CHAPTER II

BUSINESS PROCESS REENGINEERING

2.1. Introduction

According to Michael Hammer, “Business Process Reengineering (BPR) is the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed.” ¹ The concept of BPR, in this study, is considered as the solution for present days’ difficulties in front of Agro Process Industries (API). Hammer considers four keywords within this definition which are most relevant. These are:

a) Fundamental

Two questions; what are we doing, and why are doing so, are considered as being fundamental and are addressing the organizations for justification of existence. As Hammer points out, forcing people to question the way they do business leads to rules turning out to be obsolete, incorrect and inappropriate. Reengineering means starting from scratch, no assumptions given and no current fact accepted and determines firstly what a company has to do, and secondly how to do it.

b) Radical

Radical redesign of business processes means getting to the root of things, not improving existing procedures and struggling with sub optimizing. According to Hammer, radical redesign means disregarding all existing structures and procedures and inventing completely new ways of accomplishing work.

c) Dramatic

Reengineering is no way for achieving marginal improvements and fine-tuning. It is intended to achieve heavy blasting.

d) Processes

Process-orientation is considered as being the most important aspect of BPR. Hammer claims, that most companies are focused on tasks, people and structures rather than processes.

2.2. The History of Reengineering

As it has been mentioned, BPR focuses on redesigning work processes to enhance productivity and competitiveness. The demand for a new approach to organizational restructuring has been fueled by the awareness, of the existing business logic. These existing processes are first designed as a set of sequential manual procedures, and then automated parallel with the accelerating development of technology. However, this automation should not change the strong efficiency orientation pushing for optimizing procedures or functions and a maximum level of
control. The development and application of information technology seemed to be a solution to that problem. Due to the global changes in economy, markets are globalized, customer requirements change and competition is intensified, and new approaches had to be developed for coping with environmental dynamics and the required flexible organizational change.

In 1991, Michael Hammer, a former MIT professor in computer science published an article in the Harvard Business Review, emphasizing the need for fundamental organizational change and for the first time using the term Business Process Reengineering. Since then, the concept has been widely spread and applied. API has immense potentials to support for speedy development of national economy. Hence, this research is carried out to usher problems and challenges in front of API and suggest remedial model to resolve them.

2.3. The Concept of Reengineering

Successful organizations are imagined to be networked across functional boundaries and business processes rather than functional hierarchies. However, it is pointed out in literature that simply using the latest technology on existing processes, respectively procedures, is no valid solution to the problem. The solution is found in taking a step further and rethinks and questions the business activities being a foundation for business processes. Effective redesign of business processes by removing unnecessary activities and replacing outdated functional processes with cross-functional activities, in combination with using information technology as an enabler for this type of change will lead to significant gains in speed, productivity, service, quality and innovation. Business reengineering normally includes a fundamental analysis of the organization and a redesign of:

- Organizational structure
- Job definitions
- Reward structures
- Business work flows
- Control processes and, in some cases
- Reevaluation of the organizational culture and philosophy.²

BPR is generally conceived as consisting of four elements to be considered, as there are strategies, processes, technology and humans (figure 2.1.), where strategies and processes are building the ground for the enabling utilization of technologies and the redesign of the human activity system. A brief description of these four dimensions is given below
2.3.1 Strategies

The strategy dimension has to cover strategies within the other areas under concern, namely organization strategy, technology strategy and human resources strategy. The determination of all strategies has to be performed with respect to the dynamic marketplaces the organization is acting on and is not focused on internalities, but the external presumptions for successful acting on markets. Beyond that, strategies have to be current and relevant to the vision of organization, as well as to internal and external constraints. It is assumed that a reconsideration and redefinition of strategies might accelerate further changes. Finally, the strategies must be defined in a way that enables understanding and motivation of employees in order to align the work accurately.

2.3.2 Processes

Processes can be defined on different levels within the organization. The issue is, to identify core processes which are satisfying customer needs and add value for them. It is important to point out, that processes are not determined by internal organizational requirements, but by customer requirements, even though organizational constraints have to be taken under consideration. The shift from functional departments to inter-functional processes includes a redesign of the entire organizational structure and the human activity system and implies process- instead of task optimizing.

2.3.3 Technology

Information technology is considered as the major enabler for spanning processes over functional and organizational boundaries and supporting process driven organizations. However, the point is not to use IT as an improver for existing
activities, as which it often has been conceived, but as enabler for the new organization. This includes using new technologies, as well as new methods and an acceptance of technological changes with the fact that information technology will be shaping the future.

