

**ADDIS ABABA UNIVERSITY**  
**COLLEGE OF EDUCATION AND BEHAVIORAL**  
**STUDIES**

SUCCESS AND FAILURE FACTORS IN IMPLEMENTING BPR  
IN THE MINISTRY OF SCIENCE AND TECHNOLOGY

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**MAY 2014**

**ADDIS ABABA**

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A Thesis 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 Human Resource and  
Organizational Development in Education

May 2014

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**APPROVED BY BOARD OF EXAMINERS**

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## **Acknowledgements**

First and foremost, I would like to express my deepest gratitude to my advisor Dr. Mulugeta Tsegay, with whom every idea was discussed and who gave me valuable constructive comments throughout the course of this study. Had it not been his careful observation, the successful completion of this thesis could have been in doubt.

I am also highly indebted to my beloved wife, w/o Yealemzewed Ayinshet who encouraged me to join this program and advised me to continue and gave me moral support. I am also very grateful to my two little daughters, Yeabsira and Amen with whom I have courage. I also appreciate the academic staff of Educational Planning and Management Department who gave me unforgettable lessons and knowledge during class hours.

My warmest gratitude is also extended to all individuals who contributed to the research in filling out the questionnaires and who co-operated me in answering the interview questions and document inspection.

Above all, I thank the Almighty God Who gave me health, access and strength to make the study real.

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## **Abbreviations/Acronyms**

**BPR:** Business Process Reengineering

**CSKD:** Course System Knowledge Database

**CSRP:** Civil Service Reform Program

**FDRE:** Federal Democratic Republic of Ethiopia

**GoE:** Government of Ethiopia

**HRM:** Human Resource Management

**IS:** Information System

**IT:** Information Technology

**MoCB:** Ministry of Capacity Building

**MoST:** Ministry of Science and Technology

## **Abstract**

*This study was conducted to assess the key success and failure factors in implementing Business Process Reengineering (BPR) in the Ministry of Science and Technology (MoST) as perceived by employees and some customers. A descriptive method was used as a method of research. The study was conducted in three executive offices of MoST which were selected by simple random sampling technique. Respondent employees were selected using systematic random sampling. Respondent customers and Management members were also selected using purposive sampling techniques. For the selection of employees' respondents from each office, proportional stratified sampling technique was engaged. However, for the selection of customers' respondents, availability sampling technique was employed. The sample included 87 employees, 28 customers and 12 management members. Both quantitative and qualitative were employed to analyze the data. Statistical analysis using frequency and percentages were conducted. The findings of the study revealed that females were understated. The awareness and thought of employees as well as management members is fair; the degree of top management willingness and commitment was high; insufficient information technology infrastructure alignment with the reengineering project was shown; fragmented training and development program was witnessed; high turnover rate and inadequate measurement and evaluation system were also discovered. To reimburse the major failure factors and carry on the successes registered, it was recommended that the offices need to, craft favorable environment by providing more sustainable training and development programs; improve the IT infrastructure so as to be more effective in improving quality of service, customer satisfaction and productivity; develop suitable measurement and evaluation system; and solve the experienced and skilled work force drainage by introducing proper placement, preparing incentive packages and providing reward.*

# CHAPTER ONE

## INTRODUCTION

This chapter deals with the problem under study and provides background on the thesis. It comprises background of the study in which it handles the history of business process reengineering (BPR) and its implementation in the Ministry of Science and Technology (MoST). It also manages to state the problem statement, the objectives, the significance, the delimitations, and the research design and methodology of the study.

### 1.1. Background of the Study

In today's competitive global environment with continuous and unpredictable changes organizations are forced to alter the traditional business process and engaged in a new approach that is Business Process Reengineering (BPR) to effectively stay in the competition.

The concept of BPR evolved in 1990s from a very well known professor Michael Hammer and put into action as a private sector technique to help organizations fundamentally rethink how they do their work in order to dramatically improve customer service, cut operational costs, and become world-class competitors (He, 2005). Since its inception two decades ago, BPR has become an axiom to bring about innovative initiatives and cultural changes in the business world (ibid). Though it began as a private sector technique, the Ethiopian government has considered it as a public sector technique to help government agencies from service rendering public organizations to the conventional judicial courts fundamentally rethink how they do their work in order to dramatically improve customer services, cut operational costs, improve quality and service and become first class competitors (Ministry of Science and Technology, 2009).

Hence, the government, after the transition in 1991, made significant political, economic and administrative developments which included wide ranging institutional

reforms. Besides, it knew the importance of improving the performance of service delivery and the creation of accountable and responsible civil service institutions would support the development efforts in the country (Tesfaye, 2009).

However, it was not easy to bring a radically different style of government management, from one in which the state that had been highly centralized and interventionist in political and economic affairs to one that introduced decentralized systems of government and a significant shift away from the command economy to one that would be more market based and that would encourage private sector growth. The problems of the civil service inherited from the previous system would not vanish without significant government intervention, among other things, in redefining the role of the state (Report on CSRP, 1994).

Thus, the government established Civil Service Reform Programs (CSRP) in two phases. Before the CSRPs were enacted a task force was established in 1996 in order to assess problems in the civil service system. The task force discovered that the orientation, attitude and work practices were improper to the needs of the new policy environment of the country. Lack of clear national service delivery policy, insufficient recognition of citizens' right, lack of accountability, excessive hierarchy, giving priority to the convenience of providers not users, more concern on inputs and routine activities rather than on achieving tangible outputs are some of the problems detected (Hassen, 2012).

As a result, CSRP Phase I implementation commenced in 2001, following the establishment of Ministry of Capacity Building (MoCB), that included the five pillars of the civil service reform program (CSRP) so as to create accountable and responsible civil service institution. The pillars of CSRP are top management system, civil service ethics, expenditure management, service delivery and human resource management (ibid). But after an in-depth review and evaluation of program implementation by the Inter-Ministerial Steering Committee it was found that the top leadership has shifted its responsibility of leading the reform to CSRP units and the conduct of the program integration and ordering was carried out in each organization in disorganized manner.

To this end, CSRP Phase II implementation started in March 2002 with a new direction that clearly set top leaderships' accountability for reform results, to redefined sequencing of reform activities and best fit management tools to be employed. Thus an Institutional Transformation Model to guide the implementation process was adopted. The model constitutes five major management tools: Strategic Planning and Management (SPM), Business Process Reengineering (BPR), Results Oriented Performance Management System widely known as Balanced Scorecard (BSC), Charter and Charter Mark (CCM), Scheme and Senior Executive Service (SES) along with the mainstream HRM reform activities (Bezabih, 2010).

Following the national transformation scheme, Ministry of Science and Technology has implemented BPR in 2009 so as to bring a radical change and achieve its objectives of transferring and using technology, contributing to improvements in productivity of quality and local produce, controlling radioactive materials and radiation and building human and institutional capacity. However, some argued that bad results occur during BPR implementation such as discharging of large number of employees.

### **1.1.1. Profile of the Organization**

F.D.R.E. Science and Technology Ministry (MoST) was established for the first time as a commission in 1975 by proclamation No. 62/1975. Due to change of government and establishment of the government of Federal Democratic Republic of Ethiopia, the commission undergoes two re-establishment stages in the years 1994 and 1995. In 2005 it was established by the name "Ethiopian Science and Technology Agency (ESTA)". Finally it was established as a ministry having the name "F.D.R.E. Ministry of Science and Technology (MoST)" in 2008 by proclamation No. 603/2009. The Ministry has the following executive organs. They are, Ethiopian Standards Agency, Ethiopian Conformity Assessment Enterprise, Ethiopian National Accreditation Office, Ethiopian Radiation Protection Authority, Ethiopian Intellectual Property Office, Ethiopian National Metrology Institute, Tsetse Fly Eradication Coordination Project and Ethiopian Science and Technology Information Center.

## Vision of the Ministry

To see Ethiopia entrench the capabilities which enable rapid learning, adaptation and utilization of effective foreign technologies by the year 2022/23.

## Mission of the Ministry

To create a technology transfer framework that enables the building of national capabilities in technological learning, selecting and importing effective foreign technologies in manufacturing and service providing enterprises.

## Powers and Duties of the Ministry

According to proclamation No. 603/2008 the Ministry of Science and Technology shall have the powers and duties to:

- ❖ Forward recommendations based on studies for adopting and revising policies, strategies, laws and directives on the development of science, technology and innovation activities that support the realization of the country's socio-economic development objectives;
- ❖ Prepare science, technology and innovation master plans; provide guidelines for the preparation of sector annual plans, programs, and projects; review and submit them to the Government for approval; monitor and evaluate their implementations;
- ❖ Set priorities for the country's research activities, and ensure that they conform to the country's development strategies;
- ❖ Direct coordinate and support science, technology and innovation activities and country-wide research programs with a view to realizing the country's social and economic development objectives;
- ❖ Facilitate conditions to ensure strong inter linkage among higher education, research and development and the industrial sector with regard to scientific research and technological advancement focusing on production activities;

- ❖ Create public awareness and ensure the applicability of science and technological achievements that are useful for the country;
- ❖ Develop the capability for searching, selecting, negotiating, procuring and importing technologies that are appropriate for the – country's socio-economic condition and establish a system for the import, utilization and disposal of technologies;
- ❖ Support the efforts to develop and upgrade the competent man power required for science, technology and innovation activities; and build national capability thereof;
- ❖ Collect and organize information on science, technology and innovation; formulate and disseminate applicable indicators on science and technology; set and follow up the implementation of standards for the assurance of the quality, safety and reliability of information;
- ❖ Encourage studies and research and development activities carried out to improve and develop indigenous technologies, and ensure their application and support efforts thereof;
- ❖ Support and strengthen institutions that undertake research and development activities and have contribution in the development of science and technology; propose, as may be necessary, the establishment of new institutions rendering scientific and technological services;
- ❖ Provide professional and technical support to regional science and technology institutions so as to build their capabilities;
- ❖ Establish and implement a system for granting awards and incentives to individuals and institutions that have contributed to the development of science, technology and innovation;
- ❖ Assist and encourage the establishment of associations that contribute to the development of science, technology and innovation and provide support;

- ❖ Encourage the practical application of inventions that support technology transfer; establish and implement of a patent system that encourages and advances such inventions;
- ❖ Follow up the implementation of monitoring system for the use and disposal of rays' and sources of rays' equipment;
- ❖ Ensure the proper provision of quality and standardization services;
- ❖ Support the provision of technical, consultancy and capacity building services to users of scientific instruments to enable them discharge their activities effectively;
- ❖ Establish science and technology councils and science academy that support the implementation of science, technology and innovation system;
- ❖ Establish relations, in various fields of cooperation, with foreign and international institutions having similar objectives.

Thus, the purpose of this study was to assess the major success and failure factors of BPR implementation in the Ministry of Science and Technology.

## **1.2. Statement of the Problem**

Most nations, particularly developing ones are feeling the pressure caused by globalization and an ever changing economy due to science and technological advancements. Ethiopia is one that strives to build good governance, democracy and economic development by controlling such pressure.

The Transitional Government of Ethiopia formulated a National Science and Technology Policy in 1993 in order to build the country's science and technology capability to generate, select, import, develop, disseminate and apply appropriate technologies for the realization of its socio-economic objectives and to rationally conserve and utilize its natural and human resources; to improve and develop the knowledge, culture and the scientific and technological awareness of the people and promote the development of traditional, new and emerging technologies; and to make

science and technology activities more productive, efficient and development oriented(National Science and Technology Policy, 1993).

