 Data Collection

In this study primary and secondary data sources are used to address the research questions. Primary data was gathered to get responses to a particular problem through some close ended questionnaires (i.e. respondents are required to select from a set of alternatives) and semi structured interviews. The closed ended questions have a five scored Likert Scales to provide respondents a wider range of alternatives with the statements Strongly Disagree to Strongly Agree, Not important to Very important, Very Low to Very High Likert (1932). Additionally, secondary data was obtained by examining various documents, research reports, books, journal articles related with information technology projects and EPM systems, and documents obtained from CBE's PMO office including contract documents, project performance reports, project charter, and other project related documents.

The questionnaires are collected from the respondents using a Google Form, an online web-based interface, and an email containing a link to the Google Form, with some instructions on how to feel the questionnaires. After the questionnaires, Google Forms, are filled by the respondents, the result was downloaded, exported and then fed to the data analysis tools (SPSS, MS Excel Sheet) for interpretation. Google forms allow us to include different types of questions such as short answers, paragraphs, multiple selection, verification boxes, pull-down, linear scale, grid of several options, among others Guay (2018).

For the second part of primary data source, an interview has been conducted with directories, managers and team leaders. The technique the researcher used for this type of data collection is purposeful sampling (i.e. selecting respondents of the interview by their high contribution to the question of the interview, and based on the researcher's demands and respondents who can satisfy those demands).

3.6 Data Analysis

Data analysis is the process of coding, classifying, and tabulating information required to perform quantitative or qualitative analysis according to the research design and

appropriate to the data Dulock (1993). Descriptive statics using Microsoft Excel spreadsheet and Statistical Package for Social Scientists (SPSS), was the major technique of statistical analysis used for this study. The data collected through the abovementioned research tools was organized in a way suitable for analysis using computer software. The quantitative data collected from respondents was analyzed using mean value, Percentage (%)s, Frequency (N), standard deviation and tables to address research questions. The qualitative data, which was gathered from interviews, was analyzed separately but the researcher attempted to present the results in combination with the quantitative information. The results obtained from the analysis were drawn in graphs, and based on these findings, tangible conclusions and recommendations are presented.

3.7 Validity and Reliability

The tendency toward consistency found in repeated measurements is referred to as reliability Cambridge Dictionary (2011). This can be checked by comparing the responses for similar or consistent questions of the questionnaire and interview. In addition, as the data collection method for the questionnaires part is a Google form, user inputs are validated by the application, and had a positive role for data reliability and validity. Feedback was gathered about the clarity of the sentences, correctness of a language and grammar, and whether the designed instrument can fully assess the research topics prior to distributing the questionnaires. Validation was done to ensure if the instruments used for collecting the data enables collecting the information needed.

The reliability of qualitative data has been checked by methods like Cronbach's alpha reliability test by using SPSS (Statistical Package for the Social Sciences). The Cronbach's alpha test is used to test the consistency and stability of the questionnaires, which measure latent variables Bujang et al. (2018). The Cronbach alpha for the below four categories of questions was ranged from the minimum 0.839 to the maximum one 0.872 as shown in table 3.1. Conferring the Cronbach's alpha test result indication from 0.7 to 0.8 is considered as good, from 0.8 to 0.9 very good and above 0.9 is considered as more reliable data but doesn't show diversity (Kline, 1999; Leary, 2012). The researcher used to compare

the interviews results, and questionnaires result and result from observations of the reference project documents and facilitated to reach to the conclusion.

The study has examined the reliability of the data collected for all the constructs using Cronbach's Alpha as shown in table 3.1 below. The reliability of the questionnaire items was assessed through Cronbach's Alpha which is used for measuring the internal consistency of the study instrument. As shown in table 3.1, the Cronbach's Alpha value indicates the presence of good internal consistency among the items and considered to have adequate reliability as its value exceeds a cut-off point of 0.70 (Kline, 1999; Leary, 2012). Moreover, the reliability of data collected through questionnaires was cross checked during the session with the key informant interviews.

Table 3.1 Reliability Statistics

Variables	Cronbach's Alpha	Number of Items
Implimentation Benefits	.872	11
Critical Success Factors	.865	8
Implementation Challenges	.839	7
Post go-live challeges	.847	7

3.8 Ethical Consideration

Research ethics is important in our daily life research endeavors and requires that researchers should protect the dignity of their subjects and publish well the information that is researched Fouka & Mantzorou. (2011). In this research ethical consideration was considered by preserving the confidentiality of information about the organization and respondents both for the questionnaire and interview. The research was designed, reviewed and undertaken to ensure integrity and quality. Prior to gathering the required data, respondents were well instructed about the objectives, methods and intended possible uses of the research. Besides, to avoid any bias that can lead the research to the wrong results and to respect the subjects' anonymity, respondents were strictly warned not to write any personal information including their name, home address, and other personal code while responding to the questionnaire or interview. The research participant's participation was based on their volunteerism, free from any coercion, and any harm on research participants was avoided.

CHAPTER FOUR : RESULTS AND DISCUSSIONS

4.1 Introduction

The purpose of this study was to analyze the benefits and challenges during implementation of Enterprise Performance Management System project in Commercial bank of Ethiopia. This chapter focuses on presentation, and analysis of results and findings of the data collected from questionnaires and interviews. The findings are presented in the form of mean-value/average, occurrence/Frequency (N), Percentage (%) and standard deviation. The discussion of the outcome is performed based on the output obtained from Statistical Package for Social Sciences (SPSS) version 20. The questionnaire was developed by using a 5 point Likert rating scale where 1 denotes Strongly Disagree, 2 Disagree, 3 Neutral, 4 Agree and 5 Strongly Agree for proposed benefits of EPM System. For EPM System Implementation Critical success factors 1 denotes Not important, 2 Less important, 3 Uncertain, 4 Important and 5 Very important; and 1 denoted Very Low, 2 Low; 3 Uncertain, 4 High, 5 Very High for Challenges during/post EPM System Implementation.

