ADDIS ABEBA UNIVERSITY
FACULTY OF BUSINESS AND ECONOMICS
Msc
Accounting and Finance

A Research Paper Presented
For the Partial Fulfillment
of Msc in Accounting and Finance

The Effect of Business Process Reengineering (BPR) on The Firms Performance Case of Ethiopian Shipping Lines S.C

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January 21st, 2008

Declaration

I, ***Berhane Gebru Woldemariam,*** declare that this study entitled "***The Effect of Business Process Reengineering (BPR) on the Firms Performance; Case of Ethiopian Shipping Lines S.C.***" is my own effort and study. It has been carried out by me independently except for the guidance and suggestion from my research advisor and it has not been submitted for any degree or Diploma in AAU or any other University. It is presented here, in partial fulfillment of the requirements for the degree of Msc. in Accounting in finance.

Berhane Gebru Woldemariam

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Student

The Effect of Business Process Reenginering (BPR) on The Firms Performance Case of Ethiopian Shipping Lines S.C.

A Research Project Submitted to the School of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Requirements for the Degree of Msc in Accounting and Finance.

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Acknowledgement

I acknowledge with gratitude ***Ethiopian Shipping Lines S.C****. Management and staff for their significant contributions and assistance in the process of coming out this study. I also want to address my deepest gratitude for my Instructor* ***Ato Asmare Emerie*** *for his kind advice and assistance on my study.*

Last but not least I also give due consideration to my family whom they encourage me to undertake this study and to ESLSC staff especially the Finance Department for their assistance in every aspect of my study.

Certification

This is to certify that ***Ato Berhane Gebru Woldemariam*** has carried out his research work on the topic entitled

"***The Effect of Business Process Reengineering (BPR) on the Firms Performance; Case of Ethiopian Shipping Lines S.C.***"

under my supervision. This work is original in nature and it is suitable for submission for the award of degree for ***Masters in Accounting and Finance.***

Ato Asmare Emerie (Lecturer)

Signature:_____

Advisor

ACRONYMS

BPR	-	Business Process Reengineering
BSC	-	Balanced Score Card
CEO	-	Chief Executive Officer
CPI	-	Continuous Process Improvement
ESLSC	-	Ethiopian Shipping Lines Share Company
ICT	-	Information and Communication Technology
IPMS	-	Integrated Performance Management System
IT	-	Information Technology
ISO	-	International Standard Organization
JIT	-	Just-in-time
MBO	-	Management By Objective
MOR	-	Management By Objective and Result
MTSE	-	Maritime and Transit Service Enterprise
NR	-	Number Respondent
OD	-	Organization Development
OJT	-	On the Job Training
PBM	-	Performance-Based Management
PBM-SIG	-	Performance-Based Management Special Interest Group
QMS	-	Quality Management System
ROPMS	-	Result Oriented Performance Management System
SPC	-	Statistical Process Control
TOR	-	Term of Reference
TQM	-	Total Quality Management
SPM	-	Strategy, Planning & Management

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CHAPTER ONE

Introduction

1.1. Background

1.1.1 Business Process Reengineering (BPR)

Business process improvements increase an organization's efficiency, productivity and profitability. Minor or incremental process improvements usually result in a little increase in profitability. In order to create a dramatic increase in efficiency, productivity, or profitability, a drastic change in the design of the organization's processes is required. A process is an ongoing, recurring and systematic series of actions or operations whereby an input is transformed into a desired output (goods or services) which increases value to a firm. Such process improvement could be achieved through business process reengineering.

Business process is primary a change initiative resulting from a firm engineering assessment and /or strategic visioning. It is the way in which a firm dramatically improves performance and customer satisfaction by reinventing the business processes and other operational aspects, culture, social systems, and technology.

Though the potential results can make it seem like a silver bullet, BPR can't be taken lightly. Reengineering is a monstrous task to undertake and it is also very risky. There is a chance it will fail to improve the process. There is a greater chance that there will be resistance to change.

BPR has been defined by different scholars. Among the different definitions the one given by Michael Hammer (1993) is widely accepted and worth considering:

> "*Reengineering is "the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed."* **[1].**

In BPR, firms started with a blank sheet of paper and rethink existing process to deliver more value to the customer. They typically adopt a new value system that places increase emphasis on customers needs.

BPR also advocates that enterprises go back to the basics and reexamine their very roots. It doesn't believe in small improvements. Rather it aims at total reinvention. As for results: BPR is clearly not for companies who want a 10%

improvement. It is for the ones that need a ten-fold increase. According to Hammer and Champy:

> "*The last but the most important of the four key words is the word-: 'process.' BPR focuses on process and not on tasks, jobs or people. It endeavors to redesign the strategic and value added processes that transcend organizational boundaries."* **[2]**.

1.1.2 ESLSC BPR IMPLEMENTATION

Ethiopia, which is the most underdeveloped countries in the world, is known by her prevalent poverty, plague and drought. The government is committed to pull out the nation from this vicious circle by putting national vision to change her miserable image and line up with a row of middle income generating countries. To achieve this goal, the government has drawn strategies, policies and programs which are capable enough to build up democratization process and sustainable socio-economic development.

One of the most crucial methods of implementation is to bring radical institutional transformation all over the nation. Accordingly, the study for reform has begun in 2001/02 in Federal and Regional government institutions. The core aim of this study is to establish a conducive civil service system characterized by cost-saving, transparency, accountability, participatory and responsiveness.

The pilot project has been launched practically in 2003/04 in some prominent organizations which have broad activities in their sector. Based on their action plan and methodology, other organizations have been conducting their own reform process in 2004/05 extensively.

The fundamental institutional transformation can be enhanced where the following basic factors are considered and exercised properly. These are:-

(a) Strategic performance management (SPM)
(b) Business process reengineering, (BPR) and
(c) Result oriented management system (ROMS)

Integrating those principles in harmony could definitely lead to successful institutional change. Business process reengineering could facilitate accomplishment of institutions' vision and mission by avoiding wastages of scarce resources and precious time.

ESLSC started BPR in 2004/'05 and it is being carried out by all units of the company up to this moment. In light of the above background, the purpose of

this study will, therefore, be to evaluate BPR implementation experience of ESLSC and determine its effect on the firm's performance.

1.2. OBJECTIVES OF THE STUDY

The overall objective of this study is to evaluate the BPR implementation experience of ESLSC with the view to determine its impact on the firm's performance.

The study is specifically designed to seek answer for the following research questions:-

1) What are the compelling reasons for ESLSC to undertake BPR?

2) Has the BPR had performance impact as measured in terms of finical results, customer satisfaction, operational efficiency, innovation and learning?

3) Was the reengineering attempt of ESLSC a radical one or just improvement?

4) Does ESLSC invest on ICT as part of the BPR implementation process?

1.3. SIGNIFICANCE OF THE STUDY

The study will be significant for its contribution:-

- As source of knowledge for future references by people who have interest to gain insight about BPR and business process of a firm engaging in shipping business.
- To research through revealing issues for further research.
- As a guideline for those who will undertake evaluation of BPR implementation experiences of different firms.
- As a baseline data to compare against similar studies to be made in the future.
- To shade light to problem areas and indicate solution ideas for the management.

1.4. RESEARCH METHODOLOGY

1.4.1. The Subjects

The subject of this study were Forty reengineering team members of ESLSC, Seventy employees of ESLSC, and Eighty Five purposefully selected customers of ESLSC.

1.4.2. Data Collection Tools

The study made use of both primary and secondary data sources. While the data from primary sources were collected using three type of questionnaires (see Annex I, II & III), data for secondary source were elicited from documents and literatures on the subject area. Further, interviewing and on the job observation was applied to validate data obtained using the questionnaire survey.

1.4.3 Data Analysis and Presentation

Quantitative data collected through questionnaires are analyzed and interpreted through SPSS (Statistical Package for Social Science). In addition, other data, which are qualitative in nature, are also analyzed and interpreted by using statistical tools such as data tabulation, frequency distribution, percentage, graphs and charts. Once the data are organized and presented, it is then analyzed to form meaning about the research questions and draw appropriate recommendation.

Those data collected through document review are analyzed and interpreted by comparing it with standard literature review to draw appropriate finding, conclusion and recommendation.

1.5. ORGANIZATION OF THE PAPER

This research paper is organized in to four chapters. Chapter one presents the background of the study, ESLSC's BPR implementation, objectives of the study, significance of the study, methodology of the study and organization of the paper. Chapter two provides the literature review. The data presentation and analysis is presented in chapter three. Finally, chapter four discusses findings of the study and the conclusion & recommendations made on the basis of the research findings.

CHAPTER TWO
LITERATURE REVIEW

2.1. EVOLUTION OF MANAGEMENT AND A NEW APPROACH TO WORK

Management is an integral part of Human life and has been evolved and developed along with human development. The basic form of management and organization exist since the beginning of organized human activity. The activities of hunting, gathering and safeguarding the family from attacks are all part and parcel of management and organization.

In mid – 1700s movement from the cottage industry to the factory system has developed and this gives birth to the industrial revolution in Europe especially in England. Further mid – 1800s in America shift from agrarian society to industrial society. The situation in work environment becomes sophisticated and complex and that required modern way of management and organization of job. From the Ministry of capacity building training and coaching material (July, 2007) **[3],** the following evolution of management has been discussed form craft production up to the new era of industrial revolution**.**

2.1.1 Craft production

Craft production refers to the common method of manufacturing technique applied in the pre-industrial world. For example, the production of pottery uses methods of craft production. The time of craft production was largely characterized by limited production /artisanship/; predominantly agricultural economy; limited division of labor, that is, production was relatively simple and, thus, the number of specialized crafts was limited compared to mass production that needs a vast amount of specialized knowledge and skills. Moreover, craft production developed largely in rural communities was also known for its limited variation of social classes. Communications too were limited between human communities in that few had a chance to see or hear beyond their villages (Linden, 1994) **[4].**

2.1.2 Mass Production

Mass production also called flow production, repetitive flow production, or series production is the production of large amounts of standardized products on production lines. It typically uses moving tracks or conveyor belts to move partially complete products to workers, who perform simple repetitive tasks to

permit very high rates of production per worker, allowing the high-volume manufacture of inexpensive finished goods.

In the late 1770s Adam Smith observed two types of production in a pin factory: mass production & a group that divided its work into small, narrow tasks which showed high productivity Hammer and Champy (1993). Thus, Smith (1776) expressed a new Idea: the principle of division of labor. In the famous example of an English pin factory, Adam Smith described the production of a pin in the following way: one man draws out the wire, another straights it, a third cuts it, a fourth points it, a fifth grinds it at the top for receiving the head to make the head requires two or three distinct operations, to put it on is a particular business, to whiten the pins is another ... Making a pin is, in this manner, divided into about eighteen distinct operations. Such high production which gave rise to exporting goods entailed financing, management and distribution systems, which in turn called for sequence of specialists: from jobber-importer-and cotton factor-broke rand commission agent. Rarely did a merchant know both the producer and consumer because of the long chain. (*London, 1994).*

2.1.3 The end of Mass Production and Emerging Reengineering Revolution.

A producer-oriented era called for centralized, segmented organization. Separation in business /division of labor, specialized positions, separate "line" and "staff', and so on/ become challenged in businesses and government agencies. The government reforms used the principles of separation to meet public demands for accountability and honesty. However, such separation led to fragmentation, overlap, and duplication. It tied the hands of bright and committed civil servants and reduced the quality and effectiveness of government programmers that resulted in poor services to customers, who have to put up with delays, shoddy quality, runarounds, and lack of accountability.

Today, globalization along with the key driving forces of change such as **fundamental change in the nature of customer, competition and change, has** created tough environment for organizations that have been working in philosophies and principles of mass production that helped their businesses succeed yesterday which does not fit for today's new world of work. .

During the industrial age of mass production, organizations and companies were built around Adam Smith's brilliant discovery of: 'work should be broken down into its simplest components and be assigned to specialists (the notion of division of labor and specialization)'. The new world requires organizations to build working system that can make them responsive, flexible and customer focus. The fragmentation and

traditional bureaucratic organization of mass production era do not fit to these requirements.

- These new feature of organization (responsiveness, flexibility and customer focus) achieved in new perspective: shift the approach of work from task based to process based thinking. The persistent problems organization faced in the late twentieth century could not be addressed by means of task improvement. So too for organization's today unless they shift their approach to process perspective. Even if there existed efficiency of task with best employees, managers, best rules and efficient working procedures in the organization, that all are nothing because the nature of the organization can not allow them to provide seamless services. The problem lied not on task efficiency but on the business process; i.e. process structure, in other words, how work was organized and done. Therefore, organizations have to make process the center of their attention which entails of closing down the mass production principles and Adam Smith's of two hundred years of industrial history. Any organization that hops to thrive in the twenty-first century must reach the destination of process centering.

- Now, the conclusion above tells us that any organization that hopes to thrive in today's world must shift approach to work and organization to process centering in order to provide seamless services. The key issue raised here is then the way to transform to seamless government and process centering. There are two tools called TQM and Reengineering that could help organizations more lead to process centering. However, it, is critical to understand the different results the tools provide and the timing they are appropriate.

- The two have some important common features: process orientation and begin with customer. However, the two have fundamental difference in essence. TQM is about modifying the process to solve the problem in which it is based on a problem solving centered and the result is incremental change. Reengineering, in contrast, is about beginning again from scratch. Starting over entirely considering how the jobs in the process put together. It entails the fundamental and radical redesign of the business process and replacing the old process with the new superior one, with pursuing new direction, philosophies and perspectives to work and organization.

From the above fact shows us that the world is fundamentally changed. We have seen a dramatic change of work environment in the world. Yesterday, the world was in industrial age with the mass production concept for centuries, but today on high tech and information age society where yesterday's principles and philosophies of doing work and bureaucratic structure doesn't fit for it. Therefore, the new world require paradigm shift before the total quality program comes to support the

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continuous improvement as the incremental kind of change that TQM can offer is incapable of delivering the required performance for business today. The conclusion, Reengineering is not just the best tool, but also inevitable world in order to thrive in business today.

Business process reengineering has raised during the early 1990s as an approach mainly developed by practitioners. It gained prominence in the work of writers such as Davenport and Short (1990) **[5],** Hammer (1990) **[6],** Hammer and Champy (1993), and Harrington (1991) **[27],** The concept is currently very topical and ubiquitous in many organizational, management and information technology literature. Business Process Reengineering is the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical measures of performance Hammer and Champy (1993). In order to bring about a complete organizational transformation, the jobs, organizational structures, management systems, and values and beliefs need to be aligned to the redesigned business processes.

Note that the different forms of change manifestation such as Automation or computerization, downsizing, restructuring, decentralization, outsourcing that organizations has been used to respond the challenge they are falling, even though these all have their advantage in improving organizational efficiency and effectiveness, they are not reengineering as all deal with the existing paradigm unlike in reengineering which starting over from scratch and creating new process design from clean sheet.

2.1.4 Business Process as a rebirth of Scientific Management

BPR was first introduced to the business world by Frederick Taylor when he published his article *The Principles of Scientific Management* in the 1900s. Following on from the earlier ideas of Time and Motion Studies pioneered by Frank and Lillian Gilbreth, Scientific Management was the first step to the introduction of BPR which turned out to be unsuccessful due to the many issues which were not resolved. During Taylor's time, not many knowledgeable workers were employed in the manufacturing workforce, which at the time was the main wealth generator. Scientific Management involved breaking the manufacturing process down to a thoughtless cycle of simple sequences which were to be carried out in the least amount of time possible with the minimum amount of effort. This often raised the factory workers' salaries but also cause the workers to work just as hard in back-breaking manual labor. This practice of improving efficiency in manufacturing often raised the concern of "*dehumanization of the workplace" (Kock, 2002)* **[9].**

The Scientific Management method gave birth to Total Quality Management in Japan after World War II, which eliminated many of the discrepancies that the previous

method of improving the business structure. William Deming and Dr. Joseph Juran helped Japan become a super economic power by taking over market share from North American businesses with quality goods and services. Total Quality Management's main goal is to improve the manufacturing operations.

In the 1990s, Michael Hammer and James Champy introduced their book *Reengineering the Corporation*, which gave birth to the term *business process reengineering*. Michael Hammer once said, "Serving the customer is not a mechanical act but one that provides an opportunity for fulfillment and meaning" (Microsoft, 2004) **[9].**

2.2 BASIC DEFINITIONS OF BPR AND SOME TERMS USED AS SYNONYMIES FOR BPR

2.2.1 Definition of BPR

The term 'reengineering' was first introduced in 1990 in a Harvard Business Review article: Reengineering Work: Don't Automate Obliterate. The article's author was Michael Hammer, a former Computer Science professor at the Massachusetts Institute of Technology. Hammer then went on to develop the concept further in a book: Reengineering the Corporation, written jointly with **James Champy. They provided the following definition:**

"Reengineering is the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service, and speed."

This definition comprises four keywords: fundamental, radical, and dramatic and processes.

Keyword: *Fundamental*

Understanding the fundamental operations of business is the first step prior to reengineering. Business people must ask the most basic questions about their companies and how they operate: Why do we do what we do? and why do we do it the way we do? Asking these basic questions lead people to understand the fundamental operations and to think why the old rules and assumptions exist. Often, these rules and assumptions are inappropriate and obsolete.

Keyword: *Radical*

Radical redesign means disregarding all existing structures and procedures, and inventing completely new ways of accomplishing work. Reengineering is about business reinvention, begins with no assumptions and takes nothing for granted.

Keyword: ***Dramatic***

Reengineering is not about making marginal improvements or modification but about achieving dramatic improvements in performance. There are three kinds of companies that undertake reengineering in general. First are companies that find themselves in deep trouble. They have no choice. Second are companies that foresee themselves in trouble because of changing economic environment. Third are companies that are in the peak conditions. They see reengineering as a chance to further their lead over their competitors.

Keyword: ***Processes***

Process is the most important concept in reengineering. In classic business structure, organizations are divided into departments, and process is separated into simplest tasks distributing across the departments. The preceding order-fulfillment example shows that the fragmented tasks - receiving the order form, picking the goods from the warehouses and so forth - are delayed by the artificial departmental boundaries. This type of task-based thinking needs to shift to process-based thinking in order to gain efficiency. The following example is taken from Hammer and Champy to illustrate the characteristics of reengineering - fundamental, radical, dramatic, and especially process

Thomas H. Davenport (1993) [7], another well-known BPR theorist, uses the term process innovation, which he says ***"encompasses the envisioning of new work strategies, the actual process design activity, and the implementation of the change in all its complex technological, human, and organizational dimensions*****".**

Additionally, Davenport (ibid.) points out the major difference between BPR and other approaches to organization development (OD), especially the continuous improvement or TQM movement, when he states:

"*Today firms must seek not fractional, but multiplicative levels of improvement – 10x rather than 10%."*

Finally, Johansson *et al.* (1993) **[8]** provide a description of BPR relative to other process-oriented views, such as Total Quality Management (TQM) and Just-in-time (JIT), and state:

"*Business Process Reengineering, although a close relative, seeks radical rather than merely continuous improvement. It escalates the efforts of JIT and TQM to make process orientation a strategic tool and a core competence of the organization. BPR concentrates on core business processes, and uses the specific techniques within the JIT and TQM "toolboxes" as enablers, while broadening the process vision*" **[9].**

2.2.2 Definition of Others Terms Used

Business Process Redesign

Business Process Redesign is "*the analysis and design of workflows and processes within and between organizations"* (Davenport & Short 1990). Teng et al. (1994) define BPR as "*the critical analysis and radical redesign of existing business processes to achieve breakthrough improvements in performance measures*" **[11].**

Business Process

Davenport & Short (1990) define *business process* as "a set of logically related tasks performed to achieve a defined business 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" (Davenport 1993). In their view *processes have two important characteristics*:

(i) They have customers (internal or external),

(ii) *They cross organizational boundaries, i.e., they occur across or between organizational subunits. One technique for identifying business processes in an organization is the value chain method proposed by Porter and Millar (1985)* **[11].**

- **Process Orientation of Business**

Process Orientation is a new paradigm for the organization of a business. Instead of the traditional inward-bound functional orientation, which divides the company into functions like sales, production, procurement, and product development, process orientation organizes companies around their processes. The basic idea is, to have everybody in the company in a systematic way better and directly serve the customer, who is at the receiving end of business processes.

Thinking in process management was introduced with the concept of Total Quality Management. Process thinking and managing is at the heart of Business Reengineering. Members of the organization are no longer looking upward into the hierarchy, but ahead to the customers, who ultimately drive the organization. A process orientation can be assessed in basically two ways depending on the degree of change required: Process simplification and Process Reengineering. Simplification usually results in an incremental rather than a major step change. Simplification exercises tend to take for granted an existing framework, the limits of installed Information Technology, as well as current attitudes and behaviors. In contrast Business Reengineering aims at fundamental or frame-breaking change. A reengineering exercise challenges the existing framework,

questions attitudes and behaviors, and might suggest the introduction of new Information Technology. In practice though, simplification and reengineering can overlap and together form the process orientation of an organization (Coulson-Thomas, 1994) **[10].**

- **Process Improvement**

"Process improvement" is a disciplined approach to the simplification and streamlining of processes, using measurements and controls to aid continuous improvement. The notification "continuous improvement," "Kaizen" and "TQM" are all variations of "Process improvement [12].

2.3 RELATION OF BPR WITH OTHER BUSINESS PHILOSOPHERS

IPMS, RQPMS, MBO/MDR, TQM and QMS and BPR

There are a number of management tools and systems from which organizations select (choose) and implement for realizing their respective objectives. A fundamental question may arise in the course of selecting a system or tool? Which tool or system is appropriate for a given organization at a given point in time? In this regard, understanding the differences and similarities that exist in the various management tools and systems becomes pertinent.

It may be prudent to conduct a research to establish what system or managerial technique is appropriate for a given organization. In this process some basic issues related to the following need to be highlighted:

- What does the organization want to achieve?
- What is the cultural aspect of its working staff?
- What is the level of knowledge & skill of its employees?
- What is the capability of utilization of IT systems in the organization?

In this brief literature, however, the discussion is limited to the definition of IPMS, ROPMS, MBO/MDR, TQM and QMS and BPR along with the identification of the salient principles of each. The major differences observed both from theoretical perspective and practice are highlighted.

A) INTEGRATED PERFORMANCE MANAGEMENT SYSTEM (IPMS)

Performance-based management (PBM) or IPMS is a systematic approach to performance improvement through an ongoing process of establishing strategic performance objectives, measuring performance collecting, analyzing, reviewing and reporting performance data, and using that data to drive performance improvement.

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We call it IPMS as it has to be linked/integrated with the strategic plan; linked with the nation wide strategy, integrated from organization to work unit and to employee level.

B) RESULT ORIENTED PERFORMANCE MANAGEMENT SYSTEM (ROPMS)

As per the definition in "Handbook for Measuring Employees Performance", United states office of Personnel Management, Jan 2001,

ROPMS is a systematic process of

- Planning work and setting expectations
- Continually Monitoring performance
- Developing the capacity to perform
- Periodically rating performance in a summary fashion, and
- Rewarding good performance

Though the concept is more or less the same with IPMS/PBM, the advocates of this system refer more on the employee's performance/personnel management, giving little regard for overall organization performance and work unit performance.

C) MANAGEMENT BY OBJECTIVE (MBO) & MANAGEMENT BY OBJECTIVE AND RESULTS (MOR)

Management by objectives (MBO) is a systematic and organized approach that allows management to focus on achievable goals and to attain the best possible results from available resources. It aims to increase organizational performance by a lining goals and subordinate objectives throughout the organization. Ideally, employees get strong input to identify their objectives, time lines for completion, etc. MBO includes ongoing tracking and feedback in the process to reach objectives.(Peter Drucker).

Management by objective and results (MOR) is a further refinement of the MBO process, incorporating a closed-loop approach to ensure that the results achieved do in fact resemble the objectives that were set. Here, management defines in advance the results to be achieved and the action plans required for the achievement of these results.

D) TOTAL QUALITY MANAGEMENT (TQM)

It is a set of systematic activities carried out by the entire organization to effectively and efficiently achieve company objectives so as to provide products and services with a level of quality that satisfies customers, at the appropriate time and prices.

Total Quality Management (TQM) is a comprehensive and structured approach to organizational management that seeks to improve the quality of products and services

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through ongoing refinements in response to continuous feedback. TQM requirements may be defined separately for a particular organization or may be in adherence to established standards, such as the International Organization for Standardization's ISO 9000 series.

TQM can be applied to any type of organization; it originated in the manufacturing sector and has since been adapted for use in almost every type of organization imaginable, including schools, highway maintenance, hotel management, and churches. As a current focus of e-business, TQM is based on quality management form the customer's point of view and are divided into four sequential categories: plan, do, check, and act.

Total Quality Management (TQM) Stands for:

Total = Quality involves everyone and all activities in the company.

Quality = Conformance to Requirements (Meeting Customer Requirements).

Management = Quality can and must be managed.

TQM= A process for managing quality; it must be a continuous way of life; a philosophy of perpetual improvement in everything we do.

E) QUALITY MANAGEMENT SYSTEM (QMS)

According to the definition of International Standard Organization (ISO) in ISO 9000-2000,

> ***"QMS is a management system to direct and control an organization with regard to quality."***

QMS refers to the activities you carry out with in an organization to satisfy the quality-related expectations of customers.