Though the policy was formulated in 1993 and revised in 2006 to help the nation transfer, acquire, adopt and use advanced technologies the civil service was not capable to carry out these tasks (ibid). The traditional, ill-suited bureaucratic system made the efforts futile attempt. With regards to this Getachew and Richard (2006) stated that the civil service was held back by the out dated civil service legislation and working systems; the absence of the medium term planning and budgeting frame work ineffective financial and personnel management controls; inadequate civil service wages and in appropriate grading systems; poor capacity for strategic and cabinet level decision making; and inefficient focus on modern managerial approaches to service delivery. In recognition of these constraints, the Government of Ethiopia (GoE) went through a rigorous CSRP in order to address the problem. Implementing BPR to public sectors was one and the major part of the CSRP. Likewise, the Ministry of Science and Technology took the initiative to implement BPR so that it would be able to change the old un-scientific and un-systematized way of doing tasks. However, among other reasons, the commencement of the reform was difficult due to the resistance for change, incompetent and irresponsible top management. With regards to this, several scholars such as Attaran and Wood, 1999; Hammer and Champy, 1993; etc believe that failure to BPR implementation occurs when top management do not give full support, the reengineering fails to demonstrate how to reengineer the human resource in conjunction with its processes and information technology does not play the central role due to being outdated or incapability.

In spite of that, the challenges the Ministry encountered to implement BPR and success recorded to date were not addressed in previous studies in comprehensive way.

Therefore, this study is opting to identify key failure and success factors of BPR implementation by searching answers for the following research questions:

1. How does the Ministry implement BPR?
2. What are the key successes factors accomplished to date?
3. What are the key failures factors encountering BPR implementation of the Ministry?

### **1.3. Objective of the Study**

#### **1.3.1. General Objective**

The general objective of the study was to identify different key success and failure factors of BPR implementation in the FDRE Ministry of Science and Technology (MoST).

#### **1.3.2. Specific Objectives**

- ❖ To determine how the MoST is implementing BPR.
- ❖ To identify the key success factors in transforming the MoST due to BPR implementation.
- ❖ To identify the key failure factors facing the BPR implementation in the MoST.
- ❖ To put forward possible recommendations for organizations implementing BPR.

### **1.4. Significance of the Study**

This study is significant for MoST to identify its achievements and weaknesses in providing its services and be able to increase its overall organizational performance. It is also significant because it will help both public and private organizations which undergo BPR implementation to adjust themselves based on the achievements and weaknesses experienced by MoST.

Moreover, this study is helpful to employees work on reform, capacity building and researchers that they may gain valuable insight on the implementation of BPR.

## 1.5. Delimitations of the Study

In a general statement, this study is delimited to key success and failure factors in implementing BPR in the Ministry of Science and Technology. Although the success and failure factors of BPR implementation problem that requires large scale and rigorous study, circumstances such as material and financial resources as well as time constraint obliged the student researcher to limit the scope of the study.

In addition, though there are eight executive organs of the MoST, three of them namely Ethiopian Intellectual Property Office, Ethiopian Radiation Protection Authority and Ethiopian Standards Agency are selected to constitute the sample in order to have a manageable size.

## 1.6. Definition of Terms

**Change Management:** - according to Ahmed et al. (1999) involves all human and social-related changes and cultural adjustment techniques needed by management to facilitate the insertion of newly designed processes and structures into working practice and to deal effectively with resistance.

As Cummins and Worley (1993) cited in Wanna, (2010) in thinking about what is meant by change management, at least four basic definitions come to mind:

- ❖ An area of professional practice where by independent consultants live on change management by doing change management practice as a profession;
- ❖ A body of knowledge whereby the subject matter of change management is drawn from psychology, economics, sociology, business administration, the study of human and organizational behavior, etc;
- ❖ A control mechanism in which change management, in some cases, is considered as a control mechanism consisting of requirements, standards, processes and procedures; and
- ❖ The task of management change which obviously refers to the task of management change.

**Process:** - as Linden (1998) defines it is 'a set of interrelated steps that begins with an input or trigger and end with an outcome that satisfies the end user'.

**Business process:** - refers to activities carried out to achieve a defined outcome. According to Rose and Moore (2006) cited in Mlay et al. (2013) business process is simply all about how work is done in an organization.

Likewise, Davenport and Short (1990) define business process as 'a set of logically related tasks performed to achieve a defined outcome. A process is a structured, measured set of activities designed to produce a specified output for a particular customer or market. It implies a strong emphasis on how work is done within an organization'. In their view business processes have two important characteristics:

1. They have customers (internal or external), and
2. They cross organizational boundaries, they occur across or between organizational subunits. One technique for identifying business processes in an organization is the value chain method.

By the same token, Mlay et al. (2013) define business process as a design that adds value for the customers and does not include unnecessary activities. It has a goal, specific inputs and outputs, uses the resources, has a number of activities that are performed in some order, may affect more than one organizational unit and creates value for the customer (ibid).

**Core processes:** - as per Linden (1998) core processes are those that end up touching an external customers; they occur when an employee fills a customer's order, responds to a customer's complaint, or develops a new program or product.

**Support processes:** - are internally focused, like the process of recruiting, hiring, training new employees, facilitating events and creating smooth communication (ibid).

**Redesigned processes:** - according to Tanoglu (2004) are those processes newly redesigned by disregarding all existing structures and procedures and inventing completely new ways of accomplishing work.

**Design team members:** - as Linden (1998) describes it as individuals participated to redesign the way work is done. He also levels the members to take the current process, analyze it and come up with a fundamentally new design.

**Implementation team members:** - cognizant to this he refers implementation team members as individuals who actually implement the redesigned processes. They can be redesign team members or others, but not necessarily redesign team members (ibid).

### **1.7. Organization of the Study**

This study consists of five chapters. The first chapter deals with the introduction while, the second chapter is concerned with review of related literature. The third chapter is about research design and methodology. On the other hand, the fourth chapter deals with presentation and analysis of data. Chapter five presents summary, conclusions and recommendations of the study.

# CHAPTER TWO

## Review of Related Literature

This chapter generally deals with the conceptual/theoretical framework of BPR, organizations, organizational performance, BPR implementation and success or failure factors of BPR implementation.

### 2.1. Theoretical Perspectives

The civil service system is one of primary and key tool in building good governance, democracy and economic development. However, in most developing countries, the unscientific and the old bureaucratic system of civil service has not been fruitful to achieve these objectives. Therefore, radical change and transforming the civil service system becomes a key task in order to support the building of good governance and democracy.

To this end, Ethiopia has gone through multiple stages of civil service reform program. BPR is one of the key parts of the CSRP. As Tesfaye (2009) rightly stated it, “the Ethiopian Government has taken BPR as a panacea for the problems of inefficiency in the performance of the civil service organizations”.

There are different views on the origins of BPR. According to Graham (2010) the concept of reengineering traces its roots back to management theories developed in the 19<sup>th</sup> century. Besides, as the Financial Times cited on Yih-Chang Chen (2001):

The purpose of reengineering is to make all your processes the best-in-class. ...Frederic Taylor suggested in 1880s' that managers use process reengineering methods to discover the best processes for performing works and that these processes be reengineered to optimize productivity. ...In the early 1900's, Henri Fayol originated the concept of reengineering: To conduct the undertaking toward its objectives by seeking to derive optimum advantage from all available resources. (p. 70-71)

As per Tesfaye (2009) a number of corporations started to apply BPR in the mid 1980s before Hammer and Champy developed the theoretical framework during early 1990s. In fact, it is commonly agreed that BPR first emerged as a decisive tool to transform organizations into more productive and competent after Michael Hammer and Thomas Davenport introduced it in the early 1990s.

### **2.1.1. Business Process Reengineering (BPR)**

BPR, according to Yih-Chang (2001), is known by multiple names such as ‘core process redesign’, ‘new industrial engineering’ or ‘working smarter’ although all of them imply the same concept which focuses on integrating both business process reengineering and utilizing IT to support the reengineering work.

As it mentioned earlier, the need for reengineering is due to strong competition, customer demands and technological advancements. The Total Quality Management techniques which focus on improving the existing processes became outdated since they failed to add value to the processes. Thus, as S K Dubey and Sanjeev Bansal (2013), the only way to get out of the problem is to adopt fundamental approach to BPR. BPR is a radical change from the old traditional way of task oriented to process oriented activities. As Hammer (1996) clearly described it “the difference between task and process is the difference between part and whole”. He further argued modern organizations suffered with process problems rather than task problems (ibid).

Therefore, organizations adopted process oriented business improvement programs such as BPR to satisfy customer needs, to cope with the constant change and to be highly competitive. According to Hammer and Champy (1993) BPR is:

...the fundamental rethinking and radical redesign of the processes to achieve dramatic improvements in critical, contemporary measures of performances, such as cost, quality, service and speed. (p.32)

They picked four key words from the above definition – fundamental, radical, dramatic and process – which help organizations to ask the most basic questions, to

reach to the roots of things, to achieve 'quantum leaps' and to encourage managers to transform companies' activities into 'process oriented'(ibid).

According to Hammer and Champy (1993) the reengineering process should be fundamental because it is a fresh start, blank sheet review as it begins with no assumptions; it rejects all rules and assumptions that underlie the foundation of the organization; it takes nothing for granted; and it ignores what is and concentrates on what should be.

When they argued the redesign project is radical because it is not improving the existing system to make better rather it disregards all existing structures and procedures and invents completely new ways of doing work. Besides, it is dramatic since it brings drastic cost reduction, dramatic improvement of quality and service level.

Process is considered as the other key word for BPR since it is a process not the organization, or parts of it such as department, or work units to be redesigned in reengineering.

Similarly, Davenport (1993), describes business process redesign as:

...the analysis and design of work flows and processes within and between organizations. Business activities should be viewed as more than a collection of individual or even functional tasks; they should be broken down into processes that can be designed for maximum effectiveness, in both manufacturing and service environment.

Besides, Teng, Grover and Fiedler (1994) define BPR as 'the critical analysis and radical redesign of existing business processes to achieve significant improvements in performance through radical redesign of business processes'.

All the definitions focus on achieving significant improvements in performance through radical redesign of business processes. Even though IT is not explicitly stated in some of the definitions, they suggest the use of IT and process-based work reorganization as facilitators.

BPR incorporates the foreseeing of net work strategies, the actual process design activity, and the implementation of the change in all its complex technological, human and organizational dimensions. BPR, other than different reform programs like TQM, does not show a continuous improvement rather it is radical. It is not about making 10 percent or 15 percent better. On contrary, it is about making things quantum leaps in performance, achieving breakthrough performance that can be measured in various ways – reduce costs, increased speed, greater accuracy, and the like. BPR according to Hammer and Stanton (1995) speculates a radical new principle that the design of work must be based not on hierarchical management and the specialization of labor but end-to-end processes and the creation of value for the customer. Re-engineering's distinctiveness has been established by the fact that it actually works by the massive improvements which organizations around the world have achieved by applying its principles. Reengineering eliminates work, not jobs or people. Reengineering is also not to be confused with automation. Even though technology plays an important role in reengineering, its role is to enable new process designs, not to provide new mechanisms for performing old ones.

