ST. MARY'S UNIVERSITY COLLEGE
BUSINESS FACULTY
DEPARTMENT OF MANAGEMENT

AN ASSESSMENT OF BUSINESS PROCESS RE-ENGINEERING IMPLEMENTATION
IN MINISTRY OF NATIONAL DEFENSE
INFRASTRUCTURE AND CONSTRUCTION SECTOR

BY
GETANEH BEZABEH

AN ASSESSMENT OF BUSINESS PROCESS RE-ENGINEERING IMPLEMENTATION
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A SENIOR ESSAY SUBMITTED
TO THE DEPARTMENT OF MANAGEMENT
BUSINESS FACULTY
ST.MARY'S UNIVERSITY COLLEGE

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF BACHELOR OF ARTS
IN MANAGEMENT

BY

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JUNE 2011

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ACKNOWLEDGEMENTS

First of all I would like to thank the Almighty God. I would like to express my deep appreciation to Ato Biruk G/Michael, my senior essay advisor for his valuable, constructive and helpful comments, corrections given to me at all stage of this essay. Special thanks to all management members of Defense Infrastructure and Construction Sector in giving me advice and filling the questionners properly.

Finally, my deepest thanks to W/ro Aster Worku for her excellent work processing of the entire manuscript and her patience in making corrections.

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CHAPTER ONE
INTRODUCTION

1.1. **Back ground of the Study**.

Business process reengineering is a management means putting aside much of the received wisdom of two hundred years of Industrial management. It means forgetting how work was done in the age of the mass market and deciding how it can be done now. Therefore organization's have to make process the center of their attention with entails dropping the principles mass production prevailed for the last two hundred years. Any organization that hopes to thrive in the twenty-first century must reach the destination of process centering. (Hammer, M and Champy J. (1993).This premise heralds that any organization that hopes to thrive in today's world providing seamless services must shift its approach of work and organization to process centering. The key question one may raise here could be "what is the way for transforming organizations into seamless government and process centering? Therefore the tool Business Process Reengineering that could help organizations get into process centering. (Hammer and Champy(1993).

The Design and Construction requirement of the Ministry of Defense was performed by Defense Industry Sector. This sector gave attention mostly for Industries not for construction. Due to this reason the higher demand of Design and construction requirement of defense was not successfully performed. Therefore, ministry of defense took the design and construction work from the industry sector and give the duty and responsibility to Defense Infrastructure and Construction Sector which had been newly established to perform the design and contract Administration requirement of the ministry.

Due to this reason, Defense Infrastructure and Construction Sector come in to picture. As soon as this sector is established a new type of structural arrangement (Reforms) and different types of Quick win works has been done. But this works doesn't bring a fundamental and sustainable change for the sector.

Therefore, in order to keep the quality of the design and construction and to finalize the design and construction work very fast as well as to be competitive with the outside market and to keep the fundamental change sustainable, the business process Re-Engineering (BPR) study is taking place

and implemented in the sector. During the process of the research the researcher will tries to investigate how the implementation of BPR brings dramatic change in time, cost, quality, and processes and also see the attitude of employees towards the change.

1.2. **Statement of the Problem**.

Defense Infrastructure and Construction was established with the objective of providing quality design and construction works and fair cash of construction and designs and also a timely design and construction works to Ministry of National Defense. The sector works different constructions i.e (Apartments, Colleges, Hospital, Roads...etc). The sector will be expected that after fulfilling the interest of Ministry of Defense to be competitive in the civil market. But it is witnessed that the sector could not have been provided the services to its customer since the establishment. Customers are dissatisfy entirely in the design & construction work. Both the design and construction work is not completed according to the contract agreement and work execution plan on time so that it couldn't fully satisfy the customer. The different construction projects which are done by the sector does not fulfill the standard quality in the construction industry. The projects which are done by the sector are not cost effective comparing to the construction market. Employees are not motivated there is no conducive working environment and there is also a shortage of working material facilities... etc. The sector doesn't use IT for improving the design and construction work. The central theme of this research paper is to identify the key problems and to recommend possible solution to the sector.

1.3. **Research Questions**.

- What are the major reasons that lead the sector to delay in the design and construction work?
- How the process of BPR improve the level of quality of the construction work?
- What are the challenges of the sector to be cost effective in the construction industry?
- To what extent BPR implementation give solution in reward & incentive system and also in creating conducive working environment?
- How is the service delivery of the sector backed by information and communication technology?

1.4. **Objective of the study.**

1.4.1. General Objectives.

The general objective of the study is to assess and analyze the implementation of BPR in the sector.

1.4.2. The specific objectives are:

- To measure the degree of improvement in execution the design and construction work after BPR implementation.
- To measure the level of quality of the construction work according to the given standard.
- To measure the cost effectiveness of the construction work after BPR implementation.
- To suggest some possible solution for employees motivation and conducive working environment.
- To analyze how service delivery is back by information and communication technology.

1.5. Significance of the Study.

The most significance of the study is to try to investigate the missing item and to recommend the necessary measure that should be taken by the sector and concerned party. For effective implementation of BPR the researcher believes that this study will have the following contributions.

- It helps managers and employees to evaluate their strength and weakness.
- Provide current information about the perfection of the sector in its service delivery.
- It gives possible solution for the improvement of the existing problem.
- The findings of the study will serve other researchers to conduct a better and depth study.

1.6. Scope of the Study.

Infrastructure and construction sector cannot provide a better service to its customers and users. In order to reach on sound customer satisfaction the implementation of BPR for service improvement was inevitable at the sector level. The sector has got many projects in different regional states. All

the projects are organized and led by the head office. So, in order to achieve a reliable evaluation with in the given limited finance, time frame and resources the study has only focused on the implementation of BPR in the head office of the sector. The study includes all management members department division and section heads and employees. The study covers the period from 2000 up to 2002E.C.

1.7. **Definition of Terms**.

- **Business Process Reengineering (BPR)**. The fundamental rethinking and radical redesign of business processes to achieve dramatic improvement in critical measure of performance.
- **Fundamental Rethinking**. This is asking the most basic question about the company and how they operate.
  - Why do we do what we do?
  - Why do we do in the way we do it?
- **Radical Redesign**: It means going to the root of things as reengineering is not about improving what already exist. It is about throwing it away and begin with a clean state.
- **Dramatic Improvement**: It is not about making 5% or 10% marginal improvement better improvement or but about achieving quantum leap in performance.
- **Business Process**. This is the core of the reengineering definition and according to Hammer process is an organized group of related activities that together create value to customers. It is about how work is done. In other words, processes are what create the results that an institution delivers to customers. (Hammer, M and Champy J. (1993).

1.8. **Research Design and Methodology**.

1.8.1. **Research Design**.
The researcher used descriptive research design followed by survey approach.

1.8.2. **Population and Sampling Techniques**.
All members of the head office employees are taken as a sample they are 68 in number and also 7 customers are taken. There is no need of sampling techniques the researcher used censes survey.

1.8.3. Types of Data to be Collected.

The researcher used both primary and secondary data from primary and secondary sources.

1.8.4. Method of Data collection.

Primary data were collected using questionnaires. They were designed in such away that they should generate important information regarding the implementation of BPR. Secondary data were collected from the sector BPR study manual.

1.8.5. Data Analysis Method.

The unit of data analysis is individual questionnaire. The information (data) that were be collected through primary and secondary source will be statistically presented, analyzed and interpreted by using percentage.

1.9. Limitation of the study.

In this study one of the limitation is that the respondents may not respond on time and may resist filling the questionnaires for different reasons.

1.10. Organization of the study.

The paper will organize in four chapter. The first chapter will deal introduction, background of the study, statement of the problem, Objective of the study, Significant of the study, Scope of the study, Definition of terms, Research Design and Methodology and Organization of the study. The second chapter will deals review of related literature. Third chapter consists of data collection and interpretation where as the Fourth Chapter consist of Summary, Conclusion and Recommendation.

CHAPTER TWO
REVIEW OF RELATED LITERATURE

Today, globalization along with the key driving forces of change, such as fundamental change in the nature of customer computation and change has created tough environment for organization's 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 Smiths brilliant discovery of work should be broken down in to the 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 product era don't fit to this requirement. (Working manual Ministry of Capacity Building: August 2008)

The new feature of organization (responsiveness, flexibility of customer focus) achieved in new perspective: a 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 improving merely the tasks unless they shift their approach to process perspective. Even if there existed efficiently of task with best employees, managers, best rules and efficient working procedures in the organization, that all are nothing because the future of the organization can't allow them to provide seamless service. 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(Ibid).

The key issue raised here is then the way to transform to seamless government and process centering. There are two tools called Re-engineering and TQM 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 differences in essence. TQM is about modifying the process to solve the problem in which it is based on a problem solving entered and the result is incremental change (Ibid).

Reengineering in contrast, is about beginning again from scratch. Starting over entirely considering how to jobs in the process put together. It in tails the fundamental and radical redesign of the business process and replace the old process with the new superior one, with pursuing new direction, philosophies and perspectives to work and organization(Ibid).

BPR has arise during the early 1990's as an approximately developed by practitioners. It gained prominence in the work of writers such as Daven Port and Short (1996) Hammer (1990), Hammer and Champy (1993), and Harrington (1991). The concept is currently very topical in many organizational, management and information technology literature.

2.1. What is Business Process Re-Engineering?

Business Process Re-Engineering is the fundamental rethinking and radical redesign of business process 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. According to *Hammer,* four terms: fundamental, radical, dramatic and business process are considered important in the definition of BPR.