The core of ISO 9000 quality system standard consists of four international standards that provide guidance in the development and implementation of an effective QMS. These core standards are:-

- ISO 9000 : 2000 = Guidelines - QMS principles
- ISO 9001 : 2000 = Requirements - QMS
- ISO 9004 : 2000 = Guidelines - QMS beyond ISO 9001
- ISO 19011 = Guidelines - QMS quality audit

2.3.1 Conceptual Comparative analysis between them

Sr. No.	DESCRIPTION	IPMS	ROPMS	BPR	MBO	TQM	QMS
1	Conceptual focus: performance improvement and better result by:	Integrating & managing plan. performance activities at company, work unit & employee level	Directing employee's performance towards result	Improving, Changing, replacing the existing business process	Allowing management to focus on achievable objectives and goals	Creating organization-wide planning and implementation to improve process towards customer needs	Creating a system to direct and control quality of an organization product or service
2	Basing the strategic planning (SP)	SP is a prerequisite	SP is a prerequisite	Needs to be tied-up with the organization's SP	SP is a prerequisite	SP is prerequisite	Needs to be linked with the organization's SP
3	Specific focus in the SP	Vision, Mission, Strategic (general) objectives, Performance (specific) objectives	Mission; Strategic objectives, goals and activities; Annual objectives, goals, activities and indicators	Vision, Mission, Strategic objectives and goals	Strategic Objectives and goals	Vision, Mission, strategic Objectives and goals	Vision, Mission, Strategic Objectives and goals
4	Involvement, Participation	Management & Worker, Top-Bottom	Management & Worker, Top-Bottom	Management & Worker, Top-Bottom	Management & Worker, Top-Bottom	Management & Worker Bottom -Top	Management & Worker Bottom -Top
5	Approach of the system	Result	Result	Process	Result	Process	Process
6	Orientation focus	Management	Management	Customer	Management	Customer	Customer
7	Level of change	radical	radical	radical	Step by step	Step by step	Step by step
8	Duration of carrying over the	Short	Short	Short	Short	Long	Long
9	Scope of Coverage	Cross-function	Cross-function	Cross-function	Cross-function	With in functions	With in functions

Sr. No.	DESCRIPTION	IPMS	ROPMS	BPR	MBO	TQM	QMS
10	Type of change	Cultural and structural	Cultural and structural	Cultural and structural	Cultural and structural	Cultural and structural	Cultural
11	Standard of implementation	Planned Performance target	Planned Result	Set process with quantity, quality, time and cost	Set objectives at all levels	Set principles	ISO 9001-2000
12	**Measurement**	Plann-Performance data	Plan-achieved result	Statistical records	Statistical records	Statistical records, Audit	Statistical records, Audit
13	**Certification**	Not required	Not required	Not required	Not required	May not be required	Required
14	**Historical emergence**	U.S.A	U.S.A	U.S.A	Europe	Japan	Europe
15	**Implementation quality**	Achieve targeted performance level	Achieve targeted result	Achieve targeted process	Achieve targeted objectives	Achieve Overall quality	Achieve targeted quality
16	External **Stake holder's role**	limited	limited	Moderate	Low	Broader	limited
17	**Conformance Requirement**	tailor - made	tailor - made	tailor - made	tailor - made	Partial tailor - made	ISO 9000- `1000
18	Applicability	Any Organization	Any Organization	As applicable	knowledge based company, MNCs	An_y Organization	Any Organization
19	**Inter-relation ships**	BYR is a requirement, IPMS can be combined with ROPMS	BPR is a requirement, ROPMS can be combined with IPMS	Can serve as an input to all	Can complement IPMS, ROPMS, QMS	Can complement all, TQM can be combined with QMS	Can complement IPMS, ROPMS, MBO,QMS can be combined with TQM

Table: 1 Comparative analysis - Conceptual

2.4 *THE PRINCIPLE OF BUSINESS REENGINEERING*

The principles of Business Reengineering emerged during the early 1990`s. are as follow, (Coulson-Thomas, 1994).

- *Externally, focus on end customers and the generation of greater value for customers.*
- *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.*
- *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.*
- *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.*
- *Think and execute as much activity as possible horizontally, concentrating on flows and processes (including communication) through the organization.*
- *Remove non-value added activities, undertake parallel activities, and speed up response and development times.*
- *Concentrate on outputs rather than inputs, and link performance measures and rewards to customer related outputs.*
- *Give priority to the delivery of value rather than 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.*
- *Network related people and activities. Virtual corporations are becoming commonplace in some business sectors.*
- *Implement work teams and case managers extensively throughout the organization.*
- *Move discretion and authority closer to the customer, and re-allocate responsibilities between the organization, its suppliers and customers.*
- *Encourage involvement and participation. This requires error-tolerant leadership.*
- *Ensure people are equipped, motivated and empowered to do what is expected of them.*
- *Where ever possible, people should assume full responsibility for managing and controlling themselves. This requires planning skills.*
- *Work should be broadened without sacrificing depth of expertise in strategic areas.*
- *Avoid over-sophistication. Don't replace creative thinking with software tools.*

- *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.*
- *Build learning, renewal, and short feedback loops into business processes.*
- *Ensure that continuous improvement is built into implemented solutions. Experience of Business Reengineering can re-awaken interest in TQM (Total Quality Management); both are natural complements. This is widely overlooked.*

2.5 METHODOLOGICAL APPROACH FOR BUSINESS PROCESS REENGINEERING PROJECT MANAGEMENT

There area large number of different project management methodologies available for Business Reengineering. Some are of a more theoretical nature, others are of practical nature.

Manganelli/Klein list and compare eleven important Business Reengineering project management approaches (Manganelli/Klein, 1994) **[15].**

Hess/Brecht published a comprehensive study of fifteen Business Reengineering methodologies (Hess/Brecht, 1995) **[16].** They concentrated on the Information Technology elements of Business Reengineering. They conclude, that next to Information Technology, Teamwork can be considered key to most methodologies. They also concluded that there is no generally accepted way of analyzing and defining business processes.

Based on the above studies of Business Reengineering approaches, the following four representative methodologies from the academic, consulting and user fields are for review.

Source	Methodology
Consultants (Academic Background)	Hammer/Champy
Academics	Davenport
Consultants	Managerial/Klein
Users	Kodak

Table 2: Selected Business Reengineering Methodologies

2.5.1. The Hammer/Champy Methodology

Hammer/Champy popularized Business Reengineering. Hammer, a former M.I.T. professor turned into a consultant, and Champy, president of the world-wide consulting company CSC Index, define Business Reengineering as a fundamental rethinking and radical redesign of mission critical business processes (Hammer/Champy, 1993). Hammer/Champy see poor management and unclear objectives as the main problems to Business Reengineering success. Only just recently they acknowledge people's resistance as a major obstacle to Business Reengineering successful implementation (Davenport, 1996) **[17].** Their Business Reengineering methodology, which was fine-tuned by Champy`s consulting company, breaks into six steps:

Object Steps	Objectives
1. Introduction into Business Reengineering	The CEO initiates the project describes briefly and pragmatically the current business situation to start actions. It introduces the vision to the employees of the company.
2. Identification of Business Processes	This step looks at the broad picture, of how processes interact within the company and in relation to the outside world. One deliverable is a graphical display of all processes.
3. Selection of Business Processes	The third step serves to select such processes , which - once reengineered - will lead to high value for the company's customers. Also processes, which lend themselves to easy reengineering are being selected.
4. Understanding the Selected Business Processes	This step does not dwell on a detailed analysis of the functioning of the selected business processes, rather concentrates on the performance of the current processes as opposed to what is expected from them in the future.
5. Redesign of the Selected Business Processes	The fifth step is according to Hammer/Champy the most creative of all. It is characterized by imagination, lateral thinking and some sort of craziness.
6. Implementation of Redesigned Business Processes	The last step covers the implementation phase of the Business Reengineering project. Hammer/Champy do not talk about implementation as much as about project planning. They believe in the success of the implementation, once the five preliminary steps have been properly performed.

Table 3: The Hammer/Champy Methodology

2.5.2. The Davenport Methodology

Davenport puts Information Technology at the heart of Business Reengineering. For Davenport Information Technology possesses the most important role for innovating Business Processes. Despite his emphasis on innovation and technology, Davenport states, that organizational and human resource issues are more central, than technology issues to the behavior issues that must occur to within a business process. Davenport sees culture as a constraint, when there is a poor process innovation to cultural fit. With

regard to managing the change, Davenport emphasizes traditional management functions, like planning, directing, monitoring, decision making and communicating (Davenport/Short, 1990 and Davenport, 1993).

Davenport is convinced, that Business Reengineering should better integrate with the other non-revolutionary (incremental) process approaches, like Total Quality Management (Davenport, 1996). His methodology covers six steps

Project Steps	Objectives
1 .Visioning and Goal setting	The first step is needed to focus all subsequent actions on company visions and process goals. Cost reduction is considered an important goal, yet Davenport warns against concentrating too much on cost-cutting, because other goals, such as worker satisfaction, reduction of time requirements, and improvement of process performance might be discriminated against.
2. Identification of Business Processes	This step identifies the business processes, which should be reengineered. Davenport advises Business Reengineering teams to concentrate on a few important, not more than 15 core processes.
3. Understand and Measure Processes	The third step studies the exact functioning and performance of the selected Business Processes. This differentiates Davenport from the Hammer/Champy approach. Davenport in particular wants to make sure, that during the process redesign old practices are not being "reinvented" and performance benchmarks for the redesigned processes are being set up.
4. Information Technology	The fourth step serves to study the applicability of Information Technology tools and applications for the newly designed work processes.
5. Process Prototype	This step covers the design of a functioning prototype of the new Business Process. People in the company study this prototype, develop ideas for enhancements and make themselves comfortable with the redesign of their work processes.
6. Implementation	The last step serves to implement the tested prototype on a company-wide basis. Davenport considers this step crucial to the success of the overall effort, since implementation takes roughly double as long (minimum one year) as the foregoing steps.

Table 4: The Davenport Methodology

2.5.3 Manganlli /Klein Methodology

Manganelli/Klein argues, to only concentrate on those Business Processes that directly support the strategic goals of the company and customer requirements. Product development (a knowledge process) is such a preferred Business Process. The see organizational impact, time, risk, and cost as obstacles to success. They claim, Business Reengineering to be more successful than incremental change initiatives, which tend to fail more often (Manganelli/Klein, 1994) **[15].**

The Manganelli/Klein Business Reengineering methodology Rapid-Re (tm), which is supplemented by the Rapid-Re Reengineering Software toolset for Microsoft Windows (tm), breaks into five steps:

Project Steps	Objectives
1. Preparation	The first step asks all directly involved persons to define goals and to prepare for the Business Reengineering project.
2. Identification	This step defines a customer oriented process model of the organisation, as well as selects key business processes for redesign.
3. Vision	The third step serves to define at which performance level the processes currently deliver, and which higher level is required for the future.
4. Re-Design 4.1. Technical Design 4.2. Social Design	This step breaks into two parallel sub-steps The Technical Design deals with Information Technology Design to support the new processes. The Social Design step serves to design new work environments for the people, including organizational and personnel development plans.
5. Transformation	The fifth step is meant to implement the redesigned processes and work environments within the organization.

Table 5: The Manganelli/Klein Methodology

2.5.4 Kodak Methodology

The international Kodak organization developed a Business Reengineering methodology that is being applied to Kodak facilities around the world. Similar to other practitioner approaches, The Kodak methodology has been influenced by Hammer/Champy. The Kodak methodology breaks into five steps (Kodak, 1995) **[18].**

Project Steps	Objectives
1. Project Initiation	The first step is considered key. It covers project planning and definition of all project administration rules and procedures.
2. Process Understanding	This step sets the project team up, designs a comprehensive process model for the organization and assigns process managers, who will be responsible for the redesigned process after implementation.
3. New Process Design	The third step covers the redesign of selected Business Processes, taking into account the potentials of Information Technology. This step ends with the planning of a Pilot Implementation of the redesigned processes.
4. Business Transition	The fourth step is focused towards the implementation of the newly designed processes within the organization. Part of this step is the adaptation of the organization's infrastructure to the requirements of the newly designed processes.
5. Change Management	The last step is being performed parallel to the first four steps. The project team handles barriers, which crop up during the course of the Business Reengineering project.

Table 6: The Kodak Methodology

2.5.5 *Comparison Of Selected BPR Methodology*

The four representative methodologies assume that Business Reengineering projects are being initiated by top-management and carried out by specially formed project teams. Business Reengineering projects are typically not considered collaborative efforts, but rather top-down power driven projects. The General Accounting Office studied "*all available Business Reengineering methodologies and came to the conclusion, that all of these can be structured into three steps"* (General Accounting Office, 1995) **[19]** of Business Reengineering project management.

	Step 1: Project Preparation	**Step 2: Redesign of Processes**	**Step 3: Implementation**
Hammer/Champy (Consultants / Academics)	1. Introduction 2. Identification 3. Selection	4. Understanding 5. Redesign	6. Implementation
Davenport (Academic)	1. Visioning and Goal setting 2. Identification	3. Understand and measure 4. Information Technology	5. Prototyping 6. Implementation
Manganelli/Klein (Consultants)	1. Preparation 2. Identification	3. Process Vision 4a. Technical Design 4b. Social Design	5. Transformation
Kodak (Users)	1. Project Initiation 5. Change Management	2. Understanding 3. New Process Design 5. Change Management	4. Business Transition 5. Change Management

Table 7: Comparison of Selected Business Reengineering Methodologies

The comparison of the four selected methodologies shows many similarities. First, the overall approach Business Reengineering projects take is of a linear nature. Further, Business Reengineering projects take a similar route as Information Technology implementation projects. Within the three consecutive steps, the individual approaches differ in the scope of project preparation. Davenport asks for a complete preparation including visioning, whereas the other methodologies contrast by hands-on approaches right from the project start. Davenport, Manganelli/Klein and Kodak also address the people side of Business Reengineering, but only as far as implementation issues are concerned.

Taking the conclusion further, and applying it to the sources of existing methodologies, then consultants appear to see Business Reengineering as yet another systematic and marketable approach for fast and cost-efficient implementation of planned change. Technically oriented academics take a broader view, yet shy away from really integrating

social psychology into their linear approaches, because this might be considered non-scientific by colleagues. Users prefer an eclectic approach. They take proven elements both from consultants and academics and apply them as needed.

2.6 WHO NEEDS BPR?

Hammer & Champy (1993), in their book REENGINEERING THE COPORATION identified three kinds of companies that undertake reengineering.

a) **Are companies that find themselves in deep trouble**?

They have no choice.

- If a company's costs are an order of magnitude higher than the competition's or than its business model will allow,
- If its customer service is so week that customers openly complain against it,
- If its product failure rate is twice, three times, or five times as great as the competition's,
- If, in other words, it needs order-of-magnitude improvement, that company clearly needs business reengineering.

b) **Are companies that are not yet in trouble but whose management has the foresight to see trouble coming**?

For the time being, financial results may appear satisfactory, but looming in the distance are storm clouds new competitors, changing customer requirements or characteristics, an altered regulatory or economic environment that threaten to sweep away the foundations of the company's success. These companies have the vision to begin reengineering in advance of running into adversity.

c) Company undertaking reengineering are those that are in peak condition.

They have no discernible difficulties, either now or on the horizon, but their managements are ambitious and aggressive.

2.7 WHAT REENGINEERING IS NOT?

Hammer & Champy (1993), in their book **REENGINEERING THE COPORATION** note the following forms and manifesto of change programs that are different from reengineering:

a) Reengineering is not automation or computerization

It is true that

- Computerization can speed work up.
- Automation can faster jobs accomplishment.

But What is different?

- Fundamentally the same jobs are being done within the existing system. The old system improved to make things better. But, no fundamental improvement in performance.
- Automating existing processes with information technology does not provide the break through performance because you are automating or computerizing the old system.
- Automation simply provide more efficient way of doing the wrong kind of things or, if your processes are inefficient and not customer focused, automating them will allow you to work inefficiently more quickly. Therefore, automation or computerization does not mean reengineering. Reengineering is innovation, crating new system of work. Automation is fixing the existing system to work faster.

b) Reengineering is not restructuring or downsizing

- Restructuring or down sizing has relevance with reducing capacity to meet current, lower demand.
  - Reduce size to match the demand at time of fewer markets. It means doing less with less. However, reengineering mean doing more with less.
- Downsizing reduce costs by getting rid of people and jobs, reengineering reducing cost by eliminating non value-adding activities, non-value adding steps, stages, and hand offs and non-value adding rules and procedures.

c) Reengineering is not reorganizing, delivering or flattering an organization.

- Although, reengineering produce flat organization, simply delivering or flattening an organization doesn't mean doing reengineering.
  - The key issue is on process structure, not organizational structure.
  - The problem facing organizations do not result from their organizational structure, but their process structures.
  - Bureaucracy is not a problem. For the last two hundred years bureaucracy has been the solution to being glue that holds traditional organization together. If there was no bureaucracy, chaos will result. The underlying problem that

bureaucracy has been and remains a solution is that of fragmented process. The way to eliminate bureaucracy and fatten the organization is by reengineering the processes so that they are no longer fragmented. Then the company can manage nicely without its bureaucracy.

d) Reengineering is not quality improvement, Total Quality Management (TQM)

- It is true that quality programs and reengineering shares a number of common themes.
  - They both recognize the importance of processes.
  - They both start with the needs of the process a customer. - However, the two program fundamentally different.
  - Quality program work within the framework of the organization's existing processes to make them better.
  - It is incremental improvement to process performance.
- **Reengineering is:**
  - Breakthroughs, not enhancing existing process but discarding them and replacing them with entirely new ones.
  - Beginning again with a clean sheet of paper
  - Inventing new approaches to process structure.
  - Rejecting the assumptions inherent in Adam Smith's industrial paradigm (division of labor, hierarchical control) and search for new models of organizing work
  - Reengineering is a new beginning.

e) Reengineering is not decentralizing or outsourcing

- The objective of outsourcing is to reduce costs (the market can perform more efficiently).
- Reengineering have no assumption (old thought); but determining what the organization need to do and the best way to do it.
- Decentralization has advantage to reduce costs of bureaucracy and centralization by devolving power and authority so that the decentralized entity able to make decision, find solution for local problem by themselves rather than waiting

center. However, it doesn't mean providing breakthrough performance, it entails the existing system doing better (it exist with old system).

- Decentralizing might mean sending down the inefficient, problematic... System procedures, rules, etc to let they use of these. It is pouring soured wine into new bottles'

f) Reengineering is not about incremental change, but step change, dramatic change

- Reengineering is not about making incremental improvement in performance (e.g. 5% reduction of cost, 10% sales increment) but is about achieving quantum leaps in performance (e.g. 5 times cost reduction, 10 times sales growth)

- The hallmark of Reengineering is achieving a dramatic break through performances in cost reduction, quality, service level, speed of delivery, etc. **[3].**

2.8 FUNDAMENTAL TECHNIQUES AND TOOLS FOR GETTING REENGINEERING

Hammer & Champy (1993), in their book REENGINEERING THE COPORATION emphasizes the following roles emerge, either distinctly or in various combinations, during the implementation of reengineering. To create conducive environment by embracing more change agents in the reengineering effort, the leader organizes a governance structure for the project consisting of:

- The Reengineering Leader,
- Process owner,
- Reengineering Team,
- Reengineering Czar and
- Steering Team (optional).

2.8.1 The Leader

A reengineering leader is a senior executive who authorizes and motivates the overall reengineering effort. The leader is the primary or key ingredient for reengineering to happen. This is so because reengineering succeeds when driven from the top most level of an organization (Hammer and Stanton, 1995) **[20].** Therefore, the active engagement and commitment of top management is critical for the reengineering to happen. Without top-down leadership, reengineering failure is a foregone conclusion. Undertaking reengineering in this situation is a deceptive exercise and a fatal mistake. The likely attempt by other bodies (teams), in absence of the top level leadership is a fatal exercise hence no reengineering will actually happen.

The tools of Reengineering Leader

The tools that the leader uses are so essential in discharging his/her responsibilities and achieve the revolution required. These tools include: Signal, explicit communications; symbol, personal behavior; and system, measurements and rewards (Hammer and Stanton, 1995).

Signals are the explicit massages that the leader sends to the organization about reengineering. That is communicating about the reengineering program: what it means; why we are doing it; how we are going to do it; what it will take etc. Communication is not a one-time task or limited to only to the unfreezing phase, it should be undertaken continuously. Constant repetition of reengineering message is essential to make people understand it and being part of it. It is important to note here that communication must be simple. The basic concepts must be conveyed clearly and concretely. It must be dramatic and exciting and of course has to be able to show the urgency of the project.

Symbols are actions that the leader performs to reinforce the content of the signals, to demonstrate that he lives with his words. The leader's acts as important symbolic activities are demonstrated through assigning the company's best and brightest to reengineering teams; and rejecting design proposals that promise only incremental improvement; removing managers who block the reengineering efforts. The leader must display the depth of his personal commitment to the effort by having contact with the team, coaching and advising; by authorizing them to break the rule and publicly honoring those who have become creative. The reengineering leader has to prove to the organization that he/she is serious about the transformation and change is inevitable.

System means the organization's management system by which people are measured and rewarded. Management systems are key instruments to shaping the attitude and behavior of people; and giving life and reality for the value required to develop in the reengineered company. Speeches need to be supported by management systems, that is, the system should reward good performers and encourage people to engage in new innovation. Generally, a leader is a senior executive who has a great conviction on reengineering and sponsors the process. He/she is the one who can turn the organization inside out acting as the primary change agent in the organization.

2.8.2 Process owner

A Process owner is one responsible for reengineering a specific process. The owner should be a senior-level manager, who carries prestige and reputation, credibility, and clout (power/influence) within the organization. As leader's job is to make reengineering happen in the large, process owner's job is to make it happen in small, at the individual process level. An owner along with leader assembles a reengineering team. A process owner motivates, inspire, and advices the team. Process owner acts as the team's spokesman and liaison. Moreover, he works with other process owners to ensure that the processes are compatible and integrated. The process owner's job will not end when the reengineering project is completed. He/she stays with the project throughout the design and implementation phases. In process - oriented organization, it is process, not function that will form the bases of organizational structure. Therefore, every process will continue to need an owner; processes would have owners.

2.8.3 Reengineering Team /Design Teams

Reengineering teams are the second key ingredients next to the leader in making reengineering happen. Each process team in charge of one process at a time does the actual work of reengineering. Each member works as a team not as group and the size of the teams could be between five to ten people. They are experts that others have trust in them and act as key agent for conveying the others in the organization.

Reengineering work is not a part-time assignment rather a full time work. Hence, organizations should assign team members 100% to the project, do not stretch them with other assignment and commitments. This is one of the powerful signals for the organization for committing reengineering. The teams prepare high level maps of the current processes and identify the overall cycle time and satisfaction or frustration of the customers. They reinvent the business processes by producing breakthrough changes through breaking assumptions using whacko ideas, benchmarking etc.

The teams are composed of insiders and outsiders. Insiders are people currently working inside the process undergoing reengineering. These should the best and the brightest, the company's rising stars. They are people who have full knowledge of the process undergoing reengineering and have credibility with the workers. Outsiders' also known as disruptive elements for they give a different perspective are people outside the process undergoing reengineering. These people could be within the organization or outside -the--organization. It is good to look at outsiders from departments of such as: engineering, information systems, and marketing.

An organization that does not have the right people for outsiders, must go outside the company, and use consulting firms. Experiences show that teams that consist of only insiders are likely to produce only incremental improvement, as they might be biased and confused with the existing system and tend to recreate what already exists. They remain within the frame of the existing process. As they are in the system, they are already familiarized and accustomed with it and do not break it. But outsiders will bring different ideas, can make waves in the team, they tends to take risks.

A reengineering team has no official head but a captain/first among equals/ usually nominated by the group members. However, the process owner is their client. The members should remain on the team at least through implementation of the first field pilot site.

2.8.4 Reengineering Czar /Chief of staff/

The reengineering leader needs strong staff support to realize the reengineering effort. Of the people who give support to the leader, the Reengineering Czar is one and if necessary could be a group of people. He/she plays a pivotal role in the overall reengineering project. The czar who serves as the leader's chief of staff for the reengineering has two distinct functions. One is just supporting each individual process owner and reengineering team by obtaining and allocating resources and giving technical advice to process owners and teams. The other is playing a crucial role in coordinating the all ongoing reengineering activities by helping select high-quality people for the reengineering team, keeping a watchful eye on process owners to keep them on track, moderating discussions among process owners, helping how teams can coordinate their works/if there is a need for/, anticipating the infrastructural needs and meeting them before hand. However, sometimes the Czar is seen becoming a problem by becoming too controlling person forgetting that the leader and process owner are in charge. Thus, organizations must guard against these possibilities.

2.8.5 Steering Committee / Team

The steering team consists of senior managers and process owners chaired by the reengineering leader. It is a policy-making body that articulates and develops the organization's overall reengineering strategy, and monitors the progress. The steering team decides on which business process should be reengineered first and the required resources.

The team also deals with the problems that are beyond the process owners and reengineering teams. What is more, it hears and resolves conflicts that could arise among process owners.

Forming steering team could be optional at an organization level; however, it appears essential at all levels for coordinating the reengineering effort,

2.9 COMMON STEPS WHEN PERFORMING BPR

Successfully perform BPR can be grouped into seven steps, or phases**.** All successful BPR projects begin with the critical requirement of communication throughout the organization. (Michael Covert, (1997) **[21].**

2.9.1 Phase 1: Begin Organizational Change

Activities:
- Assess the current state of the organization
- Explain the need for change
- Illustrate the desired state
- Create a communications campaign for change

The first step is to take a long, hard look at how the organization operates. The focus of this examination is on the operating procedures and the bottom-line results that are generated by them. The purpose of performing the analysis described below is to determine whether dramatic change by doing BPR is really necessary. It may be that only marginal change (the result of Continuous Process Improvements, Total Quality Management, and other similar programs) is needed -- which would expose the change initiative and the organization to much less risk.

Aspects of the business that need to be evaluated are: how things are currently done, what changes may be occurring, and what new circumstances exist in our business environment. Next, a look at how certain operating procedures within the organization has caused or will cause irreparable damage to the company's livelihood. What is the source of the organization's concern? Maybe the demands of the marketplace are shifting. Perhaps competitors have made significant advancements in products and services. Regardless of the reasons, it should be clear whether or not the organization, in its current state, is able to meet the needs of the markets it serves. The consequences of inaction should be identified and well understood. In most cases, these consequences are the loss of jobs by shutting down portions of the business, or perhaps the entire business. Finally, the proper future direction of the organization should be decided. The future "vision" of how the business must operate will serve as a clear and concise guide with measurable goals for employees to focus on.

If an organization wishes to change the way it operates, it must turn to its people to make it happen. People are the agents of change. Creating business plans and strategies are important, but they are only tools to guide the actions of people.

Because BPR can potentially require significant changes throughout an organization, it must begin with a communications campaign to educate all those who will be impacted by this change. Communication to all levels of personnel must remain active from start to finish keeping everyone involved and working towards a common goal. Without a common understanding about what is happening, confusion and uncertainty about the future can result in resistance strong enough to stop any reengineering effort. BPR is most effective when everyone understands the need for change, and works together to tear down old business systems and build new ones.

In order for change to be embraced, everyone must understand where the organization is today, why the organization needs to change, and where the organization needs to be in order to survive.

2.9.2 Phase 2: Build the Reengineering Organization

Activities:
- Establish a BPR organizational structure
- Establish the roles for performing BPR
- Choose the personnel who will reengineer

An infrastructure must be established to support reengineering efforts. Although this phase consists of only a few tasks, it has a tremendous impact on the success of a BPR endeavor. Who are the people that will be chartered to reengineer the business? What will their responsibilities be? Who will they report to? These are the questions that must be answered as the reengineering staff is gathered together to communicate, motivate, persuade, educate, destroy, create, rebuild, and implement.

One of the most important members of the reengineering effort is the *executive leader*. The leader must be a high-level executive who has the authority to make people listen, and the motivational power to make people follow. Without the commitment of substantial time and effort from executive-level management, most BPR projects cannot overcome the internal forces against them and will never reach implementation.

A *process owner* is responsible for a specific process and the reengineering effort focused on it. There should be a process owner for each high-level process being reengineered. Allocating the responsibility of a process to a specific person ensures that someone is in charge of how that process performs. Process owners are usually appointed by the executive leader.

The process owner convenes a *reengineering team* to actually reengineer his or her process. The team dedicated to the reengineering of a specific process should be made up of current insiders, who perform the current process and are aware of its strengths and

weaknesses, along with outsiders who can provide objective input to spark creative ideas for redesign. The team should be small, usually five to ten people. Since they will be the ones who diagnose the existing process, and oversee the redesign and implementation, they should be credible in their respective areas. This qualification plays an important role in reducing the resistance by company personnel to the new process.

In some BPR initiatives it is helpful to institute a *steering committee.* Especially in larger or multiple reengineering projects, a steering committee can control the chaos by developing an overall reengineering strategy and monitoring its progress.

