

The research on Business Process Reengineer Internal Influencing Factors

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Abstract: In the worldwide, the actual effect of BPR project is not satisfactory. The internal influencing factors can not be ignored. So, through literature review and basic analysis based on the implementation pattern of four stage model, the model of enterprise internal factors which influence the effect of BPR is constructed. The six key internal factors of the process reengineering are enterprise strategy, business processes, information technology, organization structure, enterprise staff and corporate culture, each item of which is made up of several items. What's more, in this article, the internal influencing factors are classified as ostensive factors and covert factors. There are different management approaches for different factors. This research tries to make the managers more clearly understand the key factors to consider for BPR and how to manage them.

Keyword: business process reengineering; enterprise internal factors; ostensive factors; covert factors

I. INTRODUCTION

BPR is a management techniques. After BPR's appearance, many companies got under way business process reengineering. BPR brought some companies with significant economic benefits and great success. However, there are also many companies did not achieve the desired objectives. Through survey, in the United States and Europe, about 70% of the BPR project failed or did not achieve the desired goals after 5 years. In China, the actual effect of BPR project is also not satisfactory. The real BPR management innovation which lead to a huge increase in performance is very few.

Therefore, BPR becomes a puzzle in the enterprise management community. Moreover, there are a lot of scholars who study BPR method. And BPR internal influencing factors is one of the major research methods. Many domestic and foreign scholars have proposed the internal factors of BPR from different angles. But different one has different opinion. So far, scholars have not formed a consistent view on internal factors of BPR. As a result, internal influencing factors of BPR theory is not perfect and lack systematic comprehensive study.

II. ANALYSIS OF EXISTING BPR INTERNAL INFLUENCING FACTORS MODEL

This part is mainly the analysis and literature summary for domestic and foreign relevant theories about BPR.

A. Hamid's enterprise internal factors of BPR implementation model

Hamid reviewed and analyzed the BPR success factors and causes of the failure. According to the organization and personnel's influence on BPR, Hamid summarized the internal influence factors of BPR implementation which are management behavior, organizational structure, organizational culture, and the customers. In addition, he put forward the internal influence factors of BPR implementation effect model. Related parameters are shown in Fig.1:senior management support, change management, resources (including human resources and financial resources) support, a culture of equality and customer focus.

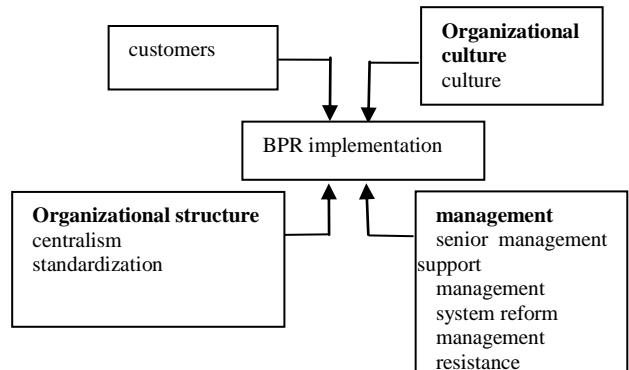


Figure 1. Hamid's enterprise internal influence factors of BPR implementation model

However, this model is lack of systematic and has some limitations.Due to the limitation of the time, it doesn't take into account the influence of the management information system.

B. process integration model

Through the case study, Michael and others come up with process integration (Alignment) model.This model is

mainly to analyze the relationship among process innovation, strategic planning and information systems (IS) planning. The model assumes that BPR should be combined with enterprise's strategic planning and IS planning. What's more, managers should also consider change management and control. So, They believe that the entire enterprise transformation can be divided into four aspects: strategy, process, information system, along with change management and control.

In my view, this model unite the four elements(the strategy, processes, information systems, change management and control) in one model. And the model adds process into existing frame of strategy and IS system. Therefore, this model has innovative significance and in this model, they begin to take information system into account.

C. Business process change model

Kettinger and Grover summed up the predecessors' achievements and combined the thinking of process reengineering and process improvement together. Thus, they put forward the theoretical framework of business process change management model. In this framework, they proposed that the business process transformation is closely linked with enterprise internal organization structure, management features, employees and information technology. Moreover, environmental factors and the enterprise strategy as input variables play a leading role in process reform. On the other hand, product, service and performance as the outputs, are the fundamental aims of BPR. In conclusion, they believed that the depth of process change which can range from process improving to the new process design depends on the internal organization structure and inter-department relationship.

So far, this model posed by Kettinger and Grover is more perfect and comprehensive. However, it still has some defects. Firstly, the description of strategic management is not clear. This model assume that we can select strategy according to the environmental factors, and then strategy determine the management characteristic which drive the BPR. But in my opinion, this deduction has certain one-sidedness. Secondly, according to above model, Kettinger and Grover ignore enterprise development capacity and the staff growth, thinking that the output of BPR are only products, services, and structures. Thirdly, the outputs are repeat. For example, performance should include the factors such as product development and service. Finally, this model is constructed on western higher management level and its adaption to Chinese current condition needs to be improved.

D. Other research about BPR enterprise internal factors

There are also many other scholars who have studied the internal influence factors of BPR and put forward some different points of view. In general, I summarize as the following.