4.2 Response rate

From 53 questionnaires distributed to clerical staff from Business Development and Strategy Management, Project Management, Financial Reporting and Reconciliation, Budget Control, Strategy Planning, Monitoring and Evaluation, and EPMS project, 44 responses have been received via the web-based interface, Google form. As the proposed survey technique was census, the researcher expectation was a response from all subjects/population, but due to cases like annual leave, maternal leave, sick leave and others 83.01%.

According to Mugenda O.M and Mugenda A.G (2003) a 50% response rate is adequate, 60% good and above 70% rated very well. Saldivar (2012) also suggested that for a census survey more than 75% response rate is preferable for validity and reliability of the research. Moreover, to make the study more reliable, semi structured interviews have been conducted for three directors and three managers. And hence, their answers have also been taking in to consideration for data presentation, analysis and interpretation.

4.3 Demographic Profile of the Respondents

This section discusses the results of the general information about the respondents, including age, gender, education level, position, and service of year in the organization.

Table 4.1 Respondents gender, age, educational level, service year and department

Demography	Description	Frequency (N)	Percent
Gender	Male	27	61%
	Female	17	39%
	Total	**44**	**100%**
Age Group	26 - 30 years	17	39%
	31 - 40 years	19	43%
	41 and above years	8	18%
	Total	**44**	**100%**
Educational Level	BA/BSc	35	86%
	Master's Degree	9	14%
	Total	**44**	**100%**
Service year	5 - 10 years	11	30%
	11 - 15 years	18	35%
	16 - 20 years	22	22%
	≥ 21 years	4	13%
	Total	**44**	**100%**
Department/division	Business Development and Strategy Management	23	52%
	Financial Reporting and Reconciliation	14	32%
	Program Management Office	7	16%
	Total	**44**	**100%**

Source: Own Survey Finding, 2022 SPSS version 26 outputs

As per the above general demographic profile of the respondents' five demographic characteristics, gender, age, educational level, service year in the bank, and their respective divisions/departments of respondents have been identified. Describing the demographic characteristics of the subjects helps analysis to be more meaningful for research readers.

As shown in table 4.1, from a total of 44 respondents, male to female gender ratio is around 3:2. Only 39% of female participation implies that in this study women's participation was in minority level and this in turn shows finding the lack of gender diversity. This finding strengths the argument by several researchers that woman participation in projects is still low.

As per the findings, the demographic age of the subjects falls into three ranges. 39% of the respondents were in the first range (i.e. from 26 - 30 years old), 43% of the respondents were in the second range (i.e. from 31 - 40 years old), and the rest of the respondents, 18%, were in the age of 40 years old and above. This age demography finding shows the organization's willingness to assigns young workforce, which is assumed to be the productive age group, that has good capability for project implementation processes.

The educational background of the subjects were limited only to Bachelor's degree (BSc/BA) and Master's degree (MSc/MA). The respondents with a Bachelor degree and Master's degree were 86% and 14% respectively. All the research study subjects have at least a Bachelor degree and this implies that the employees have a good educational background for project implementation and are capable of executing the roles assigned to them effectively and efficiently.

In this study the professional service years of the subjects was considered as another demographic criterion and was analyzed and illustrated in Percentage (%), accordingly the professional service year of the respondents was classified into four ranges. From 5 - 10 years of experience constituted to 30%, from 11 – 15 years of experience 35%, from 16 – 20 years of experience 22% and 13% of the respondents have a work experience of 21 years and more. Looking into the service distribution findings, it can therefore be said that most of the subjects have good experience in the bank that contributes a positive impact in projects implementation and enhance the project's successful completion.

The last, but not least, demographic profile of the subjects was the department of respective respondents. As discussed in chapter one of this document, the EPM system module includes many product solutions like Oracle Hyperion Planning, Oracle Hyperion Workforce planning, Oracle Hyperion Financial Management, Oracle Hyperion Strategic Finance, Oracle Project Financial Planning, Oracle Hyperion Profitability and Cost Management, and others. Out of those product solutions CBE have implemented Hyperion Planning, Hyperion Workforce Planning, Hyperion Financial Management, and Oracle Hyperion Strategic Finance. Accordingly, the researcher's

target population was those departments who are using the product solution. Among those 44 respondents, the majority of the respondents, 52%, were from Director Business Development and Strategy management department (i.e. these are Hyperion Planning, Hyperion Workforce Planning, and Hyperion Strategic Finance Product users), 32% from Director Financial Reporting and Reconciliation department (i.e. Hyperion Financial Management Product users), and 16% from Director Program Management Office department. The researcher have observed that many of the employees who were members of the project implementation had been transferred to operational departments after the project's compilation.

4.4 EPM System Solution Benefits

This section is intended to present the survey results concerning the benefits stemming from the use of EPM system. The findings are presented in terms of assessment of previously defined benefits with their explanations regarding their assessments. Based on questionnaires survey, the researcher was able to get confirmation about agreement of respondents using Likert rating scale regarding to the Benefits of EPM in commercial Bank of Ethiopia. Let us see the analysis and interpretation of the following presented data. Then after, the researcher have discussed, as per the findings of data, related to the Benefits of EPM implementation in CBE. By considering their mean and Frequency (N) and Percentage (%) value, the following table indicated the variables. As shown in the below table below, 17 statements were raised to assess the Benefits of EPM. The researcher grouped these 17 benefits into four categories of Organizational, Business Partner Relation, Internal Process Efficiency and Customer Satisfaction as per the literature.

