

# The analysis of Business Process Reengineering applicability and process of implementation

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**Abstract**-Business Process reengineering theory, popular in the nineties of the last century, is still the main pattern in Chinese enterprises' reform. However, any theory has its applicability and guidelines for the application. In this paper, we discuss the necessity of business process reengineering, preconditions, the ways of reengineering and the implementation process. Through re-examining business process reengineering theory, we hope to provide reasonable proposals for business reform.

**Keywords**- Business Process Reengineering; the necessary of reengineering; the prerequisite; the ways of reengineering; implementation process

## I. INTRODUCTION

In the last century, 90 years, Hammer and Champy first propose "Business Process Reengineering is the fundamental rethinking and radical redesign of business processes to achieve dramatic performance, such as cost, quality, service, and speed" [1]. Business Process Reengineering can help enterprises to adapt to rapidly changing market environment, with the fastest speed, best quality, lowest cost, best service and the cleanest environment [2]. Many large businesses succeed in BPR, such as Haier, greatly stimulates the enthusiasm in SME recently. But any kind of theory are not a panacea, it has its scope of application and conditions. Prior to business process reengineering, Enterprises must carry out a detailed analysis of the actual enterprises' situation. So which kind of businesses does need to Business Process Reengineering? And which kind of business is suitable for Business Process Reengineering? And then how to do Business Process Reengineering? This article will give a detailed analysis.

## II. NECESSITY ANALYSIS OF BPR

Prior to BPR, the Enterprises must be careful to think the necessity of BPR. Otherwise the business process reengineering not only can not bring new vitality, but also will chaos businesses. The first step, enterprises must weight the interests of BPR and the enterprise status quo, through establishing a team of in-house managers and outside consultants.[3] The Enterprises can quickly know the urgency of reform. The next step, we weight the necessary of reform and the enterprises' ability of the reform. We can take the following approach to analysis, the basic framework shown in Figure 1.

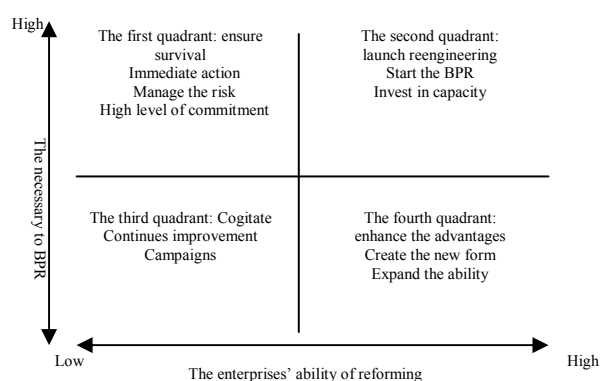


Figure 1 analysis diagram about the necessary of reengineering / the enterprise' ability of reforming

The first quadrant: ensure to survive. In this quadrant, the enterprise in dilemma wants to improve business performance as soon as possible. So-called "dilemma" in the business may be explained as follows: a substantial decline in market share, heavy losses of business, customer satisfaction with products and services far less than its competitors and so on. However, in this case, the ability of reform is low; it has not the necessary conditions for the reform, in this quadrant with a high-risk to reengineer.

The second quadrant: launch reengineering. The enterprise is also faced crisis, there is a need for business process reengineering to improve operational performance, the enterprise's reform ability is strong, everything is well prepared, and the staffs have strong willingness to take on additional workload for the reconstruction. Therefore the risk of the reform is little. It is suitable for process reengineering in this quadrant.

The third quadrant: Cogitate. The enterprise works well without the need for reform. Businesses were not prepared to conduct business process reengineering, and the ability of reform is not high. At this point, the company does not have to carry out business process reengineering. If for the future development need, the business can be the first to conduct a partial small-scale process reengineering and accumulate a wealth of practical experience for the future total reform.

