1 Chapter

BUSINESS PROCESS REENGINEERING – AN OVERVIEW

Objectives

After going through this chapter, you would be able to :

- Understand the meaning of term 'BPRE' (BUSINESS PROCESS REENGINEERING) and the logic behind various organisations trying to introduce the concept of BPRE.
- Know how the concept of BPRE is evolved.
- Know main principles of BPRE.
- Relation of BPRE with quality as well as process improvement.
- Advantages and limitations of BPRE.

Structure

1.1 INTRODUCTION

Customer satisfaction has increasingly become the cardinal principle governing any successful business. In some cases, marketing campaigns have been reformulated and new slogans invented to take advantage of the impact of advertising on customers. Despite the new emphasis on customer satisfaction by companies, there has been a high incidence of complaints, anger, rage and acute disappointment over products. One of the reasons for this lies in the fact that the old ways and processes have become severely inadequate and that the mere realignment of old values (old wine in a new bottle!) is no longer acceptable. In many cases, the present system can no longer be fixed and incremental improvements are not sufficient. What is needed is the reengineering of the entire system which is referred to as Business Process Reengineering (BPRE).

1.2 WHAT IS BUSINESS PROCESS REENGINEERING OR REENGINEERING?

According to Michael Hammer of the US who coined the term **"reengineering"**, the definition of reengineering is as follows : Reengineering has been defined as ***"the fundamental rethinking and radical design of business processes to achieve dramatic improvements in critical contemporary measures of performance such as cost, quality, service and speed"***. The term is also known as "Process reengineering" or "Business process reengineering".

Reengineering does not strive to revamp an existing process. It involves asking basic questions about business processes: why do we do it? Why is it done this way? Such questioning often uncovers obsolete, erroneous or inappropriate assumptions. Radical redesigning involves tossing out existing procedures and reinventing the process, not just incrementally improving it. The goal is to achieve quantum leaps in performance.

Reengineering seeks to enhance the celerity of the delivery of a product without compromising its quality by improving the utilisation of materials, labour and equipment. According to Janson, a proponent of reengineering, by focussing on making improvements in all dimensions of the service organisation – human dimension, work process dimension and the technological dimension – reengineering helps companies overcome systematic work barriers that interfere with efforts to achieve higher levels of customer satisfaction. According to Lawrence, another proponent of reengineering, "reengineering involves redesigning business processes to take advantage of the enormous potential of the computer and information

technology". In order for companies to embrace the concept of reengineering, they must be able to break away from previously followed conventional rules and policies and be open to changes that would make their businesses more productive.

Hammer states that "Reengineering strives to break away from the old rules about how we organise and conduct business. It involves recognising and rejecting some of them and finding imaginative new ways to accomplish work".

Box 1.1 : Reengineering at IBM Credit Corporation

IBM Credit Corporation cut the process of financing IBM Computers, software and services from *seven days* to *four hours* by rethinking the process. Originally, the process was designed to handle difficult applications and required four highly trained specialists and a series of hand offs. The actual work took only 1 to 5 hours, the rest of the time was spent in transit or delay. By questioning the assumption that every application was unique and difficult to process, IBM Credit Corporation was able to replace the specialists by a single individual supported by a user friendly, computer system that provided access to all the data and tools that the specialists would use.

Source : James R. Evans and William M. Lindsay; *"The Management And Control of Quality"*, 4th Edition, South-Western College Publishing, p. 374.

1.3 WHY REENGINEERING?

"Business Process Reengineering" or ***"process reengineering"*** (or process redesign) or simply ***"reengineering"*** is focussed on *"break through"* improvement to dramatically improve the quality and speed of work and to reduce its cost by fundamentally changing the processes by which work gets done.

For organisations that want to survive and grow, improvement is not an option but a compulsion. For organisations that seek to thrive, dramatic improvement is often the only key to success. Small improvements are always necessary, but sometimes quantum leaps are needed if an organisation is to forge ahead. (Ten percent improvement can be created by tinkering, but 50 percent improvements call for process redesign).

Whether an organisation realises that the old ways of doing things needs changing or its customers are demanding a change or competitors are taking over its market share, or not, many processes in the organisation may need reengineering, not a minor tweak, but a major overhaul. Some of the symptoms that signal that it is time to start reengineering are:

(i) it takes too long for an organisation to move its products from conception to the market place as compared to its competitors.

(ii) the budgeting process may be too complex and

(iii) the services provided by the organisation are not compatible with its customers' needs.

Business process reengineering is a refreshing new approach to do business. There is plenty of evidence that it works well – perhaps with performance gains of 100 to 300 percent for some recognised processes.

Success in reengineering requires fundamental understanding of processes, creative thinking to break away from old tradition and assumptions and effective use of information technology. Pepsi-Cola, *for example,* had embarked on a program to reengineer all of its key business processes such as selling and delivery, equipment service and repair, procurement and financial reporting. In the selling and delivery of its product, *for example,* customer representatives typically experience stock-outs of as much as 25 percent of the products by the end of the day. Many other routes would return with overstock of other products, increasing handling costs. By redesigning the system to include hand held computers, the customer representatives could confirm and deliver that day's order and also take a future order for the next delivery to that customer.