#### **2.1.1.1. Principles of Business Process Reengineering**

As per Coulson-Thomas, 1994 cited in Wanna, (2010) the principles of BPR developed during the early 1990s are as follows:

**Table 2.1 Principles of Business Process Reengineering**

No.	Principles of Business Process Reengineering
1.	Externally, focus on end customers and the generation of greater value for customers
2.	Give customers and users a single and accessible point of contact through which they can harness whatever resources and people are relevant to their needs and interests
3.	Internally, focus on harnessing more of the potential of people and applying it to those activities which identify and deliver value to customers. This principle tends to be overlooked
4.	Encourage learning and development by building creative working environments. This principle has been almost forgotten in many organizations, the current emphasis being to squeeze more out of people and working them harder, rather than improving the quality of work life and working more cleverly
5.	Think and execute as much activity as possible horizontally, concentrating on flows and processes(including communication) through the organization
6.	Remove non-value adding activities, undertake parallel activities, and speed up response and development times
7.	Concentrates on outputs rather than inputs, and link performance measures and rewards to customer related outputs
8.	Give priority to the delivery of value rather the maintenance of management control. The role of the manager is being redefined and an emphasis on command and control is giving way to empowerment, and the notion of the coach and facilitator
9.	Network related people and activities. Virtual corporations are becoming commonplace in some business sectors
10.	Implement work teams and case managers extensively throughout the organization
11.	Move discretion and authority closer to the customer, and re-allocate responsibilities between the organization, its suppliers and customers
12.	Encourage involvement and participation. This requires error-tolerant leadership
13.	Ensure people are equipped, motivated and empowered to do what is expected of them
14.	Where ever possible, people should assume full responsibility for managing and controlling themselves. This requires planning skills
15.	Work should be broadened without sacrificing depth of expertise in strategic areas
16.	Avoid over-sophisticated. Don't replace creative thinking with software tools
17.	Keep the number of core processes to a minimum (approx. 12). They all should be directed to external customers. Management processes such as corporate planning processes which deliver too late to have any real impact can lack both internal and external customers
18.	Build learning, renewal, and short feedback loops into business processes
19.	Ensure that continuous improvement is built into implemented solutions. Experience of business reengineering can re-awaken interest in total quality management; both are natural complements. This is widely overlooked.

### 2.1.1.2. Characteristics of Business Process Reengineering

Linden (1994) states BPR characteristics as follows:

**Table 2.2 Characteristics of Business Process Reengineering suggested by Linden (1994)**

No.	Characteristics of Business Process Reengineering
1.	Several jobs are combined into one.
2.	Decision making becomes part of the job of employees. (employee improvement)
3.	Steps in the processes are performed in natural order, and several jobs get done simultaneously.
4.	Processes have multiple versions. This enables the economies of scale that result from mass production, yet allows customization of products and services.
5.	Work is performed where it makes the most sense.
6.	Controls and checks and other non-value added work are minimized.
7.	Reconciliation is minimized by cutting back the number of external contact points and by creating business alliances.
8.	A single point of contact is provided to customers.
9.	A hybrid centralized/decentralized operation is used.

Organizational change is process of altering the behavior, structures, procedures and purposes or output of some unit within an organization.

### 2.1.2. Business Process Reengineering and Organization

An organization is a collection of resources (people, physical, finance, intellectual) working together to achieve a common purpose. Etzioni (1964) defines organizations as 'social units (human groupings) deliberately constructed and reconstructed to seek specific goals'.

Likewise, Daft (2001) cited in Hur (2007) describes organizations as social entities, goal directed, designed as deliberately structured and coordinated activity systems and linked to the external environment. Daft (2001) cited in Hur (2007) explains that the key elements of an organization are not a building or a set of policies and procedures, rather the key elements are people and their relationships with one another. He also emphasizes that an organization cannot exist without interacting

with customers, suppliers, competitors and other elements of the external environment.

One useful way to view the activities of any organization is that the organization as an open system interacts with its environment in the continual process of transforming resource inputs into products outputs (goods or services). The reality facing today's world such as globalization and technological advancement and business environment is challenging organizations. Organizational transformation depends on the creation of a powerful vision of what future should be like. Thus, organizations need to implement changes to be in the pace. According to Halachmi (2006) the promises of BPR have attracted the attention of private-sector managers concerned with global competition and the need to satisfy greater customer demands for service, quality and value. However, only a few organizations have reported great success in achieving dramatic improvements in performance after reengineering their business processes (Attaran & Wood, (1999), Hammer & Champy (1993), He (2005)).

Therefore, for an organization to successfully carry out BPR, it must first understand what the reengineering process is all about, as well as what it is not. As Halachmi (2006) put it, those involved in the reengineering efforts must realize from the outset that the changes to result from the reengineering or without the significant pain to some stakeholders, such as employees and customers.

Secondly, the organization must be able to put the theoretical model that implements the desired way of doing business into operation. Though, Halachmi (2006) claims that this depends on the relative status of the organization before it undergoes the drastic treatment of reengineering. He also suggest organizations that are already on the last leg of their life cycle are less likely to come up with the right ideas, the right people to carry them out, or the necessary resources for underwriting the necessary reengineering effort.

### **2.1.2.1. Business Process Reengineering in Private Organizations**

Following the introduction of the fundamental concepts of BPR by Hammer and Champy (1990) and Davenport and Short (1990), several organizations like Ford Motor Company and IBM Credit Corporation have reported dramatic benefits gained from the successful implementation of BPR.

#### **I. Ford Motor Company**

Ford Motor Company is the world's second largest manufacturer of cars and trucks with products sold in more than 200 markets. The company employs nearly 400,000 people worldwide, and has grown to offer consumers eight of the world's most recognizable automotive brands.

However, as cited on [www.hbr.org](http://www.hbr.org), in the early 1980s, when the American automotive industry was in a depression, Ford's top management put accounts payable – along with many other departments – under the microscope in search of ways to cut costs. Accounts payable in North America alone employed more than 500 people. Ford was enthusiastic about its plan to tighten accounts payable – until it looked at Mazda. While Ford was aspiring to a 400 – person department, Mazda's accounts payable organization consisted of a total of 5 people. The difference in absolute numbers was astonishing, and even after adjusting for Mazda's smaller size, Ford figured that its accounts payable organization was five times the size it should be.

The drawback in the Ford's accounts payable organization was performed by so many people. The department spent most of its time on mismatches, instances where the purchase order, receiving document, and invoice disagreed. In these cases, an accounts payable clerk would investigate the discrepancy, hold up payment, generate document, and all in 'gum up the works'. Its process was not efficient.

Thus, the management thought that by rationalizing processes and installing new computer systems, it could reduce the head counts. One way to improve things might

have been to help the accounts payable clerk investigate more efficiently, but a better choice was to prevent the mismatches in the first place. To this end, Ford instituted 'invoiceless processing'. When the purchasing department initiates an order, it enters the information into an online database. It does not send a copy of the purchase order to anyone. When the goods arrive at the port, the receiving clerk checks the database to see if they correspond to an outstanding purchase order. Then the clerk accepts them and enters the transaction into the computer system.

Under the old procedures, the accounting department had to match 14 data items between the receipt record, the purchase order, and the invoice before it could issue payment to the vendor. The new approach requires matching only three items – part number, unit of measure, and supplier code – between the purchase order and the receipt record. The matching is done automatically, and the computer prepares the check which accounts payable sends to the vendor. Invoices would not be a problem since the Company has asked its vendors not to sell them. The new process cuts head count in accounts payable by 75%, eliminates invoices and improves accuracy. Matching is computerized. It opted for radical change and achieved improvement.

## II. IBM Credit Corporation

IBM Credit Corporation is in the business of financing the computers, software, and services that the IBM Corporation sells. According to Lam the IBM credit's operation comprises of five steps as follows:

- ❖ When an IBM field sales representative called in with a request for financing the, one of the operators in the central office wrote down the request on a piece of paper.
- ❖ The request was then dispatched to the credit department where a specialist checked the potential borrower's creditworthiness, wrote the result on the piece of paper and dispatched to the next link in the chain, which was the business practices department.

- ❖ The business practices department was in charge of modifying the standard loan covenant in response to customer request. The special terms to the request form would be attached to the request if necessary.
- ❖ Next, the request went to the price department where a price determined the appropriate interest rate to charge the customer.
- ❖ Finally, the administration department turned all this information into quote letter that could be delivered to the field sales representatives.

As per Lam this entire process consumed six days on average. From the sale's representative's point of view, this turnaround was too long that the customer could be convinced by another computer supplier. Furthermore, no one would tell where the request was and when it could be done.

To improve this process, the Company tried several remedies. They decided, for instance, to install a control desk, so they could answer the sale representative's question about the status of the request. That is, instead of forwarding the request to the next step in the chain, each department would return the request to the control desk where an administrator logged the completion of each step before sending out the request again. Though this treatment solved the problem, the process added even time to the turnaround.

Eventually, two senior managers took a request and walked themselves through all five steps. They found that performing the actual work took in total only ninety minutes. But they realized that the problem did not lie in the tasks and the people performing them, rather in the structure of the process itself. In the end, IBM Credit replaced its specialists – the credit checkers, pricers and so on – with generalists who process the entire request from beginning to end with no handoffs.

Lam further argued that the old process design was found on a deeply held assumption: that every bid request was unique and difficult to process, thereby requiring the intervention of four highly trained specialists. In fact, this assumption was not valid; most requests were simple and straight forward: finding a credit rating in a database, plugging numbers into a standard model, pulling clauses from a file.

This tasks fall well within the capability of a single individual when he or she is supported by an easy-to-use computer system. The Company, therefore, developed a new, sophisticated computer, with the system provides guidance and data, to support the generalists.

The new turnaround becomes four hours instead of six days. The Company achieved a dramatic performance breakthrough by making a radical change to the process. In making its radical change, IBM Credit shattered the assumption that every request needed specialists to perform.

### **2.1.2.2. Business Process Reengineering in Public Organization**

Public organizations are often described as being relatively bureaucratic (Voet, Kuipers and Groeneveld, 2013). Besides, they reflected the results of recent studies which approved the characteristics of public organizations as being centralized and highly formalized (ibid). However, though public organizations have difficult environmental complexity, they should transform themselves so as to bring efficient and quality service delivery.

To this end, during the last two decades, governments have undergone radical organizational changes after the experiences of the private companies though government organizations have different motives when implementing BPR. According to Borins cited in Tesfaye (2009) USA and Canada were the pioneers to borrow the methods of BPR from the private companies and to apply it to their civil service organizations.

As per Tesfaye (2009) any state is responsible for playing the role of regulatory functions, maintaining security, law and order in the country, and protecting the country from any external threat. On top of this, modern states are responsible to provide social services to their citizens, and to uphold the principles of good governance: transparency, fairness, equity, efficiency, effectiveness, accountability, participation, responsiveness, etc. in their political administration.

Leenders et al. as quoted by Tesfaye (2009) some of the major characteristics that distinguish government organizations from private companies so as the government institutions can consider the situation they are in when they apply BPR.

*Service provisions:* Government services are not governed by market prices rather they are governed by legal provisions, rules, procedures and regulations. The philosophy of “customer is the king” often being ambiguous mostly in developing countries because of the autocratic control of government services.