2.3.4 People

The human activity system within the organization is the most critical factor for reengineering. While top management support for reengineering efforts is rather simple to ensure, the real change agents, middle management are far harder to win due to the fact that they have to identify change opportunities and perform them. This is the group facing most threats, as BPR often is used for cutting hierarchies and reducing the work force. The other crucial factor is to align the work force with the strategies defined and to address the variable cultural and environmental contexts within the organization. Finally, flattening hierarchies implies decision making to be moved down in the organization and empowering the employees. This requires training and education as well as motivation and trust from top management that people are able and willing to take responsibility, a fact that is rather contradictory to the "trust is good, control is better" way of thinking.

2.4. Methodological Approach of BPR

Even though a formalized standard methodology, based on a common framework that ensures success in reengineering projects hasn't yet been developed, several attempts have been made to develop such an approach. In order to improve the understanding of how BPR works, a methodological approach known as PRLC - Process Reengineering Life Cycle, as it has been described by Guha et. al. is discussed below. The methodology consists of 6 stages. A graphical description of the PRLC approach is as below in figure 2.2)

![Diagram](image-url)
2.4.1. Envisioning New Processes

Due to the radical structure and the overall character of BPR, organizations require absolute support from the top management. The organization's leaders start with an examination of how they would run their business without any constraints whatsoever. This process does not address the question of how current work can be improved, but how it should be done to achieve maximum performance in all measures. This stage even involves the aspect of aligning the reengineering effort with the corporate strategies and organizational goals. Nevertheless, if these strategies show out to be obsolete or inappropriate, a reexamination and redefinition might be necessary in order to adopt new externalities to the organization.

a. Secure Senior Management Support

It is substantial, that top management is willing to support reengineering projects. This involves the chief executive officer (CEO), as well as the heads of departments in the reengineering effort which is a necessary presumption for anchoring BPR throughout the entire organization. A critical success factor in this concern is convincing management of the necessity of disregarding existing constraints and abandoning existing procedures and methods.

b. Identify Reengineering Opportunities

Business consists of a large number of processes and the crucial matter is to identify those of them being adequate for reengineering efforts. This task requires firstly a commonly accepted definition of what a business process means, secondly genuine knowledge about the changing needs of customers and processes' potential for customer value addition.

c. Identify Enabling Technology

The rapid pace of information technology development has removed many constraints in information handling. However, it is important to remember, that using IT is no self-purpose, but a way of supporting the activities within the business processes to be performed. Keeping this in mind, companies can use IT for achieving gains in speed and productivity.

d. Aligning With Corporate Strategy

This step includes the examination of internal and external strategies related to the reengineering opportunities and enabling technologies being identified. The reengineering direction is determined according to the organization’s strategic market intentions and reengineering potentials without strategic significance are removed.

2.4.2. Initiating Change

In this stage, the reengineering project is prepared for performance. The reengineering team is assembled from a multiplicity of units within the organization and external change agents are, if necessary, allocated to the project. At the same time, the reengineering route is staked out and performance goals are defined and set.
a. The Reengineering Team

Due to the multifunctional character of processes, the reengineering team has to be assembled from a various number of departments. An overall project may involve people from all departments, while minor projects may consist of members from the affected departments only. A result responsible team leader is assigned by top management and this team leader is then, in turn, assigning roles to the other members of the team.

b. Performance Goals

The desired performance for the new processes is determined in this step. There are four areas where potential benefits can be realized. These are, financial success, customer satisfaction, internal processes, organizational learning.

2.4.3. Process Diagnosis

On the basis of the performance goals to be accomplished the reengineering is able to perform an in-depth analysis of the processes to be reengineered. Existing processes are described and hidden pathologies are uncovered. This stage is critical for the further success of the reengineering efforts due to its importance to process redesign.

a. Describing Existing Processes

A presumption for business process redesign is to gain genuine understanding how existing processes work, their span, linkages and bottlenecks. The following factors are important for consideration in process documentation:

- Description of the entire process.
- Identification of process elements and resources.
- Current process performance.
- Analytic decomposition of processes.

b. Uncovering Pathologies

The pathologies of processes may have different nature, as there may be inefficient work-flows and sequences of activities, high costs and insignificant value addition for customers. These inadequacies have to be detected and documented. For this, quantitative as well as qualitative methods should be applied, depending on the nature of pathologies.