Lastly, a *reengineering specialist* can be an invaluable addition to the overall effort. A reengineering specialist can assist each of the reengineering teams by providing tools, techniques, and methods to help them with their reengineering tasks.

2.9.3 Phase 3: Identify BPR Opportunities

Activities:
- Identify the core/high-level processes
- Recognize potential change enablers
- Gather performance metrics within industry
- Gather performance metrics outside industry
- Select processes that should be reengineered
- Prioritize selected processes
- Evaluate pre-existing business strategies
- Consult with customers for their desires
- Determine customer's actual needs
- Formulate new process performance objectives
- Establish key process characteristics
- Identify potential barriers to implementation

In this phase, it begins to break away from normal patterns of identifying business opportunities. it start by dividing the entire organization into high-level processes rather than the usual vertical business areas such as marketing, production, finance, etc. These processes, usually less than a dozen, are the major or core processes of the organization. This activity is not a time consuming task, but it is difficult because it requires a shift in how we think of ourselves. One goal here is to identify the process boundaries (where the process begins and where it ends), which will help set the project scope for those processes that are to be reengineered.

At this point, it is helpful to begin thinking about potential *change levers* which may lead to dramatic changes in the organization's processes. Change levers usually will fall under one of three categories: the use of information, the use of information technology, and human factors. What new information is available and easily accessible to the organization? What new technologies have recently been introduced, or are on the horizon, that can change how businesses and customers interact? What new ways of structuring cross-functional work teams, compensation systems, and incentive methods have proven to be effective in improving operations within other organizations? In many instances, a modification in one of these areas requires changes in the other two areas to be the most effective.

Once the major processes have been defined, it needs to decide which of high-level processes needs to be reengineered. The most objective and accurate way is to compare the performance of high-level processes, identified earlier, with the performance of competitors as well as organizations outside of industry. Even if it outperforms the direct competition, there may be companies in other industries which may be much more effective in performing a similar task -- such as order fulfillment or product development. If we fulfill orders in six months, while a competitor fulfills orders in two weeks, It may consider this a process that needs to be reengineered. What it look for here are overall, bottom-line performance metrics for the high-level processes that will help us select which of these processes to reengineer. Typically, organizations use the following three criteria: **Dysfunction** (which processes are the most ineffective), **Importance** (which processes have the greatest impact on our customers), and **Feasibility** (which processes are at the moment most susceptible to accomplish a successful redesign, or which ones are the "low hanging fruit" as many experts call them). Picking the "low hanging fruit" can show quick success and help build the much needed momentum and enthusiasm at all levels of the organization. Prioritizing the processes chosen to reengineer guides in scheduling the order of reengineer these processes.

Going after the highest priority process first, it is to be assessing the preexisting business strategy which governed its component tasks. Most likely, this existing business strategy is not focused on driving a process; therefore, it has to be defining a new process strategy to reflect the new strategic goals for the process. Process customers are an important source of information to help set the new direction. It must consult with them to not only discover their desires, but also to find out what they *actually need* by watching what they do with the output. Process goals and objectives can be determined by combining customer needs with competitor benchmarks and "best of industry" practices (metrics on the best performers of a similar process in other industries). In addition to goals and objectives, it needs to complete the conception of the new process by identifying key performance measures, key process characteristics, critical success factors, and potential barriers to implementation.

2.9.4 Phase 4: Understand the Existing Process

Activities:
- Understand why the current steps are performed
- Model the current process
- Understand how technology is currently used
- Understand how information is currently used
- Understand the current organizational structure
- Compare current process with the new objectives

Now that it is known which process to reengineer, it need to take a look at *why* currently perform the process the way it dos. *Understand* is a key word here. It may not need to scrutinize every detail of how it is performing the process -- this effort has the potential to go on indefinitely, sometimes referred to as *analysis paralysis,* which can weaken the momentum needed to carry the project all the way to implementation. What it needs to do is *understand* the underlying reasons why the existing process is carried out the way it is, so that it can question those assumptions during reengineering sessions later on. When we have the new process objectives clearly defined (in *Phase 3*), it can measure the existing process in terms of the new objectives to see where it is and how far it has to go.

Modeling the current process is an important part of this phase. It not only helps to better understand the existing process, but also helps with planning the migration from the old to the new process and executing the physical transformation of personnel, organizational structures, information requirements, and how technology is used. Information that should be included in the models are process inputs (such as task times, data requirements, resources, demand, etc.) and process outputs (such as data outputs, cost, throughput, cycle time, bottlenecks, etc.).

Understanding how and why the current processes use information is also important. Do staff members have access to essential information? Are some business areas wasting time and effort by creating duplicate information when it can be shared across organizational boundaries? Why is technology used to support some tasks and not others? How effective are the current interfaces? Are they easy to use, or are they counter-intuitive and thus inhibit the *effectiveness* of current tasks? In what way does the existing process take advantage of technology, and in what way has technology imposed artificial restrictions? it need to end up with an estimate of the current cost, robustness, and functional value of each technology and information systems currently being used.

2.9.5 Phase 5: Reengineer the Process

Activities:
- Ensure the diversity of the reengineering team
- Question current operating assumptions
- Brainstorm using change levers
- Brainstorm using BPR principles
- Evaluate the impact of new technologies
- Consider the perspectives of stakeholders
- Use customer value as the focal point

During this phase, the actual "reengineering" begins. It has to be moved from strategy and analysis phases into the redesign phase. The Reengineering Team that was formed to take part in the reengineering sessions should consist of designers and implementers, including people well versed in technology. These team members should come from both inside and outside the existing process.

The "inside" perspective may reveal information about the existing process that was not uncovered in Phase 4. Having people who will be the future *process owners*, or those responsible for the new process, is a critical component of the Team. Including the future owners will help to ensure that the reengineered process succeeds once it is implemented.

Equally important is the "outside" perspective of someone who will look at the process with a "fresh eye" and raise questions about operating assumptions that may not be obvious to the insider who might be too close to the process to see this.

Lastly, a technologist will provide insight as to how technology can be applied in new and innovative ways. In other words, the technologist will help to visualize how the process can be performed outside the boundaries of the current implementation. Including both outsiders and technologists on the team will help spark "out-of-box" thinking (thinking creatively above and beyond the current restrictions - the walls of the box).

Having developed a good understanding of how the existing processes work in the previous phase, it is now necessary to question the operating assumptions underlying the processes. Is there some (outdated) historical reason why a process has been performed a certain way? Are there customer requirements that dictate the steps in a process? Many times the operating assumptions can be thrown out and new ones developed. However, it is important to evaluate the impact the assumptions have outside the process in question.

The Reengineering Team is now tasked with brainstorming to create new process ideas. According to *Hammer*, brainstorming sessions are most successful when BPR principles are considered.

BPR Principles:

- Several jobs are combined into one;
- Workers make decisions;
- The steps in a process are performed in a natural order;
- Processes have multiple versions;
- Work is performed where it makes the most sense;
- Checks and controls are reduced;
- Reconciliation is minimized;
- A case manager provides a single point of contact;
- Hybrid centralized/decentralized operations are prevalent.

-- Dr. Michael Hammer

For example, hybrid centralized/decentralized operations encourage the formation of cross-functional workgroups. Ideally, the Team will identify those processes which should be centralized (because those processes are of value across the enterprise) as well as the processes which are of value to a specific group within the organization. A company might maintain a customer database on a centralized system, but it would provide data for a variety of processes throughout the organization such as sales, purchasing, or accounts receivables.

During the brainstorming sessions, the Reengineering Team must also consider new technologies. They will need to evaluate the impact of new technology on the process. Technologies that are often considered enablers of reengineering include: distributed computing platforms, client/sever architectures, workflow software, and application development tools.

The Reengineering Team should also search for uses of new information as well as new ways to use existing information. The reengineered process may enable the organization to collect data that was not gathered before, thereby bringing new knowledge into the process to help in decision making. Another benefit is the sharing of data across the organization to eliminate redundancies in data storage and increase internal communication.

The act of reengineering a process may require evaluation of the organizational model and the management strategy. A newly formed cross-functional workgroup will not fall neatly into a traditional hierarchical management structure. In addition, this workgroup will most likely require new measurement systems and reward programs. Changes in the infrastructure can also have an impact on corporate values and belief systems. It may be found at this stage that a new process simply will not fit into the current organization without a new process-oriented organizational structure.

Lastly, the Reengineering Team must consider all process stakeholders in the redesign of a process. Stakeholders are those whose actions impact the organization, and those who

are impacted by the organization's actions. Stakeholders include both those internal to the process and those external to the process. External stakeholders may not be concerned with how a process is performed but they are certainly concerned with the output of the process if they are the recipients.

Throughout this phase, the Team must consider the impact on external processes that interact with the reengineered process. Does the implementation of client/server architecture have an effect on another process? Will that process need to be reengineered also? Reengineering cannot be performed in a vacuum. However, it cannot be performed on all processes simultaneously either.

2.9.6 Phase 6: Blueprint the New Business System

Activities:
- Define the new flow of work
- Model the new process steps
- Model the new information requirements
- Document the new organizational structure
- Describe the new technology specifications
- Record the new personnel management systems
- Describe the new values and culture required

Blueprints are detailed plans required to build something in accordance with the designer's intentions. In BPR, blueprints must be created to identify all the necessary details of the newly reengineered business system and ensure it will be built as intended. This phase of the project takes the reengineered process developed in the previous phase, and provides the details necessary to actually implement it.

Blueprinting involves modeling the new process flow and the information required to support it. Just as we modeled the "as is" process and information requirements in *Phase 4*, it need to create "to be" models to illustrate how the workflow will be different. The information models, or data models, will indicate where the new process will use information that is shared across functional areas of the business.

The blueprints should also contain models of the redesigned organizational structure. Instead of the traditional organization chart, a different kind of chart is needed. This chart will show the new process flow along with the process team members, the process owners, the case managers, the process facilitators. The chart should also indicate parts of the organization which interact with the process personnel.

In addition, detailed technology specifications required to support the new process should be defined. Although minor changes, or fine tuning adjustments to the technical configuration will probably occur during the implementation phase, an initial physical

description of the technologies used and their physical specifications should be recommended in this phase, to set the stage for rapid application development.

Included in the blueprints should be the new management systems and values or belief systems of this redesigned area of the business. New management strategies, along with new ***performance measurements, compensation systems, and rewards programs should be outlined.*** The reengineered process may require a change in the ***values or belief*** systems of the company. The redesign may require an entirely different *culture*, or atmosphere, than what is prevalent in the organization today. It is critical to have these areas, and their responsibilities, defined as we go into the implementation phase.

2.9.7 Phase 7: Perform the Transformation

Activities:
- Develop a migration strategy
- Create a migration action plan
- Develop metrics for measuring performance during implementation
- Involve the impacted staff
- Implement in an iterative fashion
- Establish the new organizational structures
- Assess current skills and capabilities of workforce
- Map new tasks and skill requirements to staff
- Re-allocate workforce
- Develop a training curriculum
- Educate staff about the new process
- Educate the staff about new technology used
- Educate management on facilitation skills
- Decide how new technologies will be introduced
- Transition to the new technologies
- Incorporate process improvement mechanisms

Now it is ready to transform the organization. It has to be communicated, strategize, analyzed, reengineered, and blueprinted the ideas for the new process. This is where all of the previous efforts are combined into an actual business system – something that can be seen and feel and use to enable the organization to meet the market demands of today and tomorrow.

The first step in transforming the organization is to develop a plan for migrating to the new process. It needs a path to get from where the organization is today, to where the organization wants to be. Migration strategies include: a full cutover to the new process, a phased approach, a pilot project, or creating an entirely new business unit. An important

point to consider is the integration of the new process with other processes. If only one process is reengineered, then it must interact with the other existing processes. If multiple processes are slated for reengineering, then the new process must not only integrate with existing processes, but also with the newly reengineered processes that will come on line in the near future; therefore, the implementation of the new process must be flexible enough to be easily modified later on.

Successful transformation depends on consciously managing behavioral as well as structural change, with both sensitivity to employee attitudes and perceptions, and a tough minded concern for results. BPR Implementation requires the ***reorganization, retraining, and retooling*** of business systems to support the reengineered process.

The new process will probably require a new organization, different in structure, skills, and culture. The new management structure should result in the *control* paradigm being changed to the *facilitation* paradigm. The new process team structure should result in the *managed* paradigm being changed to the *empowered* paradigm. Once the new structures are established, it should map tasks in the process to functional skill levels, and ultimately to workers.

Transforming the workforce will require an array of activities. It begins with an assessment of the current skills or capabilities of the workforce to include soft skills, operational skills, and technical skills. This inventory may require personal evaluations (including areas of interest), peer evaluations, and supervisor evaluations. Feedback should be provided to all personnel to ensure accuracy of current skills and interests for all staff. Armed with the new process skill requirements and a current skills inventory, the gaps can be assessed. Is the new process feasible with the current skill set? Which are the areas to focus on to enhance personnel skills to meet the requirements of the new process? An education curriculum needs to be established to get all employees educated on the business and, most important, on how their jobs relate to the customer.

An educational pyramid is an effective way to transfer knowledge of team building, self mastery, and subject matter knowledge. Systems training are essential to understanding the use of new information systems and how to take advantage of their capabilities. Process training may be needed to help employees think beyond a linear process to a more holistic interdependent process. Facilitation training for management is critical to develop their abilities to listen, allow mistakes, handle disputes among process experts, and transition to a *coach/facilitator* role. Education may be necessary for Total Quality Management (TQM), Statistical Process Control (SPC), or Continuous Process Improvement (CPI) if these mechanisms are designed into the new processes. Finally, a structured on-the-job training (OJT) program is instrumental in providing continuity of the new process during periods of personnel turnover or attrition.

As with any dramatic change, people will have personal difficulties, to varying degrees, with the paradigm shift that has taken place. Almost all new process implementations are surrounded by confusion, frustration, and sometimes panic. The best transition strategy is one that minimizes, as much as possible, the interference caused to the overall environment. Attempts should be made to keep the new process chaos to a controlled level, to maintain the focus of the reengineering team and the faith of the employees.

Transforming information systems to support the new process may involve retooling the hardware, software, and information needs for the new process. One approach to this transition could be a *controlled introduction*. The method would ensure that each part of the system is operational for a segment of the business before going on to the next module to implement. Although the risk may be low while the bugs in the new system are ironed out, it may be difficult to integrate the hybrid old/new systems in a step-wise manner. The *flash cut* approach is where the entire system is developed in parallel to the existing system, and a complete transition occurs all at once. This may put the organization at a higher risk if the systems do not function properly at first, but it is the more common approach due to the "all-or-nothing" nature of BPR. Most reengineered processes function in an entirely different manner than existing processes; thus, a step-wise introduction would, most likely, not be fully functional until all steps were introduced anyway. An important reason to justify the flash cut approach is that the reengineering benefits can be realized much sooner than with a controlled introduction.

Transitioning the information used to support the old process to become useful in the new process involves reducing some requirements while expanding others. Usually 30 to 40% of the old information can be discarded because it was administrative data needed to tie the old disjointed, linear processes together. On the other hand, the old systems may have poor data integrity, incorrect data, or insufficient data to support the new business needs. In these cases the data must be expanded to fill the gaps in the existing data and supply the new information requirements of the reengineered process. The information blueprints help manage the development of the new information systems.

The thoughts of management experts, the experiences of management consulting firms, and the research conducted by academicians have resulted in the methods and procedures outlined in this document. In order to establish the *dramatic change*, it requires to have *dramatically* increase chances of successful BPR. The phases and activities described here must be considered, as a minimum, when attempting to *successfully* plan and perform Business Process Reengineering.

Source:http:/www.ies.aust.com/~visible/papers?BPR.html

2.10 PERFORMANCE MEASUREMENT IN THE PROCESS OF BPR

Performance measurement is, according to PBM SIG, *"... the ongoing monitoring and reporting of program accomplishment, particularly towards reestablished goals"* **[22].**

Generally, it analyzes the success of an organization, work-unit or individual's efforts comparing data on what actually happened to what was planned or intended.

Different authors give definitions which, if not for the wording, mean the same thing.

Most of them seem to revolve around: "*Systematical collection and reporting of information that track resources (input) used, work produced (process) and results (output/outcome) achieved."*

Performance measurements are important for, among others, the following:

- Enable organizations to know the extent to which they satisfy their customers;
- To understand one's process;
- To base decision on facts;
- To identify improvement points;

Here will be some of the performance measurement tools used to evaluate the business process reengineering:

2.10.1 The Balanced Scorecard

The BSC intends to reflect the necessity of balance between the traditional financial perspective and the three non-financial elements of customers, internal business processes and innovation/improvement. BSC translates an organization's mission and strategy into a comprehensive set of performance measures to provide the necessary framework for a strategic measurement and management system (Kaplan & Norton, 1996) **[23].** The BSC enables companies to track short-term financial results while simultaneously monitoring their progress in developing the capabilities and acquiring the intangible assets that generate growth for future financial performance.

According to Kaplan & Norton, an effective strategic learning process requires a shared strategic framework that communicates the strategy and allows all participants to see how their individual activities contribute to achieving the overall strategy. The BSC provides a representation of the organizations' shared vision. The use of measurements as a language helps translate complex and frequently nebulous concepts into a more "precise" form that promotes consensus among senior executives. The BSC communicates a

holistic model that links individual efforts and accomplishments to business unit objectives.

The scorecard should incorporate the complex set of cause-and-effect relationships among outcome measures and the performance drivers that describe the trajectory of the strategy of those outcomes. The measurement system should make the relationships (hypotheses) among objectives (and measures) in the various perspectives explicit so that they can be managed and validated.

Outcome measures without performance drivers fail to communicate how the outcomes are to be achieved. Moreover, they do not provide an early indication about whether the strategy is being implemented successfully. Conversely, performance without outcome measures may enable the business unit to achieve short-term operational improvements, but will fail to reveal whether the operational improvements have been translated into expanded business with existing and new customers and, eventually, to enhanced financial performance.

Implementing the scorecard typically includes four processes:

1. Translating the vision into operational goals;
2. Communicate the vision and link it to individual performance;
3. Business planning;
4. Feedback and learning and adjusting the strategy accordingly.

Further Balanced Scorecard is a method and a tool which includes:

- a strategy map where strategic objectives are placed over four perspectives in order to clarify the strategy and the cause and effect relationships that exists among them.
- Strategic objectives which are smaller parts of the strategy interlinked by cause and effect relationships in the strategy map.
- Measures directly reflecting strategy. Their prime purpose is to measure that the desired change or development defined by strategic objectives actually takes place.
- strategic initiatives that constitute the actual change as described by strategic objectives

Benefits of the Scorecards

Kaplan and Norton cite the following benefits of the usage of the Balanced Scorecard:

- Focusing the whole organization on the few key things needed to create breakthrough performance.
- Helps to integrate various corporate programs. Such as: quality, re-engineering, and customer service initiatives.

- Breaking down strategic measures towards lower levels, so that unit managers, operators, and employees can see what's required at their level to achieve excellent overall performance

Perspectives of the Balanced Scorecards

The balanced scorecard method of Kaplan and Norton is a strategic approach, and performance management system, that enables organizations to translate a company's vision and strategy into implementation, working from 4 perspectives:

- *Financial Perspectives*
- *Customer Perspectives*
- *Business process Perspectives*
- *Learning and Growth Perspectives*

2.10.2 The Benchmarking

Organizations and companies use benchmarking to determine where inputs, processes, outputs, systems, and functions are significantly different from those of competitors or others. The common question is what is the best practice for a particular activity or process? Data obtained are then used by the organization or company to introduce change into its activities in an attempt to achieve the best practice standard if theirs is not best. Comparison with competitors and exemplary organizations is helpful in determining whether the organization's or company's capabilities or processes are strengths or weaknesses. Significant favorable input, process, and output benchmark variances become the basis for strategies, objectives, and goals. Often, a general idea that improvement is possible is the reason for undertaking benchmarking. Benchmarking, then, means looking for and finding organizations or companies that are doing something in the best possible way and learning how they do it in order to emulate them. Organizations or companies often attempt to benchmark against the best in the world rather than the best in their particular industry.

A problem with benchmarking is it may restrict the focus to what is already being done. By emulating current exemplary processes, benchmarking is a catch-up managerial tool or technique rather than a way for the organization or company to gain managerial dominance or marketing share. Benchmarking can foster new ideas or processes when management uses noncompetitive organizations or companies outside its own industry as the basis of benchmarking. What if new ideas are not generated? It is possible that no one in some other organization or company has had a great idea that is applicable to the input, process, or outcome that the organization is attempting to improve or change by benchmarking.

Benchmarking is not a competitive analysis. Benchmarking is the basis for change. It is about learning. The organization performing the benchmark analysis uses the information

found in the process to establish priorities and target process improvements that can change business or manufacturing practices.

Type of Benchmarking

Benchmarking commonly takes one of four forms.

Internal Benchmarking

Internal benchmarking compares processes or practices within the organization or company over time in light of established goals. Advantages of internal benchmarking include the ease of data collection and the definition of areas for future external investigations. The primary disadvantage of internal benchmarking is a lower probability that it will yield significant process improvement breakthroughs.

Competitive Benchmarking

Some authors call benchmarking "best practices benchmarking" or "process benchmarking". This is to distinguish it from what they call "competitive benchmarking". **Competitive benchmarking** is used in competitor analysis. When researching your direct competitors you also research the best company in the industry (even if it serves a different location).

Competitive benchmarking compares the organization's processes to those of direct competitors. In competitive benchmarking, a consultant or other third party rather than the organization itself collects and analyzes the data because of its proprietary nature.

Functional Benchmarking

Functional benchmarking looks at similar practices and processes in organizations or companies in other industries. This type of benchmarking is an opportunity for breakthrough improvements by analyzing high-performance processes across a variety of industries and organizations.

Generic Benchmarking

Generic benchmarking investigates activities that are or can be used in most businesses. This type of benchmarking makes the broadest use of data collection. One difficulty is in understanding how processes translate across industries. Yet generic benchmarking can often result in an organization's drastically altering its ideas about its performance capability and in the reengineering of business processes.

Collaborative Benchmarking

Benchmarking, originally invented as a formal process by Rank Xerox, is usually carried out by individual companies. Sometimes it may be carried out collaboratively by groups of companies

.

Typical Steps in a Benchmarking process

Steps that are typically employed in the benchmarking process:

- Identify processes, activities, or factors to benchmark and their primary characteristics.
- Determine what form is to be used: generic, functional, competitive, or internal.
- Determine who or what the benchmark target is: company, organization, industry, or process.
- Determine specific benchmark values by collecting and analyzing information from surveys, interviews, industry information, direct contacts, business or trade publications, technical journals, and other sources of information.
- Determine the best practice for each benchmarked item.
- Evaluate the process to which benchmarks apply and establish objectives and improvement goals.
- Implement plans and monitor results.
- Recalibrate internal base benchmarks.

A recurring problem that must be addressed during the eight steps is the determination of criteria to ensure that inaccuracies or inconsistencies do not occur that will make any comparisons meaningless.

2.11 *THE ENABLING ROLE OF INFORMATION TECHNOLOGY*

Hammer (1990) considers IT as the key enabler of BPR which he considers as "radical change." He prescribes the use of IT to challenge the assumptions inherent in the work processes that have existed since long before the advent of modern computer and communications technology. He argues that at the heart of reengineering is the notion of *"discontinuous thinking -- or recognizing and breaking away from the outdated rules and fundamental assumptions underlying operations... These rules of work design are based on assumptions about technology, people, and organizational goals that no longer hold." He suggests the following "principles of reengineering":*

(a) Organize around outcomes, not tasks;

(b) Have those who use the output of the process perform the process;

(c) Subsume information processing work into the real work that produces the information;

(d) Treat geographically dispersed resources as though they were centralized;

(e) Link parallel activities instead of integrating their results;

(f) Put the decision point where the work is performed, and build control into the process; and

(g) Capture information once and at the source.

Davenport & Short (1990) **[24]** argue that BPR requires taking a broader view of both IT and business activity, and of the relationships between them. IT should be viewed as more than an automating or mechanizing force: to fundamentally reshape the way business is done.

Business activities should be viewed as more than a collection of individual or even functional tasks: in a process view for maximizing effectiveness. IT and BPR have recursive relationship. IT capabilities should support business processes, and business processes should be in terms of the capabilities IT can provide. Davenport & Short (1990) refer to *this broadened, recursive view of IT and BPR as the new industrial engineering*.

Business processes represent a new approach to coordination across the firm; IT's promise -- and its ultimate impact -- is to be the most powerful tool for reducing the costs of coordination (Davenport & Short 1990). Davenport & Short (1990) outline the following capabilities that reflect the roles that IT can play in BPR **[25].**

Impact	Explanation
Automation	Eliminating Human labor from a process
Informational	Capturing process information for purposes of understanding
Sequential	Changing process sequence, or enabling parallelism
Tracking	Closely monitoring process status and objects
Analytical	Improving analysis of information and decision making
Geographical	Coordinating processes across distance
Integrative	Coordination between tasks and processes
Intellectual	Capturing and distributing intellectual assets
Disintermediation	Eliminating intermediaries from a process

Table: 8 Davenport & Short identification of It Technology used in BPR innovation

Further Hammer has also emphasizes on IT as being disruptive, which means

"us ability to break the rules that limit haw we conduct our work, that makes it critical to companies looking for competitive advantage".

He identifies eight areas where IT can de used disruptively and roles rules are broken and replaced by new ones **[26].**

Old rule	Disruptive technology	New rule
Information can appear in only one place at one time	Shared databases	Information can appear simultaneously in as many places as needed
Only experts can perform complex work	Expert systems	A generalist can do the work of an expert
Business must choose between centralization and decentralization	Telecommunication networks	Business can simultaneously reap the benefits of both
Managers make all decisions	Decision support tools	Decision-making is everybody's job
Field personnel needs offices where they can receive, store, retrieve and submit information	Wireless data communication & computers	Field personnel can send and receive information wherever they are
The best contact with a buyer is personal contact	Interactive videodisk	The best contact with a buyer is effective contact
You have to find things where they are	Automatic identification and tracking	Things tell you where they are
Plans get revised periodically	High performance computing	Plans get revised instantaneously

Table.9 Hammer identification of It technology used in BPR innovation

2.12 BPR IMPLEMENTATION PROCESS: AN ANALYSIS OF KEY SUCCESS AND FAILURE FACTORS

Following the publication of the fundamental concepts of BPR by Hammer (1990) and Davenport and Short (1990), many organizations have reported dramatic benefits gained from the successful implementation of BPR. Companies like Ford Motor Co., CIGNA, and Wal-Mart are all recognized as having successfully implemented BPR**.[29].**

However, despite the significant growth of the BPR concept, not all organizations embarking on BPR projects achieve their intended result. Hammer and Champy (1993) estimate that as many as 70 percent do not achieve the dramatic results they seek. Having BPR repeatedly at the top of the list of management issues in annual surveys of critical information systems reflects executives' failure to either implement properly or acquire the benefits of BPR (Alter, 1994) **[28]**. This mixture of results makes the issue of BPR implementation very important. BPR has great potential for increasing productivity through

reduced process time and cost, improved quality, and greater customer satisfaction, but it often requires a fundamental organizational change. As a result, the implementation process is complex, and needs to be checked against several success/failure factors to ensure successful implementation, as well as to avoid implementation pitfalls.