1.4 HISTORY AND DEVELOPMENT OF BUSINESS PROCESS REENGINEERING

The concept of reengineering has been around for nearly two decades and was implemented in a piecemeal fashion in organisations. Production organisations have been in the vanguard without knowing it. They have undertaken reengineering by implementing ***concurrent engineering, lean production, cellular manufacturing, group-technology*** **and** ***pull – type production systems***. These represent fundamental rethinking of the manufacturing process. Manufacturers generally made significant improvements in their internal operations during the 1980s. But excellence in manufacturing has not always translated to superior sustainable results in the market place. More recently, the focus appears to have shifted out of the manufacturing process to other inter-functional and inter-organisational and customer-based processes. Rapid advances in information technology and its applications have been a major enabler of business process reengineering in services.

In 1990, two Americans, James Champy and Michael Hammer presented the idea of business process reengineering. They coined the

word "Business Process Reengineering", (BPR in short form) in their famous book, ***"Reengineering the Corporation"***, published in 1993. Their argument was that most business processes had been antiquated and needed to be completely redesigned. Hammer and Champy advocated radical redesign as compared to the more incremental approach associated with total quality management.

Box 1.2 : Reengineering in a major insurance company

Consider this problem in a major insurance company: When the customer called the home office about an insurance problem, the call was taken by the incoming calls department. The problem was entered into the computer and passed electronically to one of the several departments: underwriting, policy service and accounting. The problem was waited in line, often for several days until a clerk had time to check it out. In some cases, the customer's problem had been routed to the wrong department and had to be routed to another department again taking several days in the queue. If the problem required more than one department to answer the question, the process of waiting was repeated. Finally, some one in customer service would get back to the customer after several weeks. In many cases, the original question was not completely answered or answered wrongly.

This process was reengineered by completely reorganising the entire insurance operation around customer services representatives who would attempt to handle the customer's request on the phone, if possible, using detailed computer protocols and standard scripts. If more detailed work was required, the customer service representative checked with other specialists and got back to the customer in one week or less with an answer. This greatly improved the speed and accuracy of the service while saving many millions of dollars. It also provided a single point of contact and less hassle for the customer.

Source : Roger G. Schroeder, *"Operations Management"*, International Edition, Irwin-McGraw Hill Publications, p. 121.

1.5 PRINCIPLES OR RULES OF REENGINEERING

Reengineering is about achieving a significant improvement in process so that contemporary customer requirements of quality, speed, innovations, customisation and service are met. This entails *seven new* rules of doing work proposed by Hammer, relating to *who does the work, where and when it is done* and information gathering and integration. These seven rules are :

Rule 1 : Organise around outcomes, Not tasks

Several specialised tasks previously performed by different people should be combined into a single job. The new job created should involve

all the steps in a process that creates a well-defined outcome. Organising around outcomes eliminates the need for hand-offs, resulting in greater speed, productivity and customer responsiveness.

- **Activity A**

Identify any one process or operation in your organisation, where you can merge a few operations performed by different people or at different locations into a single activity.

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Rule 2 : Have those who use the output of the process perform the process

In other words, "work should be carried out where it is", makes the most sense to do it. This results in people closest to the process actually performing the work, which shifts work across traditional intra and inter-organisational boundaries. For instance, employees can make some of their purchases without going through the purchasing department. Customers can perform simple repairs themselves and suppliers can be asked to manage parts inventory.

Rule 3 : Merge information processing work into the real work that produces the information

This means that people who collect information should also be responsible for processing it which greatly reduces errors by cutting the numbers of external contact points for a process.

Rule 4 : Treat geographically dispersed resources as though they work centralised

Centralised databases and telecommunication networks allow companies to link separate units or individual field personnel, providing them with economies of scale while maintaining their individual flexibility and responsiveness to customers.

Rule 5 : Link parallel activities instead of integrating their results

The concept of only integrating the outcome of parallel activities that must eventually come together is the primary cause of rework, high costs and delays in the outcome of the overall process. Such parallel activities should be linked continuously and coordinated during the process.

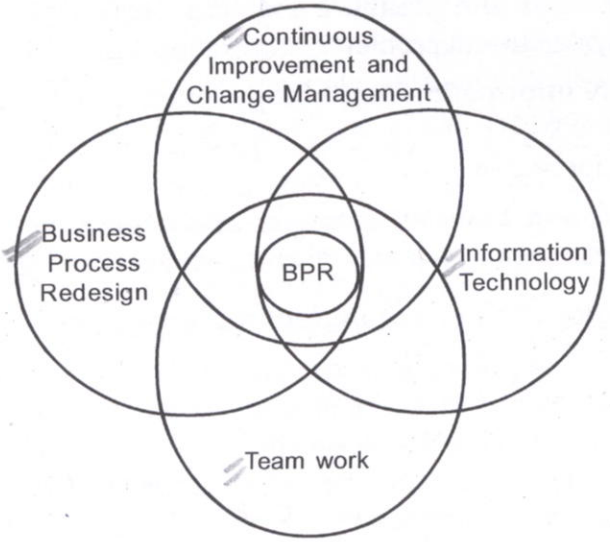
Rule 6 : Put the decision point where the work is performed and build control into the process

Decision-making should be made part of the work performed. This is possible today with a more educated and knowledgeable workforce plus decision–aiding technology. Controls are now made part of the process.

Rule 7 : Capture information once – at the source

Information should be collected and captured in the company's on-line information system only once at the source where it is created. This approach avoids erroneous data entries and costly re-entries.

Exhibit 1.1 : Five Key Principles of Business Process Reengineering



BPR focusses on strategic business processes such as order processing, logistics, manufacturing systems, procurement and supplies, cash flow management etc. Five key principles of BPR are :

(i) Strategic redesign of process.