*Source of authority:* The authority of any civil service organization emanates from the parliament and the authority is established by law and regulation. Therefore, managers of government organizations have to abide by the laws and to grant their accountability to the legislative body and ultimately to the people at large.

*Source of finance:* A government finances the operation of its agencies by collecting taxes from the public, by obtaining aid from donors or by borrowing fund from lenders. It is the legislative body that finally approves the budget of an organization. As the agent of the people the government establishes systems and rules to control how the government organization can spend the budget.

*External pressure:* In a democratic society, managers of public organizations are subject to public hearings and open criticisms for their actions. Thus, most managers in the public sector do not like to take risks by thinking outside the bounds of the existing rules, procedures and regulations, even if they know the best method that dramatically improves the performance of the civil service organization they manage.

Though, the above and other factors make the BPR implementation more difficult in public organizations than in private organizations, a number of public organizations have gone through redesigning their processes. Bahir Dar University (BDU) along with some public sectors in Botswana and Zimbabwe can be stated as examples of implementation of BPR in public sectors.

According to Paulos and Paschal (2013) Bahir Dar University adopted Linden’s methodology for introducing the BPR. The method has three fundamental principles:

- I. Challenging assumptions behind the old way of doing business,
- II. Focusing on processes, not along functional lines, program offices or budget departments; and
- III. Organizing around outcomes.

Alike the private companies mentioned above, the University engaged in mapping the old ways of doing work, identifying problems, assessing rules, and verifying assumptions behind the rules.

Jobs and responsibilities were redefined; the number of activities was reduced; the time for each activity was determined; and positions were reduced. Besides, BDU made its Course System Knowledge Database (CSKD) permanent. The re-design of courses into end-to-end holistic systems reduced the previous 800 separate courses to 250 CSKDs. Traditionally, courses were each instructor's property; now CSKDs have their respective managers who manage, renovate, continually update the systems, and make them available for delivery (ibid).

As Paulos and Paschal (2013) claimed the public sector reforms in Africa have brought a great deal of changes. In every country, which experiences the reforms, ministries have developed strategic plans, service charters and mechanisms for complaints.

## **2.2. Organizational Performance**

Organizational performance encompasses the actual output or results of an organization as measured against its intended objectives. According to McNamara at Authenticity Consulting organizational performance involves the recurring activities to establish organizational goals, monitor progress toward the goals, and make adjustments to achieve those goals more effectively and efficiently. Organizational performance as per Neely, Gregory and Platts (1995) is a result of the effectiveness and efficiency of the actions that an organization undertakes. The definition shows two basic performance aspects – effectiveness and efficiency. Effectiveness primarily

focuses on external relations i.e. on customers where as efficiency primarily focuses on internal operations and processes.

Cognizant to this, Richard et al. (2009) organizational performance encompasses three specific areas organization outcomes they are financial performance (profits, return on assets, return on investment, etc.), market performance (sales, market share, etc.) and shareholder return (total shareholder return, economic value added, etc.).

Even though, organizations are constantly trying to adapt, survive, perform and influence, they are not always successful. As a result, they need frequent organizational performance measurement and transform themselves so as to be competitive.

There are six general categories that help organizations measure performance though some organizations may develop their own categories. According to Neely, Gregory and Platts (1995) the following six categories are stated as appropriate measurement of organizational performance:

**Table 2.3 Six categories of organizational performance measurement**

No.	Categories	Measurement of Organizational Performance
1.	Effectiveness	A process characteristics indicating the degree to which the process output (work product) conforms to requirements.
2.	Efficiency	A process characteristics indicating the degree to which the process produces the required output at minimum resource cost.
3.	Quality	The degree to which a product or service meets customer requirements and expectations.
4.	Timeliness	Measures whether a unit of work was done correctly and on time. Criteria must be established to define what constitutes timeliness for a given unit of work. The criterion is usually based on customer requirements.
5.	Productivity	The value added by the process divided by the value labor and capital consumed.
6.	Safety	Measures the overall health of the organization and the working environments of its employees.

In addition to this, performance drivers such as strategic goals, customer value, leadership and team performance, culture, values, ethics and process excellence are key factors to organizational success. Organizational performance measurement involves studying of processes or strategies within organizations to assess the outputs. Neely et al. (2002) defined organizational performance measurement as “the process of quantifying the efficiency and effectiveness of past actions”.

Besides, according to Ray et al. (2004) cited by Kassahun (2012) measurement of organizational performance determine process level outcome, often by measuring efficiency, based on realized process performance, using both financial and non-financial measures of cycle time, costs of delivering the services, quality of service delivery and customer satisfaction. Table 2.1 reviews performance measurement aspects suggested by some researchers.

**Table 2.4 Measurement of Organizational Performance Aspects**

Performance Measurement Aspects	Researchers			
	Kim & Mahoney (2008)	Kohli & Hoadley (2006)	Melville et al. (2004)	Ray et al. (2004)
Business Process	Customer satisfaction	Customer satisfaction and Capacity utilization	Operational efficiency (speed, flexibility, cost and quality)	Customer service performance (quality of service, retention ratio, complaint ratio)
Organizational Performance	Organizational Growth (revenue, employee size and value added)	Profitability	Financial performance and market share	—

The review shows that measuring performance is crucial for an organization because it helps assess achievements and set future strategies to reach a stable long term growth path and success.

## **2.2. Business Process Reengineering Implementation**

Business process reengineering is a pervasive but challenging tool for transforming organizations for radical improvement in all aspects of its performance. BPR is a discrete, one-time event and it needs to be treated as a project, which is critical to the future of the organization. Reengineering has an analysis phase, a design phase and an implementation phase.

Implementation of BPR brings about numerous benefits to organizations such as cost reduction, quality improvement, service improvement, and efficiency enhancement. As Dale cited in Kaptoge (2008) BPR implementation requires transformational change and it takes an organization outside its current rules of the game. Rules of the game can be either explicit or implicit i.e. they can be superficial manifestations of status buried deep within people's beliefs.

Carter (2005) states some building blocks as basements for making the implementation of BPR fruitful. The points are starting with mission statements that define the purpose of the organization and describe what sets it apart from others in its sector; producing vision statements which define where the organization is going, to provide a clear picture of the desired future position; defining behaviors that will enable the organization to achieve its aims; producing key performance measures to track progress; relating efficiency improvements to the culture of the organization; and identifying initiatives that will improve performance.

Thus, if organizations apply the above tasks before they enter into the implementation of the BPR project, they can minimize the challenges that might occur in the implementation period.

## **2.2.1.Success Factors of Business Process Reengineering Implementation**

Both private and public organizations have gone through the implementation of BPR in order to cope with the demand from the ever dynamic environment. As a result, organizations reengineer their process to help redesign the operation processes so that they can function well in the new environment.

BPR implementation success factors according to Al-Mashari and Zairi (1999) can be categorized into different dimensions of change which include: change management, management competency and support, and IT infrastructure.

Adjustment of reward systems, effective communication, empowerment, people involvement, training and education, establishing a culture for change, stimulating receptivity of the organization to change and Information technology infrastructure are the most important factors related to change management.

### **a. Reward System**

As Al-Mashari and Zairi (1999) contend staff motivation through a reward program has a crucial role in facilitating reengineering efforts moderating the commencement of the new processes in the office.

### **b. Effective Communication**

Effective communication as Davenport, Cooper and Markus and Talwar cited in Al-Mashari and Zairi (1999) is considered a major key to successful BPR – related changes. Besides, they claimed that effective communication between both the internal and external stakeholders of the organization could be necessary to promote a BPR program and to ensure patience and understanding of the structural and cultural changes needed as well as the organization's competitive situation.

### **c. Human Involvement, Training and Education and Empowerment**

Al-Mashari and Zairi (1999) further discussed the importance of human involvement, training and education and empowerment for both individuals and teams as critical factor for successful BPR implementation. When empowered, trained and being involved, employees are able to have BPR – related concepts, to set goals and monitor their own performance, and to withstand mistakes during the implementation period.

### **d. Establishing a Culture for Change**

Since organizational culture influences the organization's ability to adapt to change, it is a decisive factor in successful BPR implementation (Hammer and Champy, 1993; Davenport, 1993). According to Andrews and Stalick (1994) in a newly reengineered organization, people usually share common goals and thus become more capable of working cooperatively without competing against each other.

### **e. Stimulating the Organization's Openness to Change**

Preparing the organization to respond positively to BPR – related change is critical to successful BPR implementation. According to Jackson quoted by Al-Mashari and Zairi (1999) when people are made flexible to change, they remain positive during uncertainty, focused, organized, and pro-active.

### **f. Information Technology Infrastructure**

Adequate IT infrastructure revision and components are considered as a vital factor in successful BPR implementation (Kaptoge, 2008). Besides, Al-Mashari and Zairi (1999) argued effective alignment of IT infrastructure and BPR strategy, building an effective IT infrastructure, adequate IT infrastructure investment decision, adequate measurement of IT infrastructure effectiveness, proper information system integration, effective reengineering of inheritance IS, increasing IT function competency, and effective use of software tools are the most important factors that contribute to the success of BPR project.

On the other hand, if the BPR project lacks the necessary methodology and the above factors, it will end up in disappointment. Some of the failure factors will be seen below.

### **2.2.2. Failure Factors of Business Process Reengineering Implementation**

Al-Mashari and Zairi (1999) state a list of BPR failure factors related to change of management systems and culture which are problems in communication, organizational resistance, lack of organizational readiness for change, and lack of training and education.

As Davenport (1993), Grover et al. (1995), and others cited in Al-Mashari and Zairi (1999) poor communication between BPR teams and other personnel, fear of loss of control and position, lack of determination/courage/skills of management for radical changes, underestimating the role of politics in BPR, and lack of appropriate training for affected by BPR.

### **2.3. Researches on Business Process Reengineering Implementation in Ethiopia**

Ethiopia has experienced a major political, economic as well as administrative transformation that included institutional reforms after the 1991 transition of government. According to the document prepared by the MoCB (2004), Ethiopia's transformation agenda has gone forward over three phases in response to a growing awareness that persistent shortages in capacity have hampered the ability of the state to secure the fundamentals of poverty reduction and democratic development including responsive service delivery, citizen empowerment, and good governance.

Tesfaye (2009) studied the impacts of BPR implementation in different organizations such as Addis Ababa Transport Office (AATO), Ethiopian Costumes and Revenue

Authority (ECRA), Ministry of Trade and Investment Office (MoTI) and Ministry of Agriculture and Rural Development (MoARD).

Similarly, Tesfaye and Hagos (2011) and Wanna Wakie's (2010) survey denote the effect of BPR projects in the Ministry of Labor and Social Affairs, Commercial Bank of Ethiopia and Development Bank of Ethiopia in performance improvement, cost reduction as well as minimizing cycle time.

Furthermore, research conducted by Mengesha and Common (2007) evaluate the implementation of BPR on two Ministries – Ministry of Trade and Industry (MoTI) and Ministry of Education (MoE). The researchers state on their findings, each organization undergoes a remarkable improvement in performance.

Accordingly, as per Tesfaye (2009), most of the organizations which carried out the BPR project are able to reduce cost, to shorten the cycle time and to improve their performance though they experienced some layoffs. The improvement in the performance of the bureaus can be attributed to the use of IT in processing customer's request.