The following analyses by Majerd A.M. and Mohamed Z (1999)**[29]** the BPR implementation process by reviewing the relevant literature on both soft and hard factors that cause success and failure of BPR efforts. The factors listed below are distilled from various articles and empirical research on BPR implementation. They were then categorized into a number of subgroups representing various dimensions of change related to BPR implementation. These dimensions are.

(1) Change management;

(2) Management competency and support;

(3) Organizational structure;

(4) Project planning and management; and

(5) IT infrastructure.

2.12.1 BPR Success Factors

2.12.1.1 Factors *relating to change management systems and culture*

Change management, which 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, is considered by many researchers to be a crucial component of any BPR efforts. Revision of reward systems, communication, empowerment, people involvement, training and education, creating a culture for change, and stimulating receptivity of the organization to change are the most important factors related to change management and culture.

No.	Sub Title	Descriptions
i	**Revising Reward And Motivation Systems**	▪ Staff motivation through a reward program has a crucial role in facilitating re-engineering efforts and smoothing the insertion of new processes in the workplace. As BPR brings about *different jobs, existing reward systems are no longer appropriate for* the new work environment Therefore, reward systems should be revised as part of the BPR effort and the new reward and incentive system must be widespread, fair and encourage harmony among employees. Introducing new job titles can be considered as one example of encouraging people to endorse the re*engineering program without fear.*
ii	**Effective Communication**	▪ Effective communication is considered a major key to successful BPR-related change efforts. Communication is needed throughout the change process at all levels and for all audiences, even with those not involved directly in the re-engineering project. Effective communication between stakeholders inside and outside the organization is necessary to market a BPR Programmed and to ensure patience and understanding of the structural and cultural changes needed as well as the organization's competitive

No.	Sub Title	Descriptions
		situation. Communication should take place frequently and in both directions between those in charge of the change initiatives and those affected by them. Communication should be open, honest, and clear, especially when discussing sensitive issues related to change such as personnel reductions.
iii	**Empowerment**	▪ As BPR results in decisions being pushed down to lower levels, empowerment of both individuals and teams becomes a critical factor for successful BPR efforts, since it establishes a culture in which staff at all levels feel more responsible and accountable and it promotes a self-management and collaborative teamwork culture. Empowerment entails that staff are given the chance to participate in the redesign process. When empowered, employees are able to set their goals and monitor their own performance as well as identify and solve problems that affect their work, thus they are supporting the BPR efforts.
iV	**Human Involvement**	▪ In re-engineering, all people must be openly and actively involved and should be consulted at all stages on the process and its leaders. This includes line managers, process owners, those involved in IS and human resources, and workers. The culture of experimentation is an essential part of a successfully re-engineered organization and, therefore, people involved or affected by BPR must be prepared to endure errors and mistakes while re-engineering is taking place.
V	**Training And Education**	▪ Many researchers consider training and education to be an important component of successful BPR implementation. Organizations that undertake re-engineering projects may have to increase their training budget by 30-50 percent. BPR-related concept, skills, and techniques as well as interpersonal and IT skills, skills in TOM implementation and process analysis techniques, are all important dimensions of training for BPR. It is also important to educate people in IT-related innovations for competitive advantage, the potential of IT in reshaping the business and the leadership of empowered organizations. Business managers, line managers, IS managers, and other staff in the front-line are the people who benefit most from education and training activities in both business and IT-related skills and expertise.
Vi	**Creating An Effective Culture For Organizational Change**	▪ Organizational culture is a determining factor in successful BPR implementation. Organizational culture influences the organization's ability to adapt to change. The existing culture contains beliefs and values that are often no longer appropriate or useful in the re-engineered environment. Therefore, the organization must understand and conform to the new values, management processes, and the communication styles that are created by the newly-redesigned processes so that a culture which upholds the change is established effectively. In a newly re-engineered organization, people usually share common goals and thus become more capable of working co-operatively without competing against each other. As BPR supports teamwork and integration of labour, cooperation, co-ordination, and empowerment of employees become the standard attitudes in the re-engineered work environment. However, trust and honesty among team members is also needed, and within the organization as a whole.
Vii	**Stimulating The Organization's Receptiveness To Change**	▪ Preparing the organization to respond positively to BPR-related change is critical to success. When people are made resilient to change, they remain positive during uncertainty, focused, flexible, organized, and pro-active. Leveraging organizational change requires effective one-to-one and one-to-many interactions to enroll key influencers of both individuals and groups within and without the organization.

Table 10: Factors relating to change management systems and culture

Source: File://A:\Emeroldfillterct-files\P87.HTM

2.12.1.2 Factors *relating to management competence*

Sound management processes ensure that BPR efforts will be implemented in the most effective manner. The most noticeable managerial practices that directly influence the success of BPR implementation are top management support and commitment, championship and sponsorship, and effective management of risks.

No.	Sub Title	Descriptions
i	**Committed And Strong Leadership**	▪ Commitment and leadership in the upper echelons of management are often cited as the most important factors of a successful BPR project. Leadership has to be effective, strong, visible and creative in thinking and understanding in order to provide a clear vision of the future. This vision must be clearly communicated to a wide range of employees who then become involved and motivated rather than directly guided. Commitment to and support for the change must constantly be secured from senior management throughout a BPR project. Sufficient authority and knowledge, and proper communication with all parts in the change process, are important in dealing with organizational resistance during BPR implementation.
ii	**Championship And Sponsorship**	▪ Barriers such as political, economic, and organizational risks are all associated with BPR-related change. And champions of the change play a major role in overcoming these barriers and increasing the chance of successful BPR implementation. The champions must be able to persuade top management of the need to change and to continually push the change efforts throughout the organization. Political and material sponsorship by the champions of change to business processes, job definitions, reward systems, and organizational structure needs strong support from senior management.
iii	**Management Of Risk**	▪ BPR implementation involves radical change to several systems in the organization. Risks associated with acceptance of changes in the organizational structure, deploying emerging ITs with little familiarity, large investment in new resources needed for the new processes, loss of personnel, and loss of earnings are some examples of the many risks that an organization may take when implementing BPR. Therefore, continuous risk assessment is needed throughout the implementation process to deal with any risk at its initial state and to ensure the success of the re-engineering efforts. Anticipating and planning for risk-handling is important for dealing effectively with any risk when it first occurs

Table 11: Factors *relating to management competence*

Source: File://A:\Emeroldfillterct-files\P87.HTM

2.12.1.3 *Factors relating to organizational structure*

As BPR creates new processes that define jobs and responsibilities across the existing organizational functions, there is a clear need to create a new organizational structure which determines how BPR teams are going to look, how human resources are integrated, and how the new jobs and responsibilities are going to be formalized.

No.	Sub Title	Descriptions
i	**An Adequate Job Integration Approach**	▪ Several researchers emphasize that designing and implementing an adequate organizational human resources infrastructure is important to a BPR project's success. Job and labour integration (case worker) is the most appropriate approach of human resources design that supports the process-based organizational structure rather than a function-based one. When individuals within a process perform a series of tasks efficiently, product quality, processing time, and cost are all going to improve. However, the move to integrate human resources architecture necessitates a careful consideration of all related organizational changes.
ii	**Effective BPR Teams**	▪ Cross-functional BPR teams are a critical component of successful BPR implementation. Teams should be adequately composed. Team members should be experienced in variety of techniques. Teams should be made up of people from both inside and outside the organization. The determinants of an effective BPR team are as follows: competency of team members, their credibility within the organization and their creativity, team empowerment, motivation, effective team (Leadership) the training of members in process mapping and brainstorming techniques, proper organization of the team, complementary skills among team members, adequate size, interchangeable accountability, clarity of work approach, and specificity of goals.
iii	**Appropriate Job Definitions And Allocation Of Responsibilities**	▪ As BPR results in a major structural change in the form of new jobs and responsibilities, it becomes a prerequisite for successful implementation to have formal and clear descriptions of all jobs and responsibilities that the new designed processes bring along with them.

Table 12: Factors relating to organizational structure

Source: File://A:\Emeroldfillterct-files\P87.HTM

2.12.1.4 Factors *related to BPR project management*

Successful BPR implementation is highly dependent on an effective BPR program management which includes adequate strategic alignment, effective planning and project management techniques, identification of performance measures, adequate resources, appropriate use of methodology, external orientation and learning, effective use of consultants, building process vision, effective process design, integrating BPR with other improvement techniques, and adequate identification of the BPR value.

No.	Sub Title	Descriptions
i	**Aligning BPR Strategy With Corporate Strategy**	▪ As corporate strategy determines objectives and guidance on how organizational capabilities can be best Utilized to gain competitive position, BPR strategy, accordingly, guides the alteration of tasks and flows into integrated, and variance in how tasks are performed and the flow of material, people, and information because a source of competitiveness. Therefore, a consideration of the strategic context of growth and expansion, creating a top-level strategy to guide change, and careful alignment of corporate strategy with BPR strategy are crucial to the success of BPR efforts.

No.	Sub Title	Descriptions
ii	**Effective Planning And Use Of Project Management Techniques**	▪ Proper planning for the BPR project with adequate time frame are key factors in delivering a successful BPR project on time. Effective use of project management techniques and managing people-related issues has also a crucial role in smoothing the flow of the process redesign stages. A comprehensive piloting of the new design, and learning from errors are particularly important for tuning a BPR implementation process to the most successful way. Measurement of project progress should also be maintained continually throughout a BPR project.
iii	**Setting Performance Goals And Measures**	▪ Setting high goals for performance, and extendable targets for BPR are important success factors. Identifying and setting performance measures are-also necessary as they indicate levels of achievement.
iV	**Adequate Resources**	▪ adequate resources and sufficient budget allocated properly are important for a successful BPR project.
V	**Appropriate Use Of Methodology**	▪ Establishing a disciplined approach for BPR and using a sound methodology are prerequisites for BPR success. A BPR methodology should be designed or selected creatively to satisfy the current needs of the organization. Adequate customization of available BPR methodologies determines the level of comprehensiveness and effectiveness that a new customized BPR methodology can reach.
Vi	**External Orientation And Learning**	▪ External orientation based on customer research, competitive analysis, and benchmarking is a critical element of successful BPR efforts. Benchmarking is an effective technique to learn from customers and competitors. Customers' requirements and expectations should be defined and measured for BPR and processes should be defined broadly in terms of customer value. Benchmarking allows learning from other organizations' experiences in BPR, as well as learning from one re-engineering process to another in the same organization.
Vii	**Effective Use Of Consultants**	▪ Several authors suggest that an effective use of consultants is useful in ensuring successful implementation of BPR. Consultants can bring to the organization specialized skills, experience, and know-how that the organization needs and it is both time-consuming and expensive for it to build internally. They can also provide a firm-wide view, encourage unity between members, and are usually neutral. Success of consultants in BPR is determined by their level of experience in Implementing similar projects in other organizations, as well as their ability to direct the re-engineering efforts to areas of substantial benefits to the organization.
Viii	**Building A BPR Vision**	▪ Building an imaginative thinking and a clear and compelling vision for future processes is critical to the successful implementation of BPR. Process vision directs both long-term and day-to-day actions. A complete development of process vision includes evaluating business strategy to anticipate future processes, conducting customer-based assessment of performance targets, benchmarking similar BPR efforts, and developing process attributes and its performance measures.

No.	Sub Title	Descriptions
ix	**Effective Process Redesign**	▪ Effective process orientation, appropriate level of process knowledge, documentation of existing processes, appropriate selection of core processes, and use of prototyping are all critical components in successful BPR implementation. Adequate identification of process gaps and evaluation of effectiveness of current processes by making use of appropriate software tools to visualize and analyze them is also useful. Identifying process owners is also vital to BPR implementation.
x	**Integrating BPR With Other Improvement Approaches**	▪ several researchers suggest that using continuous improvement techniques increases dramatic gains. TQM is particularly suggested to be integrated with BPR.
xi	**Adequate Identification Of BPR Values**	▪ BPR efforts should focus on identifying re-engineering opportunities and values to internal and external stakeholders. A continuous focus should be maintained on business objectives.

Table 13: Factors related to BPR project management

Source: File://A:\Emeroldfillterct-files\P87.HTM

2.12.1.5 *Factors related to IT infrastructure*

Factors related to IT infrastructure have been increasingly considered by many researchers and practitioners as a vital component of successful BPR efforts. Effective alignment of IT infrastructure and BPR strategy, building an effective Infrastructure, adequate IT infrastructure investment decision, adequate measurement of IT infrastructure effectiveness, proper IS integration, effective re-engineering of legacy IS, increasing IT function competency, and effective use of software tools are the most important factors that contribute to the success of BPR projects.

No.	Sub Title	Descriptions
i	**Adequate Alignment Of IT Infrastructure And BPR Strategy**	▪ BPR and IT infrastructure strategies which are both derived from organization strategy are in need of effective alignment to ensure the success of the BPR initiative. IT can best enhance an organization's position by supporting a business trust strategy. The business strategy should be clear and detailed. Top management should act as a strategy formulator who provides commitment for the whole process of redesign, while the IS manager should be responsible for designing and implementing the IS strategy. The strategy describes the role of IT in leveraging changes to the underlying business processes and infrastructures. ▪ IT strategic alignment is approached through the process of integration between business strategy and IT strategy, as well as between IT infrastructure and organizational infrastructure. The degree of alignment between the BPR strategy and the IT infrastructure strategy is indicated by including the identification of information

No.	Sub Title	Descriptions
		resources needs in the BPR strategy, deriving the IT infrastructure strategy from the business strategy, examining the IT infrastructure strategy against the BPR strategy, the active involvement of management in the process of IT infrastructure planning and IT managers in business planning, and by the degree of synchronization in formulating the two strategies.
ii	**Building An Effective IT Infrastructure**	▪ Researchers consider adequate IT infrastructure reassessment and composition as a vital factor in successful BPR implementation. Adequate understanding and identification of enabling technologies for redesigning business processes, proper selection of IT platforms, effective overall system architecture, adaptable and flexible IT infrastructure, and proper installation of IT components all contribute to building an effective IT infrastructure for business processes ▪ The IT infrastructure and BPR are interdependent in the sense that deciding the information requirements for the new business processes determines the IT infrastructure constituents, and recognition of IT capabilities provides alternatives for BPR. Building a responsive IT infrastructure is highly dependent on an appropriate determination of business process information needs. This, in turn, is determined by the types of activities embedded in a business process, and their sequencing and reliance on other organizational processes. Variance in how activities are performed and the flow of materials, people, and information can be a source of competitive advantage. ▪ An IT infrastructure is made up of physical assets, intellectual assets, shared services, and their linkages. The way in which the IT infrastructure components are composed and their linkages determines the extent to which information resources can be delivered. An effective IT infrastructure composition process follows a top-down approach, beginning with business strategy and IS strategy and passing through designs of data, systems and computer architecture. Linkages between the IT infrastructure components, as well as descriptions of their contexts of interaction, are important for ensuring integrity and consistency among the IT infrastructure components. IT standards also have a major role in reconciling various infrastructure components to provide shared IT services that are of a certain degree of effectiveness to support business process applications, as well as to guide the process of acquiring, managing, and utilizing IT assets. The IT infrastructure shared services and the human IT infrastructure components, in terms of their responsibilities and their needed expertise, are both vital to the process of the IT infrastructure composition.
iii	**Adequate IT Investment And Sourcing Decisions**	▪ Adequate investment and an IT sourcing strategy are critical to the success of BPR projects which involve considerable re-engineering efforts of the IT infrastructure components. ▪ A successful IT infrastructure investment decision should be guided by corporate strategies. A key starting point in an effective IT investment decision process is translating the strategic context into comprehensive strategic statements that are simple, achievable, practical and easy to communicate across the firm. This process should also include expectations for IT investment in the firm, data access and use, hardware and software resources, communications capabilities and services, and architecture and

No.	Sub Title	Descriptions
		standards approach. ▪ A sourcing decision should make a trade-off between internal and external sourcing. A multi sourcing strategy is effective for organizations that in source their strategic IT components while outsourcing common and non-critical components. When an outsourcing decision is about to be taken, there is a need to ensure that: the vendor's level of IT expertise and skills are sufficient and up-to-date, the deployment costs are considered as part of outsourcing cost, and that effective linkages are defined between outsourcer and IT staff in the organization.
iV	**Adequate Measurement Of IT Infrastructure Effectiveness On BPR**	▪ Information and IT are the information resources that a business process needs to create a competitive value to an organization and, therefore, they are essential assets that need to be acquired, used, managed, and measured to judge the value obtained by investment in information resources. Thus the measurement of IT effectiveness is an important factor in successful BPR implementation. Measurement of the IT infrastructure effectiveness determines IT deficiencies that exist when business process information resource requirements cannot be met by the current IT infrastructure capabilities. ▪ The measurement process may start with a number of policies and goals which are then translated by the IS function into measures by exploiting other techniques such as monitoring, auditing, and benchmarking. A test of developed measures is conducted and a continuous refinement and review are performed continually as strategies change and as the IS function discovers new means for measurement. Measures can be customized from different models to fit the specific needs of an organization.
V	**Proper IS Integration**	▪ The effective integration of various organizational IS vital to successful BPR implementation. IS integration for BPR can be measured by the extent to which various information systems are formally linked for the purpose of sharing complete, consistent, accurate, and timely information among business processes. Data integration and communication networking are the most important enablers for IS integration. ▪ The success of the data integration effort depends on the level of integration between organization planning and IS planning, top management support, user involvement, leadership, effective communication, systematic implementation, the degree of interdependence between business units, the need for flexible action by subunits, the degree of difficulty in designing and implementing systems with integrated data, and the degree of inter-operability between systems.
Vi	**The Effective Re-Engineering Of Legacy IS**	▪ BPR projects often require revamping of the IS to deliver the full potential of the redesigned processes. Re-engineering legacy IS to new systems that use the latest technologies is a key factor in creating an integrative IT infrastructure that supports BPR efforts effectively. Critical to this effort is the need for goal-setting and quantitative benefits measures, the role of planning, and the need for determining organizational readiness for re-engineering, Organizational readiness is determined by capability assessment, training needs, surveys of application usage, identification of application evolution trends, operational deployment considerations, and organizational change issues. Automated re-engineering of legacy systems can also add to the effectiveness of this process.

No.	Sub Title	Descriptions
Vii	**Increasing The IT Function Competency**	▪ Building a high performance IT function to accommodate the radical shifts in both technology and business is considered a critical factor in the success of BPR efforts. Appropriate IT function structure, adequate IT management architecture, building IT function competencies, effective IT function benchmarking and IT function performance measurement all contribute to the effective role that the IT function plays in BPR. Architectural understanding, programming language and structure of code, dependencies on special language or platform features, and the cumulative effects of continuous maintenance all affect the ability to re-engineer a legacy system. Systems reusability is also an important feature which facilitates the re-engineering efforts. The involvement of maintenance personnel who are familiar with the legacy systems has a positive impact on quality and productivity of the re-engineering efforts. ▪ An effective IT function needs to be designed into a comprehensive and flexible structure that focuses on quality, value creation and delivery, empowerment through education and re-skilling of IT staff, motivation of employees, partnerships between all parties involved in managing IT resources based on mutual trust and credibility, better strategic planning,, faster solution delivery, cheaper IT operations and support, and satisfied customers. Distribution, and patterns of IT managerial responsibilities and interdependencies should be specified and adequately implemented to help organizations develop an effective IT management architecture for BPR. ▪ Benchmarking of the IT function is also an important tool by which areas of improvement are identified along with descriptions of how they can be improved.
Viii	**Effective Use Of Software Tools**	▪ Several researchers argue that effective use of modern software tools to assist in BPR efforts is crucial to BPR success. Use of software tools contributes to BPR success by improving productivity, completing projects more quickly, producing higher quality results, base lining visions and measuring process costs, and eliminating non value-added work and focusing instead on value-added work. ▪ Effective software tools should have specific features, such as being usable by non-technical people, process visualization, providing interactive and graphical-based demonstrations of process phases, the ability to analyze processes and show information flows between phases as well as rates of flows and resources usages, enhancing the clarity of the BPR team's vision, enabling the running of life simulations to discover bottlenecks and constraints, enforcing consistency in analysis and design, facilitating integration with CASE tools that are widely used in designing BPR underlying information systems, permitting iterative and top-down refinement from the BPR project goals to solution, and producing an acceptable return on investment.

Table 14: Factors related to IT infrastructure

Source: File://A:\Emeroldfillterct-files\P87.HTM

2.12.2 BPR Failure Factors

2.12.2.1 Factors related to change of management systems and culture

No.	Sub Title	Descriptions
i	**Problems In Communication**	▪ Inadequate communication of need to change ▪ Hiding uncertainties in communication ▪ Poor communication between BPR teams and other personnel ▪ Lack of motivation and reward
ii	**Organizational Resistance**	▪ Resistance to change ▪ Fear, lack of optimism, and skepticism about BPR results ▪ Worries about job security ▪ Fear of job loss ▪ Fear of loss of control and position ▪ Middle management impermeability ▪ Lack of adequate planning for resistance to change
iii	**Lack Of Organizational Readiness For Change:**	▪ Need for change management is not realized ▪ Lack of determination/courage/skills of management for radical changes ▪ Demand for change exceeds the capacity to absorb ▪ Lack of cross-functional co-operation; Line managers are not receptive for change
iV	**Problems related to creating a culture for change:**	▪ Underestimating the human side ▪ Not considering existing management systems and organizational culture ▪ Values ignorance ▪ A lack of trust between management and employees ▪ The tendency to copy others ▪ Underestimating the role of politics in BPR ▪ Animosity toward and by IS and human resources specialists
V	**Lack Of Training And Education:**	▪ The absence of theory ▪ Lack of understanding of BPR ▪ Lack of appropriate training for those affected by BPR

Table 15: Factors related to change of management systems and culture

Source: File://A:\Emeroldfillterct-files\P87.HTM

2.12.2.2 Factors related to management support

No.	Sub Title	Descriptions
i	**Problems Related To Commitment, Support, And Leadership:**	▪ Lack of sustained management commitment and leadership. ▪ Lack of top management attention and support; ▪ Lack of support from line managers. ▪ A "Do It to ME" attitude.
ii	**Problems Related To Championship And Sponsorship:**	▪ Lacking the visible sponsorship of senior management ▪ Wrong sponsor ▪ Lack of a champion.

Table 16: Factors related to management support

Source: File://A:\Emeroldfillterct-files\P87.HTM

2.12.2.3 Factors related to organizational structure

No.	Sub Title	Descriptions
i	**Ineffective BPR Teams:**	▪ Lack of a cross-functional project team ▪ Difficulty in finding suitable teams members ▪ Lack of IS staff credibility and involvement in re-engineering teams. ▪ Inadequate communication among members ▪ Lack of training for BPR teams ▪ *lack* of authority given to BPR teams ▪ Inadequate team skills
ii	**Problems Related To The Integration Mechanism, Job Definition, And Allocation Of Responsibilities:**	▪ Inflexible hierarchical structures ▪ People think solely in terms of their own immediate working group ▪ Conflicts between BPR team responsibilities and functional responsibilities ▪ Unclear definition of jobs

Table 17: Factors related to organizational structure

Source: File://A:\Emeroldfillterct-files\P87.HTM

2.12.2.4 *Factors related to BPR project management*

No.	Sub Title	Descriptions
i	**Problems Related To Planning And Project Management:**	▪ Inadequate planning for BPR project ▪ Compressing the time needed to succeed ▪ Not enough time to develop new skills for BPR ▪ Too many improvement projects underway ▪ Variable quality of ideas for BPR ▪ Incomplete restructuring of an organization ▪ Extremely radical process change ▪ Too incremental and not enough radical process change ▪ Missing assessment of BPR project performance in the early stages; ▪ Inability to control BPR efforts
ii	**Problems Related To Goals And Measures:**	▪ Lack of clear performance objectives and milestones for BPR project ▪ Poorly defined needs ▪ Difficulty in establishing performance goals ▪ Difficulty in measuring BPR project performance ▪ Using only quantifiable and easy measures ▪ Spending too much time in analyzing existing processes
iii	**Inadequate Focus And Objectives:**	▪ Narrow technical focus ▪ Cost-cutting focus ▪ Absence of strategic focus ▪ Focusing on planning rather than on doing ▪ Using re-engineering to avoid making hard decisions ▪ Old patterns of automating existing processes without redesign ▪ Short-term view and quick fix mentality.
iV	**Ineffective Process Redesign:**	▪ missing process understanding and orientation ▪ Missing process owners ▪ Inadequate focus on core processes ▪ Inadequate determination of scope of change ▪ Re-engineering the wrong processes ▪ Narrowly defined processes.
V	**Problems Related To BPR Resources:**	▪ Lack of required resources for BPR efforts ▪ Unsound financial condition ▪ Not understanding the total financial impact ▪ Difficulty in forecasting human, financial, and other resources.
Vi	**Unrealistic Expectations:**	▪ Unrealistic scope and expectations ▪ Expecting BPR to solve all organizational problems.
Vii	**Ineffective Use Of Consultants:**	▪ Poor implementation by consultants; ▪ Lack of external consultants' support for BPR process.

No.	Sub Title	Descriptions
Viii	**Miscellaneous Problems**	▪ Lack of adequate BPR methodology ▪ Inappropriate identification of customer's needs for BPR, ▪ Lack of BPR vision ▪ Difficulty in financially justifying value of BPR ▪ Piecemeal implementation.

Table 18: Factors related to BPR project management

Source: File://A:\Emeroldfillterct-files\P87.HTM

2.12.2.5 Factors related to IT infrastructure

No.	Sub Title	Descriptions
i	**Problems Related To IT Investment And Sourcing Decisions:**	▪ Optimizing lower-level processes that can be outsourced for cheaper cost and less efforts ▪ Premature IT outsourcing ▪ Costing models fail to consider the totality of system elements.
ii	**Improper IS Integration**	▪ Inadequate treatment of compatibility issues ▪ Insufficient telecommunication infrastructure capabilities ▪ Insufficient database infrastructure capabilities ▪ Insufficient IS application infrastructure capabilities
iii	**Inadequate IS Development:**	▪ Failure to deliver the right IS applications on time ▪ Rushing off IS development process ▪ Inability to change IS development approach to process-based.
iV	**Ineffective Re-Engineering Of Legacy IS:**	▪ Existing IT systems ▪ Legacy systems were not initially designed with reuse in mind ▪ Lack of documentation, or obsolete documentation ▪ Loss of human system expertise. ▪ Inability to recover total system architecture, Re-engineering unfinished systems ▪ Insufficient understanding about existing IT infrastructure.
V	**Miscellaneous Problems:**	▪ Failure to mutually consider and align both business strategies and IT infrastructure strategies. ▪ Lack of IT expertise ▪ Difficulty of modeling and simulating the new business processes. ▪ Failure to continually assess emerging IT capabilities ▪ Failure to aggressively use IT enablers

Table 19: Factors related to IT infrastructure

Source: File://A:\Emeroldfillterct-files\P87.HTM

CHAPTER THREE

Data Presentation and Analyses

Overview

This chapter presents the data gathered from primary and secondary sources in relation to BPR implementation by ESLSC and analysis of the data. The primary data from reengineering team leaders, employees of the company, and outside customers were gathered using independent questionnaire for each. Such primary sources were also supported by secondary data like BPR related materials, financial and non-financial performance data. Further, management members of the company were interviewed for validating findings of the data gathered using questionnaires and document review.