A. Fundamental Rethinking

This is asking the most basic questions about the company and how they operate.
- Why do we do what we do?
- Why do we do it the way we do it?

It makes people to look at the tacit rules and assumptions that underlie the way they conduct their business. Often the rules turn to be obsolete, erroneous, or inappropriate. Re-engineering begins with no assumptions and no givens. It ignores what is and concentrates on what should be.

B. Radical Redesign

Radical means going to the root of things as re-engineering is not about improving what already exists. It is about throwing it away and starting over, that is, beginning with a clean slate and reinventing (redesigning) how you do your work, if a business process is poorly designed, it will not be well executed. The starting point for organizational success is well-designed process.Thus, re-engineering is about business reinvention not business improvement, business enhancement, or business modification.

C. Dramatic improvement

Re-Engineering is not making marginal improvements to the business. It is not about making 5% or 10% better but about achieving quantum leap in performance. Here, the performance can be measured in various ways: reduce costs, increased speed and greater accuracy. The hallmark of re – engineering is always a dramatic breakthrough in performance.

D. Business process

This is the core of the Re-Engineering definition. And according to *Hammer /2001/* process is an organized group of related activities that together create value to customers. It is about how work is done. In other words, processes are what create the results that an institution delivers to its customer.

Features that characterize a process institution:

➢ Processes are goal or mission oriented activity: Processes focus on the outcome of work rather than on work as an end in itself; everyone in the institution understands the why as well as what of their work.

➢ Processes are customer – focused: work is done from the perspective of the customer; viewing work through the lens of forming partnerships with customers to solve their business problems; concentrates on serving the customers on time.

➢ Processes are holistic: process thinking transcends individual activities; concentrates on how activities fit together to produce the best outcome.

➢ Process thinking is based on the belief that business success flows from well – designed ways of working. Hammer and Champy (1993),

2.2. What is not Business Process Re-Engineering?

Note that the different forms of change manifestations such as Automation (computerization), downsizing, restructuring, decentralization, outsourcing that have been used by organizations to respond to the challenges they were facing, even though these all have their advantages in improving organizational efficiency and effectiveness, they are not re-engineering which is starting over from scratch creating new process design from clean sheet. Let's look at each term one by one;

A. Computerization

The focus of re-engineering is the customer, not automation. Automation is a reengineering tool to help you provide value to your customers, but simply automating your operation will not provide the breakthrough performance increase. If your processes are inefficient and not customer focused, automating them only will allow you to be inefficient more quietly. It is automating obsolete processes with more sophisticated computerized systems the best thing one should do is that first re-engineer, and then automate.

B. Downsizing

Downsizing reduces costs by getting rid of people and jobs, re-engineering reduces cost by eliminating work that simply isn't necessary. It may or may not affect the number of people employed. It will affect the work those people perform. Re-engineering is r right sizing.

C. Out sourcing

The purpose of outsourcing is driven by the theory that groups outside the organization can perform some operations more efficiently. Re-engineering makes no such assumptions. It simply determines what work needs to be done and finds the best way to accomplish it.

D. Restructuring

Job descriptions and structures are the functions of the newly redesigned business process. Overlaying a new organization/structure on top of an old process is like 'pouring soured/old wine into new bottles(Ibid).

2.3. Business Process Re-Engineering Vs Total Quality Management

The two have some important common features. They are process oriented and of course begin with the needs of customer. However, the two have fundamental difference in essence as well. TQM is about modifying and refining the existing process aimed at resulting in incremental change. It is based on problem solving. Re-Engineering, in contrast, is about beginning a new from a scratch; starting over entirely considering how the jobs in the process put together. It entails the fundamental and radical redesign of the business process replacing the old process with a new and superior one pursuing new direction, philosophy and perspective to work and organization.

This notion reveals that the world is fundamentally changing. We have witnessed dramatic changes of work environment in the world. Yesterday, the world was successful employing the principles of industrial model; however, today, the world is in high tech and information economy in which yesterday's principles and philosophies of doing work and organizing the bureaucracy are incompatible and obsolete. They cannot fit it at all. Therefore, the new world requires a paradime shift before the TQM program comes to support it as a continuous improvement. Such incremental kind of change that TQM offers is incapable of delivering the required performance for today's business. In this case, one can say that Business Process Re-Engineering is not only the best tool, but also inevitable one in order to thrive in today's business re-engineering has raised during the early 1990's as an approach mainly developed by practitioners. It gained prominence in the work of writers such as *davenport and short (1990), Hammer (1990), Hammer and champy (1993) and Harrington (1991).* The concept is currently very topical in many organizational, management and information technology literature.

2.4. Driving Forces of BPR

The driving forces of BPR are customers, competition and change known as the 3Cs.

A. Customers

Today customers have become much more sophisticated and demanding; much more knowledgeable about their own needs; and are exerting ever greater pressure on their suppliers.

B. Competition

Which at one time was local and relatively gentle has become global and cutthroat.

C. Change

Whether in geopolitical realities, technology, or customer preferences, the pace of change is dizzying, that is, what was unthinkable yesterday is routine today.(Ministry of Capacity building working manual August 2008).

2.5. Who needs Business Process Re-Engineering?

There are virtually three kind of companies that undertake Re-Engineering. They are:-

a) The first are Companies that find themselves in deep trouble. These companies have no choice and are desperate. They are ready to do anything without worrying about danger.

b) The second are companies that are not yet in trouble but whose management has the foresight to see trouble coming.

c) The third type of company undertaking re-engineering. Is those that are in peak condition? They have no discernible difficulties, either now or on the horizon, but their managements are ambitions and aggressive. Companies in this third category see re-engineering as an opportunity to further their lead over their competitors. By enhancing their performance, they seek to raise the competitive bar even higher and make life even tougher for everyone else (Ibid).

2.6. Steps to follow business process Re-Engineering

There are four phases in designing Business process re-engineering. The first phase is planning the re-engineering project. In this the role of the top management, the definition of a business process, the different actors in the re-engineering project and what the content of a re-engineering plan looks like are highlighted. The second phase is concerned with understanding the current business process supported by examples from different organization. How to redesign new business processes is dealt with in phase three concepts such as: - benchmarking, identifying performance, desired outcomes

and redesign from clean sheet are presented in this part. The fourth phase concentrates on implementing the new designed process and other alignments; the way works, management and organization are structured; what gets measures and how in a process organization and finally, the values and believes to be followed in a process organization are discussed.

Each phase is organized in three parts. The first part deals with key concepts, the second contains checklists or criteria helpful to evaluate the completion of a phase and determine if the re-engineering teams can continue to the next phase, the third part of each phase gives us the key common mistakes committed when conducting re-engineering. *(Reengineering organization working manual August 2008)*

2.7. Key mistakes in BPR

The following mistakes appear to be commonly committed in the planning phase. *(Reengineering organization working manual August 2008)*

2.7.1. Leadership Problems

➢ Not leading the re-engineering him/herself, and not considering as his/her personal agenda. Usually such agendas are given to experts.

➢ Trying to lead without having sufficient knowledge in Business Process Reengineering. They don't make readings or attend trainings properly.

➢ Delegating the transformation agenda to others. They fail to get focused and become too busy with routine activities.

➢ Not giving enough support to the design teams.

2.7.2. Mistakes in identifying and stating business process

a. Failure to start from end, when identifying business processes people starts at functional perspectives, rather than process perspective. For instance trying to simply list the functions in the organization's mandate as business process without seeing the coherence relation that the functions together produce end result.

b. Considering department as business process. Besides these, they do not use the criteria suggested for checking business processes. The way to identify and state process start from having process perspective; i.e. looking at the end result through the whole jobs that create that result, start from outcome, the deliverables that value for customers. Then come back to the work process inside

the organization that produce the end result (come out) or deliverables. By doing so, you will end up on the core business process. Here again don't confuse goals with processes.

c. Some organizations write mistakenly bold goals and say it a process. Processes are not goals. But processes are group of activities that together and organized to create the goals.

2.7.3. Problems in relation to forming governance structure

a. The designing teams are field with people who have no sufficient knowledge, skill and exemplary behavior(Ibid).

b. The design teams do not devote their full time to the reengineering work

2.7.4. Problems when preparing the reengineering plan or TOR

a. The plan is prepared in a way that it results in incremental change.

b. Some plans tempt the design teams to go to full – scale analysis.

c. Failing to work according to the Terms of Reference(Ibid).

2.7.5. Mistake when defining input and output of a business process

Input means the customer's demands needs, request, order or the customer's problem or claims. It doesn't mean the operational inputs such as stationeries, human and physical resources, finance, time etc. Likewise, output means the solution for customer's, problem, i.e., the end result of the process (out come) that create value for customer. It doesn't mean operational output or function's output. For example, procurement is a business process where its input is customer's request or order of goods or services while the output is the bought paid and delivered goods and services that meet their order or solution for their problems or needs(Ibid).

2.7.6. Mistake in defining sub process

People mistakenly state functions in the process as sub process. Functions do not create result, but only processes do. For exam7ple, purchase or pay is a task from the group of tasks in the procurement process. Purchase or pay is not a sub process, as it doesn't create result in isolation. Sub process is part of a large process where the output of the first process becomes the input of the next. For example, if a manufacturing company has defined its core process as procurement to shipment, we can see the end result passing through procurement of raw materials, then processes in factory, and shipped (delivered) to the retailers or end users. The procurement process in this context is sub

process for the other next processes. The other example can be the reform program delivered by our civil service reform program or Management institute. It is a core process. This core process has sub processes, which includes from assessment of need up to producing the program document. This is not the end; rather it is sub-process for the next training implementation process(Ibid).