## **2.4. Conclusion on Review of Related Literature**

Organizations, both private and public, get involved in transition after the inception of BPR by Hammer (1990) and Davenport and Short (1990) due to rapidly changing technologies and ever shorter product/service life cycles, performance development often proceeds at a hostile pace.

Organizations applied BPR to improve performance, satisfy customers, produce quality products and services, and be competitors in the ever changing environment. However, as Hammer and Champy (1993) assess, about 70 percent of BPR project failed. A number of researchers suggested various factors such as fear of loss of control and position, lack of determination and skills of management for radical change, lack of appropriate training and education, and lack of effective IT infrastructure.

In spite of this, many organizations, both private owned and public, employed BPR project successfully and could improve performance. As it mentioned above, some public organizations in Ethiopia implemented successful BPR project

# CHAPTER THREE

## Research Design and Methodology

### 3.1. Research Method

A descriptive survey design method was employed as it was the appropriate method, which enables the student researcher to assess and describe the perception of employees on the key success and failure factors in implementing BPR in the MoST in a broader and wider magnitude. Thus, to achieve the objective of the study and to collect complete and appropriate information from the available source, this method was put into practice. As Kumarsingh (2007) describes, the issue of descriptive research is to portray an accurate profile of events or situations and the major purpose of this method is to tell “what is” that is, to describe the present phenomena. Therefore, the relevance of this method that has designed in this research context was to collect primary and secondary data on the key success and failure factors in implementing BPR in the MoST. In addition, in undertaking this study, both quantitative and qualitative data were used which helped to identify the key success and failure factors and to obtain an in-depth information. Though, the study relied more on quantitative rather than qualitative data.

Besides, in order to meet this objective the student researcher used measuring mechanism which involves some variables. As Kumar (2005), stated it precisely ‘an image, perception or concept that is capable of measurement – hence capable of taking on different values – is called a variable’. The dependent (outcome) variable of the study is the implementation of BPR and the independent (change) variables are:

- Top management accountability
- Attitude towards change
- Capacity of management in handling reform
- Technical and financial resources
- Support of advanced technology

### **3.2. Data Sources**

Primary and secondary source of data were used in order to make the study properly substantiated. Employees of the three executive offices of MoST which are Ethiopian Intellectual Property Office (EIPO), Ethiopian Radiation Protection Authority (ERPA) and Ethiopian Standards Agency (ESA) were considered in the study as the main source of data since the study was intended to assess the perception of the employees on the key success and failure factors of BPR implementation. Besides, to make the data more reliable, some customers of the offices were selected as source of data and semi-structured interview was also prepared for management members and document analysis was conducted.

### **3.3. Sample Population and Sampling Techniques**

The target population in the study area was mainly employees of MoST. The Ministry has eight executive offices. To provide equal chance to all eight executive offices of MoST in selection process, lottery method of random sampling technique was employed and three offices were selected as samples.

According to the statistics of the human resource departments of each executive office, a total of 379 employees were available in the three executive offices of MoST.

Subsequently, in order to achieve the objective of the study, the sampling technique was designed and representative of each office has been secured. Therefore, 30 percent of employees were selected from each office using proportionate stratified random sampling techniques. This proportionate stratified random sampling was chosen because it enables the student researcher to get proportional sample employees from each office.

Finally, purposive sampling was used to select 12 management members on the basis accessibility and 28 customers of the sample offices were selected on the basis of availability sampling techniques.

**Table 3.1 Size of Sample Respondents**

No.	Office	Population	Sample (30%)
1.	EIPO	115	34
2.	ERPA	97	29
3.	ESA	167	50
Total		379	113

### **3.4. Data Gathering Tool**

In order to gather the desired information for the study two sets of questionnaires, one set for employees and the other for customers were used. Beside, interview and document analysis were also used.

The sets of questionnaires which were prepared for the employees as well as the clients of the three sample offices developed based on the literature review. Most of the items in both sets of questionnaires were adapted from the work of Al-Mashari and Zairi (1999). The first set of questionnaire, which was prepared for the employees, has 27 items; whereas, the second set of questionnaire, which was organized for the customers of the sample offices, has 8 items.

A total of 148 questionnaires, 113 for employee respondents and 35 for customer respondents, were prepared and distributed to the 3 sample offices of MoST. Of the distributed 148 questionnaires, 115 questionnaires were filled and returned timely and this represented 77.7% of the rate of return.

The employees' questionnaire consists of five parts. These are the background section which helps to collect bio-data of the respondents. The second section of the questionnaire helps to know whether the employees were familiarized with the thought of BPR or not. The third section of the questionnaire dealt with BPR implementation success factors. The fourth section was concerned on the factors that challenge BPR implementation. The fifth and the last section dealt with the achievement accomplished.

The data gathering tool comprised mainly with close ended items. This type of survey was used because it can cover a great deal of questions at a time. It is uncomplicated to provide, understand, quickly answer the questions and code the analysis in measuring the individual respondent's position to generate qualitative data. It is also straightforward for the respondents since it will provide alternatives to be selected. It is five point Likert scale that has a number response options from strongly agree (1) to strongly disagree (5).

Hence, for the employees' respondents 87 questionnaires were distributed and for the customers' respondents 28 questionnaires were distributed. In addition, to strengthen the data collected from employees and customers through questionnaires, semi-structured interview for key official informants (Management members) and document analysis were prepared. According to William (2005) semi-structured interviewing method is used in descriptive study mostly in case studies.

### **3.5. Data Collection Procedure**

At the initial stage of questionnaire administration, the student researcher clarified the objectives of the study to the research participants so as to avoid unnecessary confusions. Then, in order to maximize the rate of return, attempts were made to distribute the questionnaires at convenient time for respondents. Furthermore, close follow up was made so that all the expected data were filled in by the respondents.

### **3.6. Data Analysis**

According to the nature of basic questions and data collected, quantitative and qualitative methods of data analysis were used. The quantitative data was analyzed by employing descriptive statistics.

Hence, to analyze data obtained from the survey instrument, statistical package for social science version 20 (SPSS 20.0) was used in order to sum up the data by frequency and converted into percentages.

The procedure used for analysis was primarily descriptive in nature. Therefore, for the survey questionnaire, the data obtained from the responses to specific tasks were analyzed using the descriptive statistical procedure. In addition, the semi-structured interview and document analysis were analyzed.

The analysis was largely derived from the survey questionnaire. Moreover, the qualitative data obtained through interviews and the documents information were analyzed by narration and it was incorporated in the analysis to supplement and substantiate the data secured through questionnaire.

## CHAPTER FOUR

### Data Presentation, Analysis and Interpretation of Findings

This chapter is comprised of two parts. The first part discusses the characteristics of respondents and the second part treats the presentation, analysis and interpretation of the data gathered from the sample respondents. The primary and secondary data which were obtained through questionnaires, interview and document analysis were presented, analyzed and interpreted in accordance with the basic questions that were formulated in the first chapter of the study.

#### 4.1. Characteristics of Employee Respondents

The subsequent point was made to show the general picture of respondents' characteristics. It particularly analyzes characteristics of respondents in terms of gender, age, academic qualification, service year and current position. Employees provided bio-data: such as their gender, age, educational level, number of service years and the responsibility they have at present. The customers gave demographic information: like their gender, age and customer type. Frequencies were used to summarize the bio-data for both employees and customers because frequency tables depict the distribution of the values of the demographic variables.

**Table 4.1 Characteristics of Employee Respondents by Gender and Age**

Variable	Category	Respondents	
		Number of Frequency (F)	Percentage (%)
Gender	Female	24	27.6
	Male	63	72.4
	Total	87	100
Age	< 25	7	8.0
	25 – 35	39	44.8
	36 – 45	26	29.9
	46 – 55	12	13.8
	>55	3	3.4
	Total	87	100

Source: Own Field Survey, April 2014

The data in table 4.1 above shows that 24 (27.6%) of the respondents are females and 63 (72.4%) of the respondents are males. Thus, this indicates that the majority of employees were male dominated.

Regarding the age of respondents, the employees were more diverse, where 39 (44.8%) of the employees were between 25 – 35 and 26 (29.9%) of them were among 36 – 45. Besides, 12 (13.8%) and 7 (8.0%) were in the age of 46 – 55 and below 25 respectively. Whereas 3 (3.45%) of the employees were above the age 55.

In general, it would be, therefore, possible to generalize from the data that, with regard to gender, the majority of respondents were males and hence there were some limitations in obtaining adequate information of females' perception. Nonetheless, age of their composition was from all categories of age group. Hence, it was a good opportunity to obtain responses from diversified age group. As a result, this situation has contributed the analysis of the study to become comprehensive.

**Table 4.2 Characteristics of Employee Respondents by Academic Qualification, Work Experience and Responsibility.**

Variable	Category	Respondents	
		Number of Frequency (F)	Percentage (%)
Academic Qualification	Diploma/Certificate	9	10.3
	BA/BSC	61	70.1
	MA/MSc	17	19.5
	PhD	-	-
	Total	87	100
Work Experience	Less than 3 years	7	8.0
	3 – 10 years	31	35.6
	11 – 17 years	24	27.6
	Above 17 years	25	28.7
	Total	87	100
Current Position	Expert	46	52.9
	Team Leader	18	20.7
	Process owner	14	16.1
	Other	9	10.3
	Total	87	100

As to the academic qualification of the respondents, table 4.2 shows majority of the respondents 61 (70.1%) were first degree holders. Besides, 17 (19.5%) of the employees were second degree level. Thus, this indicates that the majority of the employees were well qualified. At diploma/certificate level 9 (10.3%) of the respondents were working for the three sample MoST offices however, there was no PhD graduates working for these sample MoST offices.

Regarding the work experience of the respondents, the employees were more diverse, where 31 (35.6%) of the respondents had the experience of 3 – 10 years while 25 (28.7%) of them had more than 17 years experience. In addition, 24 (27.6%) of the respondents had the service year between 11 – 17 years. Whereas, only 7 (8.0%) of them had less than 3 years work experience. This tells us that in the sample offices the majority of the employees had adequate work experience.

In terms of job responsibility (current position) of the respondents, the majority which accounts to 46 (52.9%) were experts. While, 18 (20.7%) and 14 (16.1%) of the respondents were team leaders and process owners respectively. On the other hand, 9 (10.3%) of the employees were admitted that their position were other than expert, team leader and process owner.

In general, the above analysis shows the employees in the sample MoST offices were well experienced and qualified. Hence, as far as data collection is concerned, it would be possible to generalize from the data that respondents possess adequate qualification and experience to understand the question and give appropriate information for the study.

## **4.2. Awareness and Understanding about Business Process Reengineering**

The first research question deals with how the offices employed the implementation of BPR. To answer this question quantitatively and qualitatively, I enquired employees and management members for their point of view on awareness and understanding of BPR.

As Hammer and Champy (1993), states before redesigning the process understanding the fundamental business operation is necessary, while it ignores the underlying rules and assumptions of the old/traditional business processes to radically redesign the process for dramatic performance of business processes that can be measured in terms of speed, cost and quality.

The employees replied on their status regarding the awareness and understanding of BPR as follows.