3.1. Activities ESLSC undertake in implementing the BPR program

According to the Company's report, the following main activities had been performed in budget year 2004/'05 as part of the BPR **[31].**

a. ***Internal problem identification:*** it was noted that the company's customer's service was incompetent, inefficient and lacks modernity.

b. ***Causes for the company's internal problems:*** It was identified that sources of company's problem were customers miss handling, management's lack of capacity in exercising leadership, incompetence of Company's system and structure, backwardness of information technology, inefficient and inferior capacity of Company's vessels'. The Company's employees and management's insufficient attitudinal change were also identified as major causes.

c. ***Implication of Company's internal problem:*** Consensus has been reached that problems in company's service delivery definitely have a negative effect on service receivers of import and export trade, on the survival of the Company, on company's employee as well as on national interest. The problems were taken to have a negative effect on the Country's growth and developmental activities.

d. ***The necessity in understanding the Country's constitute government policies, proclamation, & regulations and international maritime regulations***: There was a shared understanding among management and employees that it is critical to become familiarize about the regulating policies of Federal Democratic Republic of Ethiopia (FDRE) and that of the international maritime.

e. ***The necessity that the Company should have benchmarking:*** As a state owned company, weaknesses observed in other state owned company have also been observed in ESLSC. As ESLSC is operating in international level, while comparing Company's performance against other shipping lines, it was believed that the Company's work system was below the standard of shipping industry. Hence it was necessary to build its capacity and have benchmark which enables the company competent enough in international shipping industry.

3.1.1 Work performed and result achieved as per Quick wins I (BPR)

In the first part of this program, weakness on service delivery as well as internal problems were identified and remedial action have been taken. At this step, priority was given in solving company's internal problem that doesn't require additional manpower and budget.

Accordingly, the following results were achieved as per the measure taken as part of Quick wins I.

a. Related to Company's service delivery

- Organizing information desk which could provide information to customers, notifying customers in advance on information needed from them, preparing brochure and poster, establishing company's web site, notifying customers with e-mail about own and slot vessels fleet position. These make the company to provide efficient service & access Company's information without spending time and money.

- As Company's employees are used to hang their ID card, it is now observed that customers are able to easily identify the staff, in charge of specific tasks.

- In relation to customers' interest, Company's inter departmental work relation and coordination had been revised and improvements have been made in cargo release & freight refund. Hence customers' grievances are now reduced.

b. Managements and employees attitudinal change

BPR is most effective when everyone understands the need for change, and works together to tear down old business systems and build new ones. Hence by considering this fact, following have been performed.

- Implementing of BPR has been accepted with consensus and believed that BPR will determine the survival of the Company.
- Management and employees are showing their readiness in completing quick wins within the schedule.
- By having monthly regular meeting, every department in the company is reviewing their performance, strengthening their follow up and able to take corrective action.
- As causes for company's problems are internal, efforts have been made in finding improved working system and employees were devoted to solve these problems even by working with their extra time.
- Feeling of responsibility, transparency & accountable are being cultivated and Company's management made an effort in initiating the employee.

c. Improvement made on the system

- For some tasks, decision has been made to minimize the process and reduce the time to be taken.
- As work relation with agent have been improved, slot charter operation enables the Company to contribute a lot on cost savings.
- Purchasing of office supplies in bulk and on yearly basis, enable the company to save time and cost.
- It is now possible to make thorough review on company's performance and able to make improvements on work system and manual.
- Enable to have uniform meeting and make decisions on its internal work regulations and problems.
- Each department is now able to prepare and review their detailed work manual and implement accordingly.

d. Changes observed on Company's manpower

According to the report, as the result of implementing BPR it is possible to observe the following changes.

- Efforts have been made in reducing employees' accumulated annual leave and decision has been made not to accumulate annual leave in future.
- Familiarization program to new staffs are now practiced and show good result.
- It is also possible to improve manpower shortage by having program on crew embarkation and disembarkations.
- It is now formulating a policy which enables employees to improve their academic status.

e. Progress observed on exchange of information

The company's effort in implementing BPR is determined by its ability to narrow the gap in exchange of information. The report also shows that the following efforts have been made in facilitating exchange of information.

- As company's website is now providing information to customers on permanent basis, cost is being saved by avoiding expensive means of communication such as fax & postage.
- Detailed work has been made in identifying the gap on exchange of information between departments.
- MIS study has been made and inception report was already submitted.

f. Measure taken in building company's capacity on cargo lifting & transportation.

In shipping industry, building capacity is one of the determining factors for the survival of shipping lines. Hence to operate efficiently and to be competent enough in the international shipping industry, the company has already acquired two new vessels.

g. Measure taken in improving work relation with MTSE

- Operational problems with MTSE are being identified and measure had been taken by both parties.

- Financial problems are also identified and corrective actions are now undertaken.

3.1.2 Work performed and result achieved in improving service delivery as per quick wins II (BPR)

a) Refunds on container related payments

- For containers imported to the center of the country, by referring to pertinent documents and comparing customer's container deposit against container demurrage, it is now possible to prepare debit or credit notes within ***15 minutes***, which was taking ***1-2 weeks*** before.

- In handing over container related documents to finance department, it will take now ***2:00 hours*** instead of ***one day*** and it was taking ***1-2 weeks*** to know date of container discharged at Djibouti and receive reply. However, as communication is now made daily and based on the reply, it is now possible to prepare debit note within ***15 minutes***. Hence it is now possible to handover this documents to Finance Department within ***2:00 hours*** instead of taking one day.

- Finally, finance department is now taking 6 to 7 hrs in arranging payment for container refund which was taking ***21-22 days*** before.

b) Cargo release service

- In receiving own vessels' cargo manifest, which is the main document in releasing cargo, ***2-11 days*** were spent. However it is now improved to take ***2-3 days*** only.

c) Preparing Invoice and collection of freight

- In preparing/compiling and sending cargo/freight manifest from loading ports, it was taking ***11 days*** before. However by using e-mail service, it is now improved to take ***2-3 days*** in compiling and receiving these documents.

- Sending freight documents to MTSE head office and Djibouti branch was taking ***1-2 days*** before it's now improved to take ***half day*** only.

- As per customers request , it is now possible to issue corrector within ***15 minutes***, which was taking ***1-2 days*** before.

- Per customers' request/application on freight discount, it is now possible to decide and issue corrector within ***15 minutes***, which was taking ***1-2 days*** before.

- Invoice preparation, which was taking ***5-6 days*** before, could be finalized within ***2-3 days*** now.

d) Providing cargo delivery service

- As customers are now able to access information from company's web site, it is possible to get own vessels' fleet position within ***one hour***, instead of taking ***half day*** by using fax & courier services.

- The agent at port of loading was taking ***2-11 days*** in preparing and sending manifests to head office through courier service. However by using e-mail, it is now possible to get this documents/information within ***2-3 days***.

- Cargo lead for non ESLSC owned vessels, which was provided every week, is now improved to be provided every ***two days***. Also information on cargo discharging date at Djibouti port, which was referred before from slot carriers' web site ***every week*** is now improved to refer daily from their web site.

- Slot carriers notification date which was taking before ***5 to 10 days*** is now improved to be completed within ***two days***.

- Cargo handing over to customers, which was taking ***2-3 weeks*** before, is now shortened & improved to ***2 to 3 days***.

e) Cargo canvassing, providing freight quotation & cargo booking services

Under this task , main problem like dangerous cargo for imported goods, service requested beyond company's regular service, inability to provide fright quotation or waiver either for cargo having improper description or

cargo needed special containers are being identified. Also company's activity in securing high volume cargo on export trade was limited and hence by considering above problem, study was made and the following improvements were exercised.

- It is now improved to issue proforma for freight quotation ***every two days***, instead of ***two days a week***.

- Examining customers' request on loading dangerous goods, providing freight quotation is now improved to take two days, instead of taking 4 to 7 days. This improvement will also apply for out of gauge cargo.

- In checking all process and providing reply on customer's request on out port container service was taking ***4-7 days*** before which is now improved to finalize it within ***2 days***.

- Providing freight quotation for ex-work, after checking and ascertaining customer's acceptance and notifying agent at port of loading is now taking ***2 days***, instead of taking ***4-7 days***.

- Regarding out port service for break bulk cargo, is now improved to provide freight quotation and make an agreement/contract with customers within ***2 or 3 days***, which was taking ***3 to 6 days*** before.

- As per request from exporter, it was taking ***1-2 weeks*** to check all the necessary requirements in issuing loading order. However it is now improved to complete within ***2 days***.

f) Claims settlements and Insurance

The main problem under this section was the impossibility in replying customers claim on lost and damaged cargos. Hence in consideration of above problem, Study was conducted and following improvements has been made.

- Upon receiving customer's compensation claim on missed cargo, it is now possible to effect payment within ***4-5 days***, instead of taking ***21-23 days***.

Further, policies and procedure manual were developed and implemented ***(see Annex IV).***

The processes identified by the BPR team are also shown under ***Annex V***.

3.2. Ethiopian Shipping Lines S.C Operational and Financial Performance before and after BPR

Michael Armstrong and Angela Baron (1998) **[30]** point out that performance is affected by a number of factors that comprise of the following:-

- Personal factors-the individual's skill, competence, motivation and commitment.
- Leadership factors – the quality of encouragement, guidance and support provided by managers and team leaders.
- Team factors – the quality of support provided by colleagues.
- Systems factors – the system of work and facilities provided by the organization.
- Contextual (situational) factors – internal and external environmental pressures and changes.

In subsequent sections of this chapter, an attempt was made to present performance data of ESLSC from 2002/03 up to 2006/07.

3.2.1 Operation Performances

Table 20 below depicts that after the implementation of BPR there has been significant increase in total cargo lifting.

In Tons

	BASE YEAR 2002/2003	2003/2004		2004/2005*		2005/2006		2006/2007	
CARGO LIFTED	TONS	TONS	%	TONS	%	TONS	%	TONS	%
IMPORT CARGO	665,549	811,882	21.99	1,075,338	61.57	1,394,560	109.54	1,475,041	121.63
EXPORT CARGO	2,864	1,981	-30.83	24,829	766.93	33,191	1,058.90	6,158	115.01
CROSS TRADING	31,368	89,631	185.74	54,536	73.86	25,909	(17.40)	3,622	(88.45)
TOTAL	699,781	903,494	29.11	1,154,703	65.01	1,453,660	107.73	1,484,821	112.18

Table 20 – Company's cargo lifting in tons for the budget years 2002/'03 up to 2006/'07

***** BPR was implemented during 2004/2005 by the Company.

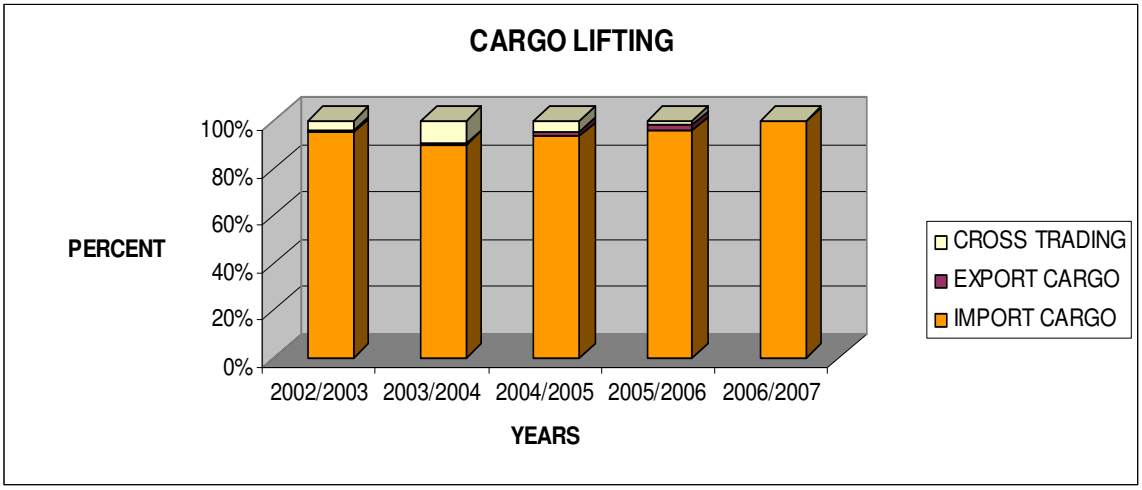

Chart 1 - Cargo lifted for budget years 2002/2003 up to 2006/2007

Out of the total cargo lifted in year 2006/2007, about 1,475,041 tons was from import cargo, which accounts for 99% of the total cargo and the remaining are from export cargo and cross trading which is transportation of goods between foreign ports.

During the year 2005/'06 and 2006/'07, Import cargo rise by 110% and 122% from base year of 2002/'03 and reaching to 1,394,560 and 1,475,041 tons.

It may be more informative to consider cargo lifting by taking the operation of both slot and own vessels.

	BASE YEAR 2002/2003	2003/2004		2004/2005		2005/2006		2006/2007	
CARGO LIFTED BY	TONS	TONS	%	TONS	%	TONS	%	TONS	%
OWN VESSELS	269,104	360,697	34.04	405,725	50.77	355,979	32.28	351,459	30.60
SLOT VESSELS	430,677	542,797	26.03	748,978	73.91	1,097,681	154.87	1,133,362	163.16
TOTAL	**699,781**	**903,494**	29.11	**1,154,703**	65.01	**1,453,660**	107.73	**1,484,821**	112.18

Table 21 – Company's Cargo lifting for budget years 2002/2003 up to 2006/2007

As we refer from Table 21, the total cargo lifting from slot operation, which requires short delivery time and less cost, has shown significant increase from year to year to the extent that performance of slot operation surpassed own vessels'. However as own vessels are becoming old, their contribution to the Company's cargo operation has declined and reached to 25% of the total cargo lifting.

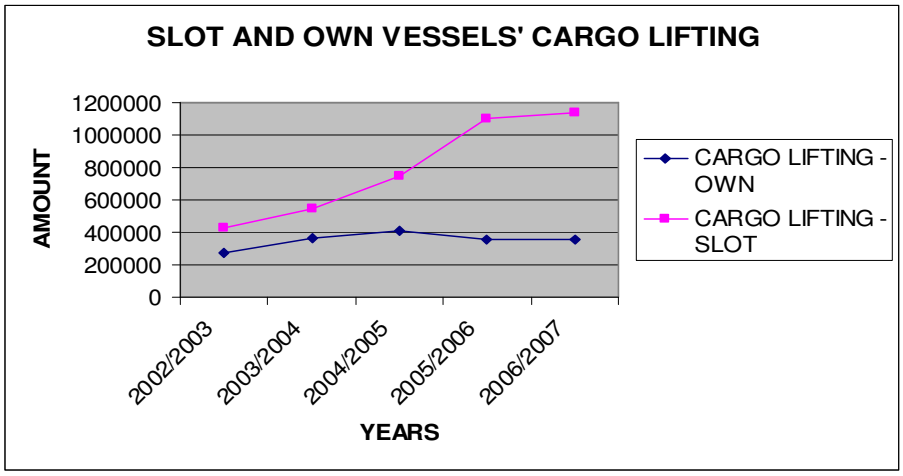

Chart 2 – Slot and own vessel's cargo lifting

3.2.2 Financial Performance

a) Cargo revenue

As table 22 shows, ESLSC has performed financially quite well and registered a marked increase in cargo revenue from year to year. There has been substantial increase in revenue earning.

Below table depicts that after the implementation of BPR there has been significant increase in total cargo revenue and there was also a corresponding growth in net profit.

IN '000 BIRR

	Base year 2002/2003	2003/2004	%	2004/2005	%	2005/2006	%	2006/2007	%
CARGO REVENUE	756,730	849,654	12.28	1,147,034	51.58	1,571,827	107.71	1,812,461	139.51
OPERATING EXPENSE	642,850	711,705	10.71	995,873	54.92	1,347,064	109.55	1,527,573	137.63
GROSS PROFIT	113,880	137,949	21.14	151,161	32.74	224,763	97.37	284,888	150.16
OTHER INCOME	25,706	45,420	76.69	75,982	195.58	68,127	165.03	90,754	253.05
	139,586	183,369	31.37	227,143	62.73	292,890	109.83	375,642	169.11
ADMINSTRATIVE EXPENSE	**41,195**	**53,370**	29.56	**46,778**	13.55	**59,852**	45.29	**87,918**	113.42
NET INCOME	**98,391**	**129,999**	32.12	**180,365**	83.31	**233,038**	136.85	**287,724**	192.43

Table 22 – Company's profit and loss for budget years 2005/'06 up to 2006/'07

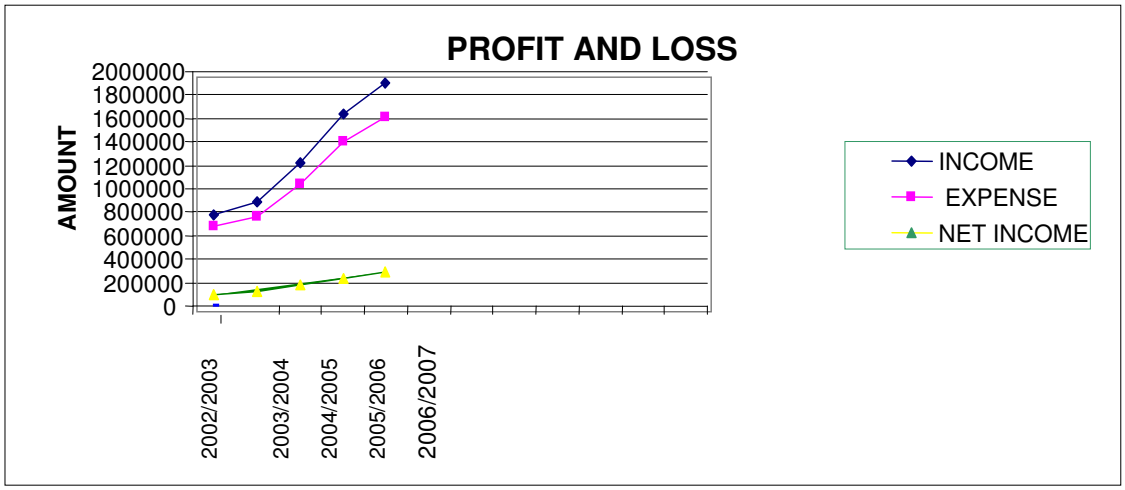

Chart 3 – Company's profit & loss for budget years 2002/'03 up to 2006/2007

Using 2002/'03 as a base year , during 2006/'07 company's gross revenue and net income increased by 140% and 192% respectively. Also, as a result of implementing BPR and government's encouraging policy on investment, Company's cargo revenue as well as net income was increased at an average increasing rate of 29 & 30% respectively.

During budget year 2002 up to 2005, for the three consecutive budget years, the company had earned an average net profit of Birr 136.252 million. However during the following two budget years i.e. 2005/'06 & 2006/'07, the Company had earned a net profit of Birr 233.038 million & Birr 287.724 million, which has a tremendous average increase of 91%.

It can be noted from Table 22 that in the year 2006/'07 the company earned (cargo revenue plus other income) Birr 1,903.329 million, incurred (operating and administrative expenses) of Birr 1,615.533 million and achieved a net profit of Birr 287.796 million.

The major factor for this achievement is the implementation of BPR which focuses on customers and the generation of greater value for customer.

b) Profitability Ratio

Profitability is the ability of a business to earn profit over a period of time. Although the profit figure is the starting point for any calculation of cash flow, profitable companies can still fail for a lack of cash. Without profit, there is no cash and therefore profitability must be seen as a critical success factors.

Interims of profitability, ESLSC's performance over the period from 2002/'03 up to 2006/'07 is as shown in Table 22 up to Table 26.

❖ Gross Profit Margin

A financial metric used to assess the Company's financial health by revealing the proportion of money left over from revenues after accounting for the cost of services. It also serves as the source for paying additional expenses and future savings. The gross profit margin measures how the company was efficient during the process delivering service to its customers. A company that boasts a higher gross profit margin than its competitors and industry is more efficient.

Table 23 shows the company's Gross profit margin which depicts the margin the company earns on its sales since year 2002/'03 up to 2006/'07.

	BASE YEAR 2002/'03	2003/'04	2004/'05	2005/'06	2006/'07
GROSS PROFIT MARGIN	15.05	16.24	13.18	14.30	15.72

Table 23 – Company's gross profit margin for budget years 2002/'03 up to 2006/2007

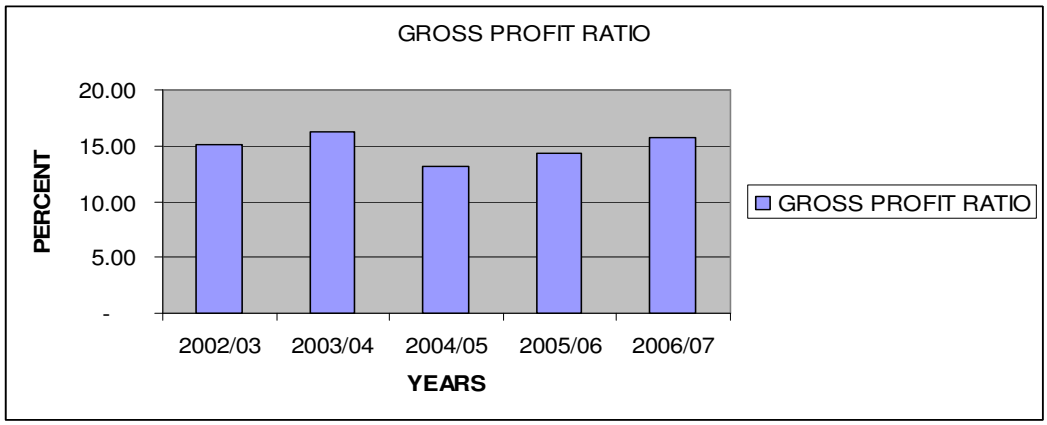

Chart 4 – Company's gross profit ratio for budget years 2002/'03 up to 2006/2007

❖ *Return on Assets (ROA)*

Return on assets relates net income to total asset and measures the company's earnings in relation to all of the resources it had at its disposal or measures how efficiently the Company has used its asset. A comparison of net income and average total assets, the ROA ratio reveals how much income management has been able to squeeze from each Birr's worth of a company's assets.

Table 24 shows how the Company's ROA was improved from year to year and how the company is performing since the implementation of BPR. In fact as the Company is acquiring two new vessels, ROA in year 2006/'07 shows a decrease of 14% from its preceding budget year.

	2002/'03 (Base year)	2003/'04	%	2004/'05	%	2005/'06	%	2006/'07	%
ROA	17.99	19.78	10	22.5	25	24.03	34	20.7	15

Table 24 – Company's Return on Asset (ROA) for budget years 2002/'03 up to 2006/2007

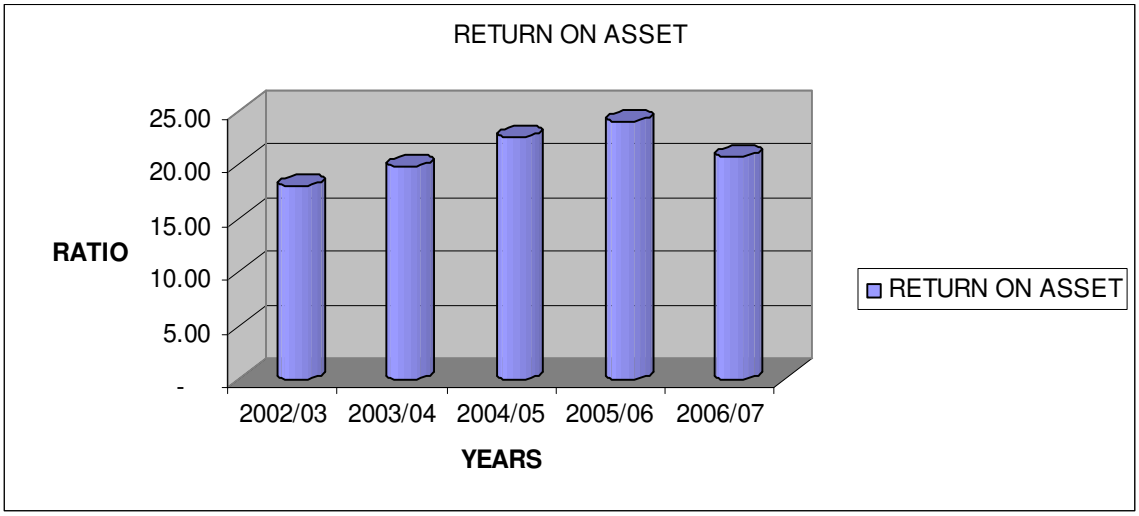

Chart 5 – Company's Return on Asset (ROA) for budget years 2002/'03 up to 2006/2007

According to the above graph the company has high rate in the year 2004/'05 and 2005/'06 as compared to the other three years. This high rate of return suggested that ESLSC is utilizing its assets as profitably.

❖ Return on Investment (ROI)

The ROI is the most important ratio of all. It is the percentage of return on funds invested in the business by its owners. In short, this ratio tells the owner whether or not all the effort put into the business has been worthwhile. It indicates the rate of return earned on the value of owners' equity.

	(BASE YEAR) 2002/'03	2003/'04	2004/'05	2005/'06	2006/'07
ROI	26.70	55.99	40.88	51.42	63.24

Table 25 – Company's Return on Investment (ROI) for budget years 2002/'03 up to 2006/2007

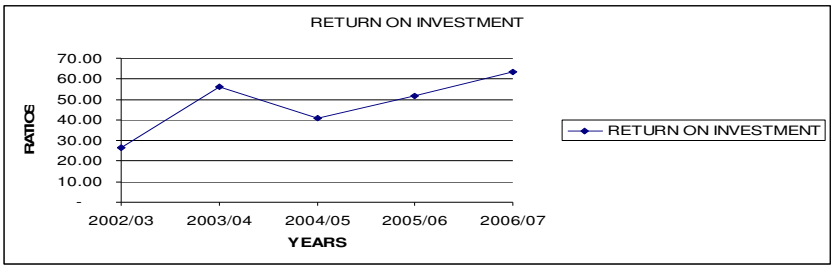

Chart 6 – Company's Return on Investment (ROI) for budget years 2002/'03 up to 2006/2007

As we refer from Table 25 & Chart 6 since the implementation of BPR, the company's return for every invested birr shows an average increment of 24% yearly.

❖ Net Profit Margin

Profit margin shows what percent of sales in birr will be able to convert to net income or tells you how much profit a company makes for every one Birr it generates in revenue. Profit margins vary by industry, but all else being equal, the higher a company's profit margin compared to its competitors, the better.