(ii) Involvement of right teams of people

(iii) Wise use of information technology

(iv) Changed management style

(v) Continuous improvement of processes.

1.6 APPLICATION OF REENGINEERING

Reengineering as applied to any business process

Hammer states that business process may be defined as a set of logically related tasks to achieve a defined business outcome. A set of processes forms a business system – the way in which a business unit or a collection of units carries out its business.

Assuming that a company has decided that its processes are ineffective and inefficient, the following are the major steps the company should embark on to redesign its process, according to Hammer :

(i) **Develop business vision and process objectives :** This step involves prioritising objectives and setting targets for the future. A BPR vision statement describes the ideal state of a process.

(ii) **Identify processes to be redesigned :** This involves identifying critical or bottleneck processes and envisioning the steps to avert shortcomings in them.

(iii) **Understand and measure existing processes :** This involves identifying current problems and setting a base line.

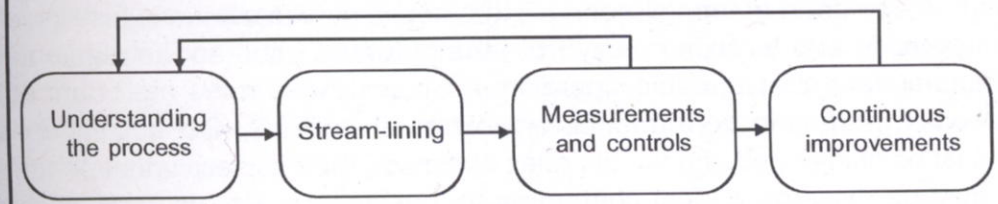
(iv) **Identify information technology levels :** This involves bringing those involved in the process to a brain-storming session to identify new approaches.

(v) **Design and build a prototype of the process :** This includes implementing organisational and technical aspects.

Process reengineering in a manufacturing organisation

A process is a group of activities that takes an input, adds value to it and provides an output to an internal or external customer. Processes enable the organisation to focus on the customer. Viewing the material transformation process in terms of those activities tied to transforming material into something of value to the customer is a process view. Such a view examines inventory in terms of customer value, not internal economies. Such a view can be the basis of reengineering processes. *Exhibit 1.2* presents one view of process reengineering.

Exhibit 1.2 : Process Reengineering



Source : Michael J. Stahl, *"Total Quality Management in the Global Environment"*, First Indian Edition 2000, Infinity Books, p. 503.

Box 1.3 : BPRE Project at Ford Motor Company

The accounts department of Ford employed 500 people before reengineering and represented an opportunity for major improvement. Ford had formed a joint venture with Mazda and decided to benchmark their accounts payable department only to learn that Mazda had only five employees in accounts payable department. Even after accounting for the difference in sizes of the two companies, this could only be attributed to a much different process.

The process that was being used by Ford before reengineering started with the purchasing department issuing a purchase order to the supplier with a copy to accounts payable. When the merchandise was received from the supplier, a receiving document was sent to accounts payable. Later, the supplier sent an invoice to Ford accounts payable for the merchandise. If account payable could match the three documents, they would authorise payment to the supplier. Most of the time in accounts payable, however, was spent in mismatches among documents. A clerk would hold up payment until the source of the mismatch could be identified and the problem resolved.

Under the reengineered system, the purchasing department entered the purchase order into a database and did not send a copy to anyone. When the merchandise arrived, the receiving clerk would enter the database and determine whether the shipment agreed with the electronic purchase order. If it did, payment was authorised to be made at the appropriate time. If it didn't match, the merchandise would be returned or the Ford purchasing department would be notified to give the okay nod to receive the material. Ford also instituted *"invoiceless purchasing"* where the supplier did not need to send an invoice to be paid. This generally simplified the process for all concerned. As a result, Ford was able to reduce the work of its accounts payable department and the headcount by 75 percent.

Source : Roger G. Schroeder, *op. cit,* p. 121 & 122.

1.7 THE ESSENCE OF REENGINEERING

At the heart of reengineering, is the notion of discontinuous thinking of organising and breaking away from the outdated rules and fundamental assumptions that underlie operations. Unless these rules are changed, *break-throughs* in performance are extremely difficult. Old assumptions must be challenged and the old rules that made the business under perform must be discarded. Most contemporary businesses are run on the basis of decade old policies. These assumptions about technologies, people and organisational goals probably are outdated and no longer valid.

Quality and *customer service* are increasingly becoming the primary focus of any company. A large portion of the population is educated and capable of assuming responsibility and workers cherish their autonomy, expect to have a say in how the business is run and demand quality. Consequently, the present business process and structures are outmoded and obsolete. Work structure and processes have not kept pace with changes in technology, demographics and business objectives. Conventional process structures are fragmented, piecemeal and myopic. Consequently, employees substitute the narrow goals of their particular department for the larger goals of the process as a whole. Reengineering seeks to provide a new perspective to business operations and processes. According to Hammer and Champy, "Reengineering requires looking at the fundamental processes of the business from a cross-functional perspective."

One way to ensure that reengineering has a cross functional perspective is to assemble a team that represents the functional units involved in the process being reengineered and all the units that depend on it. Rather than looking for opportunities to improve the current process, the team should determine which of its processes really add value and search for new ways to achieve the end results.

In short, reengineering efforts strive for dramatic levels of improvement. They break away from conventional wisdom and the constraints of organisational boundaries and are broad and cross-functional in scope. They use information technology not to automate an existing process but to create a new one.