Table 4.2 Enterprise Performance Management System solution Benefits

EPM System Benefits	Statistical measure	Level of Agreement					Mean	SD
		1	2	3	4	5	$\bar{x}$	
Enables more efficient management	Frequency (N)	1	3	6	20	14	3.98	0.98
	Percentage (%)	2.3	6.8	13.6	45.5	31.8		
Provides real-time analysis necessary to execute the company's strategy	Frequency (N)	1	2	8	21	12	3.93	0.93
	Percentage (%)	2.3	4.5	18.2	47.7	27.3		
Better strategic alignment	Frequency (N)	0	1	3	23	17	4.27	0.69
	Percentage (%)	0	2.3	6.8	52.3	38.6		
Improves performance across different	Frequency (N)	2	4	6	21	11	3.80	1.07
	Percentage (%)	4.5	9.1	13.6	47.7	25		

operational and financial metrics								
Budgeting and forecasting is done faster and is less expensive	Frequency (N)	1	6	7	18	12	3.77	1.08
	Percentage (%)	2.3	13.6	15.9	40.9	27.3		
Helps improve financial planning and analysis	Frequency (N)	2	2	7	17	16	3.98	1.07
	Percentage (%)	4.5	4.5	15.9	38.6	36.4		
It creates more time to simulate what-if scenarios	Frequency (N)	0	3	9	16	16	4.02	0.93
	Percentage (%)	0	6.8	20.5	36.4	36.4		
Manage and drive profitability	Frequency (N)	4	3	11	18	8	3.52	1.15
	Percentage (%)	9.1	6.8	25	40.9	18.2		
Optimize the financial close	Frequency (N)	1	6	8	19	10	3.70	1.05
	Percentage (%)	2.3	13.6	18.2	43.2	22.7		
Align tax reporting with corporate financial reporting	Frequency (N)	0	3	11	17	13	3.91	0.91
	Percentage (%)	0	6.8	25	38.6	29.5		
Greater regulatory oversight and compliance	Frequency (N)	1	2	7	17	17	4.07	0.97
	Percentage (%)	2.3	4.5	15.9	38.6	38.6		
Group Mean and Standard Deviation							3.9	0.98

Source: Own Survey, 2022 SPSS version 26 outputs, Note: 1 = strongly Disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, 5 = strongly Agree

As per the above table, the majority of the respondents agree on the proposed benefits of EPM System that is currently in use by the bank. The first benefit of EPM System questioned for subjects was whether management that is more efficient can be achieved from EPM system. The majority, 77%, of the respondents agree, of which 31.8% agree strongly, that EPM System enables more efficient management, while 9.1% of the respondents disagree, of which 2.3% disagree strongly, that implementing EPM system enables more efficient management. 13.6% of the respondents was not certain whether EPM system is even related to efficient management or not. This finding shows that implementing EPM system is a key to enable management that is more efficient.

In the second question, the questionnaire participants were asked if implementing EPM system could provide real-time analysis necessary to execute the company's strategy. From the findings, 27.3% of the respondents strongly agreed and 47.7% were agreed. Only three respondents disagree that implementing EPM system can provide real-time analysis necessary to execute the company's strategy. From the responses gathered on this specific benefit, the finding is that the majority of the respondents agree EPM System provides real-time analysis necessary to execute the company's strategy.

Aligning strategies, objectives, goals, and day-to-day activities is an important part of a successful business. Respondents were questioned if implementing EPM system could benefit an organization in aligning its strategies better. Almost all of the subjects, 91.4%, agreed on this benefit. Only one respondent disagree on this benefit, and three on them were not sure whether, or not, such benefit can be achieved.

The other benefit participants were asked was if performance across different operational and financial metrics can be improved by adopting EPM system. 25.0% strongly agreed and 47.7% agreed on this specific benefit, while 13.6% of them were neutral. The result shows that 13.6% of participants disagreed on the benefit of improved performance across different operational and financial metrics. From the result, it can concluded that adopting EPM system have a positive impact on improving performance across different operational and financial metrics.

Referring to EPM system manuals and books, the main attainable advantages of such systems is to plan, budget, forecast, analyze, and report on an organization/business. Accordingly, the researcher have requested participants three questions if they can agree on. The questions asked were if EPM system can, do budgeting and forecasting faster and with less expensive, help on improving financial planning and analysis, and create more time to simulate what-if scenarios. Majority of the respondents 68.2%, 75%, and 72.8% have agreed in favor of the three benefits respectively. 15.9%, 15.9%, and 20.5%, respectively, of the respondents had neutral opinion on those proposed benefits. Few of the respondents 15.9%, 9%, and 6.8%, respectively have disagreed on those three benefits. From the findings, irrespective of some of the respondents who think planning, budgeting, forecasting, analyzing are more of human factors than system dependent, the majority of the respondents agreed on those system benefits.

Regarding the question on whether EPM System can manage and drive profitability, 59.1% of the respondents agreed, and 15.9% disagree, and the rest, 25%, were neutral. From the results obtained even though EPM Systems have valuable impact on improving and managing profitability, EPM System is not the sole driver for business's profitability not to mention the clear and attainable goals, efficient and effective sales and marketing strategies, and productive employees.

From the Hyperion Financial Module the researcher have questioned subjects whether the solution have optimized the financial close, align tax reporting with corporate financial reporting, and

provide greater regulatory oversight and compliance. Majority of the respondents, 65.9%, 68.1%, and 77.2% have agreed on optimizing the financial close, aligning tax reporting with corporate financial reporting, and providing greater regulatory oversight and compliance benefits respectively. Very few seven, three, three, respectively, respondents have not agreed on those benefits, and the remaining respondents were neutral.