**Table 4.3 Responses on Awareness and Understanding about BPR**

Items	Yes		No		Total	
	F*	%	F	%	F	%
Do you have any knowledge of BPR?	82	94.3	5	5.7	87	100
Does the office organize any event to help employees be aware of BPR?	69	79.3	18	20.7	87	100

\*F = Frequency

As table 4.3 indicates, employees were asked about the awareness and understanding of BPR. The majority of the respondents 82 (94.3%) admitted they were acquainted with the knowledge of BPR while 5 (5.7%) of the employees confirmed that they did not have any clear knowledge about BPR.

Regarding exposure to concepts of BPR again the majority of respondents which accounts 69 (79.3%) had an exposure to the concept of BPR whereas 18 (20.7%) did not get the chance. However, though the majority of the respondents confirmed that they got acquainted with the concept of BPR, some employees who worked for a year at current office did not have any clear idea about BPR. This indicates that there is an irregularity in providing awareness creation events to employees.

**Table 4.4 Responses on the Exposure of BPR Concepts**

Items	Training and Development		Workshop		Seminar		Other		Missing		Total	
	F*	%	F	%	F	%	F	%	F	%	F	%
If you replied 'yes' for the preceding question please select the method that your office employed.	47	54.0	5	5.7	8	9.2	9	10.3	18	20.7	87	100

\* F = Frequency

Table 4.4 above reveals that 47 (54.0%) of employees got acquainted with the concept of BPR through training and development while 8 (9.2%) of them were familiarized with the thought of BPR through seminar. Whereas, 5 (5.7%) and 9 (10.3%) of the respondents got the opportunity to know about BPR through workshop and other means respectively. And yet, the remaining 18 (20.7%) of the employees refrained from responding this item since they did not have any clue whether the office organized any event to create awareness on BPR.

*In addition, it is observed and found to be disappointing that the employees' turnover rate is shocking. In some case, employees did not even work for six months. This in turn results to poor performance.*

From the above findings with regard to employees' awareness and exposure of BPR concepts, one can deduce that awareness creation stages were organized to empower employees in the given sample offices though there was some gaps in addressing all employees as it was observed.

### **4.3. Factors that Leads to Successful Business Process Reengineering Implementation**

The second research question concerns on key success factors accomplished to date. To answer this research question, I asked the employees and the management

members to share their thought that which factors made the implementation of BPR successful.

BPR implementation success factors, as stated in literature, are keys to make the BPR application fruitful. According to Al-Mashari and Zairi (1999) and Attaran (2003) the major step successful BPR implementation is applying the necessary factors such as top management commitment and ability to comprehend BPR projects, use of information technology, effective communication among the workers and other stake holders, adequate financial resources, and so forth.

In addition, Grover et al. (1995) also noted BPR implementation as complex, i.e., it involves many challenging factors. Thus the authors suggested, to be succeed with BPR implementation, organizational change has to be essentially managed and balanced attention to be paid for management support and technological competence factors. As well as, factors that pertain directly to the conduct of the project (e.g., project management and process delineation) have to be given emphasis for successful BPR implementation.

Based on BPR implementation success factors the employees were asked for their opinion and their responses have been analyzed as follows.

**Table 4.5 Respondents View on BPR Implementation at the Office**

No.	Items	Response											
		Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Total	
		F	%	F	%	F	%	F	%	F	%	F	%
1.	Introducing new job titles encourages employees to support the BPR program	28	32.2	34	39.1	17	19.5	6	6.9	2	2.3	87	100
2.	Effective communication within and outside of the office is a major key to BPR implementation	42	48.3	28	32.2	11	12.6	2	2.3	4	4.6	87	100
3.	All employees are involved in the BPR implementation	22	25.3	24	27.6	17	19.5	20	23.0	4	4.6	87	100
4.	Training and education coordinated by the office are important component to the BPR program	36	41.4	35	40.2	14	16.1	1	1.1	1	1.1	87	100
5.	The top management provide support and commitment to the implementation of BPR	49	56.3	22	25.3	9	10.3	2	2.3	5	5.7	87	100
6.	Adequate resource and sufficient budget allocate for the implementation of BPR	25	28.7	28	32.2	20	23.0	7	8.0	7	8.0	87	100

\* F = Frequency

As table 4.5 indicates 34 (39.1) and 28 (32.2%) of the employees were agree and strongly agree respectively to the statement that refers introducing new job titles encourages employees to support the BPR program. Whereas, 6 (6.9%) and 2 (2.3%) of the respondents were disagree and strongly disagree respectively to this statement. The remaining which accounts 17 (19.5%) of respondents preferred to be neutral. This shows that most of the respondents believe that introducing new job titles encourages employees to support the BPR implementation.

Regarding to the statement that deals with effective communication within and outside of the office as a major key to BPR implementation, 42 (48.3%) and 28 (32.2%) of the respondents strongly agree and agree respectively. While, 4 (4.6%) and 2 (2.3%) of the respondents strongly disagree and disagree to this statement respectively. Whereas, 11 (12.6%) of them chose to be neutral. In a similar fashion, the majority of the respondents consider this statement helps the sample offices to become successful in their BPR implementation.

With respect to the third item, 28 (32.2%) and 22 (25.3%) of the employees agree and strongly agree respectively to the statement which says all employees are involved for the BPR implementation program. Whereas, 20 (23.0%) and 4 (4.6%) of the employees disagree and strongly disagree respectively. While, 17 (19.5%) of the respondents were neutral. This indicates that almost half of the respondents were not convinced whether all employees were involved in the BPR implementation program.

Regarding with the idea, training and education coordinated by the office are important component to the BPR program 36 (41.4%) and 35 (40.2%) of respondents strongly agree and agree respectively while 1 (1.1%) of respondents disagree and strongly disagree. Whereas 17 (19.5%) of respondents wanted to be neutral.

With reference to top management support and commitment for the BPR implementation program, 49 (56.3%) and 22 (25.3%) of employees strongly agree and agree respectively. Whereas, 5 (5.7%) and 2 (2.3%) of respondents strongly disagree and disagree respectively to the statement. While, 9 (10.3%) of employees remained neutral. This indicates that the BPR implementation project has been supported by the top managements.

As to the allocation of adequate resources and sufficient budget, 28 (32.2%) and 25 (28.7%) of respondents agree and strongly agree respectively. But 7 (8.0%) of respondents disagree and strongly disagree. While the remaining 20 (23.0%) of respondents were neutral. This indicates the majority of respondents confirmed the statement.

*With regard to senior management support and commitment and employees trainings the key official informants stated that the top management commitment and support empowering employees were vital since the country's civil service transforms from bureaucratic and un-systematized to a more scientific one.*

In general, as table 4.5 shows majority of respondents accepted that the sample offices applied the BPR success factors on their implementation period. As a result, they claimed the BPR project was successful.

#### **4.4 Challenging Factors Encountered during Business Process Reengineering Implementation**

The third research question deals with the key failure factors encountering BPR implementation. To respond this question quantitatively and qualitatively, I questioned employees and management members for their attitude that which factors were challenging during the implementation of BPR.

As some factors such as effective communication within and outside the organization, use of information technology and top management support and commitment are helpful to successes in BPR implementation, failed to employ these factors resulted in a BPR implementation failure. In addition, Al-Mashari and Zairi (1999) listed the BPR failure factors related to change of management systems and culture as follows: organizational resistance, lack of organizational readiness for change and lack of training and education.

On the basis of the above and other BPR implementation challenging factors employees of the sample offices were asked for their opinion and their responses were analyzed as follows.

**Table 4.6 Challenging Factors in BPR Implementation**

No.	Item	Response											
		Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Total	
		F	%	F	%	F	%	F	%	F	%	F	%
1.	Inadequate alignment of IT* infrastructure and BPR project are shown	22	25.3	31	35.6	13	14.9	16	18.4	5	5.7	87	100
2.	Resistance to change is a challenge of BPR implementation	5	5.7	16	18.4	22	25.3	38	43.7	6	6.9	87	100
3.	Fear of job loss among the employees is a failure factor of BPR implementation	4	4.6	22	25.3	21	24.1	32	38.6	8	9.2	87	100
4.	The office faces problems related to management commitment and support	4	4.6	11	12.6	19	21.8	46	52.9	7	8.0	87	100
5.	The office lacks adequate BPR methodology that leads to the failure of BPR implementation	3	3.4	7	8.0	24	27.6	41	47.1	12	13.8	87	100

\* F = Frequency

\* IT = Information Technology

As table 4.6 indicates, 31 (35.6%) and 22 (25.3%) of respondents were agree and strongly agree to the statement which says inadequate alignment of IT infrastructure and BPR project are shown respectively while, 16 (18.4%) and 5 (5.7%) of respondents were disagree and strongly disagree to the statement respectively. Whereas, 13 (14.9%) of respondents were neutral. This shows that the majority of respondents believed the BPR project was not sufficiently supported by IT.

With regard to resistance to change as a challenge to BPR implementation, 16 (18.4%) and 5 (5.7%) of respondents agree and strongly agree respectively. On the other hand, 38 (43.7%) and 6 (6.9%) of respondents disagree and strongly disagree

to the above statement respectively. Whereas, the remaining portion that accounts to 22 (25.3%) of respondents remained neutral. This shows that resistance to change was hindrance to the reengineering process.

Concerning to fear of job loss among employees as a failure factor in the BPR project diversified responses are shown with 22 (25.3%) and 4 (4.6%) of respondents agree and strongly agree respectively while, 32 (38.6%) and 8 (9.2%) of respondents disagree and strongly disagree respectively. Whereas, 21 (24.1%) of respondents remained neutral in the idea that fear of job loss being a challenging factor.

About the item that states the office faces problems related to senior management commitment and support as a challenging factor to BPR implementation, 11 (12.6%) and 4 (4.6%) of respondents agree and strongly agree respectively while, 46 (52.9%) and 7 (8.0%) of respondents disagree and strongly disagree to the statement. The remaining respondents that account to 19 (21.8%) remained neutral. This indicates that the majority of the employees rejected the idea of no management commitment and support in the employment of BPR.

Regarding the lack of adequate BPR methodology as a failure for the implementation, 7 (8.0%) and 3 (3.4%) of respondents agree and strongly agree respectively whereas, 41 (47.1%) and 12 (13.8%) of respondents disagree and strongly disagree respectively. While the remaining respondents that account to 24 (27.6%) were neutral. This shows majority of respondents believed that there is no lack of adequate BPR methodology though large portion of respondents remained neutral.

Interview with the key official informants also reaffirmed that most BPR implementation challenging factors were not obstacles to the offices except inadequate IT infrastructure. They even admitted, by the time BPR project commenced the offices did not have well skilled man power and that caused delay in implementation.

In general, this implies that considerable number of respondents rejected the above factors as a challenge for BPR implementation project except for the scarce of IT

setup. Thus, with this, one can deduce that the sample offices did not give much attention to one of the important factors for successful BPR project.

#### **4.5 Improvements in Performance and Customer Service**

The second research question also contends with the improvements on performance and customer service registered due to the implementation of BPR. To answer this question quantitatively and qualitatively, I asked employees, customers and management members' point of view if there are any improvements.

Cost, time, quantity and quality are referred to measure the results of organizations. Besides, according to Tesfaye (2009) understanding the concepts of efficiency and effectiveness is also vital because they are the cornerstones for measuring the performance of an organization.