2.7.7. Understanding Vs full scale analysis

Redesigning teams are tempted to make full-scale analysis than have high level understanding of the current business process. The commonly made error in reengineering is to spend too much time analyzing existing processes. Too many people confuse understanding with conduction a full-scale analysis.

In addition to wasting time in full-scale analysis, people miss what is required and what is not. For example, they take time analyzing each and every step and actively in sub processes by missing the required one, which is understanding the customers, what and why of the business process(Ibid).

2.7.8. Pursue wrong way to establish performance baseline

For example, they are using activity based costing tool to estimate the cost of detail activities rather than estimating the whole process, i.e. calculating the cycle time of business process(Ibid).

2.7.9.In identifying and stating business process problems,

people get confused with operational problems like stationery, transport, human resource, salary etc… rather than problems from the customers' point of view such as delay of service, unresponsiveness, costliness, timeliness, quality of service (Ibid).

2.7.10. Mistakenly attempting to understand functional departments, tasks, and or the mandate of the organization as business process.

For example, administration and finance department, sales department or manufacturing department(Ibid).

2.8. Redesigning the Business process

Redesign is the most creative part of the entire reengineering process. More than any other it needs imagination, inductive thinking and a touch of craziness. In redesigning process the reengineering asks the team members to suspend their belief in the rules, procedures, and values that they have honored their whole working lives.

In redesigning a process, different models like benchmarking, problem Rule-Assumption, and other can be used for teams in order to produce breakthrough ideas.

2.8.1. Performance gap

Performance gap is a gap between the performance of a process and what is required of it. Performance gap helps to

➢ See the shortcoming of the process,

➢ Establish a realistic stretch objective,

➢ Bring a new idea for clean sheet,

We can identify performance gaps using the following ways;

➢ Against the customer needs and stakeholders requirement

➢ By benchmarking the best in the world

2.8.2. Desired outcomes

One of the principles of business process Reengineering is getting organized around outcome-results-not activities inputs or even outputs *(Linden, 1998)*. It is true that the overall goal or outcome of the organization is to satisfy customer's needs. Now what is needed is articulating the specific outcomes desired by the customers of the business process. The specific outcomes emanate from the customers' expectations that have been gathered during the understanding phase. The desired outcomes have to be stated in the form of declaration and commitment like 'End users will be served with minimal waiting time'.

2.8.3. Benchmarking

Benchmarking is the practice of being humble enough to admit someone else is better at something, and being wise enough to learn how to match and even surpass them at it. (Ministry of Capacity building working manual August 2008).

Many people think they know what benchmarking is but aren't quite sure what to do. One important concept that any organization, which is going to benchmark, needs to understand is that benchmarking is not the beginning and the end by itself rather it is a tool that can be used to get to the end result that it might desire to achieve.

Many individuals try to separate benchmarking and best practice, Benchmarking is the methodology used in search of best practices in order to get the best practice in a better way for an organization. First the organization has to have a baseline and to get the baseline, understanding the current process and its current performance measure is necessary. Omitting the base lining step is risky and can lead to missed opportunities. This is so because base lining is essential to develop and understanding of the organization process.

Benchmarking is:-
- ➢ An alliance between partners to share information on processes and measures that will stimulate innovative practices and improve performance
- ➢ A process of finding and implementing best practices that accelerate the rate of improvement by providing a real world models and realizing improvement goals
- ➢ The search for those best practices that will lead to the superior performance of an organization
- ➢ A fundamental business skill that supports quality excellence
- ➢ A process for rigorously measuring your performance versus the best in class companies and for using the analysis to meet and surpass the best in class.

Benchmarking is not simply
- ➢ Comparing performance results
- ➢ Visiting site briefings and tourism
- ➢ Just copying and catching up
- ➢ Spying
- ➢ One time exercise
- ➢ Quick and easy

Why do organizations benchmark?
There are many different reasons why organization would want to benchmark, by doing benchmarking, an organization can find out the best organization and gather actionable data for change and process improvement and can realize also that there is a world outside of their own with great new ideas that they can use.

Since this section will focus on process benchmarking, we will see the common reasons why organization use benchmarking during their business process reengineering time.

- To satisfy customers' needs and expectations
- To understand the methods and practices needed to reach new goals
- To adapt best practice
- Offers an excellent source of possible stretch objectives
- It encourages breakthrough thinking, creative thinking (out of the box thinking)
- To achieve a superior process and system to manage a change
- To see tomorrows solution for today's problem
- To discover emerging enablers

Major steps in Benchmarking

In order to perform the benchmarking process the following steps should be followed.

i. Decide what to benchmark.
ii. Identify performance standards to measure and document your current performance.
iii. Identify potential benchmarking "Partners" (the organization whose process you are going to study)
iv. Collect data
v. Analyzing the collected data to get the performance gap.
vi. Write a report

2.8.4. Stretch objective

The purpose of stretch objective is to force the reengineering team members to abandon outmoded thinking about a process and to set one or more performance targets that they can only meet using very innovative thinking and new ways of behaving.

The stretch objective also:-

- Helps people get out of their complacency,
- Forces the team to bring a genuine change in the existing process not just a fix,
- Forces people to question assumptions and rethink how they do work,
- Helps to get out of the box thinking,
- Helps design a system for managing a change, and
- See tomorrow's solution for today's problem.

According to Linden 1994 there are three ways to determine appropriate stretch objectives:-

i. **Start with important customer needs or complaints.**
    - Start at the end and work backward.
    - Start with customer needs.

When it is clear that customers are dissatisfied with a particular service or product, this is a base for setting objective.

ii. **Benchmarking:- measuring its own process against Leader company's business process**

Benchmarking provides a powerful incentive for change in most organization creating the pain and challenge needed for re-engineering.

iii. **Learn form your own best performance (internal benchmarking)**

What is the fastest we have done this? When, how did it happen? When faced with pressure to move very quickly, an organization was able to meet the customer need with in short period of time. The organization may say we could only complete this service with in short period because it was an emergency but this short period can be a standard to set a stretch objective of the organization.

2.8.5. Designing from clean sheet

After the stretch objective is developed, the next step is the challenging part of re-engineering work which is redesigning starting from a clean sheet. To start from clean sheet does not have step by step procedures to bring a new radical process. It requires imagination and out of the box thinking to set the stretch objective and to bring the desired change(Ibid).

Starting with a clean sheet:

- Forces the staff to challenge fundamental assumptions.
- Allows the team to focus on the end user needs rather than on current procedures and regulations.
- Liberates them to push for truly radical change.
- Is radical going to the root of the things and not about improving what already exists?

- It is the time for "out of the box thinking". But the big challenge is how to produce new radical idea, how to bring out of the box thinking? And Where to start? There are four kind of techniques recommended to the re-engineering team for stimulating their thinking to produce a new idea. (whacko ideas)

Whacko means departing sharply from the existing process and satisfying the criterion of being radical.

a) Breaking assumption to develop whacko idea

It involves discarding (breaking) assumptions that underlie the existing old system; to discard the assumptions, make them first visible. After making the assumptions visible, reveal them untrue and get rid of them but if the assumption proved as true try again to find another assumption behind the rule or try another rule altogether.

There are three terms to define in this step: (Problem – Rule – Assumption)
- A problem is the specific performance shortcoming that you want to improve/solve.
- A rule is the particular aspect of a process design that gives rise to the problem in question
- An assumption is something that we take for granted about the world and that causes the rule in the design. The rule is the functional consequences of the assumption.

To summarize the method of busting assumption; start with your problem, use the rule to stimulate your thinking and help you discover the rule responsible for the problem, then trace the rule back to the assumption. Is it false? If yes, destroy the assumption and discarded the rule that opens the space for creating a new process.

b) Applying one or more principles of reengineering

This is another way of bringing a new idea when starting from clean sheet. The reengineering principles can guide the team to create the right process. We can summarize the reengineering principles as follows:

Several Job are combined in to one:

The most basic and common feature of reengineered processes is several jobs in the process are combined (compressed) into one.

Organize around outcomes (customer, product process) not function:

The basic reason for an organization to exist is to achieve its outcome, which is the result that the customer requires. Therefore, in the redesigning process, works must be organized around outcome, not function. In order to see the outcome, the organization (team and leader) must see at the end and come back. Use this question, for example, what deliverables do my customers want and what organization and work process inside my company will most directly provide these deliverables? Thus, one the desired result (outcome) is clear, you can organize around it.

There are three ways to organize around outcomes. These are by customer, by product and by process. (*Linden 1994*)

Organize around customer:- the first step to take when organizing around outcomes is to determine whether an identifiable customer is requesting a specific service. If so, customer's need form the basis of the deliverables or outcome. For instance, a transformed hospital can organize its service to model of patient-focused care where nurses and technicians together with doctors provide most services to the patient.

Organize around the products: - When the customer is not easily identifiable (their numbers are too large, the needs change too frequently) or when the deliverable is a tangible good and not an intangible service, then organizing around the product is the approach to take.

Organize around the process: when there is no consistently identifiable customer needing a specific service, no tangible good or product, organizing around the outcome means organizing around the process itself.

> ➤ Provide a single point of contact for customers where ever possible.