1.8 THE THREE 'R'S OF REENGINEERING

Janson states that every reengineering effort involves three basic phases :

1. **Rethink :** This phase requires examining the organisation's current objectives and underlying assumptions to determine how well they incorporate the renewed commitment to customer satisfaction. Another valuable exercise in this phase is to examine the critical success factors – those areas in which the organisation clearly stands apart from the competition and to check whether they contribute to the new customer satisfaction goals.
2. **Redesign :** This phase requires an analysis of the way the organisation produces the products or services it sells – how jobs are structured, who accomplishes what tasks and the results of each procedure. Then, a determination must be made as to which elements should be redesigned to make jobs more satisfying and more customer focussed.
3. **Retool :** This phase requires a thorough evaluation of the current use of advanced technologies, especially electronic data processing systems, to identify opportunities for change that can improve quality of services and customer satisfaction.

- **Activity B**

Identify any one operation or function in your organisation, where you feel that intelligent use of technology like automation or software support will help to boost the productivity.

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1.9 REQUIREMENT OF REENGINEERING PROCESS

A process selected for reengineering should be a core process, which has great scope for 'breakthrough' improvements rather than incremental improvement. Reengineering is accompanied by massive change involving

lay-offs and large cash outflows for investments in information technology and automation. However, reengineering processes can result in big pay-offs. Bell Atlantic, *for example,* reengineered its telephone business. After five years of sustained effort, it cut the time to connect new customers from 16 days to just few hours. The changes caused Bell Atlantic to lay off 20,000 employees, but the company has become decidedly more competitive.

Reengineering requires focussing on *critical processes,* often using cross-functional teams, information technology, leadership and process analysis. These are explained in the following paragraphs.

(i) **Critical processes :** The emphasis of reengineering should be on core business processes, rather than functional departments such as purchasing or marketing. By focussing on core processes, managers may spot opportunities to eliminate unnecessary work and supervisory activities. Reengineering should be reassured for essential processes, such as new product development or customer services because of the time and energy involved.

(ii) **Strong leadership :** Senior executives must provide strong leadership for reengineering to be successful. Otherwise cynicism, resistance ("we tried that before") and boundaries between functional areas can block radical changes. Managers can help overcome resistance by providing the clout necessary to ensure that the project proceeds within a strategic context. Executives should set and monitor key performance objectives for the process. Top management should also create a sense of urgency, making a case for change that is compelling and constantly refreshed.

(iii) **Cross-functional teams :** A team consisting of members from each functional area affected by the process is charged with carrying out a reengineering project. Reengineering works best at high-involvement work places, where self-managing teams and employee empowerment are the rule rather than exception. Top-down and bottom-up initiatives can be combined – the top down for performance targets and the bottom-up for deciding how to achieve the targets.

(iv) **Information technology :** Information technology is a primary enabler of process reengineering. Most reengineering projects design processes around information flows such as customer order fulfilment. The "process owners" who will actually be responding to events in the market place need information network and computer technology to be more effective in their jobs. The reengineering team must think

through and find answers to questions : who needs the information, when they need it and where.

(v) **"Clean slate philosophy" :** Reengineering requires a "clean slate philosophy", that is starting with the way the customer wants to deal with the company. To ensure a customer orientation, teams begin with internal and external customer objectives for the process. Teams often first establish a price target for the product or service, deduct profits desired and then find a process that provides what the customer wants at the price the customer will pay. Reengineers start from the future and work backward, unconstrained by current approaches.

(vi) **Process analysis :** Despite the clean slate philosophy, a reengineering team must understand things about the current process : what it does, how well it performs and what factors affect it. Such an understanding can reveal areas in which new thinking will provide the biggest pay-off. The team must work at every procedure involved in the process throughout the organisation, recording each step, questioning why it is done and then eliminating it if it isn't really necessary. Information on standing relative to competition process by process is also valuable.

1.10 REENGINEERING IN THE SERVICE INDUSTRY

In the service sector, despite speed and courtesy in addressing customers, customer's hostility persists due to the inability of the service provider to maintain consistency in delivery and service. Another frequent problem is delay, due to the inability of the service employee to make pertinent and satisfying decisions when confronted by an impatient customer. Sufficient evidence of this is found in banks and fast food restaurants. Even though some companies which start anew seem to better satisfy their customers in the beginning, after some years, they become sluggish due to growth in size and becoming increasingly intense and complex. Work habits evolve into unacceptable levels of performance which further complicate their problems. To remain competitive today, service organisations need to focus on customer satisfaction and on real customer needs and expectations. They need to operate according to the standards of the customers.

According to Janson, the concept of reengineering holds a significant promise for the service sector. The following are some of the salient features:

(i) **Make the customer the starting point for change :** This means identifying what the customers really want and then creating the kinds

of jobs and organisational structures that can satisfy those expectations.

(ii) **Design work processes in light of organisational goals :** Companies that design work processes according to organisational goals become more focussed towards the customer. Organisations that reengineer often make drastic changes in existing jobs by integrating work procedures or tasks and empowering workers with more authority and responsibility.

(iii) **Restructure to support front-line performance :** In a customer focussed environment, every aspect of the organisation strives to promote the highest level of service to its customers, especially those who come in direct contact with customers. Consequently, organisations that undertake reengineering build work teams to support their customer service representatives or create "work-station professionals" who can perform both front and back office functions.