4.5 Critical Success Factors in Implementation of EPM Systems

To utilize the available resource in the best possible way, identify and control risks, identify and prioritize tasks, facilitate communication between team members, save time and money by working efficiently, avoid the project management going off track, and other benefits, project managers must identify and prioritize critical success factors in advance. Many researchers proposed various critical success factors in connection with implementation of IT projects. For this research study, eight critical success factors have been identified for the questionnaire survey. Majority of the respondents replied with "Important" and "Very Important" level of agreement as can be seen from the survey summary result. In below paragraphs the researcher presented the responses and findings for the questions that were asked. The researcher assessed if the proposed eight critical success factors had been taken into account for successful accomplishment of EPM System project in commercial Bank of Ethiopia.

Table 4.3 Critical Success Factors in Implementation of EPM Systems

Critical Success Factors	**Statistical measure**	**Level of Agreement**					**Mean** $\bar{x}$	**SD**
		1	**2**	**3**	**4**	**5**		
Adequate Infrastructure	Frequency (N)	0	2	1	20	21	4.36	0.75
	Percentage (%)	0	4.5	2.3	45.5	47.7		
Skilled and experienced project team	Frequency (N)	0	1	11	15	17	4.09	0.86
	Percentage (%)	0	2.3	25	34.1	38.6		
Project management strategy	Frequency (N)	0	2	10	19	13	3.98	0.85
	Percentage (%)	0	4.5	22.7	43.2	29.5		
Training and education	Frequency (N)	0	1	8	24	11	4.02	0.73
	Percentage (%)	0	2.3	18.2	54.5	25.0		
Organizational culture, communication, and change management	Frequency (N)	1	2	11	17	13	3.89	0.97
	Percentage (%)	2.3	4.5	25	38.6	29.5		

Top management support	Frequency (N)	1	4	11	19	9	3.70	0.98
	Percentage (%)	2.3	9.1	25.0	43.2	20.5		
Consultant and vendor support	Frequency (N)	0	2	5	21	16	4.16	0.81
	Percentage (%)	0	4.5	11.4	47.7	36.4		
Stackholders engagement	Frequency (N)	0	2	8	21	13	4.02	0.82
	Percentage (%)	0	4.5	18.2	47.7	29.5		
Group Mean and Standard Deviation							4.03	0.85

Source: Own Survey, 2022 SPSS version 26 outputs, Note: 1 = Not important, 2 = Less important, 3 = Uncertain, 4 = Important, 5 = Very important

The first proposed and questioned critical success factor for successful completion of a project was the availability of adequate infrastructure. In this aspect, except for the three respondents (i.e. two of them thinks it is not important factor, and one respondent was neutral), the majority of the respondents, 93.2%, agreed that the availability of adequate infrastructure was critical for the implementation of EPM System project. From this result, we can conclude that planning and preparing adequate infrastructure in advance is a critical success factor for any project implementation.

The second critical success factor asked for subjects was the presence of skilled and experienced project team members. Accordingly, 38.6% of the respondents replied it is very important factor, 34.1% replied it was important factor, 25% didn't decided, and only one respondent replied that having a skilled and experienced project team members is not an important factor for successful project implementation. This finding clearly shows that, as project team are responsible for each activity of the project, the skill and experience of those project team members is a key factor to successful implementation of the project.

The third critical success factor for an EPM System implementation project was a project management strategy applied by the project manager. As per the respondents response, 29.5% of them think it was very important factor, 43.2% answered it was important factor, and 22.7% was uncertain about its importance. However, two of the respondents answered the project manager's project management strategy is not important factor for the project's implementation. From the finding, the majority of the respondents, 65.9%, agreed having an efficient project management strategy is a critical success factor for project implementation.

By definition, a project is a temporary (i.e. time bounded) endeavor undertaken to create a new and unique product, service, or result (PMI, 2013). Project team members, who are responsible to

deliver this unique product/service, need to be aware of the project's outcome, output, objective, deliverables, tasks, and timeline prior to the project kickoff. Accordingly, the researcher have questioned the subjects if training and education could be considered among the critical success factors. Based on the questioner replies gathered, majority of the respondents, 79.5%, agreed that training and education is among the important critical factors for project implementation, 18.2% were neutral, and only one respondent think it is not an important factor. The findings shows that training and education is a critical success factor for successful execution of a project.

The fifth critical success factor asked to subjects was whether an organizational culture, communication, and change management practices of an organization is critical to projects' successful implementation. 29.5% voted very important, 38.6% voted important, and three respondents, 6.8%, voted an organizational culture, communication, and change management practices of an organization as unimportant factor. Considering the majority of the respondents' agreement, it can be said that an organizational culture, communication, and change management practices of an organization is among the critical success factors.

Almost all previously discussed critical success factors are assumed to be taken care prior to project kickoff, and managed throughout the project's lifetime. Top management support, consultant and vendor support, and stakeholders' engagement are the other proposed critical success factors during the actual implementation of the project. The majority of the respondents, 63.7%, 84.1%, and 77.2%, respectively agreed on those three factors, as they are important critical success factors. Other respondents 25%, 11.4%, and 18.2%, respectively have preferred to stay neutral, and didn't decide whether they are important factors or not. Few group of respondents, 11.4%, 4.5%, and 4.5%, respectively disagree on the importance of these factors to a successful implementation of a project. From the results, we can deduce that op management support, consultant and vendor support, and stakeholders' engagement are among the critical success factors, which needs to be planned, managed, monitored, and controlled during the execution of the project phases.