  Customer should deal with one person presenting the entire process, for the convenience of the customer. Remember the case manager and the case of one stop shopping.

> ➤ Ensure continuous flow of the main sequences of activities that directly add value to customer.

  – Identify value adding and non value adding.

  – Eliminate or separate every one value – adding steps so that the main sequences flow smoothly and quickly.

- Use triage approach, deal different needs differently complex and high risk instances allow one process, while streamline process routine action are given different.

c) Application of information technology

The main objective of using IT here is to support radical change, not to automate the old processes. During the design process, IT is used to break the old rules. For example, after reengineering the issuance of driving license in the Transport Authority, IT is employed to administer examinations, that is, computer based examination as well as simulation for practical demonstration(Ibid).

d) Benchmarking.

As we saw in the first step of redesigning, benchmarking is a practice that rigorously examines and compares organization practices with the best in the world, aimed at creating superior business process. Some organizations have always benchmarked themselves with other organizations in an informal way. However, as a formal and rigorous process benchmarking is to being applied by companies nowadays. So, it requires an open attitude and willingness to learn from others.

2.8.6. Fitness Assessment

Using the above techniques, one can generate new ideas to redesign the new process but it should always be from the customers' side. When generating superior idea, two to three business process alternatives are proposed and the best one out of the alternatives is selected based on the following criteria (Ibid).

- ➢ Does the process help the organization to improve quality of service, increase flexibility and reduce cycle time?
- ➢ Does the process save your cost like installing technology, applying latest management, motivational techniques fashionable training program?
- ➢ Compatibility of the process for creating values for the customer
- ➢ Is the process compatible with the organization's mission and mandate?
- ➢ Is the process free from redundancy, potential for value addition?
- ➢ Does the process empower the front line staff?
- ➢ Does the process turn inputs in to outputs of greater value?

2.8.7. Steps to organize a new process

After several jobs in the process are combined into one and works organized around outcome then:

    i.   Specify the sequence/ parallel of activities; i.e., series of jobs and steps in the process from start –to-finish.

    ii.   Indicate where each activity is performed; in the business process itself, outside the business process or out of the organization.

    iii.   Set operational standards of time, cost, quality and quantity of each step in the process and the result of the process as a whole.

    iv.   Pinpoint responsibilities for each job and step in the process.

    v.   Identify the required knowledge, skill and attitude to perform the jobs.

    vi.   Finally, determine the number of performers needed based on the time and volume of work.

Note that, if your redesigning effort only ends up simply in combining several jobs in the process into one and organize around outcome, but not organized, the business process in not yet designed. The central point of redesigning a process not completed or it is missed. As a result of this, activities are done randomly and haphazardly, and no discipline of action and result for customer will prevail. Organizations exist to create value for a customer and it is only through process that the organization creates value for its customer. Therefore, the organization does not hold process without the objective of producing result for a customer. Having processes is not the end of the issue. The processes must create result of value for the customer(Ibid).

2.8.8. Comparison between As - Is and To - Be

The dramatic shift from the old business process to the new one could be shown using the following references.

    a) What is the philosophical shift discernible between the old and the new process? Is a shift in perspective?

    b) Shift in performance which includes: Quality, time, cost and service delivery

    c) Organizational shift. This is to say form hierarchical to flat structure; hand – off to hand – on etc…(Ibid)

2.9. Implementation the Business Process

The implantation phase involves two points. One is the redesigned process (the new processes) which is going to be tested and implemented, and the other is alignments: structure, management and measurement system, values and belief and information technologies that are transformed and aligned so that the new process will furnish the required result of values.

At this stage, since the way values are created is shifted from task – based thinking to process-based thinking, and all alignments mentioned above are to follow ultimately the nature of the organization which is fundamentally transformed. The traditional hierarchical organization that was built and serving the industrial era and mass production is now transformed in to process-centered organization, which is the demand of today's business environment.

The model below is called business system diamond. It shows a simplified descriptive feature of a reengineered organization. Look at it and the summary notes describing it..
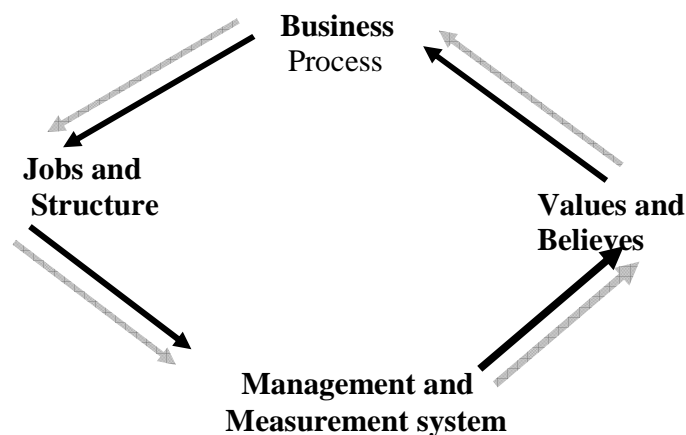
The business system Diamond *(Hammer and champy, 1993)*

i. Business process is the mechanism by which work is performed and value is created. As a result of reengineering, the organization shift its perspective from task based thinking to process based thinking a designs a new superior process.

ii. The design of the organization's business processes determine the nature of people's job and the way in which they are organized to perform that work, and hence the job and structure of the new organization is entirely new one fitting to the new world.

iii. The nature of jobs and the organization of it in turn determine the kinds of management system an organization must establish and use.

iv. The management system specially how people's performance is measured and their compensation is determined shape the value and belief held by employees.

v. These systems in turn induce the set of attitudes, belief and cultural norms needed to be built in the organization. However, transforming value system and inculcating new values in organization must go beyond this and will see it latter.

Now, pursue the following steps in implementing the new business process and building process centered organization.

2.9.1. Preparing implementation Plan

Note that unless an organization hasn't a well prepared plan, the implementation phase of reengineering is the most challenging part of the effort. This is the broad phase that the new designs come to the whole workers where the real mobilization is important, the firm and discipline of the leader in managing change is tested, and the fruit of the effort is determined. Therefore, having clear plan of implementation is very important. Basically, the preparation has two major issues to address. These are:-

a) Action Plan

The action has to include the following points:

a. What works (activities) to be done with time frames such us the decision points that are studied and ready for action, the testing of the new processes, the employees redeployment, office arrangement, and resource decision, implementation arrangement etc…

b. Communication plan and system should be clearly set.

c. Change management strategies should be set clearly.

d. Control and monitoring system should be established.

b) Manual

The redesigned processes need manuals that help individuals performing the processes and managers of the processes guide their actions. Therefore, the leader and design team must prepare implementation manual that helps the new process be precisely tested and implemented (Ministry of Capacity building working manual August 2008).

CHAPTER THREE
DATA PRESENTATION ANALYSIS AND INTERPRETATION

This chapter mainly deals with the presentation, analysis and interpretation of the data collected from two groups of respondents through questionnaires. The two different types of respondents are employee of Defense Infrastructure Sector and customer. For this study, out of the total no of employees 68 employees were selected as a sample and all employees filled the questionnaires and also 7 customers' organizations are selected to fill the questionnaire. Only 5 customers filled and

return the questionnaires. In this chapter, the researcher had analyzed the data collected from the respondents through categorizing in to different structures.

Table 3.1 Characteristics of Respondents

No	Particulars	Respondents	
		No	Percentage
1	Sex		
	Male	54	79.4
	Female	14	20.6
	Total	68	100
2	Age		
	20-30	7	10.3
	31-40	34	50
	41-50	22	32.3
	51 and above	5	7.4
	Total	68	100
3	Qualification		
	Masters	10	14.70
	1st Degree	34	50
	Advance Diploma	3	4.4
	College Diploma	19	27.9
	12 Complete	2	3
	Total	68	100
4	Service Year		
	Below one year	-	-
	1-5 years	11	16.2
	6-10 years	24	35.3
	11-20 years	20	29.45
	21-30 years	13	19.1
	31 and above		
	Total	68	100

As it can be seen from Table 3.1 Item 1, the majority 79.4% of the respondents are Male, while 20.6% of the employees are female. This shows that the numbers of male employees are greater than female employees in the organization.

With regard the age range of the respondents in item 2, 50% of the majority are found between 31 and 40 years. However 32.3% of the respondents are from 41-50 years old. While 10.3% of the respondents from 20 to 30 years old. In addition 7.4% of the respondents are 51 years and above. The age range of the sample 50% 31-40,32.3% 41-50. This may indicate that the respondents are more experienced and composed of efficient and hot work force.

In the same table item 3 concerning education and qualification of the respondents the majority i.e 50% of the respondents have 1st degree and 27.9% of the respondents have college diploma in various fields of study, while 14.7% of the respondents have master holders. In addition 4.4% of the

respondents have advance diploma and 3% of the respondents are 12 grade complete. This shows that the majority respondents have got good educational background and qualification. If the majority have got good educational background. It has a positive implication on the implementation process.

As far as the respondents service year is concerned, the majority i.e 35.3% of the respondents have 6 to 10 years service while, 29.4% of the respondents are 11 to 20 years of services. 19.1% of the respondents have 21 to 30 years of service and 16.2% of the respondents have 1 to 5 years of services. This shows that the majority respondents are well experienced. From the above data's one can conclude that in the implementation process of BPR having educated and will qualified employees and experienced and hot work force is a fundamental positive input for the implementation process.