The impact of reengineering on the service industry

According to Janson, reengineering represents a major advance over conventional management strategies for improvement. As an integral approach, it involves three dimensions of a service organisation :

(i) **The human dimension :** To achieve a stronger customer focus, employees at all levels must readjust their thinking and recognise that customer satisfaction is the overriding goal. Some companies achieve this by rewriting their mission statement to reflect the primacy of the customer or by promoting a new vision to reinforce the central role that customer satisfaction now plays. Some other companies engage in training to help employees become better listeners, probe for customer concerns more effectively or satisfy customer needs more creatively. The motive in reengineering is to become more motivated to provide superior service and be skilled at doing it.

(ii) **The work process dimension :** Work systems must be designed not according to their internal logic or any external definition of efficiency, but according to how well they satisfy customer needs. This sometimes requires substantial structural changes in an organisation – changes that do more than just revamp job descriptions. It may mean setting up work teams to perform all the functions once divided among several departments or combining several individual jobs to create, one *"multi-skilled customer service professional."* In every case, total reevaluation of the management's role in the organisation comes into play and lower level workers typically assume far greater responsibility for service quality.

(iii) **The technology dimension :** New technologies should be introduced not only because they are more advanced, but because they truly support the organisation in its drive to achieve higher levels of customer satisfaction. Most importantly, technology should be used to automate secondary work functions, leaving service workers free to concentrate on more critical matters such as satisfying customer needs and solving problems.

1.11 QUALITY AND REENGINEERING

Reengineering is not completely different from total quality principles. The issue is not ***Kaizen*** versus ***break-through*** improvement. Infact, Juran talked about breakthrough improvement long before Hammer and Champy popularised the term ***reengineering***. Incremental and break-through improvement are complementary approaches that fall under the total quality umbrella, both are necessary to remain competitive. Infact, some suggest that reengineering requires support of total quality management in order to be successful. If reengineering alone is driven by top management without the support and understanding of the rest of the organisation, the radical innovations may end up as failures. The total quality philosophy encourages participation and systematic study, measurement and verification of results that support reengineering efforts.

Continuous Process Improvement versus Process Reengineering

Some organisations shy away from process reengineering because they feel it is too costly and too time consuming. The questions asked by them are : "Why scrap a process when we can try to fix it instead?" The answer is to investigate and appreciate the problem. We need to determine whether a certain process within the organisation requires minor healing (continuous process improvement) or major surgery (process reengineering).

Both continuous process improvement (referred to as CPI) and process reengineering are necessary to drive "break-throughs" (significant advances) in organisational performance but they differ in a number of ways. The differences are :

(i) **Management Involvement :** CPI typically involves employees at all levels and emphasise continuous incremental improvement of work processes. Process reengineering typically involves managers in a more *"hands-on"* role, since it often leads to changing organisational structure and redesigning jobs.

(ii) **Intensity of Team Member Involvement :** CPI involves team members on an "as needed" part-time basis over an extended time

frame. Process reengineering requires much more intensive involvement of team members, often on a regular full time basis over a condensed time frame.

(iii) **Improvement Goals :** CPI results in the achievement of successive incremental improvements over a period of time, starting from how a work process currently operates and improving upon it. Process reengineering is periodic and focusses on the achievement of dramatic improvement, radically redesigning how a process operates without being constrained by how things were previously being done.

(iv) **Implementation Approach :** CPI builds on making incremental improvements that add up to significant improvement overall for an organisation. Process reengineering focusses on outcomes and on making break-through improvement at one time instead of adding up the sum of multiple gains.

(v) **Magnitude of organisational change :** With CPI, organisational changes happen over an extended period of time, often with limited disruption of existing jobs, management systems and organisational structures. With process reengineering, radical process changes go hand in hand with changes in job design, management systems, training and retraining, organisational structure and information technology.

(vi) **Extent of focus :** CPI focusses on narrowly defined processes, which often involve frontline employees who are working to improve a sub-process which is part of a higher level process. Process reengineering focusses on broad-based, cross-functional processes that span the larger part of an organisational system.

(vii) **Dependence upon information systems :** Organisations using CPI occasionally reinvent a process whereas those using process reengineering use information technology to pave the way for radical improvements in reduction of cycle time and information access.

Both CPI and process reengineering have a place in today's organisation. While CPI is the mainstay, process reengineering is necessary at certain times in certain situations, when CPI is not adequate for the job.

1.12 REENGINEERING AND TOTAL QUALITY MANAGEMENT

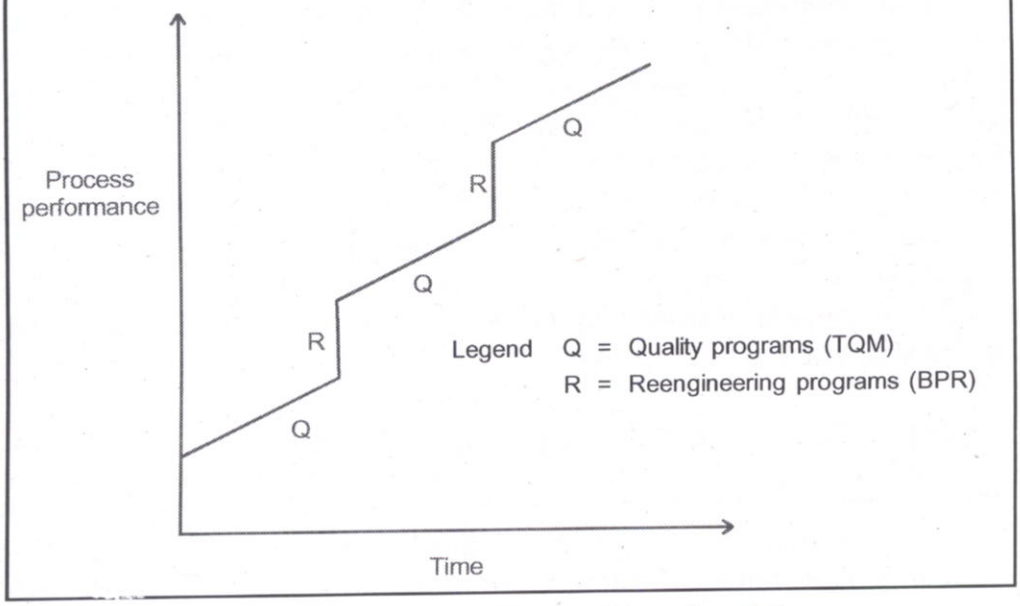
Some people have said that both TQM and Reengineering are the same, while others have argued that they are incompatible. Michael Hammer argues that the two concepts are compatible and actually complement each other. Both concepts have the same focus – customer satisfaction.