In addition, since customer is the center of any organization, customer service measures the ability of an organization in providing products and services on time, cost effectively and reliably.

Based on the offices' performance and customer services employees of the sample offices were asked for their opinion and their responses were analyzed as follows.

**Table 4.7 Respondents View on Organizational Performance and Customer Service**

No	Item	Response											
		Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Total	
		F	%	F	%	F	%	F	%	F	%	F	%
1.	There is a significant process cycle time reduction gained as result of BPR implementation	23	26.4	41	47.1	13	14.9	9	10.3	1	1.1	87	100
2.	The employees' performance has radically improved as a result of BPR implementation	15	17.2	41	47.1	18	20.7	9	10.3	4	4.6	87	100
3.	The office has delivered a higher quality of service because of BPR	8	9.2	45	51.7	22	25.3	5	5.7	7	8.0	87	100
4.	There is an increment of customer satisfaction as a result of BPR	15	17.2	43	49.1	20	23.0	5	5.7	4	4.6	87	100
5.	The office's performance has greatly improved	15	17.2	38	43.7	20	23.0	10	11.5	4	4.6	87	100

\* F = Frequency

As Table 4.7 indicates 41 (47.1%) and 23 (26.4%) of respondents were agree and strongly agree respectively to the idea that there is a significant process cycle time reduction gained as a result of BPR implementation. Whereas, 9 (10.3%) and 1 (1.1%) of employees were disagree and strongly disagree respectively to the statement. While the remaining employees which account to 13 (14.9%) were neutral. This refers that majority of employees confirmed that BPR application brought meaningful process cycle time reduction. However, one can infer that at list one-fourth of the respondents were not convinced with a significant process cycle time reduction thus the process needs revision.

Concerning the radical improvement of employees performance 41 (47.1%) and 15 (17.2%) of respondents were agree and strongly agree respectively to the statement while, 9 (10.3%) and 4 (4.6%) of employees were disagree and strongly disagree to the idea of radical improvement respectively. Whereas the remaining that accounts 18 (20.7%) of employees were neutral. Again in this case, though two-third of respondents agreed on employees' performance radical improvement, one-third did not support it. Thus, one can argue that since the implementation of BPR does not radically improve the man power's performance, then an organization cannot bring any improvement. And this is against the idea of Hammer and Champy (1993), 'reengineering is the fundamental rethinking and radical redesign of the processes to achieve dramatic improvements in critical, contemporary measures of performances, such as cost, quality, service and speed.'

The information under item number 3 indicates that 45 (51.7%) and 8 (9.2%) of respondents were agree and strongly agree respectively to the statement that BPR results in delivering a higher quality of service while, 5 (5.7%) and 7 (8.0%) of employees were disagree and strongly disagree respectively. Whereas, 22 (25.3%) of respondents were neutral. This refers that more than sixty percent of employees said the office delivered higher quality and service. However, about forty percent did not agree with this idea. Therefore, again this needs to be studied and make an intervention.

Regarding to customer satisfaction 43 (49.4%) and 15 (17.2%) of employees were agree and strongly agree respectively to the statement that the office has realized an increment of customer satisfaction as a result of BPR implementation. Whereas, 5 (5.7%) and 4 (4.6%) of employees were disagree and strongly disagree respectively. While the remaining which accounts to 20 (23.0%) of employees were neutral. This information shows that more than a quarter of employees did not accept the increment of customer satisfaction.

With regard to the office's performance improvement 38 (43.7%) and 15 (17.2%) of employees agree and strongly agree respectively while 10 (11.5%) and 4 (4.6%) disagree and strongly disagree correspondingly to the statement that the offices'

performance has greatly improve because of BPR. Whereas, 20 (23.0%) of employees were neutral. Similarly, this indicates that about one-third of employees were not convinced as their office's performance greatly improved.

*In addition, the key official informants reaffirmed the offices faced a high turnover of employees which in turn became in some points hindrance to provide quality service, increase customer satisfaction and improve performances. Cognizant of these responses the researchers' observation shows within six months two of the three sample offices' several employees were replaced by new ones. This, in fact, needs a research.*

In general, as one can understand, though majority of employees believed the implementation of BPR brought improvements in their performance as well as the offices' performance, a quarter of employees did not agree with this. Thus, if performance improvement is not as radical as it should be then the offices' BPR implementation project will be a failure.

## **4.6 Customers Response Analysis**

The three executive offices of MoST namely Ethiopian Standardization Agency, Ethiopian Intellectual Property Office and Ethiopian Radiation Protection Authority have a number of customers. Some of the major services provided to their customers are seasonal on demand in nature and this had created problem in producing a larger customer population. Because of the small number of clients sample frame, the customers' responses were analyzed on their own rather than comparing with the employees responses.

Fifty questionnaires were distributed to customers that included a covering letter detailing the objectives of the study as well as a statement of confidentiality. Data were collected through an instruments developed using five point Likert scale. Besides, the researcher observed some customer handlings occasion.

The data collection was carried out in to two stages. The first was a pilot test used to clarify the overall structure and approach to the project being as validating the measuring instrument to be used. Problems of misinterpreting and attempting all

questions occurred in the pilot resulting in revising the questionnaire in both form and content.

**Table 4.8 Characteristics of Client Respondents by Customer Type**

Customer Type	Response	
	Frequency	Percent
One Time	6	21.4
Occasional	14	50.0
Permanent	8	28.6
Total	28	100

As table 4.8 indicates, clients were asked about what type of customers are they to the sample MoST offices. Of the client respondents 14 (50.0%) and 8 (28.6%) said they are occasional and permanent customers respectively. Whereas, 6 (21.4%) of respondents claimed that they a single time customer type.

In general, the above analysis shows that more than two-third of the sample MoST offices' customers were repeatedly interacted with the offices. Hence, as far as data collection is concerned, it would be possible to generalize from the data that customer respondents can give appropriate information for the study about how the offices perform and handle customers.

**Table 4.9 Customers Response in Operational Activities**

No	Item	Response											
		Strongly Agree		Agree		Not sure		Disagree		Strongly Disagree		Total	
		F	%	F	%	F	%	F	%	F	%	F	%
1.	There is a significant process cycle time reduction.	5	17.9	19	67.9	2	7.1	1	3.6	1	3.6	28	100
2.	The employees' performance has radically improved	2	7.1	14	50.0	8	28.6	3	10.7	1	3.6	28	100
3.	The office has delivered a higher quality of service.	4	14.3	15	53.6	7	25.0	2	7.1	0	0	28	100
4.	There is an increment of customer satisfaction.	3	10.7	20	71.4	2	7.1	1	3.6	2	7.1	28	100
5.	The office's performance has greatly improved.	2	7.1	16	57.1	6	21.4	3	10.7	1	3.6	28	100
		Very Satisfactory		Satisfactory		Indifferent		Dissatisfactory		Very Dissatisfactory			
		F	%	F	%	F	%	F	%	F	%	F	%
6.	How do you level the efficiency and effectiveness of the service provided by the office?	3	10.7	17	60.7	4	14.3	3	10.7	1	3.6	28	100

\* F = Frequency

As Table 4.8 indicates, customers were asked about the operational activities of the sample offices and their responses were analyzed using frequency and percent. Concerning the number one item which says there is a significant process cycle time reduction as a result of BPR implementation 19 (67.9%) and 5 (17.9%) of customers were agree and strongly agree respectively while 1 (3.6%) of respondents were disagree and strongly disagree. Whereas the remaining which account 2 (7.1%) of

customer respondents were not sure whether the process cycle time reduced or not. This information shows that the sum of eighty five percent of customers confirmed the process cycle time reduction.

Regarding the employees performance 14 (50.0%) and 2 (7.1%) of customers were agree and strongly agree respectively to the statement the sample offices' employees performance has radically improved. On the contrary, 3 (10.7%) and 1 (3.6%) of respondents were disagree and strongly disagree to the statement while, 8 (28.6) of customers were not sure. As one can understand more than forty percent of employees did not see any performance improvement in employees as a result of BPR implementation.

With regard to service deliverance 15 (53.6%) and 4 (14.3%) of customers were agree and strongly agree that the office has delivered a higher quality of service whereas 2 (7.1%) of customers were disagree and the remaining which account 7 (25.0%) were not sure. This information shows that though majority of customers were satisfied with deliverance of higher quality service but more than a quarter of customers were not convinced.

In item 4 the same table, customers respondents replied on an increment of customers' satisfaction because of implementing BPR accordingly. Of the sample respondents 20 (71.4%) and 3 (10.7%) were agree and strongly agree respectively to the statement. Whereas 1 (3.6%) and 2 (7.1%) of customers were strongly disagree and disagree respectively. The remaining respondents which account 2 (7.1%) were not sure if there is an increment of customers' satisfaction as a result of BPR implementation.

Concerning the offices' performance 16 (57.1%) and 2 (7.1%) of customers were agree and strongly agree respectively that sample offices had greatly improved. While 3 (10.7%) and 1 (3.6%) of respondents were disagree and strongly disagree respectively to this statement. The remaining respondents which account to 6 (21.4%) of customers were not sure whether the offices' performance had been

greatly improved or not. Similarly, this information shows that more than one-third of customers doubted the improvements of the sample offices' performance.

With regard to the level of efficiency and effectiveness of the service provided by the sample offices, customers responded in a diversified form. 17 (60.7%) and 3 (10.7%) of customers chose satisfactory and very satisfactory respectively with the level of efficiency and effectiveness of the service provided. Whereas, 3 (10.7%) and 1 (3.6%) of customers selected dissatisfactory and very dissatisfactory respectively. The remaining respondents which account to 4 (14.3%) were being indifferent. One can understand that more than a quarter of customers were not convinced the level of efficiency and effectiveness of the service provided by the sample offices as satisfactory.

Thus, although this survey is too narrow to dispute this large claim, based on the customers' responses, the sample offices' performances are a little above average after the implementation of BPR. This result, therefore, contradicts with the idea of Hammer and Champy (1993) that is, implementing BPR helps to make quantum leaps in performance, achieving breakthrough performance that can be measured in various ways such as reducing costs, delivering high quality of services and products, increasing speed, and creating value for customers.

In conclusion, this study revealed that even though majority of employees and customers declared BPR brought a significant change in performance more than a quarter of employees and customers of these sample offices disproved this claim.

Hence, it is possible to generalize that the implementation of BPR is not as effective as it should be in the MoST in general and the respective executive offices in particular.

# CHAPTER FIVE

## Summary, Conclusion and Recommendation

This chapter contains the summary, conclusions and recommendations of the study.

### 5.1 Summary

As it was stated in the statement of the problem (chapter one), the foremost purpose of this study was to survey the key success and failure factors in implementing BPR in MoST.

To conduct the study, the following basic questions were raised.

1. How does the Ministry implement BPR?
2. What are the key successes factors accomplished to date?
3. What are the key failures factors encountering BPR implementation of the Ministry?

In order to answer these basic questions two sets of questionnaires were designed for employees and customers. Then, the first sets of questionnaires were distributed to 113 employees by using random sampling technique. Of the distributed 113 questionnaires, 87 questionnaires were returned and analyzed. The second sets of questionnaires were distributed to 35 customers by availability sampling technique. Of the distributed 35 questionnaires, 28 questionnaires were returned and analyzed. In addition, using semi-structured interview 12 management members' opinion was gathered by purposive sampling technique and analyzed. To strengthen the data collected through questionnaire and interview, document analysis were conducted.