4.6 EMP System Implementation challenges

The move to an enterprise system solution, specifically to EPM system solution, can have a range of benefits, as we have seen on the second section of this chapter. So why, despite the best intentions of all involved, do these EPM implementations sometimes fail or not quite have the far-reaching

impact that was expected? Implementing an EPM system solution carries with it a number of challenges. The process can be overwhelming, confusing and lengthy—all reasons that can cause organizations to avoid making the switch at all. When organizations take the plunge and embark on the software implementation process, inadequate planning and unrealistic expectations can set the project up for failure and costs can skyrocket as a result. Knowing the common challenges during an implementation of EPM system projects can help organizations avoid them. With a solid project plan and realistic goals, even the most complex implementation can realize success and return on investment in a reasonable amount of time. In the end, the benefits gained from implementing a better solution far outweigh the potential hazards along the way. This section discusses several common areas where implementing EPM systems can fail.

Table 4.4 EMP System Implementation challenges

Implementation challenges	**Statistical measure**	**Level of Agreement**					**Mean** $\bar{x}$	**SD**
		1	**2**	**3**	**4**	**5**		
Lack of functional and technical expertise	Frequency (N)	1	2	7	18	16	4.05	0.96
	Percentage (%)	2.3	4.5	15.9	40.9	36.4		
Poor project management strategy	Frequency (N)	0	2	9	16	17	4.09	0.88
	Percentage (%)	0	4.5	20.5	36.4	38.6		
Poorly written Request for Proposal (RFP) document	Frequency (N)	3	5	9	16	11	3.61	1.19
	Percentage (%)	6.8	11.4	20.5	36.4	25		
Misaligned expectations	Frequency (N)	0	2	7	16	19	4.18	0.87
	Percentage (%)	0	4.5	15.9	36.4	43.2		
Data Integrity	Frequency (N)	2	3	10	16	13	3.80	1.09
	Percentage (%)	4.5	6.8	22.7	36.4	29.5		
Lack of support from the vendor/implementer	Frequency (N)	3	5	7	18	11	3.66	1.18
	Percentage (%)	6.8	11.4	15.9	40.9	25		
Complicated customizations	Frequency (N)	1	2	7	19	15	4.02	0.95
	Percentage (%)	2.3	4.5	15.9	43.2	34.1		
Group Mean and Standard Deviation							3.92	1.02

Source: Own Survey, 2022 SPSS version 26 outputs, Note: 1 = strongly Disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, 5 = strongly Agree

The first implementation challenge asked to researcher subjects was lack of functional and technical expertise. In this case, a technical expertise means the programming, database administration and maintenance, system administration and maintenance, and other IT related skills. Whereas functional expertise means someone, who have an in depth background in business processes and can feed explain the technical expert the inputs, the workflows, the validation rules, the outputs,

report templates, and other business requirements. As per the collected research data, 77.3% of the respondents agreed that lack of functional and technical expertise was among the main challenge during EPM system project implementation, 6.8% of them disagree on this claim. 15.9% of the respondents remain neutral on this questioner. From this result, it can be said that lack of skilled and experienced expertise was the main challenge in EPM system implementation.

The second research question in section implementation challenges was poor project management strategy. 75% of the respondents agreed poor project management strategy was a challenge during EPM system implementation. Only two respondents disagree, 20.5% vote uncertain. This result shows, had there been an effective project management strategy, the project outcome could have been better that it was.

Poorly written RFP document was the third challenge questioned to subjects. As RFP is a procurement framework document, it must describe in detail specifically what kind of solution the customer is expecting from venders and implementers to purchase and how bids was evaluated. Stakeholder requirements, which are missing from the RFP document and was requested during project implementation phase or after the system go live, are out of project scope requirements, and are subject to additional costs. 61.4% of the respondents agree the RFP document for EPM system was poorly written and believe it was a challenge during the system implementation time. 18.2% of the respondents disagree that the prepared RFP document was really a challenge. 20.5% of the respondents were not sure whether RFP was a challenge or not.

Research study subjects have also been asked if misaligned expectations were a challenge during the project implementation phase. 79.6% of the respondents believe misaligned expectations were among the main implementation challenges. Two respondents, 4.5% of all, disagree with this statement, and 15.9% of the respondents prefer not to have a say about the same statement. From the result, it can be said that, misaligned expectation can result to end user disappointment or even project implementation failure.

The other implementation challenges the researcher asked respondents via the questioner were data integrity, and lack of support from a vendor/implementer. According to the collected research data, 65.9% of the respondents accept data integrity as an implementation challenge, 11.3% disagreed, and 22.7% of the respondents were uncertain. Regarding support from a vendor/implementer

challenge, 65.9% of the respondents agree it was a challenge during implementation, 15.9% replied uncertain, and 17.2% disagree to the statement vendor/implementer support was a challenge during the project implementation.

The last, but not least, implementation challenge proposed to research study subjects was if complicated customizations had been an implementation challenge. The need for customization comes as a requirement, when the business process inputs for a solution, workflows, validations, outputs, language, and reports are different from commonly known variables, or the vendor has predefined in advance. Customization can range from simple, renaming table fields, to complex, re-coding the binaries. 77.3% of the respondents responded agreed to the researcher's claim that complex customizations were among the main challenges during the implementation phase, whereas 6.9% disagreed, and the remaining respondents were neural.