TQM has contributed the concept of ***teamwork, worker participation and empowerment, cross-functionality, process analysis and measurement, supplier involvement and benchmarking***. Also, TQM has emphasised the need for a "total" view of the organisations in its approach to problem solving. TQM has also influenced company culture and values by exposing organisations to the need for change.

TQM has advocated continuous and incremental improvement of processes (Kaizen) whereas reengineering is about radical discontinuous change (breakthrough improvement) through *process innovation. Exhibit 1.3* illustrates how TQM and reengineering fit together over time in the life of a process.

First, the process is ***enhanced*** until its useful life time is over, at which point it is ***reengineered***. Then enhancement is resumed and the entire cycle repeats again. Hammer points out that this is not a once-in-a-life time endeavour. As business circumstances change in major ways, so must process design.

Exhibit 1.3 : How TQM and Reengineering fit together over the life of a process



Source : Richard B. Chase, *et. al, op. cit,* p. 779.

Box 1.4 contains a list of some similarities between TQM/Continuous Improvement CPI and Reengineering (BPRE).

Box 1.4 : Reengineering versus TQM (CPI)		
Similarities	**Reengineering (BPRE)**	**TQM (CPI)**
Basis of analysis	Processes	Processes
Performance measurement	Rigorous	Rigorous
Organisational change	Significant	Significant
Behavioural change	Significant	Significant
Time investment	Substantial	Substantial
Differences		
Level of change	Radical	Incremental
Starting point	Clean slate	Existing process
Participation	Top-down	Bottom-up
Typical scope	Broad, cross-functional	Narrow, within functions
Risk	High	Moderate
Primary enabler	Information technology	Statistical control
Type of change	Cultural and structural	Cultural

Source : Richard B. Chase, *et. al, op. cit,* p. 780.

The dissimilarities that have been identified may create an impression that reengineering is outside the realm of quality management. Hammer, the reengineering guru, together with quality gurus such as Deming and Juran, all agree that ***innovation*** and ***break-throughs*** in processes are essential parts of quality management. TQM assumes that the design of the process is sound and that all it needs is some improvement or enhancement. But if the world has changed dramatically since the process was first (or most recently) designed, the current design may be incapable of delivering the required performance. Reengineering is then necessary.

1.13 INTEGRATING REENGINEERING AND PROCESS IMPROVEMENT

Organisations must develop a framework for placing reengineering activity in the context of other change activities they may undertake. Integrating will help keep the different change initiatives, expectations, methods and results distinct from each other, thereby minimising the confusion and cynicism that usually result from undertaking an assortment of management initiatives. Four approaches to integrating process improvement and reengineering activities in organisations are :

(i) **Sequencing change initiatives :** This approach suggests cycling through ***process stabilisation, process reengineering*** and ***continuous improvement***. The drawback of this approach is that it may take at least *five years* to go through one cycle of change which would be longer than many ***organisational learning cycles*** or ***product life cycles***.

(ii) **Creating a portfolio of process change programs :** This method involves the categorisation of all processes and sub-processes in an organisation on the basis of the type of change necessary. The criteria for selecting processes for reengineering could include ***relevance to strategy, current performance levels, capability of sponsors, available investment*** and ***history of change***.

(iii) **Limiting the scope of work design :** In this approach, high level processes are designed by the responsible reengineering teams. But employees who perform the jobs design the detail work processes involved within the specifications decided by the reengineering team. This attempts to combine the participative nature of continuous improvement with the top down approach common to process reengineering.

(iv) **Undertaking improvement through innovation :** This approach combines short term improvement methods and long-term reengineering in the same process change effort. Improvement methods such as ***value analysis*** can be used to obtain quick benefits, which are then invested in the long-term reengineering effort. The improvement projects may also be a means to move the current process forward to a stage where radical process change is possible.

The different approaches to process change discussed above are complementary. Oganisations need to determine how and when they need to apply the appropriate methods to their different processes. While it is important to have an integrated approach to operational change, it is far more important to effect that change.

1.14 BENEFITS OF REENGINEERING

The following are the benefits of reengineering :

(i) By reengineering, an organisation can achieve radical changes in performance (as measured by cost, cycle time, service and quality).

(ii) It boosts competitiveness in the operations network through simpler, leaner and more productive processes.

(iii) Reengineering encourages organisations to abandon conventional approaches to problem solving and to "think big" (revolutionary thinking).