2.4.4. Process Redesign

Several dimensions are available as measures for redesigning business processes, as there are time, cost and productivity, quality and capital commitment. Using a single dimensional approach would lead to sub-optimization of processes, so a consideration of multiple dimensions is to be used. However, some of the performance measures are concurrent, a fact that requires the definition of preferences.
a. Alternative Process Designs

Obviously, several design alternatives exist for every process under concern. This step includes the exploration of alternative designs and their possible implementations in order to identify and determine the most appropriate process structure and enabling technologies.

b. New Process Design

Designing new processes is a task of constantly questioning the necessity of performing a certain activity and how it should be performed. Several factors are critical for the design of processes and have to be dealt with for success. Some of the most critical factors are,

• Break patterns and disregard "common sense".
• Align processes with strategies and performance goals.
• Assign people to processes instead of single tasks.
• Dismiss hierarchical structures.
• Eliminate pathologies.
• Improve productivity by integrating fragmented work.
• Appraise enabling technology.

c. Designing the Human Resources Architecture

It can be assumed that there is a common agreement on the claim, that no organization is better than the individuals working in it. This makes the design of the human resources architecture being a most critical task within the reengineering effort, especially as major change in the human resource area along with reengineering. The following aspects are important for a successful restructuring of the human resources architecture:

• Redefinition of work descriptions, titles and positions.
• Application of team based management techniques.
• Encouraging organizational learning.
• Performance evaluation on team basis instead of individuals.
• Reward structures based on group performance.
• The double role of managers as team members and superiors.
• Continuous reengineering communication with employees.

d. Prototyping

Prototyping provides an instant feedback to the reengineering on the progress and acceptance of the reengineering effort. It provides opportunities for simulating and evaluating reengineering potentials within the organizational, as well as the system development area. Continuous prototyping enables the reengineering team and management to make necessary adjustments before a final process design is chosen.

e. Selection of IT Platform

The IT platform has to be chosen based on its ability of supporting the new designed processes. Other aspects to be taken under consideration should be the adaptability to changing processes and new technologies. The information system
architecture has to be chosen with respect to actual and future information requirements. Several alternatives are available and the choice of the IT platform should, in the spirit of reengineering, be performed without regarding constraints, whether they may come from the computer department, organizational actors, or any other interest group.

2.4.5. Reconstruction

This stage includes implementing change and anchoring it in the organization and addresses the organization’s ability of adopting change. Failure during change implementation may result in costly project failure and potential future inconfidence of employees.

a. Installing IT

Using IT as an enabling technology for implementing change and supporting processes is one of the steps within the reconstruction stage. Depending on the radicality of change and the adaptability of the existing information technology, the existing systems may be changed, or replaced entirely. While the first alternative involves software engineering without affecting the hardware, the second way often includes overhauling the current systems totally, including a new technical platform.

b. Reorganizing Activities

Adapting the organizational structure to make it fit the new defined processes is a crucial task. The changes in the human resources architecture have to be realized carefully in a new organizational structure without more than marginal disturbances of the motivation of the individuals being affected. While employee empowerment, reorganization and job rotation often can be achieved without major disruptions probably surfaced due to the reduction of staff.

2.4.6. Process Monitoring

The identified and implemented process has to be monitored in the continuous process in order to scan their performance and contribution to quality improvement. This includes, that reengineering projects are not handled in the conventional way of being initiated, performed and finished. But reengineering is an ongoing process of permanent improvement.

a. Performance Measurement

For determining the reengineering efforts’ success, or failure, the new processes' performance must be measured and compared to the processes being replaced. This performance measuring is performed in terms of the following aspects:
• Process performance: Cycle times, customer value addition, quality.
• IT performance: Information rates, system use etc.
• Productivity: employees, production, service operations.
b. Links to Quality Improvement

Reengineering is closely related to quality improvement and should be linked with quality programs. However, there is a major difference in focus between reengineering and approaches like TQM (Total Quality Management): While reengineering is concerned with abrupt changes and improvement, TQM is concerned with continuous improvement. Nevertheless, quality improvement is a major concern for reengineering as well.  

2.5. The Value Chain Concept

The concept of value adding was originally developed by Michael Porter and described in his book *Competitive Advantage* in 1984. He stated that every firm is a collection of activities which are performed to design, produce, market, deliver, and support its product. All these activities can be represented using a value chain.

<table>
<thead>
<tr>
<th>Administration &amp; Infrastructure</th>
<th>General management of the enterprise as a business entity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Resource Management</td>
<td>Recruiting, training, developing, rewarding</td>
</tr>
<tr>
<td>Product/technology development</td>
<td>Developing the technology of the product and processes business management</td>
</tr>
<tr>
<td>Procurement</td>
<td>Acquiring the required inputs to the value adding process</td>
</tr>
<tr>
<td>Inbound logistics</td>
<td>Operations transforming inputs to outputs</td>
</tr>
<tr>
<td>Operations</td>
<td>Outbound logistics distributing the product or service to customer</td>
</tr>
<tr>
<td>Transforming</td>
<td>Sales &amp; marketing providing ways in which the customer can purchase the product</td>
</tr>
<tr>
<td>inputs to outputs</td>
<td>Services enhancing or maintaining of the purchased product/service</td>
</tr>
</tbody>
</table>

Figure: 2.3.