4.7 EMP System Post Go-live Challenges

Post go-live it is all about evaluating the new processes and applying course corrections as and when required. Getting a project to the go-live stage is an important milestone in any system solution implementation. While both the customer's and the vendor's implementation teams want the project to be a success and address all the outstanding and new issues, the vendor's team has diverging priorities once the go-live milestone is achieved. The implementation team may provide some post go-live support to address critical issues, but smaller issues or new requirements may not be in scope. As a result, most organizations experience last-minute challenges or post go-live issues that need to be resolved. In this sub section, the researcher have asked research subjects their reflection on the under listed post go-live challenges.

Table 4.5 EMP System Post Go-live Challenges

Post Go-live challenges	**Statistical measure**	**Level of Agreement**					**Mean** $\bar{x}$	**SD**
		1	**2**	**3**	**4**	**5**		
Accuracy (quality) of data	Frequency (N)	0	1	3	28	12	4.16	0.65
	Percentage (%)	0	2.3	6.8	63.6	27.3		
Key project team members back to business	Frequency (N)	1	3	10	18	12	3.84	0.99
	Percentage (%)	2.3	6.8	22.7	40.9	27.3		
End users resistance to change	Frequency (N)	2	4	9	18	11	3.73	1.09
	Percentage (%)	4.5	9.1	20	40.9	25		

Post go-live vendor support	Frequency (N)	2	3	9	20	10	3.75	1.04
	Percentage (%)	4.5	6.8	20.5	45.5	22.7		
System performance	Frequency (N)	1	6	10	13	14	3.75	1.12
	Percentage (%)	2.3	13.6	22.7	29.5	31.8		
Volume of data	Frequency (N)	0	2	9	17	16	4.07	0.87
	Percentage (%)	0	4.5	20.5	38.6	36.4		
poor level of communication among departments	Frequency (N)	0	3	9	18	14	3.98	0.90
	Percentage (%)	0	6.8	20.5	40.9	31.8		
Group Mean and Standard Deviation							3.9	0.95

Source: Own Survey, 2022 SPSS version 26 outputs, Note: 1 = strongly Disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, 5 = strongly Agree

EPM system is all about planning data. Analyzing data, and report on data. To list some of the data types reside in EPM system are budget data, plan data, forecasting data, actual data, plan versus actual variance data, employee data, asset data, and other types of data. The sources of such data may include, direct user inputs, software calculated outputs, files, and other system solutions. The authenticity of analyzed data (i.e. information) or report is highly dependent on the quality of the data. The researcher asked research subjects whether accuracy/quality of data have been a challenge after EPM system go-live stage. High majority of the respondents, 90.9%, confirm accuracy/quality of data remains the main post go-live challenge, only one person disagree to this statement, and three was uncertain about this.

The second main post go-live challenge proposed was key project team members back to business. In CBE's practice, project teams are usually formed from employees of different operational units, and they are mandated to stay as a project member until the project's closure (or until they fully deliver their assigned tasks). After a project graduates, most of the project's team, except few, was assigned back to their respective previous assignment. Respondents were asked if this is the case for EPM system project, and was a challenge for utilizing the solution to the maximum possible optimal level. 68.2% of the respondents believe the absence of key resources who were working on the implementation phase and are assigned to other operational unit (or another project), is among the challenges of post go-live period. While 22.7% of the respondents remain neutral to this post go-live challenge, 9.1% of the respondents disagree to this statement.

The third post go-live challenge asked to respondents was end-users resistance to change. 65.9% of the respondents voted in favor of this challenge, 13.6% vote against it, and 20% of them were

uncertain. From this result, it can be said that, even the new implemented EPM system have fasts, accurate, and convenient way to perform their day to day activities, valuable amount of end users prefer to do tasks the way the used to.

Post go-live vendor support was the fourth challenge asked to research subjects. In contrast to other project types, IT projects face more challenges during post go-live (post project closure) than in their implementation phase. Hence, vendor's post go-live support needs to be pre-planned, managed, and controlled. Respondents have been asked if the adopted EPM system's vendor is providing a sufficient support post go-live of the project. Even though 11.3% of the respondents say that was not a challenge in CBE's case, the majority of the respondents, 68.2%, voted against it. 20.5% of the respondents remain neutral in recognizing this to be a post go-live challenge.

The fifth research question was if system performance was among the post go-live challenges of EPM system. In this regard, system performance means the high availability of EPM system to end users irrespective of traffic loads, system/server/database/network failures, time of access, and other IT related issues. 61.3% of the respondents voted in favor of this challenge while 15.9% of the respondents voted against it. 22.7% of the respondents were uncertain if system performance was among the post go-live challenges.

Regarding the volume of data post go-live challenge, the high majority of the respondents, 75%, agreed that was among the main EPM system post go-live challenges. While 20.5% of the respondents remain neutral about being it a challenge, two respondents disagreed on considering it (i.e. system performance) as a challenge during EPM system's post go-live stage.

Furthermore, this research study tried to asses if the respondents agree on considering poor level of communication among departments as a seventh EPM system's post go-live challenge. The majority of the respondents, 72.7%, agreed in favor of this challenge, while only three respondents voted against it.

CHAPTER FIVE : SUMMARIES, CONCULUTIONS, AND RECOMMENDATIONS

5.1 Introduction

The primary objective of this research study was to assess the prospects and challenges of implementing Enterprise Performance Management system in case of Commercial Bank of Ethiopia. To attain this objective, the researcher have examined the benefits of implementing EPM system, the critical success factors for the successful implementation of such system, the common challenges during the project's implementation phase, and the main challenges after project go-live . This chapter, which includes the summary, conclusion, and recommendations for study organization, aims to present the findings from chapter four into the context of the research study objectives.