After the investigation, the study came up with the following major findings.

- There is very high proportion of male employees than female employees.
- In addition, it can be seen that middle age employees among 25-45 dominate the offices with 75 percent.

- There is very high proportion of first degree holders with 70.1 percent and 19.5 percent of second degree holders.
- Most of the employees have fallen to more experienced category.
- On the basis of their responsibility the majorities which account to 52.9 percent found to be experts and 20.7 percent team leaders. The remaining which accounts to 16.1 percent and 10.3 percent are process owners and other positions respectively.
- The study revealed that majority of employees which accounts to 94.3 percent had clear knowledge of BPR. Besides, 79 percent reaffirmed that they got acquainted because the organizations provided awareness creation stages through training and development, workshop, seminar and so forth.
- Furthermore, employees with very high proportion which accounts to 71.3 percent and 70.5 percent believed that introduction of new jobs and effective communication within and outside of the offices respectively helped them to actively support the BPR implementation.
- The study also revealed that even though it is marginal, 52.9 percent of employees confirmed all employees were involved in the BPR implementation.
- According to this study about 81.6 percent of employees declared that the existence of training and education though the key official informants (management members) argued it was fragmented.
- Moreover, the study also revealed that more than 60 percent of employees reaffirmed as there was adequate resource and sufficient budget allocated properly for BPR implementation.

Nonetheless, promising achievements have been seen due to BPR implementation within the offices. Consequently, the following findings from the survey of both employees and customers and key official informants (management members) verify this truth.

- Accordingly, out of 87 employee respondents and out of 28 customer respondents 63.5 percent employees and 75.8 percent customers believed

that there was a significant process cycle time reduction due to BPR implementation.

- In addition, 64.3 percent of employees and 57.1 percent of customers confirmed that there was a radical improvement of employees' performance because of BPR implementation even though more than one-third of respondents in both categories had doubt.
- On the basis of service deliverance 60.9 percent of employees and 67.9 percent of customers reaffirmed that the offices provided quality of service. Besides, the key official informants (management members) endorsed the idea though they claimed it was not at the best level as it had been planned.
- The study also revealed that 66.3 percent of employees and 82.1 percent of customers argued there was an increment of customer satisfaction as a result BPR implementation. However, the key official informants had mixed belief with regard to customer satisfaction. Some reassert the employees and customers response others, on the contrary, believed its long way to achieve customer satisfaction.
- In relation to office performance improvement 60.9 percent of employees and 64.2 percent of customers claimed that the offices' performance had greatly improved. Yet, more than a quarter of both categories disproved this claim.

However, the above perceived achievements were not without challenges. Thus, major challenges could adversely affect the effective implementation of BPR are identified by the study as follows.

- The study revealed that majority of employees which accounts to 60.9 percent asserted that there was inadequate alignment of IT infrastructure and BPR implementation project. Furthermore, the key official informants (management members) confirmed that the organization strategy was not aligned with the information technology within the sample offices. They also claimed that there was no sufficient IT infrastructure to play a vital role to

improve quality of service, customer satisfaction, productivity and efficiency as to the planned outcome.

- With regard to training and development though majority of employees said the offices provided opportunities but the training and development programs were discontinuous as the management members claimed. Thus, the need for training and development remained a high priority.
- As it was confirmed by the interview held with the key official informants, the offices salary scale forces employees to leave and made the employee turnover rate very high which in turn became obstacle to deliver higher quality of services consistently.
- Furthermore, although the key official informants and observation asserted the existence of monitoring and evaluation, it was discontinuous even in some cases duplicated reports were used for different sessions.

## **5.2 Conclusion**

From the aforementioned data analysis and findings the following conclusion could be drawn.

The study outcomes show that in Ethiopia organizations particularly service renders can be advanced in performance if there is readiness and commitment for change. The offices this study investigates can be good examples to this fact.

It is not surprising that the offices managed to gain driven advantage from the implementation of BPR because the country had began the road transforming the civil service and specifically as the respondents agreed that the key factors that assure success in implementation were embraced. Among the momentums for success in implementing BPR the readiness and commitment of employees as well as managements, effective communication within and outside the organizations and allocation of adequate resource and sufficient budget were the major ones.

Nevertheless, the study results indicate there were a number of challenges that could adversely affect the offices' accomplishments. The challenges were the application of feeble IT infrastructure to support the BPR implementation project; the insignificant performance improvement though it was reported that there are some positive changes; irregularities in service delivery and transparency issues; weak evaluation and monitoring system due to manual documentation and high turnover rate of experts and middle management officials countervailed the steadiness of improved service delivery.

### **5.3 Recommendation**

Based on the findings of the study and conclusions drawn the following recommendation were given.

- According to the findings of the study, the management of the Ministry has commitment in reengineering processes to get the science and technology segment transformed so that the country will be benefited with advanced technology. However, most of the managers in middle and lower levels as well as the employees lack to get consistent training and development opportunities in order to secure the radical change that transforms the Ministry and country. The management then needs to craft favorable environment by providing more sustainable training and development programs.
- Information technology plays a vital role in information exchange, knowledge transfer, collaboration, information storage, safeguarding, distribution and usage but the circumstance in the Ministry indicates there is no reliable information technology infrastructure installed to align with BPR project. The Ministry then needs to improve the IT infrastructure in order to be more effective in improving quality of service, customer satisfaction and productivity.
- Developing and organizing effective performance measurement and evaluation are fundamental to the Ministry to identify its progresses and

base its decision on facts. The study disclosed that the Ministry lacks strong measurement and evaluation system. Thus, the Ministry needs to develop suitable measurement and evaluation system.

- The human resources who effectively get training and development, skill and experience are the central part of reengineering process. However, as the study disclosed the Ministry could not exploit its skilled manpower as turnover rate was high. Therefore, the Ministry needs to solve this by dealing effectively with introduction of proper placement, incentive packages, reward systems and pay, creating a culture for change, and encouraging receptivity of the Ministry itself to adjust into operational repetition.

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## Appendix A

### Questionnaire Survey

The study is entitled “Key Success and Failure Factors in Implementing BPR in the Ministry of Science and Technology”.

The objective of the study is to identify key success and failure factors in implementing BPR in the MoST. To carry out this study, sample of employees of the three executive organs of MoST are selected randomly. Thus, your participation is very important to this research. Your responses will be treated anonymously and any statement or comments you make cannot be associated to you or to your organization.

I hope you will assist me in completing the questionnaires.

#### **Notice:**

1. No need to write your name.
2. Please tick “✓” in the box where necessary and you may choose more than one.
3. At the end of the study, the summary of findings will be forwarded if you wish to have it through your E. Mail address.

Thank you for your cooperation!!

**Section- one:** Bio data of the respondents (please Tick (√) the box that best describes you)

1. Your sex

Female

Male

Your age

Less than 25 years

26-35

36-45

46-55

Above 55

2. Name of the Office

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3. Educational status

Diploma or certificate

Bachelor's degree

Master's degree

PhD or above

4. Work Experience

Less than 2 years

3-10

11-17

Above 17 years

5. Your current status

Expert

Team leader

Department head

Other

**Section Two:** Awareness of the employees about BPR

6. Do you have any knowledge of BPR?

Yes  No

7. Does the office organize (coordinate) any event to help employees be aware of BPR?

Yes  No

8. If your answer for question No 8 is 'yes' please select the method that your office employed?

Training and development  seminars  
 Work shop  others

9. Does the office set performance goals and measures to implement BPR?

Yes  No  I don't know

**Section three:** BPR Implementation success factors

S. No	Question Items	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
11.	Introducing new job titles encourages employees to support the BPR program of the office.					
12.	Effective communication within and outside of the office is a major key to successful BPR implementation.					
13.	In BPR implementation, all employees of the bureau should be openly involved.					
14.	Training and education coordinated by the office are important component of successful BPR implementation.					
15.	The top management support and commitment directly influence the success of BPR implementation in the office.					
16.	Adequate resource and sufficient budget allocated properly for the implementation of BPR in the office.					

**Section four: Factors that challenge BPR implementation**

17.	Inadequate alignment of IT infrastructure and BPR project are shown.					
18.	Resistance to change is a challenge of BPR implementation.					
19.	Fear of job loss among the employees is a failure factor of BPR implementation.					
20.	The organization faces problems related to management commitment and support.					
21.	The office lacks adequate BPR methodology that leads to the failure of BPR implementation.					

**Section Five: Achievement to date**

22.	There is a significant process cycle time reduction gained as a result of the BPR implementation.					
23.	The office has been able to simplify the processes and improve the overall quality of the output as a result of implementing BPR.					
24.	The employees' performance has radically improved as a result of BPR implementation.					
25.	The office has delivered a higher quality of service because of BPR implementation.					
26.	The bureau has realized that there is an increment of customer satisfaction as a result of BPR implementation.					
27.	The office's performance has greatly improved.					

## Appendix B

### Questionnaire Survey

The study is entitled “Key Success and Failure Factors in Implementing BPR in the Ministry of Science and Technology”.

The objective of the study is to identify key success and failure factors in implementing BPR in the MoST. To carry out this study, sample of employees and customers of the three executive organs of MoST are selected randomly. Thus, your participation is very important to this research. Your responses will be treated anonymously and any statement or comments you make cannot be associated to you or to your organization.

I hope you will assist me in completing the questionnaires.

Thank you in advance for your cooperation!!

**Section one:** Bio date of the respondent

1. Customer type

One time

Occasional

Permanent

2. Name of the company

**Section Two:** BPR implementation success/failure factors

S. No	Question Items	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
3.	There is a significant process cycle time reduction.					
4.	The employees' performance has radically improved					
5.	The office has delivered a higher quality of service.					
6.	There is an increment of customer satisfaction.					
7.	The office's performance has greatly improved.					
		Very Satisfactory	Satisfactory	Indifferent	Dissatisfactory	Very Dissatisfactory
8.	How do you level the efficiency and effectiveness of the service provided by the office?					

## Appendix C

In- depth Interview Guidelines for Key Official Informants in MoST

In- depth interview guidelines asked to key official Informants to identify key success and failure factors of Business process Reengineering Implementation in three executive organs of the Ministry of Science and Technology.

1. Why would the office want to important Business process Reengineering and how does it do it?
2. Would you assert that the office achieves the goals set on the implementation of the BPR?
3. Do the senior management members show commitment to and support for the change in dealing with organizational resistant during BPR implementation?
4. Does the ministry have a clearly defined and proven BPR methodology that can satisfy its needs?
5. Would you please describe how the information Technology infrastructure and the BPR project are interrelated during the implementation period?
6. Would you please state key successes achieved to date due to BPR implementation with in the office as well as other executive organs of the Ministry?
7. Are the employees empowered through different trainings and education?
8. Do collaborative and front workers get incentives?
9. Have you been facing any challenges during the BPR implementation period?
10. If yes, would you please mention some of the challenges?

## DECLARATION

I, the undersigned, declare that this thesis is my original work and has not been presented for a degree in any other University, and that all the sources of materials used for the thesis have been duly acknowledged.

**Declared by:**

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Masters in Human Resource and Organizational  
Development, Addis Ababa University, May, 2014,  
Addis Ababa, Ethiopia