The fourth Quadrant: Enhance the competitive advantages. The enterprise functioning is well, without the need for process reengineering. But the managers are not complacent and have an enterprising spirit. Through business process reengineering, the enterprise want to access new development

opportunities, and enhance competitive advantages in the market. And it also has the basis for the implementation of process reengineering. Thus, business process reengineering needs the managers with the courage to explore and high-level employees' commitment.

### III. PREREQUISITES AND THE METHODS OF BUSINESS PROCESS REENGINEERING

#### A. *The prerequisites for the enterprise carrying on business process reengineering*

1) *The strong financial support.* Business process reengineering is based on the information integration and information-oriented means. If there is no information technology, it can not enter the natural process of business process reengineering. Yet the establishment of enterprise information system will need to invest a lot of money for computers, servers and other hardwares. Without a strong financial support, the companies can not afford high costs and give up halfway.

2) *The high-quality personnel.* Business Process Reengineering requires business-related management personnel with a variety of comprehensive quality talent, for example the knowledge of management, business processes, and information technology. In the new process and new groups, employees need to have certain qualities and work ethic, otherwise it will be difficult to communicate effectively and can not co-ordinate and manage themselves by objectives.

3) *The dense sales network.* In sales process reengineering, the reform is designed to enhance exchange of information between corporate production and marketing in order to plan the production activities of enterprises according the market situation; and strengthen the exchange of information between the various business outlets in order to improve their overall level of profitability by facilitating the flow of goods. If the corporation's business network is dispersed, the input for the establishment of information networks and the high costs is lack of returns, which is the waste of resources.

4) *The personalized products.* The purpose of business process reengineering is to establish a direct customer-oriented business processes to provide a more satisfactory service and better product. Thus, many businesses now have established their own business Web site. Consumers can customize the personalized products on the network and view the company information at any time. E-commerce itself has changed the existing business processes and strengthened communication between customers and enterprises. [4]As for the production businesses of standardized products, the advantages of e-commerce do not exist.

These four prerequisites are not business process reengineering necessities and sufficient conditions. Enterprises must consider the industry characteristics, market conditions, competitive conditions, combined with the necessary analysis of business process reengineering, measure the above four aspects comprehensively, and then decide whether the enterprise to conduct business process reengineering.

#### *The ways of business process reengineering*

The early development of the theory, Business Process Reengineering advocates a thorough reform, but this method requires a lot of money and time. If the project fails, it will pay a heavy cost. In practice, some companies found that the enterprise first carried out a part of the process reengineering, through continuous improvement to form a ladder-style leap forward, and ultimately achieved complete changes in the overall process.

According to the different levels of reengineering, the ways of implement can be divided into the revolutionary reengineering and the gradual reengineering. Gradual process reengineering emphasizes a continuous and periodic change, and step by step closer to the ultimate goal of process reengineering. The revolutionary process reengineering need to be thoroughly transformed the existing organizational structure or business process paradigm. The whole process reengineering complete at one-time, break the inertia of existing systems, and create a completely new way of working.

In the actual operation of enterprises, the methods of the revolutionary changes and gradual changes both exist, and each has own advantages. Then the business should be based on the different circumstances of business and select different means of implement. From the practical experience of business process reengineering, author summarized some factors influencing the choice of methods for reference.

- Consider the enterprise size and historical factors. If enterprises are larger or have more long time history, gradual methods should be taken, but the smaller size business should take a revolutionary reconstruction. The larger enterprises have the more complex internal organizational structure and business process. If we adopt a revolutionary way, it will lead to the unrest situation in enterprise and even society. The enterprises with small scale and no historical burden generally use the revolutionary BPR, which can enable businesses to enter a new process model quickly and bring the huge economic benefits.
- The different phases of implement have different approaches. In the design phase and testing phase of business process reengineering, we can use a revolutionary recycling; and in the implementation stage, we can use gradual change. In the BPR project design stage, companies want to quickly change the current status of irrational, so that the businesses can gain efficiencies and effectiveness in the short term. The programs are generally designed with the obvious changes, compared the status quo. The managers hope that reengineering can give company a new vitality and competitiveness. During the trial stage, corporate generally do a partial change for testing. Therefore, the trial department changes in organizational structure, staffing, business processes, and so on. However, when the managers want to change the program throughout the company, the resistance from various quarters will be bigger. The staff realizing that change could cause them to lose their existing work or change the working

ways to work, will resist reform and show non-cooperative attitude. Therefore, in the implement process of BPR, the company will not fully reverse the existing methods of work, but use step by step process reengineering, considering the staffs' acceptance.