Table 3.2 Level of Employees Understanding of BPR Study and Implementation

No	Questions	Alternative	No of Respondent	Percentage
1	Do you have a good understanding what BPR is?	a) Certainly yes	57	84
		b) Only a few	11	16
		c) I am not sure	-	-
		d) Not at all	-	-
	Total		68	100
2	Do you have a good understanding about the core and support processes which the sector has studied?	a) Certainly yes	58	85
		b) Only a few	8	12
		c) I am not sure	1	1.5
		d) Not at all	1	1.5
	Total		68	100

3	In your opinion does the BPR study and implementation takes place at the right time?	a) Certainly yes	23	33.8
		b) It was better if the study some years before	34	50
			10	14.7
		c) I am not sure		
		d) BPR Study is not necessary at all.	1	1.5
Total			68	100
4	Do you think that BPR will bring a better future for the enterprise?	Yes	55	81
		No	7	10
		I don't know	6	9
Total			68	100

Source: Field Survey April 2011.

As shown in Table 3.2 item No.1, respondents were asked whether they have a good understanding about business process re-engineering or not. Accordingly, 84% of the respondents which is the majority assure that they know BPR with certainty and 16% of the respondents replied that they have only a few knowledge about BPR. There are no respondents which do not understand BPR and being ignorant about BPR. Due to this fact, the majority of employees have awareness about BPR and this will going to have a positive effect on the change process.

In item No.2, the employees were asked whether they have got a good understanding about the core and support process which the sector has studied. 85% of the respondents have got a good knowledge about the core and support processes. 12% of the respondents have got a few understanding about the core and support process. In this question only 1.5% of the respondents i.e. one respondent is not sure about the processes and 1.5% of the respondents i.e one respondent is ignorant about the core and support processes. From this fact, the can conclude that majority of the employees know the core and support process clearly this will also lead to positive effect to the change process.

In item No.3 the respondents were asked whether the study and implementation takes place at the right time or not 33.8% of the employees agree that both the study and implementation are materialized at the right time while 50% of the respondents agree that it was better if it is implemented some years before. only 14.7% of the respondents are not sure whether it is carried out at the right time or not. 1.5% of the respondent i.e one respondent do have doubt about the

importance and necessity of BPR study and implementation. From the above expression one can conclude that 83.8% are totally agree about the BPR study and implementation but from this 50% agreed the time should be better if it has been some years before. This shows that the majority employees were psychologically ready in the implementation process.

In item No.4, the question was "How do you think that BPR will bring a better future for the enterprise?". 81% the employees certainly, believes that BPR will bring a better future for the enterprise. While 10% of the respondents believe that BPR implementation will not bring a better future for the enterprise. only 9% of the respondents cannot predict whether BPR will bring a better future or not. From here we can conclude that 81% of majority of the employees are very certain that applying and implementing BPR will bring a better future for themselves as well as for the enterprise.

For the question asked in item No.04   " Do you think BPR will bring a better future for the enterprise?" The respondents were asked if their answer is "yes" to state their idea. The respondents makes forward the following ideas as shown below.

- BPR is important not only for the enterprise in particular but also for the country at large change is a great motto globally hence we are on the right truck for change in the future.

- BPR as a tool can help the management and employees to manage scarce resource effectively and efficiently this may benefit the organization and the employees as well.

- BPR is a means for better performance, It gives direction in relation to responsibilities and authorities.

- BPR is New in our country and also in the construction sector it will bring better future if it is implemented properly and seriously.

- It brings the right man for the right job position, works are performed according to schedules, employees are interested and work with great moral to wards implementation no hesitation to have a bright future.

- Controls are minimized, works are worked end to end unnecessary work duplication can be avoided, transparency and honesty would be norms, efficiency can be improved, customers could be satisfied.

- By implementing BPR the enterprise can compete with time. Cost and quality with other competitors and also grant customer satisfaction.

- If an organization meets its strech objectives its obvious that it builds its capacity that will further transfer into better future.
- Even if there are short comings we are on the right truck to bring a difference.
- From the above list of ideas one can conclude that majority of the employees has positive implication by implementing BPR their brings a better future for them and for the enterprise.

Table 3.3 To what extent BPR will ensure changes and makes the Business Competitive.

No	Questions	Alternates	No of respondents	percentage
1	Do you believe that the implementation of BPR brought the anticipated change?	a) Absolutely yes b) It is on the way c) It is not the right time to evaluate d) Not at all	19 36 13 0	28 52.9 19.1 0
	Total		68	100
2	Have you observed changes in attitudes and behavior of employee after the implementation?	a) Certainly yes b) To some extent c) I am not sure d) No change at all	15 39 14 0	22 57 21 0
	Total		68	100
3	In your opinion does the BPR leads the enterprise to be come competitive in the industry?	a) Certainly yes b) It is on the right truck to be business competitive. c) It is not the times to judge d) No it doesn't It's just as previous.	30 17 20 1	44 25 29.5 1.5
	Total		68	100
4	Have you seen dramatic change in reducing the longer duration of completing the design, contract administration construction work?	Yes No I don't know	35 8 25	51 12 37
	Total		68	100
5	In your point of view has	Yes	35	51

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the organization been profitable in its activities after the implementation?	No	8	12
	I don't know	25	37
Total		68	100

In Table 3.3 item No.01, the respondents were asked whether the BPR implementation brought the anticipated change or not. For this question, 28% of the respondent believes that BPR implementation brought dramatic change while 52.9% of the employee which is the majority of respondents, believes that it is on the way to change and 19.1% believes that it is not the right time to evaluate, unfortunately no respondent argue that BPR does not bring the anticipated change. Due to this fact it is safe to say that even if the implementation process takes time there is a positive attitude towards the anticipated change.

In Item No 2, the respondents were asked whether they observe changes in terms of attitudes and behavior after the implementation. 22% of the respondents certainly believes that their is change in attitude and behavior while 57% of respondents to some extent believes that their is a change. 21% of the respondents have got doubt about the possible change in terms of attitudes and behavior. There are no respondents argue negatively about the change in terms of attitudes and behavior in the implementation process. The most important thing in change is behavior and attitudes, so from the data it shows the change is not able to bring this change, but it may be because of that total transformation comes at last not first .

In item No.3 the respondents were asked whether BPR could lead the enterprise to become competitive in the industry or not. From the respondents 44% believes that BPR leads the enterprise to become competitive while 25% of the respondents believes that it is on the right truck to become competitive again 29.5% of the respondents says that it is not the right time to judge the enterprise whether it becomes competitive or not. 1.5% respondent's i.e one person has negative implication that BPR implementation does not bring the enterprise to become competitive. From the above information one can conclude that the majority employees believe that BPR is a special tool to lead the enterprise to become competitive. This could be taken as a positive effect on the change process.

In item No 4, the respondents were asked whether they observe dramatic change in reducing the longer duration of completing the design, contract administration and construction work or not. For

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this question 51% of the respondents believes that the longer duration has been reduced and observe dramatic change in this respect, while 12% of the respondents does not observe any change in reducing the longer duration. 37% of the respondents are not sure whether a reduction of longer duration is observed or not. Therefore the resarch can conclude that the majority observe dramatic change in reducing the longer duration this leads to customer satisfaction and makes the enterprise competitive and profitable.

For question asked in item No. 4 i.e "Have you seen a dramatic change in reducing the longer duration of completing the design, contract administration and construction work" the respondents were asked, If you answer is "yes" please state your idea. The respondents forward the following ideas which they observe during the implementation of BPR.

- By throwing away the old process minimizing non value added process, activities or stages we have seen time reduction and cost benefit of the organization.
- Finalizing designs, payment approval, material approval contract agreement and construction works have been completed with in short period of time and the time reduction change is quite dramatic.
- After BPR implementation every core and support processes of work regarding time completion is highly shortened and improved drastically.
- During the As-Is study we have seen many non-value added processes during the To-be process by cutting this non-value added process when implementation takes place the scenario have been completely changed in time reduction.

In item No 5, the respondents were asked whether the organization is profitable in its activities after the implementation or not. 56% of the respondents clearly see the profitability after the implementation while 7% of the respondents could not sense or see the profitability after implementation of BPR. 37% or the respondents have doubt whether the organization is profitable or not. From the above expression one can conclude that 56% the majority respondents see the organization profitability after the implementation of BPR. This shows that implementing BPR brings profitability in the organization.

For question asked in item No. 5 i.e "In your point of view has the organization been profitable in its activities after the implementation of BPR?". The respondents were asked if your answer is "yes" please state your idea. The respondents makes forward the following major ideas.

- We have seen change if the organization keep this change properly and seriously there will be no doubt the organization maximize profitability.

- Many customers are satisfied, customer satisfaction is another form of profitability.

- The implementation deserve the project to finish before its contract time by keeping its quality. This makes the organization profitable.

- BPR consider mostly three things time, cost and quality all these leads to profitability.

- The idea of strech objectives and its implementation will help to achieve the organization profitable.

- BPR leads to efficient utilization of resource (Human, Financial, Material, Fixed assets .... etc) this in turn brings profitability.

- All activities are accomplished at their own standards these increase the profitability of the organization.

- The system of empowerment and accountability based on benefit have been applied in the sector this brings profitability.

From the above statements forwarded by the employees we can conclude that business process re-engineering implementation will bring profitability in different perspectives.

Table 3.4 major challenges in implementing BPR and the role of the leadership.