In the classical value chain (figure 2.3), an organization's activities form a linear flow from the supplier(s), through the business, to the customer(s). The value chain includes firstly the "primary activities", i.e. the activities the company has to perform in order to justify its right to exist. These activities are adding direct customer value to the product or service and the effective link of these activities has a major impact on the overall performance of the organization.

The "secondary activities" are supporting the former, in order to ensure organizational and managerial control, coordination among primary activities, as well as for developing and maintaining a corporate culture within the organization, and a corporate image towards the environment. Their value-adding effect is indirect and only realisable through the results of primary activities.
The generic value chain model is a type of business activity analysis, a way of dealing with complex organizational structures, intended to decompose the enterprise into manageable parts for analysis and change processes. Some special features, however, makes the value chain analysis different from other approaches:
1) Separation of primary and secondary activities.
2) Focus on customer value adding.
3) Links the business-unit approach to strategic analysis and planning.
4) Not concerned with organizational structures.

2.5.1. Customer Value

Adding value for customers is, by all BPR methodologies, considered as being the most important contingencies. This raises firstly the question what customer value means, and secondly how added value for customers can be achieved.

2.5.2. The industry Value System

The value chain approach adds an environmental dimension to business unit analysis, i.e., firm’s value chain does not exist in isolation, but is part of an industry value system (figure 2.4). This set of value chains is linking all companies involved in the process of product/service delivery, from the source of raw material to the final customer (for industry systems).

![Diagram of value system](image)

Figure: 2.4

The profitability of the entire system depends on the customer requirements and ability of the system to fulfill them. The cost reduction alone is not a satisfactory instrument for sustaining market positions.

Another important factor is the competition for profit within the value system. As Porter points out, the firm is not only meeting competitors in its competitive arena, even the companies being part of the own chain are bargaining for a larger share of the achievable profit in the value system. Normally, a balance between the single firms’s striving for profit maximizing and the total system benefit does exist in value chains. However, the equilibrium can be destroyed when a firm fails to achieve profit. This will result in either a rationalization of direct competitors, or a vertical integration within the chain.
2.5.3. BPR and Value Chains

The value chain analysis is independent from the analysis of organizational structures. However, it provides a framework for considering business activities as the determining factor for organizational change, e.g. placing the focus of business activities and organizational behavior on customer requirements, which are even the major process focus in BPR. The identification of primary, value adding activities, respectively processes as far as BPR is concerned, and their links and resource requirements is the major task for organizational change. However, the primary chain essentially describes how the business operates, not how it is controlled and developed. Control and development involves both primary and secondary activities, but the support activities' change process is determined by the required changes in the primary activity system. Total customer value consists of two elements, the direct product/service value and the additional value. While the direct value is determined by the value of the product/service itself, additional value refers to value that can be added by factors like superior service, fast delivery etc. 

Even though the value chain approach provides considerable advantages, such as focusing on customer requirements and broadening the view about organizational relations and dependencies within the industry value system, one considerable disadvantage has to be taken under concern when applying it. The value chain concept has been originally developed for manufacturing companies, but will be more difficult to apply where a physical product can not be observed. However, the approach is still useful as customer value adding is the main objective for the organization, but it will become more difficult to identify and categorize primary and secondary activities. In the approach of BPR this becomes potential problem for identifying customer value adding processes, where there is no tangible product to add the value

2.6. Organizational Aspects of BPR

Applying BPR on an organization includes the rearrangement of organizational structures, processes and tasks, as well as the relocation of individuals and changes of work descriptions, positions and titles. The difficulty of organizational analysis, design and change has been a concern for almost all BPR practitioners.

2.6.1. Organization Design

The basic problem of organizational design has been identified, by March and Simon as: ‘Given a general purpose for an organization, we can identify the tasks necessary to achieve this purpose. These tasks will normally include productive activities, service activities, coordinative activities, supervisory activities, etc. The problem is to group these tasks into individual jobs, to group these jobs into administrative units, to group these units into larger units, and finally to establish the top-level departments - and to make these groupings in such a way as to minimize the total cost of carrying out these activities’.

Although the first theoretical foundations on the departmentalization of organizations and the allocation of tasks to humans can be found in Aristotle's writing "Politics", the basic theoretical foundations about the difficulty of organizational
structure and behavior in modern time have been explicitly defined in the beginning of the 20th century.

In 1911 Frederick Taylor published his work "The Principles of Scientific Management", in which he investigated the effective use of human beings in industrial organizations. He was most concerned with the kinds of tasks to be performed on the production floor and in clerical departments. These tasks are characterized by being largely repetitive and by not requiring complex problem solving activities by the individuals performing them. However, many modern organizations have taken measures towards job-enrichment and job enlargement, which makes many of Taylor's assumptions being erroneous. Beyond that, Taylor's theories are hardly applicable on the types of organizations.