#### IV. THE CONTENT OF BUSINESS PROCESS REENGINEERING AND THE IMPLEMENTATION PROCES

BPR is a complex system. Its implementation depends on industrial engineering, operations research methods, management sciences, social sciences and modern high-tech. The basic elements include the following four parts: Business process reengineering, the concept reengineering, the organizational structure reconstruction, the use of information technology. [5]The four aspects is complementary and a total of one.

Process Reconstruction is the core of BPR. It needs conduct a detailed analysis and diagnosis to identify problems and create new business processes to improve the overall process efficiency. The new process to remove non value-added activities in the original process is a flexible working system, meeting the diversity and individual customers' demands. Reconstruction of the organizational structure is to establish business process oriented group, based on the specific projects. Within the group, the role and responsibility of each member is divided clearly, and each group has the right of full autonomy and decision-making, improving the organization's sensitivity and adaptability to the external environment. Reconstruction of the concept is to create a suitable atmosphere enhancing employee's ownership responsibility and to strengthen the staff training to improve their quality as soon as possible. Application of information technology is to transform corporate information infrastructure and use of advanced information technology to build enterprise-wide information network, so that each employee can obtain a variety of information relevant to their business through the network, which improves information transmission speed and provide information for decision-making [6]. Such as Kodak use of CAD / CAM systems and concurrent engineering reconstruction of traditional product development process, product development cycle reduced from 70 weeks to 38 weeks. [7]

The author draws a graph in Figure 2 in order to understand the business process reengineering process at a glance. The basic process is as follows:

First, we need to conduct process re-engineering analysis to determine whether the enterprise to conduct business process reengineering or not. Second, companies determining to implement reengineering need start from the concept of reconstruction to make preliminary preparations. It includes creating a sense of crisis within the enterprise; making reengineering objectives clear; the formation of reengineering project team; establishing the corporate future vision; good communication with business employees; and establishing the

appropriate corporate culture. Third, after the end of the preparatory work, we will enter the core aspect of the project team to begin reengineering process work. The first step is to conduct an analysis of existing processes, identify problems in existing processes. The second is the design of more effective new processes. The new design process must be experienced and evaluated, if successfully passed test, then entering the implementation phase and expanding the scope of reengineering. If it does not pass the test, you will need further revise and improve it until conform to the standards. In the process of the implementation phase, in order to ensure the success of reengineering process, we need reform the original organizational structure, staffing, performance evaluation to establish flexible and efficient process group. Process Reengineering project, not a quick thing, must be continuous improvement. Fourth, in the process reengineering, we need information technology to ensure that the entire information system flow efficiently and smoothly.

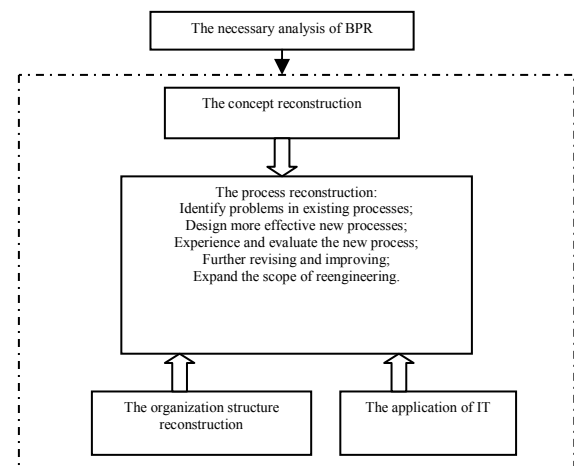


Figure 2: the map of BPR process

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