No	Question	Alternates	No of	percentage

1	Do you think that all concerned parties are directly or indirectly involved in the implementation process	☐ Yes ☐ No ☐ I don't know	respondents 42 19 7	62 28 10
	Total		68	100
2	How was the role of management in managing and handling the challenges during the BPR implementation?	a) They manage the challenges seriously b) They manage the challenges poorly c) They do nothing handling challenges. d) I do not know	27 28 5 8	39.7 41.3 7.3 11.7
	Total		68	100

Source: Field survey, April 2011

In table 3.4 item No. 1 the respondents were asked "Do you think that all concerned parties are directly or indirectly involved in the implementation process? 62% of the respondents believes that all concerned parties are involved directly or indirectly in the implementation process, while 28% does not believe the involvement of concerned parties during the implementation of BPR only 10% of the respondents have doubts whether all concerned parties are directly or indirectly involved in the implementation process. One can conclude that 62% which is the majority of the respondents believe the participation of the concerned parties in the implementation process. This shows that participation and involvement it will reduce resistance for the change and in return it creates conducive atmosphere for implementation.

For question asked in item No. 1 i.e "Do you think that all concerned parties are involved directly or indirectly in the implementation process?". The respondent were asked If their answer is "yes" to state their idea. The respondents i.e 62% the majority makes forward the following major ideas.

- Starting from the study of BPR through implementation awareness creation and progress report were a non stop activity.

- In every process i.e the core and support processes the process owners and employees are participated in every respect which the study and implementation demands.
- Every steps need briefing almost all the sector employees are involved in the study and the implementation process.
- Before the implementation there was training on BPR, during and after the implementation all concerned parties are involved practically.

From the above statement one can conclude that from the starting point of BPR study to the implementation process the process owners and employees are involved and participated directly or indirectly. This shows there is a majority involvement during the change process which brings conducive environment for the implementation process.

Item No. 2, the respondents were asked "How was, the role of management in managing and handling the challenges during the BPR implementation?" from the respondents 39.7% of the respondents appreciate the leadership in managing the challenges seriously while 41.3% of the respondents condemn the leadership in managing the challenge during the implementation process 7.3% of the respondents evaluates the leadership doesn't do any thing in handling the challenges and 11.7% of the respondents do not have any knowledge whether the leadership manage the challenge properly or not. From the above data 41.3% plus 7.3% of the respondents condemn the leadership in managing the challenges this is critical. The most important thing in change is managers commitment, so in order to keep the change sustainable the management group should have to be seriously committed in handling the challenges without interruption.

In item No. 2 the respondents were asked to express the idea about the major problems challenges during the implementation process. The respondents list out the major problems during the implementation process.
- Lack of management commitment.
- Lack of team spirit.
- Lack of office facility and office layout.
- Lack of devotion and lack of supervision.
- The right person dose not assigned in the right place.
- Changing the attitudes of the workers to the new system.

- Lack of training of BPR implementation and delayance of implementation manual.
- Duties and responsibilities are not given to employees on time.
- Shortage of clarity in the implementation process.
- Communication gap between departments, groups....etc.
- Being resistance to the new change.
- Budget and resource constraints.
- Shortage of qualified manpower.
- Being ignorant about IT technology.

The respondents were asked "In your point of view what would you suggest a solution to the above problems? According to the respondents point of view the following are the major or solutions for the problems which have been seen in item no. 4.

- Providing sufficient material and creating conducive working environment.
- Allocate sufficient budget and resource to all employees.
- Facilitate adequate training program to all employees.
- Manpower allocation should be based on profession and work experience only.
- Continuous evaluation and controlling the implementation process.
- Assessment has to be performed to measure the level of understanding continually in a planned and organized way.
- Working hard in winning the mind and hearts of the employees continuously.
- Continuous trust and empowerment of employees in their profession.
- Make clear the vision, mission and objectives to all employees.
- Using IT in appropriate way.
- Giving on Job training to every employee.
- Narrowing the gap of communication between departments, groups...etc.
- Giving solution to the problem in a fast way.
- Implementing reward system.
- Commitment of all managers specially top management.
- Bringing skilled manpower from the market.
- Giving a clear written duties and responsibilities to all employees.

- Strongly working in awareness creation.

From the above expression forwarded by the respondents if and only if the problems have got solution in the above ways the respondents believes that the implementation of BPR will be bring the desired fundamental and dramatic change for the organization.

Table 3.5 Empowerment, structure, Information system reward and incentives integration.

No	Questions	Alternates	No of respondents	percentage
1	Do you think that the jobs generally determined and allocated?	a) Certainly yes	29	42.6
		b) To some extent	31	45.6
		c) I am not sure	6	8.8
		d) Not at all	2	3
	Total		68	100
2	Are all departments given a specific BPR training to enhance their work activity?	a) Certainly yes	27	39.7
		b) To some extent	28	41.3
		c) I am not sure	11	16
		d) Not at all	2	3
	Total		68	100
3	Do you think that the BPR Implementation supported with adequate information system?	a) yes	8	12
		b) To some extent yes	18	27
		c) I am not sure	22	32
		d) No there is no adequate IT	20	29

		Total		68	100
4	Do you think the change is tied with reward and incentive system?	a) yes b) To some extent c) I am not sure d) I don't think so		19 17 25 7	28 25 37 10
		Total		68	100
5	In your opinion implementation of BPR brings conducive working environment specially office facility, furniture... etc.	a) Certainly yes b) To some extent c) I am not sure d) I don't think so		13 42 9 4	19 62 13 6
		Total		68	100
6	In your opinion does the implementation provide empowerment for both individual and teams?	a) Certainly yes b) To some extent c) I am not sure d) I don't think so		22 34 8 4	32 50 12 6
		Total		68	100

Source: Field survey, April 2011

In table 3.5 item No 1, the question was "Do you think that the job generally determined and allocated or not 42.6% of the respondents are certainly sure that jobs are determined and allocated while 45.6% of the respondents believes to some extent jobs are determined and allocated only 8.8% of the respondents are not sure whether jobs are determined and allocated 3% of the respondents does not know whether jobs are determined and allocated. From the data one can conclude that jobs seems poorly determined and allocated but as observation of the BPR document and the application jobs are determined and allocated but there is a communication gap.

In item No. 2 its respondents were asked " Are all departments given a specific BPR training to enhance their work activity? 39.7% of the respondents believes that their was BPR training in order to enhance their work and 41.3% of the respondents to some extent believes that their was BPR training, while 16% of the respondents are not sure whether there was BPR training or not 3% of the respondents does not know that whether there was training or not. From this fact one can say their is a shortage of training during the implementation process. So the organization should have to prepare different training schemes in order to sustain or bring the desired change.

In item No. 3 the respondents were asked "Do you think that the BPR implementation supported with adequate information system. 12% of the respondents believes the implementation are

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supported with adequate IT while 27% of the respondents believes to some extent the implementation supported with IT. 32% which are the majority of the respondents are not sure whether the implementation supported with adequate IT or not and also 29% of the respondents believe that there is no adequate information system at all. Due to this fact we can conclude that almost there is no adequate information system to support the implementation process. Due to this fact the organization seriously implement IT technology to enhance the over all activities in order to bring the needed change.

In item No 4, the question for the respondents was "Do you think the change is tied with reward and incentive system? 28% of the respondents surely believe that reward and incentive system are tied with the change 25% of the respondents to some extent believes that the change is tied with reward and incentive system. While 37% of the respondents are in doubt whether incentives and reward tied with the change and 10% of the respondents replied that there is no reward and incentive system. From this information, it seems to be safe to say that incentives and rewards are not tied to the change process.

In item No. 5, the employees were asked "Does implementation of BPR brings conducive working environment specially office facility, furniture and working materials... etc?". 19% of the respondents certainly say yes that the implementation of BPR brings conducive working environment and 62% of the respondents that is the majority believes that to some extent the implementation brought conducive working environment while 13% of the respondents are not sure that the implementation bring conducive working environment only 6% of the respondents does not know whether the implementation bring conducive working environment or not. From the data the sector fase a problem in creating a conducive environment for employees but to the resercher observation there is a beginning which gives hope to create conducive environment for employees.

In Item No 6, the respondents were asked "Does the implementation provide empowerment for both individuals and teams? 32% of the respondents certainly believes that the implementation provide empowerment for both individuals as well as teams while 50% of the respondents to some extent believes that the implementation of BPR provide empowerment for both individuals and teams only 12% of the respondents are not sure whether the implementation provide empowerment or not 6% of the respondents believes that the implementation does not provide empowerment for both individuals and teams. Form this fact one can conclude that individuals and teams are empowered to make decisions the time taken are reduced and quality of decision is also enhance in

the change process.   To the researcher observation there is a look of suspicion in the top management and shortage of confidence with the empowered employees which is totally to be avoided.

Table 3.6 Evaluation and Follow up.

No	Question	Alternates	No of respondents	percentage
1	Do you think that the implementation is taking place in every process as the given standard?	Yes	23	33.8
		No	26	38.2
		I don't know	19	28
Total			68	100

Source: Field survey April 2011

As shown in Table 3.6item No 1 respondents were asked whether the implementation is taking place in every process as the given standard 33.8% of the respondents believes that the implementation is taking place as the given standard in every process while 38.2% of the respondents does not believes that the implementation is taking place as the given standard in every process and also 28% of the respondents have got no knowledge whether the implementation is taking place according to the given standard in every process or not. The respondents were asked if their answer is "yes" or "No" to state their idea clearly. The respondents who say "yes" stated that their idea as follows:

- In every department team and case team the implementation process taking place successfully in every process as the given standard.
- The implementation is going on according to the standard measurement on time but not yet measured quality and cost.
- Even though some of the given standard might need a change, most of the process is done according to the procedure set in the standard.
- Implementation is taking place in every process most of the process is implemented at their own standard.