2.6.2 Organizational Structure

Organizational structure is the arrangement of organizational subsystems, or sub-units into a hierarchy of authority relations. This process includes the division of labour, the allocation of resources needed to perform tasks and the definition of areas of responsibility. This definition of viewing on an organization in terms of division of labour is portrayed by an organization chart, where it is stated who is responsible for what and reports to whom. There are two main alternatives for dividing organizations, and both of them are related to BPR.

Organizations differ due to a lot of reasons, it is therefore necessary to point out, that there is no best universal organizational structure. The structure is, even though building on a specific theory, unique and has to fit the organizations requirements for flexibility, information handling, specialization, etc., needed for a successful acting in the enterprise arena. Even though organizational structures are unique, they follow a philosophy that describes the organizations consideration of aspects like control, sub-ordination and management.

According to the classical view organizations are divided into two elements, the formal organization, which means a combination of organisational "basic elements", like function or department, and the process organization, dealing with the structure and design of activities, or work processes. This differentiation can be seen as a scientific "trick", aimed to simplify the analysis, design and description of organizational behavior. In practice, such a differentiation is almost unachievable, due to the mutual implication between the charted institution and its activities.

Organizational structure and processes are aimed to integrate all activities within the enterprise towards the goals to be achieved. Besides, in practice, always find a parallel, informal organization, based on the result of individual human behavior, like sympathy or antipathy, common interests and social status. The parallel existence of the formal and the informal organization can either improve the effectiveness of the organization, or be a hinder for cooperation within and among organizational sub-units. The knowledge of informal structures, the encouragement of positive impact and the avoidance of conflicts among social groups is therefore an important task. The traditional organizational structure can be viewed as a hierarchical or pyramidal structure of positions, where each position has authority or right to command sub-ordinated positions associated with it (figure 2.5).
Authority is evidenced by control over resources, rewards and tasks and the decisions regarding them. Each position has a span of control, which describes the number of immediate sub-ordinated units. An organization may have very narrow and very wide spans of control on different levels, depending on the tasks to be performed, the supervision required, the degree of formalization and the number of rules and guidelines provided for decision taking. There are three aspects - specialization, formalization and centralization, which have to be considered critical to the choice and implementation of organizational structures. The chosen levels of these aspects will have major impact on the choice of structure, leadership style and management principles.

a. **Specialization** refers to the division of labour within the organization. The organization is divided into functional lines, like Chief Executive Officer, Finance Manufacturing, Sales, where specialization is desired and encouraged. The degree of specialization may differ along the functional lines, depending on the products as well as on the management philosophy. Research may contain highly educated and trained professionals, working in a flat, almost non-hierarchical organization and a high degree of independency, while manufacturing along assembly lines uses narrowly defined tasks, non-specialist workers and intensive control.

b. **Formalization** describes the extent to which rules, procedures and guidelines exist, which are aimed to handle organizational activities. One indication of formalization is the degree to which decisions for handling various situations are programmed and decision-rules are pre-defined. The more formalized the organization, the less discretion individual organization members have in making decisions and initiating action.

c. **Centralization** refers to the level in the organization where decisions are taken. In a highly centralized organization, decisions are mainly taken at the top of the hierarchy. If the more decision-making authority is delegated to lower hierarchical levels, there is greater amount of the decentralization. Centralization refers to...
hierarchy as well as to formalization. A flat hierarchy with a wide span of control is often considered as being decentralized, while a narrow span of control and a tall hierarchy is associated with centralization. In a highly formalized organization, people on low level positions take decisions by rules those have been specified in advance by higher-level personnel, exceptions are referred to these higher levels for decision.  

2.6.3. Departmentalization by Purpose

Organizational structures built around products, services or markets have been considered as an alternative to functional departmentalization. Structuring an organization around products would imply, that each product will have its own function for example purchasing or manufacturing. In this case, the focus is rather on the organizational output than on the processes to be performed (figure 2.6), particularly when the divisions are relatively independent. This structure is aimed to group all decisions concerning a group of highly interrelated outputs under a unified command.

![Figure: 2.6](image)

**a. Project Organizations**

In project organizations, (figure 2.7,) resources are assigned to projects, each headed by a project director. A consulting company may be organized in this way. This structure can be conceived as a dynamic form of the divisionalized organization, where the reassignment of resources, due to the temporary form of the projects, is of major importance for the effective use of them. The project manager has considerable authority for the duration of a project. It may be efficient to combine several, highly interacting activities into a single function. The fact that different products may use the same function creates a need for coordination and conflict resolution, since the objectives of the organization are their products, but the organizational structure is originally of functional character.

![Figure: 2.7](image)
b. Matrix Organization

Organizational methods for reconciling the functional organization with product objectives are termed as lateral relations. The implementation of lateral relations is not bounded to a specific organization structure, but can be represented formalized by the implementation of a matrix organization (figure 2.8). Some methods for providing lateral relations are described below.