(iv) The slow, cautious process of incremental improvements leaves many organisations unprepared to compete in today's rapidly changing market place. Reengineering helps organisations make noticeable changes in the pace and quality of their response to customer needs (*i.e.* break-through improvements).

(v) Through reengineering, an organisation can be transformed from a rule driven and job centred organisation structure to a marketing organisation structure that focusses directly on the customer.

(vi) Reengineering often results in radically new organisational designs that can help companies respond better to competitive pressures, increase market share and profitability and improve cycle times, cost ratios and quality (organisational renewal).

(vii) The major accomplishment of the reengineering effort is the change that occurs in the corporate culture and the basic principles by which departments operate. Workers at all levels are encouraged to make suggestions for improvement and to believe that management will listen to what they have to say. Reengineering will eventually help the culture in the organisation to evolve from an insular one to one that accepts change and knows how to deal with it.

(viii) Reengineering has helped create more challenging and more rewarding jobs with broader responsibilities for employees (job redesign).

1.15 LIMITATIONS OF REENGINEERING

(i) Although business process reengineering is presented as a recipe for instant competitive advantage, it is not a panacea. Like any other management approach, how you apply it makes a difference.

(ii) It is not simple or easily done, nor is it appropriate for all processes for all organisations. Many firms can't invest the time and resources to implement a radical, clean slate approach.

(iii) Moderate gains that better fit corporate strategy and culture might give greater cumulative results than the pursuit of break-through.

(iv) Significant process improvements cannot be realised without use of information technology.

(v) It is not enough if a firm improves its cross-functional processes but also processes within each functional areas must be improved.

(vi) The best understanding of a process and how to improve it, often lies with all people who perform the work each day, not cross-functional teams or top management.

1.16 HOW DO YOU REENGINEER FOR SUCCESS?

There are many tools, but what is important is to get the sequence right. Few corporates have the expertise in house, but the technology varies, with total productive maintenance, manufacturing engineering or policy redeployment – all being used as synonyms for BPRE. In Sundaram Clayton, braking system manufacturer, reengineering is carried into shop floor under the guise of the Japanese quality management tool of policy management. Its manufacturing process undergoes **Deming's Cycle – Plan, Do, Check, Act** – but only after it was reengineered from scratch. Reengineering can and does have different tools and techniques. Every consultancy will have its own methodology.

Whatever is the approach to reengineering, there are certain steps to be followed:

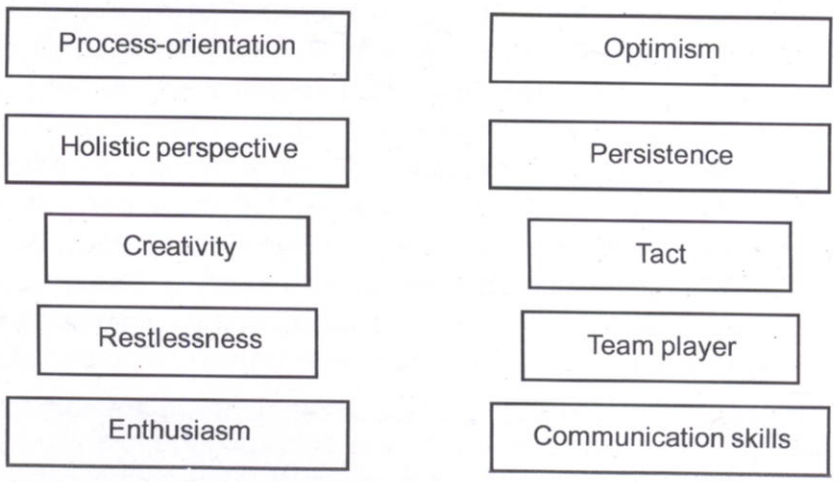
1. Create a vision: Before corporates reengineer, they dream a vision of what they want to achieve. Precision is critical, for it is the vision that will energise everyone for reengineering. An articulate, well-defined and customer oriented vision is essential. Companies can reengineer any process. For example Elgi Equipments drew up a clear vision: become No. 1 company in its business in 10 years. And the enterprise-wide reengineering that it has embarked on was driven by this vision.

2. Pick the process: Choose the process to be reengineered. The first step for the choice is mapping the company's business not in terms of organisational structure, but as an outcome of its processes. Only then will the processes where the most value is added – and where dramatic improvement will deliver the smallest benefits to the bottom line – be identified.

Picking processes for reengineering is critical because it is fatal to reengineer every one of the firm's operations simultaneously. If the entire organisation starts reinventing itself, business gets disrupted. Focusing on a few processes also helps yield results quickly, which reengineering must do.

3. Find the facilitator: Who should lead reengineering in a company? Successful reengineers recommend picking people who are not only proven leaders, but are also well-liked and accepted by employees. The employees should feel that they trust the person ushering in the changes.

Box 1.5 : The Profile of a Reengineer



4. Manage change: Smart corporations ensure that their processes – reengineered or not – are owned by the people manning the processes. The traditional top-down controls is disappearing. Instead of expecting the employees to fall in line with the reengineering programme without demur, it is advisable to convince them that change is necessary to survive. According to James Champy, "Reengineering is a particular way of using our minds."

Eicher consultancy, starts off its reengineering facilitation programmes with a concept called the ***"appreciative enquiry process"***. Employees are made to concentrate on what is good within the company instead of just focusing on the negatives. In the process, a positive mindset, receptive to change begins to be built up. "Too many firms get started on the change without trying to build the energy within themselves to change" observes the managing director, Elgi Consultancy. "If one starts without the attitudinal change, the quality of the rest of the change will be poor".