- The BPR is implemented on processes which have been already studied but there are some processes which are not studied yet (Ex. Audit and Inspections)

The respondents who think that the implementation does not taking place as the given standard and say "No" were stated their idea as follows.

- There is desk made report about implementation but it is far from what it happen on the ground.
- Since, implementation is basically a start up process so it is difficult in all process to go simultaneously.
- Implementation is taking place how can we say we work according to the standard by ignoring the quality and cost standards and working only in standard time.
- Some activities are implemented according to the strict objectives stated in the study while some activities are not implemented according to the standard.
- It is difficult to take implementation in every process but we can only take pilot taste on sensitive area as we should do.
- Implementing in every process at once will bring some problem. First it is better with pilot process and gradually by evaluation the progress we can implement BPR at full scale as the given standard, so we are doing these way.

From the above ideas which is forwarded by both respondents it is safe to say that the implementation is taking place in core and support processes at full scale, even if their are remaining support process which should have to be in corporate in the study and implementation process, The researcher can also see that their were measurement in time standards only. There is no standard measurement for cost and quality. In order to bring a dramatic change time, cost quality are critical issues to the change process.

Table 3.7 The service delivery and other changes observed by customers.

No	Questions	Alternates	No of respondents	percentage
1	Do you have a good understanding about BPR which the sector has implemented?	a) Certainly yes b) To some extent c) I am not sure d) Not at all	4 1 0 0	80 20 0 0
	Total		5	100
2	Now a days the sector has implemented BPR, Do you think the sector provide customer satisfaction?	Yes No I don't know	4 0 1	80 0 20
	Total		5	100
3	Do you think implementation of BPR brings a dramatic change in its design process?	a) Certainly yes b) To some extent c) I am not sure d) No it doesn't its just the same as previous	3 1 1 0	60 20 20 0
	Total		5	100
4	In your opinion do you think after the implementation there is a dramatic change in timely construction work?	a) Certainly yes b) To some extent c) I am not sure d) No it doesn't its just the same as previous	4 0 1 0	80 0 20 0
	Total		5	100
5	Do you think after BPR implementation there is a dramatic change on the level of quality of construction work?	a) Certainly yes b) To some extent c) I am not sure d) No it doesn't its just the same as previous	0 2 3 0	0 40 60 0
	Total		5	100

Source: Field survey, April 2011

In Table 3.7 item No. 1, respondents were asked whether they have a good understanding about BPR which the sector has implemented? From the five respondents four respondents i.e 80% of the

respondents know that the sector has implemented BPR. While, one respondent believe that he has few understanding about the implementation of BPR in the sector. There are no respondents which have got doubt in the implementation and negative implication in understanding the implementation process. From the customers point of view the majority know about the implementation of BPR in the organization.

The respondents were asked "What is your relation in service delivery with the sector" the customers briefly discuss the relation between them and the sector as follows.

- During design process of buildings, colleges, Hospitals, roads ....etc.
- On handling over finished sites for the buildings and roads.
- Upon receiving constructed finished buildings and roads.
- During light and water installation process.
- During the retention period. (if there is any sign of quality defect in the construction work.)

The relationship of customers with the sector has been forwarded by the respondents were also asked to identify which process have got problem previously and to mention what the problem was? the respondent forward major problems as follows.

- Delayance during the study of the construction works.
- The design works are not completed on time.
- Delay in the construction work.
- A quality problem in the buildings.
- Costs of buildings are exaggerated.
- Quality shortage in different fittings.
- Delayance during the process of handover on finished construction.
- Upon handover, load of soil and material scraps in the site.
- Time taken in the installation of light and water facility.
- The system was bureaucratic because the design and the construction process was one process.

It was an intentional question to the respondents to see the previous work and after the implementation how this problems were handled.

In item No.2 the respondents were asked "Do you think the sector provide customer satisfaction? 80% of the respondents believes that the sector provide a good level of customer satisfaction while

20% of the respondents i.e one respondent have got doubt in the satisfaction level. There are no respondents who have negative implication in the provision of satisfaction level.

The respondents were also asked if their answer is "yes" or "No" to state their idea. From the respondents who say "yes" i.e 80% of the majority respondents forwarded their satisfaction as shown below.

- Duplication was reduced because of the separation of the design and construction process.
- The timely design work.
- The timely construction work.
- The improvement in quality fittings.
- The improvement in handover process.

From the above statement it is safe to say that there is a positive impact on the change process in accordance with customer satisfaction.

In item No. 3 the customers were asked "Do you think implementation of BPR brings a dramatic change in the design process? 60% of the respondents believes that there is a dramatic change in the design process, while 20% of the respondents to some extent sense the change in the design process. 20% of the respondents are not sure whether there is a dramatic change in the design process or not. From the above information based on the majority idea it is safe to say the design process is changing dramatically. Implementation is a process in the long run all customers should have to be satisfied.

In item No. 4 the respondents were also asked "Do you think implementation of BPR brings a dramatic change in the construction work? 80% of the respondents believes that their is dramatic change in timely construction work while 20% of the respondents are not sure whether the construction work is completed in timely base or not. There is no respondents which have negative implication on the dramatic change in view of timely construction work. Due to this fact one could say there is a dramatic change in the construction process only on timely base.

In item No. 5 the respondents were asked "Do you think the implementation of BPR brings a dramatic change in the level of quality of construction work? No respondents say yes to the dramatic change in view of level of quality in the construction work. 40% of the respondents to some extent

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believes there is a change in the construction work while 60% of the respondents that is the majority are not sure whether there is dramatic change in the level of quality in the construction work or not. From the above information one can say that there is no change in the level of quality in the process of construction. The organization seriously investigates this critical point in order to be successful in the change process.

The respondents were asked "In relation with the service which the sector provide in order to satisfy customer. What do you recommend?. The respondents recommend in order to bring customer satisfaction the sector seriously work in certain areas as follows.

- The quality of service delivery in design and construction work.
- Evaluation of the design and construction work according to cost.
- Providing immediate response or take immediate action for problems arising in any process.
- The design and construction time are improved, but there should be a follow up in their continuity.

From the above statements it is safe to say that in order to give the best service delivery for customers all the above suggestion given by the respondents should be taken into consideration and the organization should work accordingly to bring the desired change.

CHAPTER FOUR

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summary, conclusions drawn from the findings and the corresponding recommendations.

4.1. Summary

The objective of the research was to asses BPR implementation in Ministry of National Defense Infrastructure and Construction Sector. The following basic questions were raised in order to prepare a better ground for the assessment and to get real information about the implementation process in the sector.

- What are the major reasons that lead the sector to delay in the design and construction work?
- How the process of BPR improve the level of quality of the construction work?
- What are the challenges of the sector to be cost effective in the construction industry?

- To what extent BPR implementation give solution in reward & incentive system and also in creating conducive working environment?
- How is the service delivery of the sector backed by information and communication technology?

In order to achieve the objective, related literature were reviewed questionnaires was distributed to the sample respondents. The data obtained were presented using percentages in the tables. On the basis of the data collected and from the sector BPR document the study has come up with the following findings.

- As the study indicates regarding Age distribution, education and experience majority employees have a good educational background and good experience for BPR implementation.
- The study confirm that 80% to 85% of respondents have a good understanding regarding BPR implementation and the core and support processes clearly.
- The study shows that majority of respondents believes the implementation should be better some years before even though other respondents agree that this was the right time to implement BPR.
- The findings show that majority of the respondents agree that implementation of BPR brings customer satisfaction, minimize the process time of the task, improve service, brings better future to the organization.
- The findings shows that the majority respondents does not agree that the implementation process does not bring changes in terms of attitudes and behavior in most of the employees.
- The study shows that majority of the respondents believe that BPR leads the enterprise to be business competitive.
- The study shows that the majority of the respondents believe all concerned parties are involved in the implementation process.
- The study shows 48.6% of the majority respondents condemn the role of the management in handling challenges and committment during the implementation process.
- The study finds that the level of BPR training in the implementation process was not satisfactory because of the discontinuity of the training programs.
- The study shows that most of the respondents disagree that there is no adequate information system in the implementation process.

- According to the study rewards and incentives are not tied with the change and conducive environment are not created to employees.
- Based on the study the majority respondents believe that there is no change in the level of quality in the implementation process.

4.2. Conclusions

Based on the findings derived from the study the following conclusions were drawn.

- The employees age distribution, educational background and experience have got a positive effect in the BPR implementation process.
- Result of the findings confirm that the implementation of BPR creates a good understanding for the employees in the implementation process.
- Results of the finding indicated that, it was better some years before the implementation process begun but still they know that they are not late for the tool to be practiced in their organization. This have got a good effect in the implementation process.
- Results of the findings confirms that the implementation of BPR in the sector has a positive impact in customer satisfaction, avoiding unnecessary work process and minimize the process time and also brings profitability. How ever the change is dramatic still some improvements are necessary.
- The attitude and behavior of the employees has a negative effect towards the implementation of BPR this shows that the implementation process is not able to bring the needed change.
- Based on the findings all concerned parties are directly or indirectly involved the implementation process this brings positive effect towards the implementation process.
- Results of the findings shows that there is a good understanding that BPR leads the enterprise to be business competitive this create a ground for the implenetation process.
- Results of the findings shows that the managements are not committed and being ignorant in handling the challenges this totally paralyze the implementation process.
- Based on the findings the training programs in the implementation process were not satisfactory and the efforts to solve this problem are not continuous.
- There is a serious absence of Information systems structure in the sector this affect the implementation process specially in the long run.