	(BASE YEAR) 2002/'03	2003/04	2004/05	2005/06	2006/07
PROFIT MARGIN	13.00	15.30	15.72	14.83	15.88

Table 26 – Company's net profit margin for budget years 2002/'03 up to 2006/2007

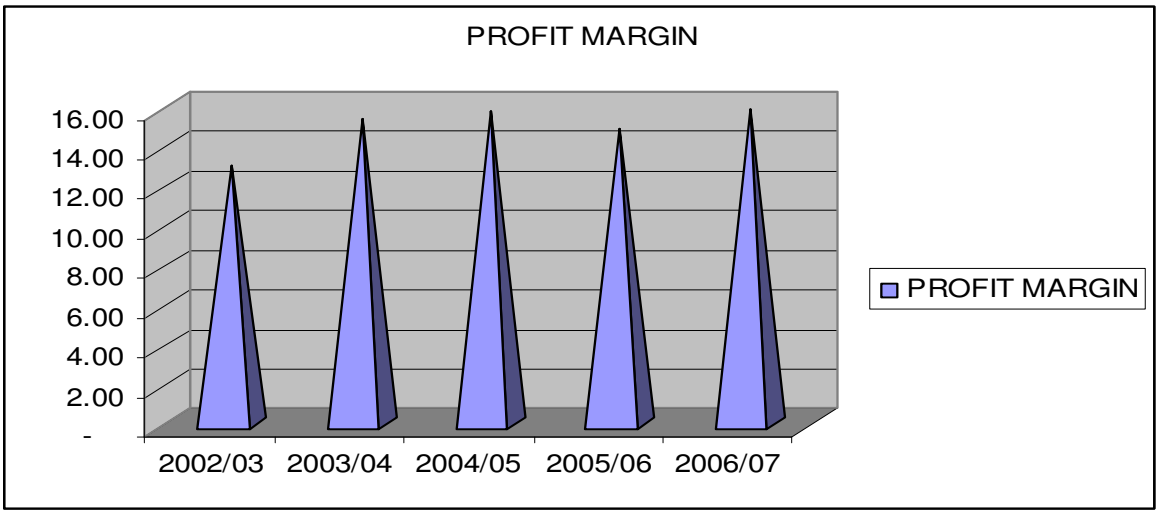

Chart 7 – Company's net profit margin for budget years 2002/'03 up to 2006/2007

Profit margin is an important ratio because it describes how well a birr of sales (revenue) is squeezed in to profit. As Table 26 shows, ESLSC was performing well that the net profit margin has consistently been increasing over the years 2002/'03 to 2006/'07.

c) Liquidity Ratio

It is extremely essential for a company to be able to meet its obligation as they become due. Liquidity ratio measures the ability of the company to meet its current obligations.

❖ Current ratio

Current ratio expresses the relation ship between the company's current asset and its current liabilities. The rule of thumb says that current ratio should be at least 2 that are the current asset should meet current liabilities at least twice. Liquidity ratio measures the extent to which the firm can meet its immediate obligations.

	(BASE YEAR) 2002/'03	2003/'04	2004/'05	2005/'06	2006/'07
Current Ratio	2.42	1.16	1.82	1.53	1.44

Table 27 – Company's Current ratio for budget years 2002/'03 up to 2006/2007

From Table 27, we are able to analyze that in the year 2005/'06 the ratio has shown a slight decrease by 0.29 which indicates the firm has shown a decrease in current ratio as compared to 1.82 of 2005.

The current ratio for year 2006/'07 was also lower than the other years which suggests that ESLSC can have difficulty in meeting requirements of credits.

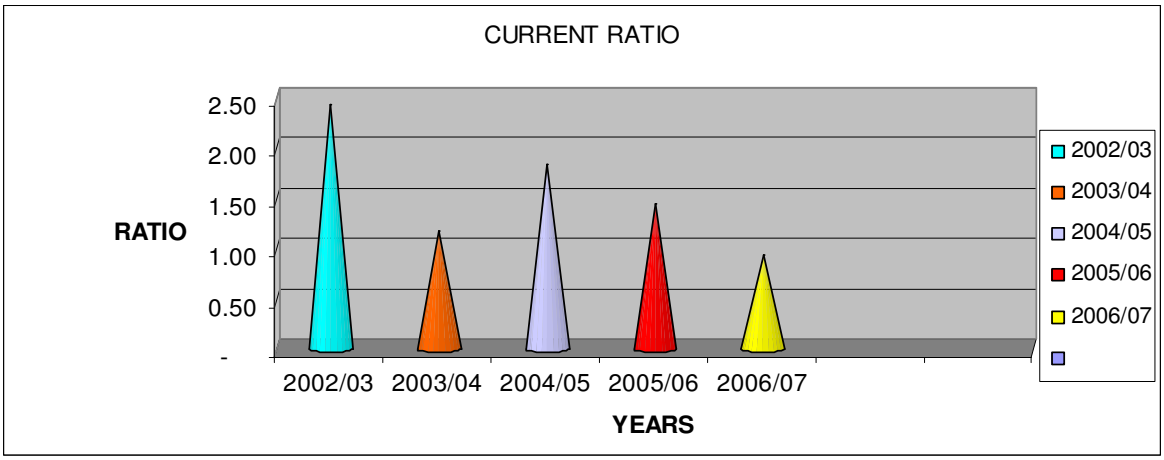

Chart 8 – Company's current ratio for budget years 2002/'03 up to 2006/2007

d) Efficiency Ratio

It measures the efficiency of a company in managing and utilizing its assets. The higher is the turnover ratio, the more efficient in managing and utilizing of assets. This means the intensity with which assets and liabilities are utilized to generate revenue is a determinant factor for the company's efficiency.

❖ Total Asset Turn Over

Total asset turn over indicates the efficiency with which the company uses all its assets to generate sales. In other words, total asset turnover indicates how many birr of sales are supported by one birr of total assets.

Table 28 depicts that after the implementation of BPR there has been significant increase in Company's Total Asset Turn Over for budget years 2002/'03 up to 2005/2006.

YEAR	COMPANY RATE
2002/'03	1.38
2003/'04	1.29
2004/'05	1.43
2005/'06	1.62
2006/'07	1.31

Table 28 – Company's Total Asset Turn Over for budget years 2002/'03 up to 2006/2007

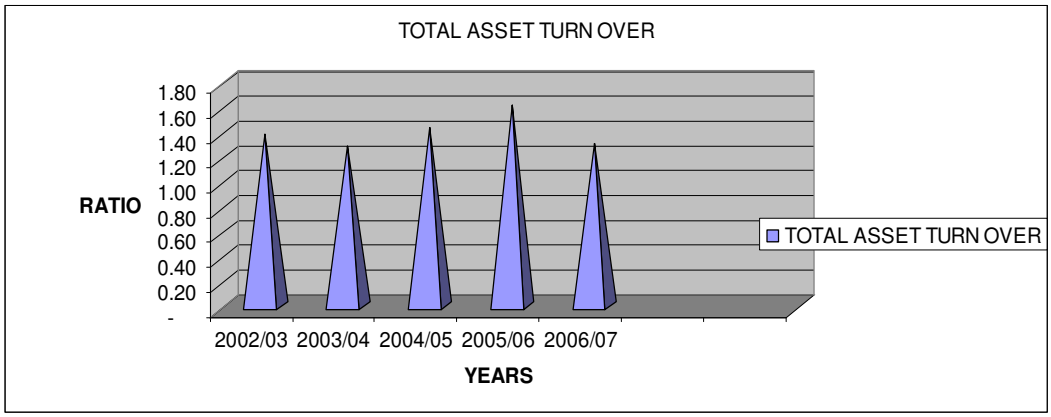

Chart 9 – Company's Total Asset Turn Over for budget years 2002/'03 up to 2006/2007

3.2.3 Human resource before and after BPR implementation

Business Process Reengineering is the key to transforming how people work. The two cornerstones of any organization are the people and the processes. Hence human resource is the most important and determinant one in the organization to achieve the objectives.

Keeping this in mind ESLSC had 536 employees in the year 2002/'03. However, due to the increase in work load the company continued to employ workers and finally the total number of employees at the end 2006/'07 became 643.

	2002/2003 (Base Year)		2003/2004		2004/2005		2005/2006		2006/2007	
	NUMBER	%	NUMBER	%	NUMB.	%	NUMB.	%	NUMB.	%
MANPOWER	536	100	554	3	570	6.34	605	13	643	20
TOTAL	**536**	**100**	**554**	**3**	**570**	6.34	**605**	**13**	**643**	**20**

Table 29 – Company's man power for budget years 2002/'03 up to 2006/2007

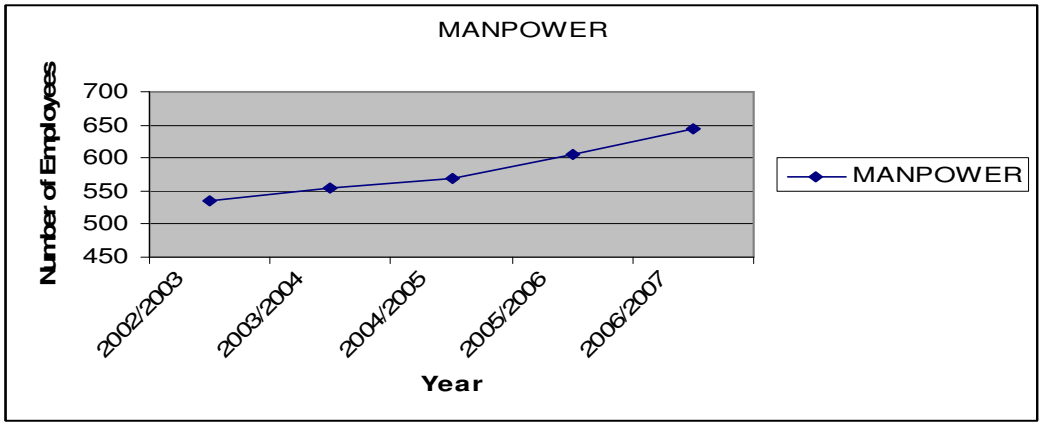

Chart 10 – Company's man power for budget years 2002/'03 up to 2006/2007

According to Table 29, the absolute number of manpower has increased from base year of 2002/'03 and it shows 5% average increase per year.

	2002/'03	%	2003/'04	%	2004/'05	%	2005/'06	%	2006/'07	%
OWN VESSELS'-CARGO REVENUE	266129	100	284869	70.4	336092	26.29	334211	25.58	402574	51.27
MANPOWER	536	100	554	3.36	570	6.34	605	12.87	643	19.96
CARGO REVENUE TO TOTAL NUMBER OF EMPLOYEES	**496.51**		**514.2**		**589.64**		**552.41**		**626.09**	

Table 30 - Company's performance and Audit report for the budget year 2002/'03 – 2006/'07

The total cargo revenue comprises of own vessels and slot operation revenue. Cargo revenue from own vessels can be expressed in terms of the quantity of manpower required to accomplish the work demanded. In addition to the nature of activities the total numbers of employees are determined by the volume of work.

As can be seen from Table 30, in the above table, using 536 employees the company has earned Birr 756730 million in the year 2002/'03. This figure increased in the year 2006/'07, and showed a 139.51% and 19.96% increment in total revenue and number of employees respectively as compared to that of 2002/'03.

3.3. Questionnaire Survey Analysis

Questionnaires were prepared and distributed to 40 members of the reengineering *team leaders* 85 *employees* of the company participated in the implementation of BPR and 70 *customers* who have direct business contact within the company.

3.3.1. Responses by BPR Team Leaders

Leaders play a determinant role in implementing BPR and they are the core in integrating and coordinating employees and resources available in attaining company's goal. Hence in consideration of this active role, 40 team leaders were requested to fill this questioner.

3.3.1.1. Background Information

Educational background and work experience of the respondent were considered and shown in Table 31 & 32. According to this study result, over 87.5% of the respondents have qualification of university degree and the remaining 12.5% have college diploma.

Table 32 also shows 62.5% of the respondents have work experience of above 20 years. Hence qualification and work experience have impact on the quality of the response and understanding of the subject.

Criteria For Evaluation		Number of Respondent	Percent (%)
What is the highest level of education achieved?	College Diploma	5	12.5
	University Degree	35	87.5
	Total	40	100.0

Table - 31 Education Level

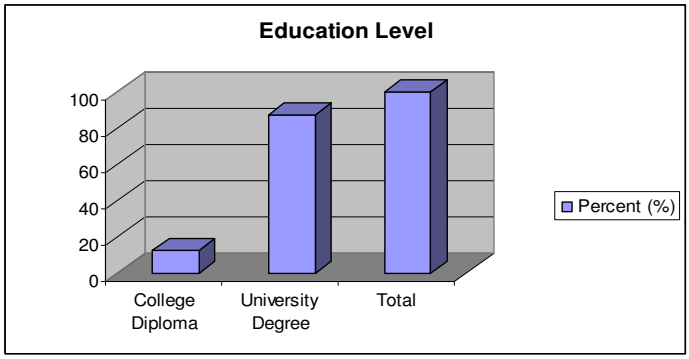

Chart 11- Respondent educational levels

Criteria For Evaluation		Number of Respondent	Percent (%)
Work Experience	5-10 Years	2	5.0
	11-15 Years	3	7.5
	6-20 Years	9	22.5
	> 20 Years	25	62.5
	Total	39	97.5
	Missing	1	2.5
	Total	40	100.0

Table 32 - Work Experience

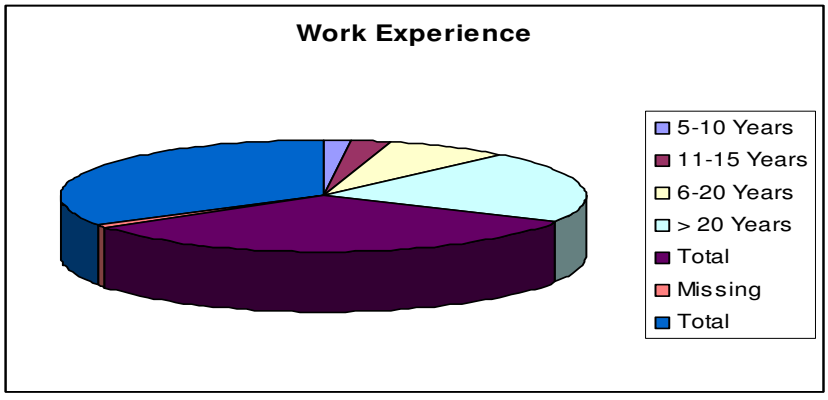

Chart 12 - Respondents' work experience

Table 33 & Table 34 show previous and current position of the respondents before and after the reengineering. Comparing the two tables reveal that there was no significant change on employees' position before and after BPR.

Criteria For Evaluation		Number of Respondent	Percent (%)
Current Position (After the reengineering)	Department Head	5	12.5
	Division Head	13	32.5
	IT Advisor	1	2.5
	Lawyer II	1	2.5
	Officer	1	2.5
	Section Head	10	25.0
	Service Head	1	2.5
	Missing	8	20.0
	Total	40	100.0

Table 33 - Current Positions

Criteria For Evaluation		Number of Respondent	Percent (%)
Previous position (Before the reengineering)	Department Head	5	12.5
	Division Head	13	32.5
	Lawyer II	1	2.5
	Officer	1	2.5
	Section Head	11	27.5
	Service Head	1	2.5
	Missing	8	20.0
	Total	40	100.0

Table 34 - Previous Positions

3.3.1.2. Conceptual and understanding of Business Process Reengineering

Respondents were asked on their understandings about business process reengineering. The respondents understand BPR from different perspective.

According to Table 35, 40% of the respondents understand BPR as a mechanism that could bring both processes, continuous, fundamental, radical & dramatic improvements. Also 22.5% of the respondents understand BPR as a mechanism that could brings only continuous improvement.

Similarly 22.5% of the respondents consider BPR as fundamental, radical and dramatic improvement. The remaining 15% of the respondents understand BPR as a process improvement.

Criteria For Evaluation		Number of Respondent	Percent (%)
Understanding about business process reengineering (BPR)	Continuous Improvement	9	22.5
	Process Improvement	6	15.0
	Fundamental , radical, dramatic improvement	9	22.5
	All the above	16	40.0
	Total	40	100.0

Table - 35 Understanding about BPR

Criteria For Evaluation		Number of Respondent	Percent (%)
When did they implement BPR within the company?	Since 2004/05	19	47.5
	Since 2005/06	16	40.0
	Since 2006/07	5	12.5
	Total	40	100.0

Table 36 – ESLSC's BPR implementation time

The team leaders were asked when business process reengineering within the company has been implemented. As we refer from Table 36, out of 40 team leaders, 19 i.e. 47.5% of them replied that BPR has been implemented since 2004/05 and the remaining 40% & 12.5% of respondent replied that BPR has been implemented since 2005/'06 & 2006/'07 respectively.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Factor lead to undertake BPR within the company as the management has the foresight that trouble is coming in	7	17.50	15	37.50	22	55.00	18	45.00	40	100
Factor lead to undertake BPR within the company because the company found in deep trouble	2	5.00	18	45.00	20	50.00	20	50.00	40	100
Factor lead to undertake BPR within the company the magnitude of cost is high	6	15.00	14	35.00	20	50.00	20	50.00	40	100
Factor lead to undertake BPR within the company customer service is weak	12	30.00	13	32.50	25	62.50	15	37.50	40	100
Factor lead to undertake BPR within the company changing customers requirements or characters	18	45.00	8	20.00	26	65.00	14	35.00	40	100
Factor lead to undertake BPR within the company due to the management is ambitious and aggressive for further improvement	22	55.00	6	15.00	28	70.00	12	30.00	40	100
Factor lead to undertake BPR within the company by Internal customers are demanding for success	17	42.50	5	12.50	22	55.00	18	45.00	40	100
Factor lead to undertake BPR within the company to Introducing high quality automation in BPR implementation	18	45.00	6	15.00	24	60.00	16	40.00	40	100
Factor lead to undertake BPR within the company the existing policies and regulation are contradicting to the business	6	15.00	17	42.50	23	57.50	17	42.50	40	100

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
affair										
Factor lead to undertake BPR within the company as a needs task based organizational structure	17	42.50	6	15.00	23	57.50	17	42.50	40	100
Factor lead to undertake BPR within the company due to Ministry of capacity building demands to be reengineered	38	95.00	1	2.50	39	97.50	1	2.50	40	100
Other reasons please specify							40	100.00		

Table 37 - Factors that lead to undertake BPR in ESLSC

The respondents were also asked on factors that lead the company to undertake Business Process Reengineering.

As we refer from above Table 37, most of the respondent, about 95% of them agreed that Ministry of Capacity Building demands to be reengineered is among the factors that lead to undertake BPR within the Company.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
The combination of governance structure formed during BPR implementation as the reengineering leader	34	85.00	4	10.00	38	95.00	2	5.00	40	100
The combination of governance structure formed during BPR implementation as Process owner	33	82.50	4	10.00	37	92.50	3	7.50	40	100
The combination of governance structure formed during BPR implementation as Reengineering team	38	95.00	1	2.50	39	97.50	1	2.50	40	100
The combination of governance structure formed during BPR implementation as Reengineering czar	12	30.00	4	10.00	16	40.00	24	60.00	40	100
The combination of governance structure formed during BPR implementation as Steering team	25	62.50	1	2.50	26	65.00	14	35.00	40	100

Table 38 - Combination of governance structure during BPR implementation

Regarding combination of governance structure during BPR implementation, the survey result in Table 38 depicted that 95% of the respondent agreed on the combination of governance structure during BPR implementation as reengineering team and 85% of the respondents consider the combination as reengineering leader and 82.5% of the respondents consider the combination as reengineering owner.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Did the company planned and assigned the best and bright staff?	34	85.00	3	7.5	37	92.5	3	7.5	40	100

Table 39 - Opinion about ESLSC's plan & assignment of staff for BPR

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Did the top management (CEO) leads the reengineering project to the end?	36	90	2	5	38	95	2	5	40	100

Table 40 - Does top management lead the reengineering project?

The respondents were asked to give their opinion whether the Company planned and assigned the best and brightest staff. The survey result which is presented above in Table 39 shows 85% of the respondents agreed that the company was assigned the best and brightest staff.

Attempt was also made to know if the top management (CEO) leads the reengineering project to the end. As we refer from Table 40, about 90% of the respondents agreed that top management leads the reengineering project to the end.

Criteria for evaluation	Low		Good		Average		Very Good		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%	NR	%	NR	%
Has the management taking the reengineering project as his/her personal?			3	7.50	16	40.00	18	45.00	37	92.50	3	7.50	40	100
Has the management been equipped with sufficient knowledge?			3	7.50	12	30.00	22	55.00	37	92.50	3	7.50	40	100
Has the leader managed the project him/her self?	1	2.50	2	5.00	12	30.00	22	55.00	37	92.50	3	7.50	40	100
Has management demonstrated commitment & restlessness?	1	2.50	3	7.50	14	35.00	19	47.50	37	92.50	3	7.50	40	100
Has monitor, evaluate the project & giving incentives to successful?	2	5.00	7	17.50	14	35.00	14	35.00	37	92.50	3	7.50	40	100
Has unfreezing been conducted by showing the pain?	2	5.00	4	10.00	9	22.50	8	20.00	23	57.50	17	42.50	40	100
Has unfreezing been conducted by creating conductive environment?			4	10.00	7	17.50	17	42.50	28	70.00	12	30.00	40	100
Has unfreezing been conducted by mobilizing the employees?			3	7.50	9	22.50	13	32.50	25	62.50	15	37.50	40	100
Has unfreezing been conducted by communicating the plan?			3	7.50	12	30.00	15	37.50	30	75.00	10	25.00	40	100

Table 41 - Skill and performance in carrying out responsibilities and duties by the Top management

Team leaders who were participated in filling this questioner were asked to rate the skill and performance of top management (CEO) in carrying out responsibilities and duties.

Based on Table 41, management has been equipped with sufficient knowledge and the leader manages the project himself is ranked as very good by 55% of the respondents. Management demonstrates commitment and restlessness in carrying out responsibilities and duties ranked as very good by 47.5% of the respondent.

Two criteria for evaluation i.e. management taking the reengineering project as his personal and unfreezing has been conducted by creating conductive environment ranked as very good by 45% & 42.5% of the respondents respectively.

On the other hand management has taking the reengineering project as his personal was also ranked as average by 40% of the respondents. Management demonstrates commitment and restlessness and has monitor, evaluate the project & giving incentives to successful are ranked average by 35% of the respondents.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Does the leader explicitly begin inculcating new values on people in the company?	36	90	4	10	40	100			40	100

Table 42 - Does leader explicitly begin inculcating new value in ESLSC?

Team leaders who were participated in this questioner were asked whether the leader explicitly begin inculcating new values on people in the company.

From the data presented in Table 42, 90% of the respondent agreed that leader does explicitly begin inculcating new values on people in the company.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Has the reengineering project followed TOR?	36	90	2	5	38	95	2	5	40	100

Table 43 - Does the reengineering project well planned in line with TOR?

The respondents were also asked whether the reengineering project follows the outline TOR.

As we refer from above Table 43, 90% of the respondent confirms the reengineering project follows the outline TOR.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%

Is the business Processes selected and prioritized using dysfunctional, important, feasibility criteria? Has sufficient discussion been made when prioritizing the BPR?	33	82.5	3	7.5	36	90	4	10	40	100

Table 44 - Was the BPR selected and prioritized?

On the other hand, team leaders were asked whether the business processes selected and prioritized using dysfunctional, important, feasibility criteria and whether sufficient discussion has been made in prioritizing the BPR.

According to Table 44 we can understand that 82.5% of the respondents believed that the business processes were selected and prioritized using dysfunctional, important, feasibility criteria, and that sufficient discussions in prioritizing BPR have been made.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
The current business process shows where it begins & ends	37	92.5	2	5	39	97.5	1	2.5	40	100
The current business process specifies its input & output (demand, request, order, delivered)	36	90	3	7.5	39	97.5	1	2.5	40	100
The current business process describes the sub process	32	80	3	7.5	35	87.5	5	12.5	40	100
The current business process uses process map	27	67.5	5	12.5	32	80	8	20	40	100
The current business process shows the interfaces of different business process	28	70	2	5	30	75	10	25	40	100
The current business process others							40	100		

Table 45- Understanding about current BPR

The respondent was also asked on the current business process whether it shows where it begins and ends, whether it specifies its input and output and other criteria which enable to understand the process.

As we refer from Table 45, 92.5% of the respondents understand that the current process shows where the business process begins and ends and 90% understands that the current business process specifies its input and outputs. Also 80% of the respondents understand that the current business process describes the sub process.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Understand customer needs by identifying who are customer	38	95	1	2.5	39	97.5	1	2.5	40	100

Understand customer needs by studying customer goals	34	85	4	10	38	95	2	5	40	100
Understand customer needs by studying customer needs	40	100								
Understand customer needs by identifying customers' real problems	36	90	2	5	38	95	2	5	40	100
Understand customer needs by requesting the process has been serving them	32	80	6	15	38	95	2	5	40	100
Understand customer needs by identifying the government's requirement, strategy and policies	40	100								

Table 46- Critical understanding about customer needs

The respondents were also asked how critical to understand customers' needs. As we refer from Table 46, almost all respondent, i.e. 100%, try to understand customers' needs by studying the needs of customers and by identifying the government's requirements, strategy and policies as well. Also 95% of the respondents understand customers by identifying the needs of customer.

In addition to the above criteria, 90% of the respondents critically understand customers' needs by identifying customers' real problems and 80% of them understand customers' needs by requesting the process serving them.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Did you take into consideration the role of information technology as a factor for success during implementing BPR?	39	97.5	1	2.5	40	100				

Table 47- Consideration the role of Information Technology

The respondents were asked whether consideration was made as to the role of information technology as a factor for success during PBR implementation.

Table 47 depicted that 97.5% of the respondents shows their agreement that information technology plays significant role and is a factor in implementing BPR.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Identify the forms and manifesto of change programs reengineering as automation or	16	40	8	20	24	60	16	40	40	100

computerization										
Identify the forms and manifesto of change programs reengineering as restructuring or down sizing	9	22.5	16	40	25	62.5	15	37.5	40	100
Identify the forms and manifesto of change programs reengineering as reorganization, delivering or flattering	15	37.5	11	27.5	26	65	14	35	40	100
Identify the forms and manifesto of change programs reengineering as quality improvement	32	80	5	12.5	37	92.5	3	7.5	40	100
Identify the forms and manifesto of change programs reengineering as decentralization or outsourcing	8	20	14	35	22	55	18	45	40	100
Identify the forms and manifesto of change programs reengineering as incremental change & step change	21	52.5	4	10	25	62.5	15	37.5	40	100

Table 48- Identification of the forms and manifesto of change programs

Team leaders were asked how they identify the forms and manifesto of change program that are different from reengineering or what reengineering is not.

Among five criteria listed in above Table 48, 80% of the respondents agreed that, they could identify the forms and manifesto of change program reengineering as quality improvement and 52.5% of them are also agreed reengineering as incremental change and steep change that enables them to identify the forms and manifesto of change program.

Also 40% of the respondents are agreed that reengineering as automation or computerization enables them to identify the forms and manifesto of change.

On the other hand, 40% of the respondents show their disagreement on reengineering as restructuring or down sizing in identifying forms and manifesto of change program.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Did you have easy and rapid access to all information within the company related to the process that was to be reengineered	31	77.5	8	20	39	97.5	1	2.5	40	100

Table 49- Easy and rapid access to information about BPR

Related to the process that was to be reengineered, respondents were asked whether they have easy and rapid access to all information within the company.