5.2 Summary of Major Findings

To achieve the general and specific objectives of this research study descriptive survey and an interview was applied. The number of respondents was 44, out of 53 populations, and hence the response rate was 83.01%, which was sufficient to the research to make any type of decision as per the gathered data. In total 37 research questions were prepared for subjects, Out of those questions, 33 were Likert questionnaires and five of the questions were interview questions.

Therefore, the major findings on evaluation of prospects and challenges of EPM system project in case of Commercial Bank of Ethiopia are summarized as follow:

- Majority of the subjects belong to the productive age group that is from 26-30 Years and 31-40 Years whose summation Percentage (%) added up to 82 %. This indicates the organization's willingness to assigns young workforce, which is assumed to be the productive age group, that has good capability for project implementation processes..
- The corporate level benefits including, better strategic alignment, manage and drive profitability, and real-time analysis necessary to execute the company's strategies, that the company has achieved after implementing EPM system accounts to mean of 4.27, 3.52, and 3.93, respectively, and standard deviation of 0.69,1.15, and 0.93, respectively. From the

results, we can conclude that CBE have really benefited a lot at corporate level by implementing EPM system.

- At business level long term benefits (i.e. Strategy and Business Development, and Finance divisions), CBE have achieved EPM system implementation benefits like, more efficient management, improved performance across different operational and financial metrics, able to align tax reporting with corporate financial reporting, and greater regulatory oversight and compliance. This conclusion was inferred from chapter four findings with mean of 3.98, 3.8, 3.91, and 4.07, respectively, and standard deviation of 0.98, 1.07, 0.91, and 0.97, respectively.
- Functional level efficiency benefits achieved after implementing EPM systems include faster and less expensive budgeting and forecasting (3.77 mean and 1.08 standard deviation), improved financial planning and analysis (3.98 mean and 1.07 standard deviation), created more time to simulate what-if scenarios (4.02 mean and .093 standard deviation), and helped optimizing financial close (3.70 mean and 1.05 standard deviation). From the findings, the adoption of EPM system have enhanced the efficiency of the internal processes.
- The analysis on the critical success factors for effective implementation of EPM system shows group mean of 4.03 and standard deviation of 0.85. From this result, a successful implementation of EPM system involves effective planning and management of factors like, adequate infrastructure, skilled and experienced project team, project management strategy, training and education scheme, top management support, consultant and vendor support, stakeholder engagement, and organizational culture, communication, and change management.
- The valuations on the project implementation challenges of EPM system shows group mean of 3.92 and standard deviation of 1.02. From the results, we can conclude that the project have encountered many difficulties during the implementation phase, The main challenges were availability of functional and technical expertise, lack of efficient project management strategy, detail and exhaustive Request for Proposal (RFP) document, alignment of expectations, data integrity, sufficient support from vendor/implementer, and nature of customizations.

- The assessments on EPM system post go-live challenges shows group mean of 3.9 and standard deviation of 0.95. From the results gathered it can be said that accuracy (quality) of data, the return of key project team members to business, end users resistance to change, post go-live vendor support, system performance, volume of data, and poor level of communication among departments were continued to be a challenge for utilizing EPM system to the maximum possible level.

5.3 Conclusions

The main objective of this descriptive survey research was to examine the prospects and challenges of implementation of EPM system project in the case of CBE, the following conclusions have been identified. In this regard, the benefits achieved by EPM system implementation, critical success factors of EPM system implementation, and challenges faced during and post go-live of the implementation were assessed by raising different issues in the form of questionnaire and interview.

When we review the benefits attained from the implementation of EPM system project, the finding shows that the adoption of EPM system within the organization have positively resulted in achieving various amount of benefits. The majority of the respondents agree that the implementation of EPM system helped them and the organization remain competitive. The effective uses of applications and business processes supported by EPM systems have positively influenced process level performance, the study found. Even though financial performance of an organization is dependent upon several factors, the study proved that the implementation of EPM system have a valuable contribution to the overall financial performance of the organization, specifically CBE. From the interview responses gathered, it was observed that, implementation of EPM system is making processes more efficient and focused over time. EPM system have also lead to greater levels of strategy focus and clarification as it provides real-time analysis necessary to execute the company's strategy.

For the assessment of critical success factors, for successful implementation of EPM system project eight crucial success factors were considered during, and if addressed properly the implementation could be considered successful. The main eight critical success factors examined in this research study are adequate infrastructure, skilled and experienced project

team, project management strategy, training and education scheme, top management support, consultant and vendor support, stakeholder engagement, and organizational culture, communication, and change management. According to interviewees, committed top management support, consultant and vendor support, and stakeholder engagement were the most critical success factors. However, according to questioner respondents, adequate infrastructure, consultant and vendor support, and skilled and experienced project team hold the top three in the most critical success factor list.

The finding gathered from the questioner subjects on challenges encountered during the implementation of EPM system shows that misaligned expectations, poor project management strategy, and lack of functional and technical expertise were the most challenging ones. While the interviewee think the project's RFP document, poor project management strategy, and complicated customizations were the top challenges during the EPM project implementation phase. The research readers should note that this difference in challenges is only in respect to the order of their impact to the project success. The majority of the subjects have agreed that availability of functional and technical expertise, lack of efficient project management strategy, detail and exhaustive Request for Proposal (RFP) document, alignment of expectations, data integrity, sufficient support from vendor/implementer, and nature of customizations were the main challenges during EPM system implementation.

Finally, on the findings related to post go-live challenges of EPM system poor data quality, huge volume of data, and poor level of communication among departments were the most significant challenges. According to interviewee's response, getting a reliable data, working with huge volume of data, doing the integration mappings, posting and availing to EPM system was one of their main challenges. Slow performance of the planning module of EPM system due to an inadequate technical infrastructure, and the product license scheme was also mentioned as a main challenge, which syncs with the data collected from questionnaires.