- Direct contact among managers. Managers establish direct contacts with other managers to resolve inner-organizational conflicts.
- Liaison roles. The responsibility for coordinating the lateral flow of a product, or service, is assigned to an individual.
- Conflict management. A formal group with representatives from each department is established to resolve conflicts.
- Team establishment. Teams are formed to resolve frequently occurring problems.
- Integrating personnel. They do not supervise operative work, but integrate the output of independent sub-units.

![Matrix Organization Diagram]

Figure: 2.8

The matrix organization is, as stated above, the formal implementation of lateral relations. For each product or service, there is a separate, integrating department or function, which has lateral relations with the relevant parts of the formal, functional organization. Each level of the organization affected has a vertical authority relation for the function and a lateral authority relation with the corresponding integrating process. The matrix organization is often used in large, diversified organizations. In typical matrix organizations, business units are organized around product or service lines, and lately through the increasing popularity of process oriented approaches, around one or a set of processes. In this kind of structure
functional specialists in each unit, or process, report to the unit manager, or process-"owner", but they even have responsibility to the corporate functional head. The corporate function exists as a knowledge-center and provides training and education and, if requested, even standards and supervision for the performance of the business unit within the concerned functional areas.  

2.6.4 The Organizational View of BPR

The BPR approach comprises of classical, formalized and hierarchical structures. Organizations are unable to react successfully on changing environmental implications. They have to satisfy customer requirements, as well as require addressing problems like low productivity, long cycle times and high costs. Organizations aiming to improve productivity and to focus on satisfaction of customers need to find new ways of business processes. These new ways include dividing the organization into sub-units and dividing labour within those sub-units. The organization around business processes, seen the solution of aligning organizational structures with the activities being performed within them. This view makes the formal and the process organizations complimentary to each other and reduces goal conflicts and misfits between structure and activities.

Customers are taken into strong consideration when the organizational structure is determined which moves the focus of change management from internalities to externalities. A process is based on the following characteristics.-

- A business process is a set of interrelated tasks that must be performed to accomplish a business objective.
- A business process is organized around the purpose of adding value for customers.
- A business process can cross functional and organizational boundaries.

2.6.5. The Division of Labour

The problem of organizational design is not only concerned with the departmentalization of the organization, but even with the division of labour within the organizational sub-units. In the same way as organizations are divided into departments, work can be decomposed into small units, tasks, each of them containing a part of the overall task. This concept encourages specialization and high skills within a bounded functional area, which increases the output significantly.
Task forces are temporary groups, they are established when a problem occurs and suspended as soon it is solved. Task forces are removing decision taking processes from higher organizational levels to the level actually being concerned. Often, task forces are established and composed in an informal way, trying to solve problems in an ad-hoc and reactive manner, however, even pre-composed task forces, taking action in specific problem situations.

2.6.6. BPR and Labour Division

The labour division concept being proposed within the frame of BPR is rather similar to the concept of task forces, if task forces are considered as teams built around a task (or process) to perform, instead of a group assembled for reactive "quick-fixing" of suddenly occurring problems. While conventional labour division is based on subordination and delegation of tasks, without the necessary delegation of decision authority and under a strict control, BPR advocates self managing teams, containing of empowered members as a solution to the complexity of decision and communication delay, as well as a way for improving organizational capacities and customer service.

The communication within the team is performed in three different, but complementary ways, as there are direct contacts among team member, team meetings and informal meetings. An important point is that due to the use of modern technology, the team members do not have to be physically located at the same place. Communication can take place by video conferences, electronic mail and other computerized tools.

2.6.7. Organizational Learning and BPR

One of the most important aspects of organizational behavior is the need for change in response to environmental changes. This implies the displacement of goals, organizational learning and the adoption of new organizational structures and processes. Organizations are considered as a collection of individuals, each with personal goals that may be contradictory to the goals established by the organization. Institutional and personal goals change in response to environmental changes, changes in inner-organizational coalitions and circumstances related to specific institutional members. One of the problems related to the management of change is goal displacement, where primary goals are replaced by goals aimed to satisfy the convenience of a secondary group. Goal displacement will reduce the institutions ability to react on environmental changes and may decline or decrease the institutions effectiveness.

The process of detecting and correcting errors, adapting new strategies as a result of environmental changes and storing experience in organizations is called organizational learning. Organizational learning can be encouraged by management practices and organizational culture, the organizational environment or by training and education within the organization.