As we refer from Table 49, 77% of the respondents show their contention as to their easy and rapid access to all information within the company.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%

Did the company benchmark during the implementation of BPR?	37	92.5	2	5	39	97.5	1	2.5	40	100

Table 50 - Benchmark during implementation of BPR

Also the team leaders were asked whether the company have benchmarking during the implementation of BPR.

As we refer from Table 50, 92.50 % of the respondents confirmed that the company did benchmark while implementing BPR.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Benchmarking process identify by process?	19	47.5	1	2.5	20	50	20	50	40	100
Benchmarking process identify by activities?	29	72.5	2	5	31	77.5	9	22.5	40	100
Benchmarking process identify by factors?	25	62.5	1	2.5	26	65	14	35	40	100
Benchmarking process determine by Generic form?	22	55					18	45	40	100
Benchmarking process determine by functional form?	31	77.5					9	22.5	40	100
Benchmarking process determine by competitive form?	19	47.5	1	2.5	20	50	20	50	40	100
Benchmarking process determine by internal form?	20	50	1	2.5	21	52.5	19	47.5	40	100
Determine benchmark target by Company?	26	65	3	7.5	29	72.5	11	27.5	40	100
Determine benchmark target by Organization?	22	55	3	7.5	25	62.5	15	37.5	40	100
Determine benchmark target by Industry?	25	62.5	2	5	27	67.5	13	32.5	40	100
Determine benchmark target by Process?	25	62.5	2	5	27	67.5	13	32.5	40	100
Specific benchmark values by collecting and analyzing information from survey	25	62.5	1	2.5	26	65	14	35	40	100
specific benchmark values by collecting and analyzing information from interview	24	60					16	40	40	100
specific benchmark values by collecting and analyzing information from industry information	31	77.5					9	22.5	40	100
specific benchmark values by collecting and analyzing information from direct contacts	25	62.5	1	2.5	26	65	14	35	40	100
specific benchmark values by collecting and analyzing information from business or trade publication	19	47.5	1	2.5	20	50	20	50	40	100
specific benchmark values by collecting and analyzing information from technical journals	15	37.5	1	2.5	16	40	24	60	40	100
specific benchmark values by collecting and analyzing information from other source of information	18	45	1	2.5	19	47.5	21	52.5	40	100
The best practice for each benchmarked item	32	80	1	2.5	33	82.5	7	17.5	40	100
Evaluate the process to which benchmarks apply & establish objectives & improvement goals	31	77.5					9	22.5	40	100
Implement plans & monitor results	32	80	3	7.5	35	87.5	5	12.5	40	100
Recalibrate internal base benchmarks	26	65	5	12.5	31	77.5	9	22.5	40	100

Table 51- Major steps in performing benchmarking process

The respondents were asked whether major steps were followed in performing benchmarking process. Under this task, which is depicted in above Table 51, a number of criteria are enumerated.

Majorities of the respondents, i.e. 80%, are agreed that determining the best practice for each benchmarked item and implement plans and monitor results as well, were the major steps followed in performing benchmarking process.

Also specific benchmark values by collecting and analyzing information from industry information as well as evaluate the process to which benchmark apply & establish objective & improvement goals are among the criteria in which 77.50% of the respondent agreed on the major steps followed in performing benchmarking process.

Benchmarking process identified by activities is also considered by 72.5% of the respondents as major steps in performing benchmarking process.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
To satisfy customer needs & expectations	33	82.5	4	10	37	92.5	3	7.5	40	100
To discuss & understand the methods & practice needs to reach new goals	30	75	2	5	32	80	8	20	40	100
To adopt best practice	36	90					4	10	40	100
Offers an excellent source of possible stretch objectives	28	70	1	2.5	29	72.5	11	27.5	40	100
Encourage break through thinking , creative thinking out of the box thinking	31	77.5	1	2.5	32	80	8	20	40	100
To achieve a superior process	31	77.5	1	2.5	32	80	8	20	40	100
System to manage a change	35	87.5	1	2.5	36	90	4	10	40	100
To see tomorrow solution for to day problem	29	72.5	2	5	31	77.5	9	22.5	40	100
To discover emerging enablers	24	60	3	7.5	27	67.5	13	32.5	40	100

***Tables 52 - Reasons that ESLSC uses benchmarking during* BPR**

The respondents were also asked to give their opinion as to why the company uses benchmarking during BPR time.

Based on Table 52, 90% of the respondents agreed that one of the reasons was to adopt best practice, 87.50% reported a system to manage change and 82.50% reported to satisfy customers needs & expectations as the reasons for benchmarking.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Did the company achieve potential gain by benchmarking?	35	87.5	2	5	37	92.5	3	7.5	40	100

Table 53 - Company's achievements in Potential gain by benchmarking

The respondents were also asked whether the company achieve potential gain by benchmarking.

Table 53 depicted that 87.5% of respondents agreed that ESLSC achieved potential gain by benchmarking.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Organizational structure on process based team Structure	14	35	14	35	28	70	12	30	40	100
Organizational structure on functional department structure	26	65	6	15	32	80	8	20	40	100

Table 54- Organizational structure during BPR implementation

Table 54 shows team leaders' reply on organizational structure during BPR implementation.

Based on above table, 65% of the respondents agreed that the company's structure during implementing of BPR was functional and 35% of them are agreed that the structure is process based team structure. On the other hand 35% of the respondents don't agree that the organizational structure is on process based team structure.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Implementing BPR by action plan	40	100								
Implementing BPR by manual	23	57.5	5	12.5	28	70	12	30	40	100
Establishing organizational structure and management system by work	16	40	8	20	24	60	16	40	40	100
Establishing organizational structure and management system by employment	15	37.5	9	22.5	24	60	16	40	40	100
Establishing organizational structure and management system by establish process based management	23	57.5	6	15	29	72.5	11	27.5	40	100
Testing	17	42.5	9	22.5	26	65	14	35	40	100
Refine the process design	29	72.5	5	12.5	34	85	6	15	40	100
Implementation & monitoring	34	85	1	2.5	35	87.5	5	12.5	40	100
Establish measurement & reward system	27	67.5	4	10	31	77.5	9	22.5	40	100
Promotion /Growth	24	60	8	20	32	80	8	20	40	100
Inculcate new value in the organization value & belief development	26	65	4	10	30	75	10	25	40	100

Table 55 - Major steps followed by BPR implementation

The respondents were also asked to give their opinion as to the steps the company followed in implementing BPR.

As we can refer from Table 55, all respondents (100%) agreed that implementing BPR by action plan was major steps followed by BPR implementation and 85% of the respondents are also agreed that implementation and monitoring was one of the step followed by the company during the implementation of BPR.

Also 72.5% of the respondents are agreed that refine the process design was among the major steps followed by BPR implementation. In addition to above 67.5% of the respondents show their agreement on establishing measurement & reward system as a major step followed by BPR implementation.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Have you placed multidimensional teams on the process design?	31	77.5	8	20	39	97.5	1	2.5	40	100

Table 56 - Placement of multidimensional team

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
The organizational boundary adjusted to allow process doing their ways	29	72.5	10	25	39	97.5	1	2.5	40	100

Table 57 - Organizational boundary during BPR

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Have you provide adequate training for employees?	33	82.5	7	17.5	40	100				

Table 58 - Adequate training of BPR for employees

Table 56, 57 & 58 show how respondents are reacting on placement of multidimensional team, organizational boundary during BPR and adequate training of BPR for employee respectively.

According to Table 56, 77.5% of the respondents are agreed that they have placed multidimensional teams (the right people) on the process design to ensure the people in the process work together and that they are aligned toward common goal.

Regarding organizational boundary, as we refer from Table 57, 72.5% of the respondents are agreed that the organizational boundary has adjusted to allow process doing their ways.

Table 58 also shows team leaders reply on whether adequate training for employees has been provided. 82.5% are contended that adequate training for employees is being provided.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Have you communicated customer and stakeholders on the new design and got feedback	27	67.5	13	32.5	40	100				

Table 59 - Communication with customers and stakeholder about BPR

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Is the feedback from employees, customers and stakeholders and data from simulation incorporated	26	65	13	32.5	39	97.5	1	2.5	40	100

Table 60 - Feedback from employees, customers and stakeholders

Communicating and getting feedback from stakeholder are determining factors in introducing and implementing BPR. Hence the team leader were asked whether communication have been made with customers and employees on the new design and got feedback.

As we refer from Table 59, 67% of the respondents are agreed that customer and stakeholders have been communicated on the new design and that feedback from them were solicited.

Table 60 shows that 65% of the respondents are agreed on the incorporation of feedback from employees, customers and stakeholders and data from simulation to the new process design.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Essence of measurement is improvement, not accounting	38	95	2	5	40	100				
Is the out come, the goals that is measured?	38	95	1	2.5	39	97.5	1	2.5	40	100
Is the result of the process as a whole the efficiency of the tasks to be measured?	27	67.5	9	22.5	36	90	4	10	40	100
Is a balanced model or the scored model?	35	87.5					5	12.5	40	100
People paid for what they produced	28	70	8	20	36	90	4	10	40	100

Table 61- Basic concepts of measurement in BPR

Team leaders were asked whether the following basic concepts are being cleared.

As we refer from above Table 61, 95% of the respondents understand the essence of measurement is improvement, not accounting. Also 95% of the respondents understand that the outcome and the goals are to be measured i.e. cascade into individuals activities in the organization.

In addition, 87.5% of the respondents understand BPR as a balanced model i.e. the scorecard model, which is the best tool, to be used for performance measurement, not the traditional performance measurement tools.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Have you establish high level performance baseline for the whole process by calculating the cycle time?	26	65	13	32.5	39	97.5	1	2.5	40	100

Table 62- Establishment of high level performance baseline

Table 62 shows team leaders' response on question whether they establish high level performance baseline for the whole process by calculating the cycle time 65% of the respondents agreed on this criteria.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Is the performance measurement system linked with the individual compensation system?	28	70	10	25	38	95	2	5	40	100

Table 63 - Measurement linked with compensation

Table 63 shows team leaders' response on performance measurement system whether linked with the individual compensation system.

70% of the respondents have agreed the link of performance system with the individual compensation system.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
The management uses the measurement system for managing improvement	34	85	4	10	38	95	2	5	40	100

Table 64 - Measurement system for managing improvement

Team leaders were asked whether the management use the measurement system for managing improvement.

As we refer from Table 64, 85% of the respondents agreed that management uses the measurement system for managing improvement.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
In a position to see your measurement system in open to accommodate the need for continuous improvement	35	87.5	5	12.5	40	100				

Table 65 - Measurement related to accommodate continues improvement

Table 65 also shows respondent's reply on measurement related to accommodate continuous improvement. 87.50% of the respondents agreed that they were in the position to see that their measurement system is open to accommodate the need for continuous improvement.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Success in implementing BPR within the company by change management system & culture	39	97.5	1	2.5	40	100				
Success in implementing BPR within the company by management commitment & support	40	100								
Success in implementing BPR within the company by organizational structure	25	62.5	7	17.5	32	80	8	20	40	100
Success in implementing BPR within the company by project planning & management	33	82.5	1	2.5	34	85	6	15	40	100
Success in implementing BPR within the company by IT infrastructure	38	95					2	5	40	100

Table 66 - Factors for success in implementing BPR

Team leaders were requested to identify factors which contribute to success in implementing BPR within the company.

Among the five criteria listed in Table 66, all the team leaders, i.e. 100% agreed that management commitment & support could be considered as factors for success in implementing BPR.

Change management system & culture is also considered as a factor for success by 97.5% of the respondents. In addition, the table also shows us that 95% of the respondents' agreement on IT infrastructure as one of the factors for success in implementing BPR.

Project planning & management is also considered by 82.5%of the respondents as factors for success in implementing BPR.

3.3.1.3. Outcome after implementing Business Process Reengineering

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Change in reduced cost & cycle time	36	90	2	5	38	95	2	5	40	100
Change in retain employment schemes	30	75	6	15	36	90	4	10	40	100
Change in improve quality of services	39	97.5					1	2.5	40	100
Change in customers satisfaction	40	100								

Table 67- New thinking brought by BPR

The respondents were asked to give their opinion whether the new thinking of BPR brought major change and positively affects the company's business on reducing cost and cycle time, retain employment schemes, and improve quality of services and customers satisfactions.

Table 67 shows that almost all respondents, i.e. 100%, are agreed on the change in customers satisfaction as one of the result brought by BPR. Also 97.5% of the respondents agreed that improvement in quality of service is one of the new results brought by BPR.

In addition to above 90% of the respondents are also agreed that change in reduce cost & cycle time is one of the new results brought by BPR. Moreover change in retain employment schemes is also considered by 75% of the respondent as one of the new results brought by BPR.

Criteria for evaluation	Low		Moderate		High		Very High		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%	NR	%	NR	%
Rate in behavior & attitudinal change	1	2.50	15	37.50	19	47.50	5	12.50	40	100.00				
Rate in skill, knowledge & training change	4	10.00	20	50.00	11	27.50	5	12.50	40	100.00				
Rate in incentive & reward system change	15	37.50	10	25.00	10	25.00	2	5.00	37	92.50	3	7.50	40	100
Rate in culture , value & beliefs	4	10.00	18	45.00	9	22.50	8	20.00	39	97.50	1	2.50	40	100
Rate in team coordination, organizational & management change	2	5.00	16	40.00	14	35.00	7	17.50	39	97.50	1	2.50	40	100
Rate in communication change	1	2.50	18	45.00	16	40.00	5	12.50	40	100.00				

Table 68 - Rate of change after implementing BPR

The respondents were asked to rate change after implementing of BPR. According to Table 68 the results interpreted as follows.

Among different criteria listed above, 47.5% of the respondents give a high rank for behavioral and attitudinal change. Also 50% of the respondents agreed that rate of change in skill, knowledge & training is moderate and 37.5% of the respondent also agreed that rate of change in incentive & reward system is low. Also 45% of the respondent suggested that culture, value & beliefs ranked as moderate.

From the Table 68, it also become evident that 40% of the respondents give moderate rank for team coordination, organizational & management change after implementing of BPR and that communication change was rated as moderate by 45% of the respondents.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%

After implementation of BPR is there organizational structure changes that accommodate process based activity?	15	37.5	25	62.5	40	100				

Table 69 - Organizational structure change after BPR implementation

Team leaders were asked whether the Company changes its organizational structure that accommodate process based activity after the implementation of BPR.

Based on Table 69, 62.5% of the respondents agreed that, after the implementation of BPR, the company doesn't make any change on its organizational structure that accommodates process based activity.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Observe that employees' have decision making authority?	22	55	18	45	40	100				

Table 70- Decision making authority of employees after BPR

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Observe that non -value added activities were excluded from all the process?	28	70	12	30	40	100				

Table 71 - Exclusion of Non value adding activities

The respondents were also asked to give their observation whether employees have got decision making authority in performing their duties and whether they observe that non-value adding activities were excluded from all processes.

As we refer from above Table 70, 55% of the respondents were showing their agreement that after implementing of BPR employees have got decision-making authority in performing their duties. Also Table 71 shows that, 70% of the respondents have agreed that non-value adding activities are being excluded from all process.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
The company produce new rules & regulation as part of the BPR	28	70	12	30	40	100				

Table 72 - New rules and regulation as part of BPR

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%

The new rules & regulation can allow the new values and set up	26	65	6	15	32	80	8	20	40	100

Table 73 - New rules and regulation which allow the new values and set up

As part of BPR implementation, producing new rules & regulation is one of the factors that determine effective implementation of BPR.

In connection to this, 70% of the respondents believed that new rules and regulations, as part of BPR implementation, have been produced (see table 72).

It was also learnt from Table 73 that, 65% of the respondents agreed on the new rules and regulation that could allow the new values and set up i.e. flexibility, teamwork, team autonomy, personal responsibility & customer focus.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
The new information technology helps in facilitating the process effectively & efficiently	36	90	2	5	38	95	2	5	40	100

Table 74 - Information Technology assistance to facilitate BPR

Table 74 shows respondents agreement, 90%, on the help of the new information technology in facilitating the process effectively and efficiently.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Did the BPR implemented as planned and per the design?	36	90	4	10	40	100				

Table 75 - BPR implementation per plan and design

Team leaders were asked whether BPR have been implemented as planned and per the design. According to table 75, 90% of the respondents agreed that BPR has been implemented as planned and designed.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Failure in problem in communication	1	2.5	1	2.5	2	5	38	95	40	100
Failure in organizational resistance			2	5			38	95	40	100
Failure in lack of organizational readiness for change	2	5	2	5	4	10	36	90	40	100
Failure in problem related to creating a	1	2.5	1	2.5	2	5	38	95	40	100

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
culture for change										
Failure in lack of training & education	3	7.5					37	92.5	40	100
Failure in problem related to commitment , support & leadership	2	5					38	95	40	100
Failure in problem related to championship & sponsorship	1	2.5	1	2.5	2	5	38	95	40	100
Failure ineffective BPR teams	2	5					38	95	40	100
Failure in problem related to the integration mechanism , job definition & allocation of responsibilities	3	7.5					37	92.5	40	100
Failure in problem related to planning & project management			2	5			38	95	40	100
Failure in problem related to goals & measure	3	7.5					37	92.5	40	100
Failure inadequate focus & objectives	1	2.5	1	2.5	2	5	38	95	40	100
Failure ineffective process redesign	2	5					38	95	40	100
Failure in problem related to BPR resources			2	5			38	95	40	100
Failure in unrealistic expectations	4	10					36	90	40	100
Failure ineffective use of consultants	2	5					38	95	40	100
Failure in problem related to IT investment & outsourcing decisions	2	5					38	95	40	100

Table 76 - Causes for failure of BPR

Team leaders were asked to identify causes for failure of BPR. As we can refer from Table 76, most of the respondents, on average 95% of the team leaders who participated in filling this questioner didn't reply for all criteria listed in above table.

Criteria for evaluation	Low		Moderate		High		Very High		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%	NR	%	NR	%
Follow up competence on forces resisting the change	10	25.00	6	15.00	20	50.00	2	5.00	38	95.00	2	5.00	40	100
Leadership's daily follow up and support in succeeding of the change	2	5.00	13	32.50	21	52.50	4	10.00	40	100.00				
Interest of leadership in accelerating the change	1	2.50	13	32.50	21	52.50	5	12.50	40	100.00				
The existence of the clear vision before and after the change	1	2.50	10	25.00	20	50.00	9	22.50	40	100.00				
The existence of objective measurements in evaluating the efforts made in having the change	4	10.00	9	22.50	22	55.00	5	12.50	40	100.00				
Concurrent of the change with other changes made in the organization	5	12.50	13	32.50	16	40.00	5	12.50	39	97.50	1	2.50	40	100
Supervisor's attitude in keeping all advantages which was derived from the change and serving the interest of the company	2	5.00	13	32.50	20	50.00	5	12.50	40	100.00				
The importance of customer and their needs are known and accepted by all employees			6	15.00	20	50.00	14	35.00	40	100.00				
The existence of easily changeable structure of system	3	7.50	14	35.00	15	37.50	8	20.00	40	100.00				
Openness of chain of command from both sides	1	2.50	14	35.00	18	45.00	7	17.50	40	100.00				
Change of company's structure in comparison with improved work process	7	17.50	20	50.00	9	22.50	3	7.50	39	97.50	1	2.50	40	100
Recent company's confidence on employees satisfaction	6	15.00	13	32.50	12	30.00	8	20.00	39	97.50	1	2.50	40	100
Maximum leadership confidence on employees satisfaction	7	17.50	11	27.50	14	35.00	8	20.00	40	100.00				
Understanding and cooperation between work divisions			11	27.50	19	47.50	10	25.00	40	100.00				
Fast decision on recommended suggestions concerning change	5	12.50	10	25.00	14	35.00	11	27.50	40	100.00				

Table 77 - Attitudinal change observed after BPR

Team leaders were asked to rank the attitudinal change observed after the implementation of BPR. A number of criteria are listed and 50% of the respondents rank high to most criteria listed

under Table 77. 50% of the respondents give high rank to follow up competence on force resisting the change.

Leadership's daily follow up and support in succeeding of the change ranked as moderate by 32.5% and ranked as high by 52.5% of the respondents. Also 52.5% of the respondents give high rank for attitudinal change observed on interest of leadership in accelerating the change. 50% of the respondents also give high rank to the existence of the clear vision before and after the change.

Most of the respondents, 22 out of 40 or 55%, give high rank to the existence of the clear vision before and after the change. In addition to above criteria, 50% of the team leaders under consideration, give high ranks to supervisor's attitude in keeping all advantages which was derived from the change and serving the interest of the company. The importance of customer and that their needs are known and accepted by all employees get high rank by 50% of the respondents.

The existence of easily changeable structure of system and openness of chain of command from both sides both ranked as moderate by 35% of the respondents and get high rank by 37.5% and 45% of the respondents respectively. Change of company's structure in comparison with improved work process ranked as moderate by 50% of the respondents. Also 13 out of 40 respondents (32.5%) give moderate rank for recent company's confidence on employees' satisfaction. Understanding and cooperation between work divisions is also ranked as high by 47.5% of the respondents for attitudinal change after implementation of BPR.

3.3.2. Responses by Employees

3.3.2.1. BACK GROUND INFORMATION

Criteria for evaluation		**Number of Respondent**	**Percent (%)**
What is the highest level of education achieved?	Primary education	1	1.2
	Secondary Education	9	10.6
	College Diploma	23	27.1
	University Degree	52	61.2
	Total	85	100.0

Table 78 - Education Level

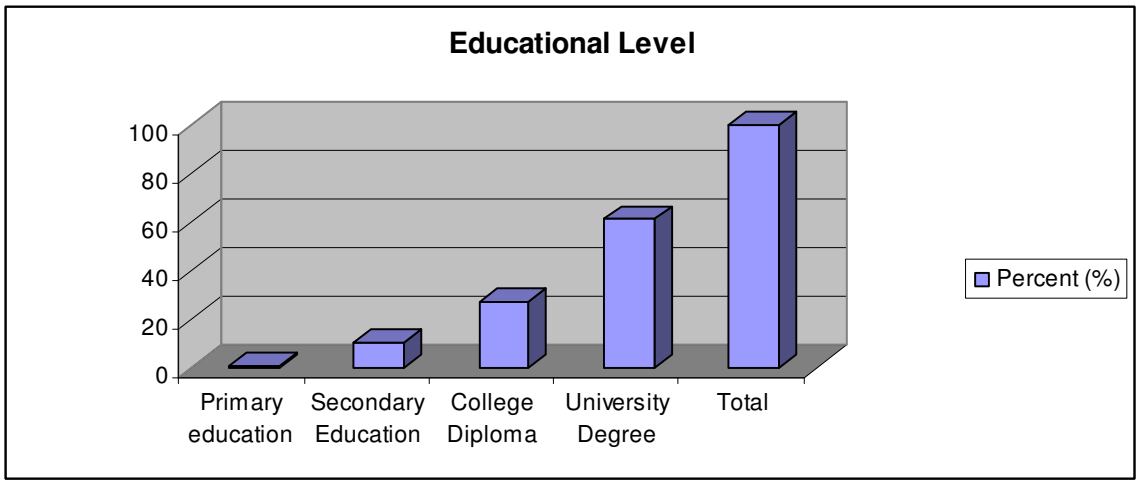

Chart 13 - Educational Levels

Criteria for evaluation		Number of Respondent	Percent (%)
Work Experience	5-10 years	17	20.0
	11-15 years	10	11.8
	6-20 years	17	20.0
	> 20 years	36	42.4
	Total	80	94.1
	Missing	5	5.9
	Total	85	100.0

Table 79 - Work Experience

Table 78 and Chart 13 show educational levels of employees who were requested to fill this questionnaire. According to above table, out of 82 respondents 52, about 61.2%, of them have university degree and 27.1% have college diploma.

Also according to Table 79, majority of the respondents, i.e. 42.4%, have work experience more than 20 years, and 20% have work experience of 6-20 years.

Previous position (Before the reengineering)			Current Position (After the reengineering)		
Criteria for Evaluation	**Number of Respondent**	**Percent (%)**	**Criteria for Evaluation**	**Number of Respondent**	**Percent (%)**
Accountant	2	2.4	Accountant	2	2.4
Accounts Clerk	2	2.4	Accounts Clerk	2	2.4
Benefit Admin.	0	0	Benefit Admin.	1	1.2
Cleaner Service	2	2.4	Cleaner Service	2	2.4
Clerk	1	1.2	Clerk	1	1.2
Clerk Accountant	2	2.4	Clerk Accountant	2	2.4

Previous position (Before the reengineering)			Current Position (After the reengineering)		
Criteria for Evaluation	**Number of Respondent**	**Percent (%)**	**Criteria for Evaluation**	**Number of Respondent**	**Percent (%)**
Controller	1	1.2	Controller	1	1.2
Department Head	6	7.1	Department Head	7	8.2
Division head	14	16.5	Division Head	13	15.3
Economist I	1	1.2	Economist I	1	1.2
Executive Secretary	1	1.2	Executive Secretary	1	1.2
Freight Clerk	1	1.2	Freight Clerk	1	1.2
IT Expert	1	1.2	IT Advisor	1	1.2
Junior Accountant	2	2.4	Junior Accountant	2	2.4
Junior Officer	1	1.2	Junior Officer	1	1.2
Junior Secretary	1	1.2	Junior Secretary	1	1.2
Junior Shipping Officer	1	1.2	Junior Shipping Officer	1	1.2
Lawyer II	1	1.2	Lawyer II	1	1.2
Liaison Officer	1	1.2	Liaison Officer	1	1.2
			O & M Expert	1	1.2
O & M officer	1	1.2	O & M Officer	1	1.2
Operator	1	1.2	Operator	1	1.2
			Ordinary Seaman	1	1.2
			Printing Room	1	1.2
			Purchasing	1	1.2
Secretary	2	2.4	Secretary	2	2.4
Section Head	13	15.3	Section Head	14	16.5
Security	1	1.2	Security	1	1.2
Security Man	2	2.4	Security Man	1	1.2
Senior Accountant	1	1.2	Senior Accountant		
			Senior Clerk	1	1.2
Senior Secretary	2	2.4	Senior secretary	2	2.4
Service Head	1	1.2	Service Head	1	1.2
Statistician	1	1.2	Statistician	1	1.2
Store Keeper	1	1.2	Store Keeper	1	1.2
Telephone	1	1.2			

Previous position (Before the reengineering)			Current Position (After the reengineering)		
Criteria for Evaluation	**Number of Respondent**	**Percent (%)**	**Criteria for Evaluation**	**Number of Respondent**	**Percent (%)**
Operator					
Missing	17	20	Missing	13	15.3
Total	85	100	Total	85	100

Table 80 - Previous & current positions

3.3.2.2. General Concept and Information Before and After Business Process Reengineering Implementation

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Did you have basic information about BPR before implementation?	67	78.80	18	21.20	85	100				

Table 81- Basic information about BPR

Employees were asked whether they had basic information about BPR before its implementation.