5.4 Recommendations

Based on the findings of the research study, the researcher have recommended the following points to the bank:

- Prior to any project implementation kickoff CBE's PMO need to start by defining project success and must identify the critical success factors. Project objectives needs to be tied back to the business objectives, the business hopes to achieve through the implementation.
- To help potential vendors and implementers determine the best solution for a project, request for proposal document need to present every specific requirements about preferred tools, systems, solutions, features, and products to the maximum possible detail level.
- To quickly identify and assign key resources during the project implementation phase, roles and responsibilities of each actor or team member needs to be delineated prior to project kickoff.
- CBE's PMO needs to set a clear and effective project governance/management strategy, which may include identifying decision makers, timeline calendar for core team with set dates, sign-off schedule on key deliverables and milestones, point of escalation, and others specific to each project implementation during the project-planning phase.
- CBE's PMO must plan a training schedule (project team training, super-users training, training of trainers, end-user training and other types of trainings) to bring stakeholders up to speed on the new system, so that every user could be ready to exploit it once go live.
- CBE's PMO needs to identify, and recognize it as a primary stakeholder, any business processes that was changed or impacted by any new system implementation, and need to plan how they will accommodate these changes.
- To avoid or address complicated customization during project implementation phase CBE needs to revise, update, and standardize its policies and procedures periodically. in addition to this, CBE's IS office must train and qualify software developers, and functional experts who can handle any customization needs arise during project implementation phase and post go live stages.

5.5 Suggestions for Further Studies

Future researchers can use the methodology, findings, conclusions, and recommendation of this research study and extend the assessment of prospects and challenges of other IT system solutions so that current success rate of IT projects in CBE or other organizations, industries, sectors can be improved to higher possible level.

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Appendix A: Questionnaire

ADDIS ABABA UNIVERSITY COLLEGE OF BUSINESS AND ECONOMICS

SCHOOL OF COMMERCE

PROJECT MANAGEMET DEPARTMENT

Dear participants,

Greetings,

I would like to thank you in advance for your time and support in filling out this questionnaire for my research in an attempt to assess **the prospects and challenges of implementation of Enterprise Performance Management system project. A case of Commercial bank of Ethiopia.** I am working on a research paper, as partial fulfillment for Master of Arts in project management at Addis Ababa University, college of Business and Economics, School of Commerce.

The survey will take few minutes of your time. The information gathered is anonymous and will remain strictly confidential. It was used only to advance knowledge and for the dissemination of the overall results at academic or professional forums. Only the researcher will have access to the data collected. Completing this questionnaire will be considered as your consent to participate in this research project and permission to use the data collected from this questionnaire in future research.

If you need any further information about this study or have a problem in completing this questionnaire, please feel free to contact me via email asherashu@gmail.com or on mobile number +251 912-75-99-55.

Thank you once again for your support,

Ashenafi Mezgebe

Section I: Personal Information

1. **Gender**:

Male ☐ Female ☐

2. **Age**:

<26 ☐ 26-30 ☐ 31-40 ☐ >40 ☐

3. L**evel of education**:

Diploma ☐ Bachelor Degree ☐ Masters ☐ Phd ☐

4. **Service Year**:

<5 ☐ 5-10 ☐ 11-15 ☐ 16-20 ☐ >21 ☐

5. **Department/division**:

Business Development and Strategy Management ☐

Financial Reporting and Reconciliation ☐

Program Management Office ☐

Section I: EPM system Benefits

EPM System Benefits	Level of Agreement				
	Strongly Disagree	**Disagree**	**Uncertain**	**Agree**	**Strongly Agree**
Enables more efficient management					
Provides real-time analysis necessary to execute the company's strategy					
Better strategic alignment					
Improves performance across different operational and financial metrics					
Budgeting and forecasting is done faster and is less expensive					
Helps improve financial planning and analysis					
It creates more time to simulate what-if scenarios					
Manage and drive profitability					
Optimize the financial close					
Align tax reporting with corporate financial reporting					
Greater regulatory oversight and compliance					

Section II: Critical Success Factors in Implementation of EPM Systems

Critical Success Factors	Level of Agreement				
	Not Impotant	**Less Important**	**Uncertain**	**Important**	**Very Important**
Adequate Infrastructure					
Skilled and experienced project team					
Project management strategy					
Training and education					
Organizational culture, communication, and change management					
Top management support					
Consultant and vendor support					
Stackholders engagement					

Section III: EMP System Implementation challenges

Implementation challenges	Level of Agreement				
	Strongly Disagree	**Disagree**	**Uncertain**	**Agree**	**Strongly Agree**
Lack of functional and technical expertise					
Poor project management strategy					
Poorly written Request for Proposal (RFP) document					
Misaligned expectations					
Data Integrity					
Lack of support from the vendor/implementer					
Complicated customizations					

Section III: EMP System Post Go-live Challenges

Post Go-live challenges	Level of Agreement				
	Strongly Disagree	**Disagree**	**Uncertain**	**Agree**	**Strongly Agree**
Accuracy (quality) of data					
Key project team members back to business					
End users resistance to change					
Post go-live vendor support					
System performance					
Volume of data					
poor level of communication among departments					

Appendix B: Interview Questions

1. To what extent are the EPM system modules being utilized in Commercial Bank of Ethiopia?
2. What benefits have the bank achieved by implementing EPM System project?
3. What were the main challenges during the EPM System Implementation project?
4. What challenges did the Bank encountered EPM System post project go-live?
5. How do you evaluate the Bank's way of challenges/issues handling during EPM System implementation project?