Applying the concept of organizational learning is a major presumption for successful change management in general, and for BPR projects in particular. Organizational learning is a major factor for empowering employees and making
them able to take responsibility for their action. Making them aware of their own importance for the performance of the whole and how their own work fits into the puzzle of work in the entire organization encourages learning and the adoption of new skills required for fulfilling the expectations focused on them. This addresses even the issue of recruiting new members to the organization. While existing employees must be trained and educated for fitting the requirements put by the new task structure, new individuals should be recruited with respect to the task profile that has been defined in order to avoid costly training on the job and failures during the introduction time.  

2.6.8. Organizational Change

There is general consensus on the need of organizational change as well on the fact, that there are lots of difficulties related to it. Change is not a simple process of implementing a new organizational structure and explaining its advantages compared to the old, change can threaten the interests of groups within the organization, it can be desirable to one group and perceived as bad by another. Beyond that, an uncertainty about "what is going to happen" is often found, even if the result to strive for seems to look good. The nature and process of planned change is as discussed below.

a. Planned change involves a deliberate, purposeful, and explicit decision to engage in a program of problem solving and improvement. The critical words in this dimension are "deliberate" and "purposeful".
b. Planned change reflects a process of change which can apply to a variety of human client systems. The notion of planned change can be used to implement change whether the client is an individual, a group, an organization, or a community.
c. Planned change almost always involves external, professional guidance. Planned change generally involves the intervention of someone who has professional skills in the technologies used to implement the change...
d. Planned change generally involves a strategy of collaboration and power sharing between the change agent(s) and the client system.
e. Planned change seeks utilization of valid knowledge or data to be used in the implementation of change. Planned change, then, is an extension of the scientific method...

The entire BPR approach is an attempt to cope with organizational change required by dynamics in an organizations environment. The characteristics of planned change are valid for BPR.  

2.7 Information Technology for BPR

Most BPR theorists and practitioners consider IT as being the essential enabler for any reengineering effort, even if there is a pessimistic view, that reengineering can be done without concerning IT. However, it can be stated that IT plays a major role in the majority of BPR projects. Using IT as change agent does not mean to throw computers on the problem. They will, in most cases, speed up work and lead to temporary improvements. The root cause of the problem will not be removed, but temporarily covered. Even though information technology can be an enabler, if used innovatively, it must not necessary drive change.
Looking ahead for new technology does not mean to find technologies looking for uses. IT opportunities should be monitored in terms of business applicability and process support and improvement. Information technology is no self-purpose, but a mean to achieve a better competitive position by yielding purposeful application on business problems.  

2.8. BPR and Quality

During the late 1980s, the concept of total quality emerged and is now widespread over a multiplicity of branches. TQM - Total Quality Management and BPR share a lot common themes as they both focus on customer requirements and processes to fulfill them, however, they differ significantly as the pace of change and improvement is concerned, as well as on the means of accomplishment. While BPR is intended to achieve quantum gains rapidly by replacing old processes with new ones, TQM and other quality programs are working on the basis of existing processes and seek to enhance them by incremental, continuous improvement, a process even known by the Japanese term "Kaizen". BPR and total quality programs must not necessarily exclude each other, but can be used as complementary concepts, aimed to provide an improvement based on rapid process changes as well as on steady improvement of the new processes.

Davenport identified four alternative approaches to integrating improvement (TQM) and innovation (BPR) activities, in order to provide a single, coherent program of organizational change

- Sequencing change initiatives
- Creating a portfolio of process change programs
- Limiting the scope of work design
- Undertaking improvement through innovation

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Impact</th>
<th>Particulars</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Automational</td>
<td>Eliminating human labour from a process</td>
</tr>
<tr>
<td>2</td>
<td>Informational</td>
<td>Capturing process information for understanding</td>
</tr>
<tr>
<td>3</td>
<td>Sequential</td>
<td>Changing process sequence, or enabling parallelism</td>
</tr>
<tr>
<td>4</td>
<td>Tracking</td>
<td>Closely monitoring process status and objects</td>
</tr>
<tr>
<td>5</td>
<td>Analytical</td>
<td>Improving analysis of information</td>
</tr>
<tr>
<td>6</td>
<td>Geographical</td>
<td>Coordinating processes across distance</td>
</tr>
<tr>
<td>7</td>
<td>Integrative</td>
<td>Coordination between tasks and processes</td>
</tr>
<tr>
<td>8</td>
<td>Intellectual</td>
<td>Capturing and distributing intellectual assets</td>
</tr>
<tr>
<td>9</td>
<td>Disinter-mediating</td>
<td>Eliminating intermediaries from a process</td>
</tr>
</tbody>
</table>
The differences between TQM and BPR efforts can be summarized by the following table 2.2.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Element</th>
<th>TQM</th>
<th>BPR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Level of change</td>
<td>Incremental</td>
<td>Radical</td>
</tr>
<tr>
<td>2</td>
<td>Starting Point</td>
<td>Existing Process</td>
<td>Clean Slate</td>
</tr>
<tr>
<td>3</td>
<td>Frequency of Change</td>
<td>Continuous</td>
<td>One Time</td>
</tr>
<tr>
<td>4</td>
<td>Time Required</td>
<td>Short</td>
<td>Long</td>
</tr>
<tr>
<td>5</td>
<td>Participation</td>
<td>Bottom Up</td>
<td>Top Down</td>
</tr>
<tr>
<td>6</td>
<td>Scope</td>
<td>Narrow, functional</td>
<td>Broad, Cross Functional</td>
</tr>
<tr>
<td>7</td>
<td>Risk</td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td>8</td>
<td>Primary Enabler</td>
<td>Statistical control</td>
<td>Information Technology</td>
</tr>
<tr>
<td>9</td>
<td>Type of Change</td>
<td>Cultural</td>
<td>Structural</td>
</tr>
</tbody>
</table>