In Indfos Industries, the management empowered workers for change before taking any step toward reengineering. The result was that workers began to volunteer to redesign process themselves.

1.17 WHY REENGINEERING FAILS?

There are top ten ways for an organisation to fail at reengineering. These are:

(i) Do not reengineer but say that you are

(ii) Do not focus on processes

(iii) Spend a lot of time analysing the current situation

(iv) Proceed without strong executive leadership

(v) Be timid in redesign

(vi) Go directly from conceptual design to implementation

(vii) Reengineer slowly

(viii) Place some aspects of the business off-limits

(ix) Adopt a conventional implementation style

(x) Ignore the concerns of your people

1.18 SUMMARY

"Business Process Reengineering" (BPR in short) is also known as "Process Reengineering" or simply "Reengineering". According to Michael Hammer Reengineering has been defined as *"the fundamental rethinking and radical design of business processes to achieve dramatic or break-through improvement in critical contemporary measures of performance such as cost, quality, service and speed".*

Reengineering does not strive to *revamp* the existing process but it involves *reinventing* the process to achieve quantum leaps in performance and to achieve higher levels of customer satisfaction.

Reengineering entails the following seven rules or principles :

(i) Organise around outcomes, not tasks.

(ii) Have those who use the output of the process perform the process.

(iii) Merge information processing work into the real work that produces the information.

(iv) Treat geographically dispersed resource as though they work centralised.

(v) Link parallel activities instead of integrating their results.

(vi) Put the decision point where the work is performed and build control into the process.

(vii) Capture information once – at the source.

According to Hammer the major steps the company should embark on to redesign its process are

(i) Develop business vision and process objectives

(ii) Identify processes to be redesigned

(iii) Understand and measure existing processes

(iv) Identify information technology levels and

(v) Design and build a prototype of the process.

Janson states that every reengineering effort involves three basic phases. They are : *(i)* Rethink, *(ii)* Redesign and *(iii)* Retool.

The reengineering process requires : *(i)* focusing on critical processes, *(ii)* strong leadership, *(iii)* cross-functional teams, *(iv)* information technology, *(v)* clean-slate philosophy and *(vi)* process analysis.

Reengineering is necessary not only in manufacturing industry, but in service industry as well. Three salient features of reengineering in the service sector are: *(i)* Make the customer the starting point for change, *(ii)* Design work-processes in light of organisational goals and *(iii)* Restructure to support front-line performance. Three dimensions of a service organisation on which reengineering has an impact are :

(i) The human dimension (focus on customers and employees)

(ii) The work process dimension (multiskilled service profession) and

(iii) The technology dimension (new technology and automation).

Reengineering is not opposed to total quality management even though the former focuses on breakthrough improvement as opposed to the continuous improvement (Kaizen) approach of the latter. Infact incremental and breakthrough improvements are complementary approaches that fall under TQM umbrella. Reengineering requires the support of TQM to be successful. The six steps involved in the reengineering process are :

(i) state a case for action

(ii) identify the process for reengineering

(iii) evaluate enablers for reengineering

(iv) understand the current process

(v) create a new process design

(vi) implement the reengineered process.

The various tools and techniques used in reengineering are : *(i)* Inductive thinking, *(ii)* Flow charting, *(iii)* Creative process redesign, *(iv)* Process benchmarking, *(v)* Simulation and *(vi)* Reengineering software.

The four approaches to integrating process improvement and reengineering activities in an organisation are : *(i)* Sequencing change initiatives, *(ii)* Creating a portfolio of process change programs, *(iii)* Limiting the scope for work design and *(iv)* Understanding improvement through innovation.

Some of the major benefits of reengineering are :

(i) Achievement of radical changes in performance measured by cost, cycle time, service and quality.

(ii) Boosting competitiveness in the operational network.

(iii) Helps to think big (revolutionary thinking)

(iv) Helps to make noticeable changes in the pace and quality of response to customers needs.

(v) Results in new organisational designs that help firms respond better to competitive pressures, increase market shares and profitability and improve cycle times, cost ratio and quality (organisational renewal).

(vi) Brings change in the corporate culture and the basic principles by which departments operate, encourages workers at all levels to make suggestions for improvements and eventually helps the culture in the organisation to evolve from an insular one to the one that accepts and knows how to deal with it.

However, reengineering has some limitations. They are :

(i) Not a panacea for all problems.

(ii) Not simple or easily done, nor is it appropriate for all processes for all organisations.

(iii) Use of information technology is a must to gain significant process improvement.

(iv) Improvement of processes require active participation of people who actually perform the work.

1.19 Self Assessment Questions

1. What is meant by "Business Process Reengineering"?
2. Why an organisation needs reengineering?
3. Discuss the seven rules or principles of reengineering.
4. Describe the reengineering process in a manufacturing organisation. How does it differ from that in a service organisation?
5. What do you understand by "the three 'R's" of reengineering?
6. Explain the requirements of reengineering process.
7. Discuss the impact of reengineering on the service industry.
8. Discuss the relationship between TQM and BPR.
9. Compare and contrast continuous process improvement and process reengineering.
10. "Some people have said that both TQM and Reengineering are the same, while others have argued that they are incompatible". Comment on this statement.
11. Explain how reengineering and process improvement are integrated.
12. State the benefits and limitations of reengineering.
13. Mention the similarities and differences between Reengineering and Continuous improvement.
14. Discuss the steps to be followed for reengineering for success.
15. What are the ten ways for an organisation to fail at reengineering?

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