Table 81 shows that, 78.80% of the respondents agreed that they have had basic information before implementation of BPR.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Reduce cost and cycle time	66	77.65	3	3.53	69	81.18	16	18.82	85	100
Improve Quality services	69	81.2	1	1.2	70	82.4	15	17.6	85	100
To meet customer satisfaction	69	81.2	1	1.2	70	82.4	15	17.6	85	100
Improve Efficiency productivity and profitability	68	80	2	2.4	70	82.4	15	17.6	85	100

Table 82 - Employees expectation after BPR

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Did you found your expectation fruitful after implementation	54	63.5	21	24.7	75	88.2	10	11.8	85	100

Table 83 - Observation about the fruitfulness of expectation after BPR

Employees were asked about their expectations on implementation of BPR.

Table 82 shows that out of 85 respondents, 69, i.e. 81.2% are agreed that, after the implementation of BPR, they were expecting improvement on the quality of service and meet customers satisfaction as well.

Also 80% of the respondents were expecting improvement in efficiency, productivity and profitability. In addition, 77.65% of the respondents consider the BPR to have an effect in reducing cost and cycle.

The respondents were also asked whether their expectation was fruitful after BPR implementation. As we refer from Table 83, out of 85 respondents, 54, i.e. 63.5% respondents agreed that their expectation was fruitful after BPR implementation.

	Low		Moderate		High		Very High		Total		Missing		Total	
Criteria for evaluation	**NR**	**%**	**NR**	**%**	**NR**	**%**	**NR**	**%**	**NR**	**%**	**NR**	**%**	**NR**	**%**
Did you observe major change in your personal after implementation of BPR by behavior and attitudinal change?	7	8.20	34	40.00	35	41.20	8	9.40	84	98.80	1	1.20	85	100
Did you observe major change in your personal in skill knowledge and training change after implementation of BPR?	12	14.10	41	48.20	22	25.90	6	7.10	81	95.30	4	4.70	85	100
Did you observe major change in your personal in incentive and reward system change after implementation of BPR?	38	44.70	25	29.40	11	12.90	4	4.70	78	91.80	7	8.20	85	100
Did you observe major change in your personal in culture value and believe change after implementation of BPR?	9	10.60	32	37.60	35	41.20	6	7.10	82	96.50	3	3.50	85	100
Did you observe major change in your personal in team coordination organizational and management change after implementation of BPR?	9	10.60	36	42.40	33	38.80	5	5.90	83	97.60	2	2.40	85	100
Did you observe major change in your personal in communication change after implementation of BPR?	8	9.40	25	29.40	42	49.40	8	9.40	83	97.60	2	2.40	85	100
Did you observe major change in your personal in retain employment opportunity after implementation of BPR?	15	17.60	33	38.80	22	25.90	6	7.10	76	89.40	9	10.60	85	100

Table 84 - Major changes after implementation of BPR

Respondents were asked to rate their observation on major changes after implementation of BPR.

Out of seven criteria listed in Table 84, 41.2% of the respondents give high rank for their behavioral and attitudinal major changes observed in themselves after implementing BPR. Also, 48.2% of the respondents agreed that they observed moderate change in personal skill and knowledge and training after implementation of BPR is moderate. Table 84 also shows that, 38 out of 85 (44.7%) respondents ranks their observation on major change in their personal incentive and reward system change after implementation of BPR is low.

On the other hand, employees observed a very high change in their cultural value and belief after implementation of BPR. Table 84 also shows that 42.4% of the respondents moderately agreed that there is a major change in their team and organizational coordination after the BPR implementation. Also, 49.4% of the respondents give high rank for a major change observed in their communication change after BPR implementation.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Did you have Benefit in salary increment?	32	37.6	51	60	83	97.60	2	2.4	85	100
Did you have Benefit in promotion?	9	10.6	65	76.5	74	87.1	11	12.9	85	100
Did you have involvement in the reengineering process?	56	65.9	21	24.7	77	90.60	8	9.4	85	100
Did you have empowerment?	36	42.4	37	43.5	73	85.90	12	14.1	85	100
Did you have work satisfaction?	64	75.3	20	23.5	84	98.8	1	1.2	85	100
Did you have work reduced work load and service time?	45	52.9	37	43.5	82	96.50	3	3.5	85	100
Did you have utilization of IT?	67	78.8	16	18.8	83	97.60	2	2.4	85	100
Did you have compensation?	18	21.2	54	63.5	72	84.70	13	15.3	85	100

Table 85 - Personal gain after BPR

Table 85 summarizes employees' personal gain after the implementation of BPR. Based on above table, 60% of the respondents agreed that they didn't get salary increment benefit after implementation of BPR. Also 76.5% of them so far didn't get benefit in promotion. 65.9% of the respondents agreed that they have had involvement in the reengineering process.

The respondents were also requested whether they have been empowered. Based on above table, 37 out of 85 (43.5%) respondents agreed that they are empowered and 75.3% of them show that they do have work satisfaction. Table 85 also shows that , 63.5% of the respondents reported that they didn't get a change in compensation after the BPR.

Criteria for Evaluation	Yes	No	Total	Missing	Total

	NR	%	NR	%	NR	%	NR	%	NR	%
Did you see fundamental change?	35	41.18	48	56.47	83	97.65	2	2.35	85	100

Table 86 - Fundamental change in carrier after BPR

Criteria for evaluation		Number of Respondent	Percent (%)
Did your fundamental change and indicate rating?	Simple	30	35.3
	No change	31	36.5
	Complete	9	10.6
	Multidimensional	8	9.4
	Total	78	91.8
	Missing	7	8.2
	Total	85	100.0

Table 87 - Rating of change after BPR

Table 86 shows that, 48 out of 85 i.e. 56.5% respondents are not in a position to see fundamental change in their carrier after the implementation of BPR.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Is IT has integrated into the job?	67	78.8	17	20	84	98.80	1	1.2	85	100

Table 88 - Integration of IT with jobs

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Did you found your job simplified interims of cost reduction?	59	69.4	5	5.9	64	75.3	21	24.7	85	100
Did you found your job simplified interims of efficiency in delivering service?	65	76.5	4	4.7	69	81.2	16	18.8	85	100
Did you found your job simplified interims of cycle time	62	72.9	7	8.2	69	81.1	16	18.9	85	100
Did you found your job simplified interims of behavioral and attitudinal change?	56	65.9	13	15.3	69	81.2	16	18.8	85	100

Table 89 - Simplification of Job

Employees were asked whether IT is being integrated in their job. Table 88 shows that, 67 out of 85, i.e. 78.8% of employees under consideration are agreed that IT has been integrated in their respective job.

Also they were asked whether their job is simplified in terms of cost reduction, efficiency in service delivery, cycle time and behavioral and attitudinal change.

As we can see from Table 89, most of the respondents, i.e. 76.5% agreed that integration of IT enables their job simplified in terms of efficiency and service delivery. 72.9% of the respondents also agreed that incorporation of IT in their jobs made them able to simplify cycle time.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
The measurement put into practice to evaluate your performance in terms of time	71	83.5					14	16.5	85	100
The measurement put into practice to evaluate your performance in terms of cost	52	61.2	11	12.9	63	74.1	22	25.9	85	100
The measurement put into practice to evaluate your performance in terms of quality	69	81.2	1	1.2	70	82.4	15	17.6	85	100
The measurement put into practice to evaluate your performance in terms of efficiency	64	75.3	4	4.7	68	80	17	20	85	100
The measurement put into practice to evaluate your performance none of the above							85	100		
The measurement put into practice to evaluate your performance in all of the above	13	15.3					72	84.7	85	100

Table 90 - Measurement to evaluate performance

Employees were asked to identify the measurement put into practice to evaluate their performance.

According to Table 90, 83.50% of the respondents are agreed that time is the best measurement to evaluate their performance. Also 69 out of 85, i.e. 81.2% of the respondents, consider that quality could also be one of the measurements for performance evaluation.

3.3.3. Responses by Customer

3.3.3.1. Back Ground Information

Criteria for evaluation		Number of Respondent	Percent (%)
What is the highest level of education achieved?	Primary education	3	4.3
	Secondary Education	7	10.0
	College Diploma	26	37.1
	University Degree	34	48.6
	Total	70	100.0

Table 91 - Education Level

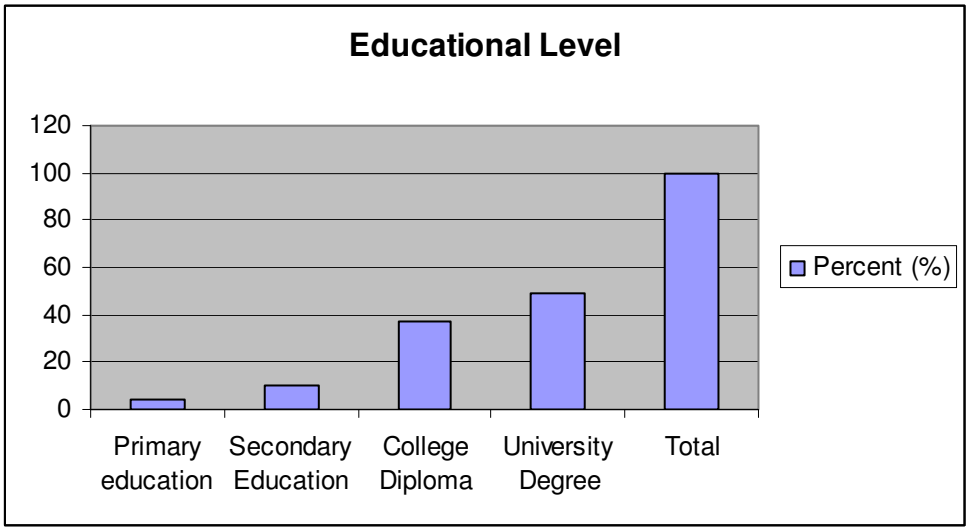

Chart 14 - Education Level

Criteria for evaluation		Number of Respondent	Percent (%)
Institution Type	Private Company	44	62.9
	Government Agencies	9	12.9
	Individual business	6	8.6
	Transistor	8	11.4
	Other	2	2.9
	Total	69	98.6
	Missing	1	1.4
	Total	70	100.0

Table 92 - Institution Type

From Table 91, out of 70 customers who were requested to fill the questionnaire, 48.6% have university degree and 37.1% have college diploma.

Table 92 also shows that 62.9% are working in private company, 12.9% in government agencies and 11.4% are working in transit companies. Most of the respondents have work experience of more than 9 years and 31.4% have 1-3 years work experience

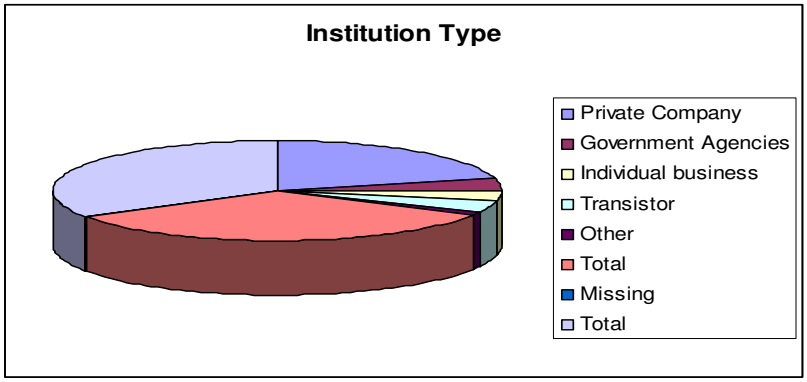

Chart 15 - Institution Type

Criteria for evaluation		Number of Respondent	Percent (%)
Work Experience	1-3 years	22	31.4
	4-6 years	9	12.9
	7-9 years	11	15.7
	> 9 years	28	40.0
	Total	70	100.0

Table 93 - Work Experience

According to Table 93, out of 70 customers who were participated to fill this questionnaire, most of the respondents have work experience of more than 9 years and 31.4% have work experience of 1-3 years.

3.3.3.2. Changes customers deserved after BPR implementation

Criteria for evaluation		Number of Respondent	Percent (%)
Years of Contact with ESLSC	1-3 years	24	34.3
	4-6 years	19	27.1
	7-9 years	7	10.0
	> 9 years	20	28.6
	Total	70	100.0

Table 94 - Business contact with ESLSC

According to Table 94, most of the customers, 61.4% have business contact with ESLSC since six years ago and 28% have also business contact with ESLSC for above seven years.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Have you any information that ESLSC undertakes improvement on its service by reengineering process?	41	58.60	29	41.40	70	100.00				

Table 95 - Information about ESLSC Business Process Reengineering

Customers who participated in filling this questionnaire were asked whether they have any information that ESLSC undertakes improvement on its service delivery by considering BPR.

Table 95 shows that 58.6% of the respondents have information on the implementation of BPR in ESLSC and the remaining i.e. 41.4% of them don't have such information.

Criteria for evaluation		Number of Respondent	Percent (%)
When did you observe improvement made by the company?	Since 1 year	7	10.0
	Since 2 year	24	34.3
	Since 3 year	15	21.4
	Since 4	2	2.9
	Above 4 years	6	8.6
	Total	54	77.1
	Missing	16	22.9
	Total	70	100.0

Table 96 - Year of ESLSC's undertaking of BPR

Also the respondents were asked when they observe improvement in the company as to the undertaking of the BPR.

Table 96 shows that 34.3% of them observe improvement since two years and 21.4% observe improvement since three years.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Impact of improvement of your business on reduce cost	42	60.00	18	25.70	60	85.70	10	14.30	70	100
Impact of the improvement of your business on reduce cycle time	61	87.1	3	4.3	64	91.4	6	8.6	70	100
Impact of the improvement of your business on improve efficiency	60	85.7	3	4.3	63	90	7	10	70	100
Impact of the improvement of your business in meeting customer demand on service	58	82.9	5	7.1	63	90	7	10	70	100
Other , please specify							70	100		

Table 97 - Impact of ESLSC's BPR in customer's business

Customers were also requested as to the impact of ESLSC's BPR in customers business. Under this heading different criteria were listed and among these criteria noted in Table 97,

87.1% of the respondents are agreed that the impact was shown on improvement in reducing cycle time, 85.7% of them improve efficiency, and 82.9% meeting of their demand on service and 60% on reduce cost.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Ever been consulted in the improvement process	29	41.4	40	57.1	69	98.6	1	1.4	70	100

Table 98 - Customers Consulted in ESLSC's BPR improvement

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Improvement on identifying customer type	27	38.6	2	2.9	29	41.4	41	58.6	70	100
Improvement on studying customers goal	26	37.1	3	4.3	29	41.4	41	58.6	70	100
Improvement on studying customers needs	29	41.4					41	58.6	70	100
Improvement on studying customers real problem	29	41.4	2	2.9	31	44.3	39	55.7	70	100
Improvement on how the process has service item	21	30	3	4.3	24	34.3	46	65.7	70	100
Other , please specify							70	100		

Table 99 - Area of BPR Improvement you are Consulted

Out of five criteria listed in Table 98, 41.4% of the respondents were consulted on two criteria each i.e. improvement on studying customers' needs and improvement on studying customers' real problem. Table 99 shows that 27 out of 29 were consulted improvement on identifying customers' type, and 26 out of 29 were consulted improvement on studying their goal.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Observe Major Improvement on employees attitude	62	88.6	3	4.3	65	92.9	5	7.1	70	100
Observe Major Improvement on quality of service	65	92.9	2	2.9	67	95.7	3	4.3	70	100
Observe Major Improvement on skill and knowledge of employees	41	58.6	16	22.9	57	81.4	13	18.6	70	100
Observe Major Improvement on team coordination, organizational and management system	62	88.6	4	5.7	66	94.3	4	5.7	70	100
Observe Major Improvement on speed of service delivery	65	92.9	4	5.7	69	98.6	1	1.4	70	100
Others please specify							70	100		

Table 100 - Major improvement before and after ESLSC's BPR

Table 100 shows customers response on major improvement made after implementation of BPR. 92.9% of the respondents agreed that major improvements have been observed on speed of service delivery as well as quality of service and 88.6% of the respondents showed their

contention that improvements have also been observed on employees attitude and team coordination, organization and management system.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Facing problem on Finance Department	15	21.4	55	78.6	70	100				
Facing problem on Marketing Department	27	38.6	43	61.4	70	100				
Facing problem on HRMA Department	2	2.9	66	94.3	68	97.1	2	2.9	70	100
Facing problem on Legal & Insurance Department	3	4.3	67	95.7	70	100				
Facing problem on Technical Department	8	11.4	60	85.7	68	97.1	2	2.9	70	100
Facing problem on Managing Director	8	11.4	62	88.6	70	100				
Other specify							70	100		

Table 101 - ESLSC's department in which customers face problem

The customers were also asked in which Department they faced problem. As we refer from Table 100 shows that, most of the respondent agreed that they didn't face problem in departments like Technical, Legal & Insurance. However 38.6% of the customers under consideration replied that they faced problem with Marketing Department and 21.4% of them also faced problem with Finance Department.

Criteria for Evaluation	Yes		No		Total		Missing		Total	
	NR	%	NR	%	NR	%	NR	%	NR	%
Ever been contacted the concerned department head for improvement	23	32.9	32	45.7	55	78.6	15	21.4	70	100

Table 102- Does the customer contact ESLSC's Department Head which need improvement?

Customers were asked whether they contact ESLSC's Department Heads on matters which shall need improvements.

Table 102 shows that 55 customers replied and 32.9% of the respondent agreed that they had made contact with concerned department for improvement.

CHAPTER FOUR

Finding, Conclusion & Recommendation

4.1. Findings

BPR has come to existence in Ethiopia with the intent to bring radical institutional transformation all over the nation and to replace traditional and outdated working system by technologically advanced ones.

As it has been clearly indicated in the introduction part, the main objective of this research paper was to evaluate BPR implementation by ESLSC and determine its performance impact.

Analysis of the data gathered revealed the following findings:

- Policies which improved employees' academic status have been formulated and familiarization program had been arranged.
- ESLSC was able to cultivate feeling of responsibility, transparency and accountability among employees.
- Improvements in the following areas of service deliveries were observed.

    a. Time in refunding container related payments has reduced from 22 days to 6 - 7 hours.

    b. Receiving cargo manifests is now becoming more efficient and customers are now able to receive their cargo within two days.

    c. The Company is now able to prepare freight documents and collect amounts within four days, which was took before more than twenty days.

    d. Customers are now able to collect their cargo instantly, which used to take eleven days before.

    e. Problems in settlement of claim and insurance are now taking 4-5 days, which used to take 21-23 days before.

- The driving forces for ESLSC to undertake BPR were the following in their degree of importance:
  - Ministry of Capacity Building demands requiring ESLSC working practices to be reengineered is the major compelling reason that leads ESLSC to undertake BPR.
  - Management's ambition and aggressiveness for further improvement is also the second reasons to undertake BPR within the company.
- ESLSC has identified and assigned the best and bright staff to implement BPR. Most of the respondents also reported that top management (CEO) has led the BPR project with high commitment.
- The business processes were selected and prioritized using dysfunctional, important, feasibility criteria and sufficient discussion has been made when prioritizing the BPR.
- Effective use of IT is the most important factors that contribute to the success of BPR. The study confirmed the critical role of information technology to successfully accomplish the BPR project.
- The survey revealed that the following were the reasons for ESLSC to undertake benchmarking.
  - To satisfy customer needs & expectations (82.5%),
  - To adopt best practice (90%)
  - To encourage break through thinking, creative thinking out of the box thinking (77.5%),
  - To achieve a superior process (77.5%) &
  - To enable the system to manage a change (87.5%)
- The survey made known that the BPR was not accomplished by a process team structure. Indeed, there was little change to jobs/positions before and after the BPR.
- Employees had received adequate training as a result of the BPR implementation.

- The stakeholders (customers and employee) have been participating in the process of the BPR implementation.
- It was found out that the following factors were critical for success in the implementation of BPR by ESLSC.
  - Change management system & culture.
  - Management commitment & support.
  - Project planning & management.
  - IT infrastructure.
- Process based organizational structure has not yet been practiced.
- The BPR resulted in identification and removal of non-value added activities.
- ESLSC developed and implemented new rules & regulation as part of the BPR.
- The study revealed that BPR resulted in quality service improvement and better customers' satisfaction.
- Changes in personal communication, culture, value, behavior and attitude have been observed after the BPR implementation. However, there was no any change introduced in the form of incentive and reward as a result of BPR implementation.
- Regarding employees gain after BPR, work satisfaction, reduced work load and service time, involvement in the reengineering process and utilization of information technology are among the opportunities that the employees have gained in their work area. On the other hand employees didn't get salary increment as well as promotion. Besides from the table presented, it has been found out that employees were not empowered and didn't get compensation in their work area.
- This study has also revealed that there was little change in employees' carrier as compared to the job before reengineering.
- The study found out that IT has been integrated into the job and made employees' jobs simple and easy. Most respondents reported that their job is being simplified.

- The survey revealed that the BPR had impact upon the customers through reducing cost, improving efficiency, and availing up to date information on line and in electronic form.

- The survey revealed that following improvements were achieved:

  - Major improvement on quality of service has been achieved.

  - Speed of service delivery has been improved.

  - Employees' attitude has been improved.

  - Improvement on team coordination, organizational and management system has been observed.

- During the BPR implementation, the BPR team leader have ensured the following:

  - The management has initiated the reengineering project and led the project to the end. The Company's mission and vision has been introduced to its employees as well as customers.

  - ESLSC's business process had been clearly identified and interaction within the company as well as external environment had been well studied.

  - Main core activities of the company had been selected so as to reengineer the process.

  - The selected core activities have been well understood and redesigned.

  - The company has implemented the redesigned process.

4.2. Conclusions

This paper deals with analyzing ESLSC's reengineering attempt on the basis of data presented and in consideration of BPR principles and other methodologies which are mostly used as a checklist in implementing BPR.

Accordingly, from the findings of the study, the following conclusions have been reached.

- As we refer to the tables presented with regard to factors that led to undertake BPR in ESLSC, there were many factors that led the Company to undertake BPR. Ministry of Capacity Building demand for reengineering was one of the reasons that lead the company to consider BPR. Also management's ambition and aggressiveness for further improvement and to introduce high quality automation in BPR implementation as well as change in customers' requirement or character are also the other reasons that lead ESLSC to undertake BPR.

- On the basis of this study, it is possible to know where ESLSC's current business process begins and ends. From this findings also, it is possible to know that ESLSC could understand the needs and problems of its customers' by identifying the government's requirement, strategies and policies. ESLSC has also made a study on customers' need and problems.

- Based on the findings, it is possible to conclude that change in customers' satisfaction and improved quality of service as well as change in reduction of cost and cycle time are among the new thinking and achievements which was brought by BPR. From the findings of this study, it is possible to know that after the implementation of BPR, the rate of change in behavioral & attitudinal change was also high. On the other hand, though the rate of change observed in employees' incentive and reward system was low, the rate of change in employees' skill, knowledge & training were high. Especially after the implementation of BPR, the rate of attitudinal change in following up competence on forces resisting the change, leadership daily follow up and support in succeeding of the change, leadership's interest in accelerating the change and the existence of objective measurements in evaluating the efforts made in having the change was high.

- Benchmarking is a tool for improvement and it is achieved through comparison with other organization recognized as the best within the area. Hence, during implementation of BPR, having benchmarking enabled ESLSC to learn how to

improve activities, processes and to become more competent enough in delivering the service. The data presented in this regard confirms to us that the company was using benchmarking during BPR implementation to satisfy customer's need and expectations, to adopt best practices, to encourage break through thinking, and to have creative thinking which could be out of box thinking. Hence, it is possible to conclude that ESLSC was able to achieve potential gain by having benchmarking.

ESLSC has also established high level performance baseline for the whole process by calculating the Company's cycle time and its performance measurement system which was linked with individual compensation system. The company's measurement system has been used by the management in managing improvement and the company had been in a position to see measurement system to accommodate continuous improvements.

- From the findings, it is also possible to conclude that, the governance structure which was formed during BPR implementation has comprised of reengineering team, reengineering leader and process owner as well. The combination of governance structure explicitly inculcated the new value to the people and in particular to the company.

- During implementation of BPR, the role of information technology has been considered as a factor for success. Also management commitment and support and change management system & culture are among the factors that contributed towards the success in implementing BPR. Besides, project planning and management could be considered as a factor for success in implementing BPR.

- The data presented in this study show that ESLSC's performance has been tremendously improved, especially since 2001/'02. Based on the finding of this study, two major causes have been identified for this achievement. As the company's performance has been improved before the implementation of BPR i.e. since 2001/'02, it is possible to argue that, protection granted by the government could be considered as the major factor that caused the company's continuous performance improvement. On the other hand, as the company's performance is still showing improvement and that its customers ascertain that Company's service delivery has been improved, especially since year 2004/'05, it is possible to conclude that implementation of BPR has also contributed to the Company's financial and operational performances as well as in providing quality service to its customers.

- According to Hammer & Champy definition, reengineering is the fundamental rethinking and radical redesign of business process to achieve dramatic improvement in critical, contemporary measurement of performance, such as cost, quality, service, and speed. The company's BPR implementation is, however, just an improvement, not radical change in terms of its organizational structure, employees' attitudinal and behavioral change. The reengineering attempt has so far been confined only to time reduction. The Company's reengineering effort didn't also empower employees. Last but not least, the Company's reengineering attempt didn't bring change in organization structure.

4.3. Recommendations

Implementing of BPR has a number of benefits. The main benefits of BPR are here below summarized.

- According to the principle of business reengineering (Coulson-Thomas, 1994), priority shall be given for delivery of values rather than maintenance of management control.

- Process thinking and managing is at the heart of business reengineering, which no longer looking upward into the hierarchy, but ahead to the customers, who ultimately drive the organization.

- Business reengineering enables to ensure people are equipped, motivated and empowered to do what is expected of them.

- Reengineering disregards all existing structure and procedures and invents completely new ways of accomplishing tasks. It seeks radical design of business process to achieve dramatic improvements and fundamental rethinking rather than merely continuous improvement.

On the basis of ESLSC's reengineering attempt which was summarized under the findings of the study, the following are recommended.

- The existing company's structure was designed to maintain management control. Also while comparing previous and current position of team leaders and employees, no significant changes has been made. Besides after implementation of BPR, organizational change that accommodates process based activity has not been considered. Hence, ESLSC could deliver more efficient & effective service by considering process based service delivery.

- Staff motivation through reward system plays a crucial role in facilitating reengineering efforts. However from the findings, change observed in employees' personal incentive and reward system after implementation of BPR was low. The Company's incentive & reward system should be changed by considering benefits in respect of salary increment, promotion, empowerment & compensation. Hence ESLSC shall consider reward system which must be widespread, fair and encouraging harmony among employees. Also introducing new job titles shall be considered as a means to encourage employees and to endorse the reengineering program without fear.

- ESLSC has made significant improvement after securing of government protection. In fact implementation of BPR has a positive effect for this improvement. However from the findings of this paper it is possible to conclude that ESLSC's BPR implementation so far doesn't bring a radical change. Hence ESLSC shall consider radical change in respect of its organizational structure, employees' attitudinal and behavioral change. Also as BPR results in decisions being pushed down to lower level, empowerment of employees become a critical factor for successful BPR effort. Hence the company shall empower its employee so as to successfully implement BPR.

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