- Based on the findings there is no incentives and reward system tied to the change process and also there is a problem in creating conducive environment in the implementation process.
- The result showed that 60% of the majority customers says there is no change in the level of quality in the process of construction process.

4.3. Recommendations

The following recommendation are offered based on the findings and conclusions of the study.

- In the process of reengineering the primary issue that comes first is the issue of strong, committed, executive leadership. Based on the findings of the study the management were not committed they are acting poorly in handling challenges during the implementation process, these is a fatal exercise, in the absence of the management leadership no reengineering will actually happen. Therefore the active engagement and commitment of management is critical for the reengineering to happen the sector should have to see this problem seriously and provide a good ground for the implementation process.
- The study shows there is a dissatisfaction level in the training program during the implementation process. To get good result in the implementation process employees should have to be equipped with sufficient knowledge since employees are placed in new processes and process owners are assigned as managers, they must start with training and their should be a continuous, uninterrupted training programm, in order to adapt to the manual by which they guide their operation. Therefore the sector should have to consider training programmes to employees in order to bring positive effect on the implementation process.
- Following the theoretical principles of implementing BPR and fulfilling all the necessary thing for employees and in return to get good result. The sector should have to follow and implement the theoretical principles and fulfill all necessary thing like adequate office facilities and creating conducive working environment for employees.
- The sector management systems are key instruments in shaping attitude and behavior of employees and giving life and reality for the value required to develop in the organization. So the system should reward good performers and encourage employees to engage in new innovations. The management must highly communicate with the employee and improve

their working circumstance by provide rewards and incentives in order to manage the problem and bring the desired change.

- The study shows that there is IT structure in the implementation process. The management should seriously seek a solution to these problem. IT should have to be started as soon as the organization engages in full scale implementation the new process requires the enabling role of information technology. The main objective of using IT is to support the radical change in providing best service delivery.

- Based on the findings the majority customers believe that there is no change in the level of quality in the construction work. Since the construction work is a process starting from the surveying, design and construction work....etc. The researcher observe that there is a new standards set for all processes in the construction work. Specially in the level of quality. So the sector should have to fill the gap by creating awareness to the customer how they exercise to bring the dramatic change in respect of quality in the implementation process.

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DECLARATION

I, the undersigned, declare that this senior essay is my original work, prepared under the guidance of Ato Biruk G/Michael. All sources of materials used for the manuscript have been duly acknowledged.

Name_____

Signature_____

Place of Submission_____

 Date of Submission_____

APPENDICES

ST MARY'S UNIVERSITY COLLEGE
FACULTY OF BUSINESS
DEPARTMENT OF MANAGEMENT

Questionnaire to be filled by employees
Dear respondent,

I am prospective graduate of St. Mary's University College from the department of Management. I am conducting a research for the partial fulfillment of my BA degree in management field "An assessment of BPR Implementation in Defense Infrastructure and Construction Sector."

The general objective of the research is to asses or investigate the implementation practices and problems of the organization in implementing BPR in the organization and to suggest recommendations that would help to minimize the GAPs in the organization. The researcher also aim to document the finding for future researcher in the area.

So I kindly request you to take time in answering the following question. More over, the information found will be used for only the research out come. All your responses will not be disclosed to anyone in any circumstance.

Thank you in advance for your cooperation.

Please circle your choice from the given alternatives and write your comment in the space provided.

1. Do you have a good understanding what Business Process Reengineering is?
   a) Certainly yes
   b) Only a few
   c) I am not sure
   d) Not at all

2. Do you have a good understanding about the core support processes which the sector has studied?
   a) Certainly yes
   b) Only a few
   c) I am not sure
   d) Not at all

3. In your opinion does the BPR study and implementation takes place at the right time?
   a) Certainly yes
   b) It was better if the implementation performed some years before
   c) I am not sure
   d) BPR Study is not necessary at all.

4. Do you think that all concerned parties are directly or indirectly involved in the implementation process?

   ☐ Yes ☐ No ☐ I don't know

   If your answer is yes please state your idea_____

   _____

   _____

   _____

   _____

   _____

5. How was the role of the management in managing and handling the challenges during the BPR implementation?
   a) They manage the challenge seriously.

  b) They manage the challenge poorly.

  c) They do nothing in handling challenges.

  d) I don't know.

6. Do you believe that the implementation of BPR brought the anticipated change?

  a) Certainly yes

  b) It is on the way

  c) It is not the right time to evaluate

  d) Not at all

7. Do you think that the BPR study appropriately defines jobs and allocate responsibilities?

  a) Certainly yes

  b) To some extent

  c) I am not sure

  d) Not at all

8. Do you think the implementation of BPR brought a quality service delivered for customers after the implementation?

  a) Certainly yes

  b) To some extent

  c) I am not sure

  d) Not at all

9. Have you observed changes in terms of attitudes after the implementation?

  a) Certainly yes

  b) To some extent

  c) I am not sure

  d) Not at all

10. Are the staffs (All departments) given specific BPR Training of enhance their work activity?

  a) Certainly yes

  b) To some extent

  c) I am not sure

  d) Not at all

11. Do you think that the BPR implementation brings a strong IT structure?

a) Yes it brings strong IT structure

b) To some extent yes

c) I am not sure

d) No there is no IT structure at all

12. In your opinion, does the BPR lead the enterprise to be business competitive?

a) Certainly yes

b) It is on the right truck to be business competitive

c) It is not the time to judge

d) No it doesn't, its just the same as the previous.

13. Do you think the BPR implementation bring a new reward and incentive system?

a) Yes

b) To some extent

c) I am not sure

d) I don't think so

14. In your opinion implementation of BPR brings conducive work environment especially office facility, furniture, work materials...etc?

a) Certainly yes

b) To some extent there is change

c) I am not sure

d) No, It doesn't

15. In your opinion does the study provide empowerment for both individuals and teams?

a) Certainly yes
b) To some extent
c) I am not sure
d) I don't think so

16. Have you seen radical change in reducing the longer duration of completing the design, contract administration and construction work?

☐ Yes ☐ No ☐ I don't know

If your answer is yes please state your idea_____

_____

_____

_____

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17. In your point of view has the organization been profitable in its activities after the implementation?

☐   Yes   ☐   No   ☐   I don't know

If your answer is yes please state your idea _____

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_____

_____

_____

18. Do you think that BPR will bring a better future for the enterprise?

☐   Yes   ☐   No   ☐ I don't know

If your answer is yes please state your idea_____

_____

_____

_____

19. What are the major problems /challenges/ facing the organization during implementation? Please state your idea_____

_____

_____

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_____

20. In your point of view what would you suggest a solution to the problems?

_____

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21. Do you think that the implementation is taking place in every process as the given standard?

☐   Yes   ☐   No   ☐   I don't know

If your answer is yes or no please state your idea_____

_____

_____

Please elaborate on any other points that you feed are worthwhile sharing with me and which are not adequately covered under any of the above sections.

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ANNEX III

<u>**ST MARY'S UNIVERSITY COLLEGE**</u>
<u>**FACULTY OF BUSINESS**</u>
<u>**DEPARTMENT OF MANAGEMENT**</u>

Questionnaire to be filled by customers
Dear respondent,

I am prospective graduate of St. Mary's University College from the department of Management. I am conducting a research for the partial fulfillment of my BA degree in management field "An assessment of BPR Implementation in Defense Infrastructure and Construction Sector."

The general objective of the research is to asses or investigate the implementation practices and problems of the organization in implementing BPR in the organization and to suggest recommendations that would help to minimize the GAPs in the organization. The researcher also aim to document the finding for future researcher in the area.

So I kindly request you to take time in answering the following question. More over, the information found will be used for only the research out come. All your responses will not be disclosed to anyone in any circumstance.

Thank you in advance for your cooperation.

<u>**Instruction**</u>

Please circle your choice from the given alternatives and write your comment in the space provided.

1. Do you have a good understanding about BPR which the sector has implemented?
    a) Certainly yes
    b) Only a few
    c) I am not sure
    d) Not at all

2. What is your relation in service delivery with the sector?

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3. Before the sector's BPR Implementation from the above service which process has got a problem? Please mention in what perspective was the problem?

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4. Now a days the sector has implemented BPR, Do you think the sector provide customers satisfaction?

  ☐   Yes   ☐ No   ☐ I don't know

    If your answer is Yes or No please state your idea_____

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5. Do you think Implementation of BPR brings a radical change in the Design process?

  a) Certainly yes

  b) To some extent

  c) I am not sure

  d) No It doesn't, its just the same as the previous.

6. In your opinion do you think after the implementation there is a radical change in timely construction work?

    a) Certainly yes

    b) To some extent

    c) I am not sure

    d) There is no change at all.

7. Do you think after BPR Implementation there is a radical change in the level of quality of construction work?

    a) Certainly yes

    b) To some extent

    c) I am not sure

    d) No It doesn't, its just the same as the previous.

8. In relation with the service which the sector provides in order to satisfy customer what do you recommend?

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9. Please elaborate on any other points that you feed are worth while sharing with me and which are not adequately covered under any of the above sections.

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ANNEX IV

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