2.9. Implementation Procedure of BPR

Proper procedure is essential for successful implementation of management concept like Business Process Reengineering (BPR), Total Quality Management (TQM), Enterprise Resource Planning (ERP), Quality Function Deployment (QFD) etc.

The awareness campaign not only provides a broad idea of BPR amongst the employees, but also enables the management to assess the preparedness of the people to accept it as a business philosophy or way of life. Proper communication is essential for the successful implementation of BPR. Before implementing the steps of BPR, its objectives must be known to all the people. It also needs to guide the people for thinking out-of-box for effective implementation of BPR philosophy.
2.9.1. Steps / Phases of a BPR Project

A BPR project consists of specific steps aiming to a successful outcome. The necessary steps are shown in the following figure.

**Figure 2.10**

**Step Zero - Preparation and Coordination of the Project.**

**Objectives:**

- To establish a strong management support
- To explain to the members of the BPR implementation team the implementation details of the project and their role in the successful outcome in the BPR effort.

**Actions taken:**

- Explain to the top-level management the necessity to commit to the BPR project.
- Allocate the most capable employees to the BPR implementation team and assign roles for each one of them.
Step One- Business Diagnosis & Measurements.

Objectives:

• To diagnose & identify problematic areas in the current processes
• To measure the performance characteristics of the current processes based on measurable factors such as average cycle time, delays, number of mistakes or number of customer complaints.

Actions taken:

• Record physical on the site measurements for each step of a process related to time, resources spent or efficiency.
• Identify added value processes that have a major impact on customer service.

Step Two- Selection of Processes.

Objectives:

• To identify the strategic processes those are feasible to change
• To redesign and model the selected processes

Actions taken:

• Set the characteristics of the processes those are more important to the organizational goals
• Identify the processes which can be changed.
• Redesign processes based on the characteristics those serve the goals
• Simulate the processes using the process management tool

Step Three - Technical Design and Solution.

Objectives:

• To automate modeled business processes (step 2) using networks and workflow tools
• To redesign and model the selected processes

Actions taken:

• Establish network connections between process team members.
• Prepare intranet applications to exchange forms and documents.

Step Four - Personnel Adjustment & Training.

Objectives:

• To train personnel in the new ways using IT in the redesigned processes.
• To redesign and model the selected processes
Actons taken:

- Adjust each position according to skills needed in the new process.
- Provide training in the operation of new processes, so employees will feel comfortable in the changing job environment

Step Five - Management of Change & Employee Empowerment.

Objectives:

- To establish a positive attitude for the change between employees
- To minimize the resistance to change between employees by empowering their position based on performance appraisal and bonus systems.

Actions taken:

- Establish executive management determination for change and determinate any attempts of resistance to change.
- Facilitate the change process outlining the positive effects of change

Step Six - Introduction of New Processes

Objectives:

- To set the time and date of operating under the new processes, emphasizing the fact that, working under the old processes is not an acceptable practice.

Actions taken:

- Prepare and test all background resources (IT, documents and equipment)
- Set time and date for operating under the new processes.

Step Seven - Continuous Improvement.

Objectives:

- To capitalize expertise from the BPR project and develop internal processes.

Actions taken:

- Periodically evaluate the performance of business processes
- Plan the time and the resources for the next reengineering project.
2.10 Journey towards Modernization

The Business Process Reengineering is an appropriate tool which can enhance potentials of the organization for different characteristics as shown in figure 2.11, below.
2.11 Conclusion

A traditional organization is that which follows traditional rules, using traditional hierarchical structures and control systems and applying information technology for supporting their activities within those structures. A modern organization, on the other hand, is customer focused, process-based, and using IT as an enabling factor for organizational change and the gain of competitive advantage. The solutions for facing the challenges put by environmental dynamics are many, and Business Process Reengineering is one of them. This research is an attempt to reengineer different components of API for their effective utilization.
References


8. Ibid, pp 208-211.