Grover Varun, Jeong Seun Ryul, Kettinger W J and Teng Ames T C carried the questionnaire survey about BPR and had empirical analysis(factors and correlation analysis). They draw some conclusions. Firstly, change management (such as letting the managers support BPR) is the center of the BPR successful implementation. Secondly, technical skills, project planning and etc is the necessary condition for BPR success. Thirdly, process description, project management, tactical plans and human resources are highly correlated with the success of BPR.

Through an empirical study of BPR, Hamid Reza Ahadi come to conclusions as follows. High-level support, change management, centralized decision-making, process formalized, organizational culture and customer involvement have positive corelation with the success of the BPR implementation; Employee resistance and work integration have no obvious relationship with the success of the BPR implementation; while poor resources is negatively related to the successful implementation of the BPR.

YuDongHui believe that BPR implementation must consider strategy, process, personnel, organization structure and information technology five key change factors. And he points out that the relationship between the five factors can represented in a pyramid.

AS far as Professor Chen Yu six concerned, during process innovation, organizational structure and the ways of organizational operation plays an important role.

Due to the different starting points of analysis, different scholars summed different influencing factors. But from the perspective of a radical way of BPR, they are not systematic enough. Therefor, based on their research, next I will put forward the influence factors of Chinese enterprises BPR implementation and present its model.

III. FIND AND ANALYZE BPR'S ENTERPRISE INTERNAL INFLUENCING FACTORS.

A. Find BPR's enterprise internal influencing factors.

To find out internal influencing factors of BPR, we can try to consider according to the pattern on the implementation of BPR. Because I want to explore internal influencing factors of Chinese enterprises' BPR, I adopt the typical the implementation pattern of four stage model which is posed by Chinese Dr Pan Guoyou.

The first stage is plan. It can be divided into seven sub steps: identify customers and their needs; set up the vision; clarify reengineering strategy; determine the reengineering leaders; create an environment of reengineering; set up reengineering team, specify the process host; make reengineering implementation plan. The second stage is reengineering/redesign. It can be divided into four sub steps: process renovation, the new process test, new process improvement and new process inspection. The third stage is reengineering/redesign. It can be divided into four sub steps: standardize and institutionalize the new process; design a new organizational structure; build new jobs series, guide and train employees; construct new structure of IT and information management system. The fourth stage is do. It can be divided into two sub steps: switch from the old process to the new and evaluate new processes.

Among the seven steps in the first stage, "identifying customers and their needs" is an external influencing factors. From "set up the vision and define reengineering strategy", we can come to the conclusion that BPR's effectiveness is influenced by the choice of enterprise strategy. What's more, "creating an atmosphere of reengineering" is related to the enterprise culture. On the other hand, "Organize reengineering team and specify the host" boils down to people. The second stage and the fourth section embody the importance of process experiment, improvement, testing and evaluation. We can classify the four steps in the third stage into several influencing factors which are system guarantee, organizational structure, good staff positions and training and information management.

B. the influencing factors analysis

- Enterprise Strategy

Strategic decides process. Strategic positioning will directly influence the designing of the execution process, goal setting and monitoring. Because the ultimate goal of BPR is to realize the strategic targets. So, the change of strategy must induce the change of process. In other words, process is the means of strategy implementation. So far, in the BPR areas, it is generally believed that choosing the redesigned and reconstructional object must be guided by strategy.

- Business process

According to various process functions and management scope, the enterprise business process can be divided into 4 levels which include the production process layer, operation layer, strategic layer and planning layer. Process management at all levels are relatively independent and have specific methods. Moreover, there are close relationships among layers. Firstly, the goal of top management must achieve through lower business activities. Secondly, when lower-level management can not solve the actual problems, the senior management should be involved. Finally, Low-level data provide the basis for top management decisions. For example, the parameters in the enterprise strategy management and strategy management model are accumulated from the statistical data of the enterprise actual business activities.

- Information technology

Through the business process reengineering and using the advanced information technology, enterprise can transform the enterprise organizational structure and the production process timely. BPR is a redesign of enterprise management and operation mode, according to the characteristics of the rapidly changing information society and the needs of the customers. We should ensure IT throughout the whole process, realizing the business process innovation. On one hand, IT supports for the process reengineering. On the other hand, process reengineering can promote the development of information technology.

- Organization Structure

When Hammer proposed BPR, he pointed out that the nature of the process reengineering is to break the organization's functional boundaries, using information technology to build a new business process and to pursue the significant performance improvement. And he (Hammer) also put forward the implementing principles of BPR, such as the establishment of a results-oriented rather than task-oriented organizations; the work of various departments through IT systems to converge; adding information flowed into the workflow and the information flow and workflow synchronization; using IT technology work in parallel; decision points forward and authorization to staff; information one-time input and sharing the entire process.

Based on the organizational structure of the process management mode, it should be transform from the pyramid level management organized by function into a process-oriented flat organization structure. Flat organization structure can reduce the levels of management, compression functions of the body, improve enterprise flexible, agile, flexible, fast and efficient. Additionally, in order to connect the staff jobs, customers' needs and suppliers and other activities, the tasks of the flat organizational structure are organized around business process or workflow. The activities of the process for the purpose of value-added can

ensure the whole process performance improvement. Furthermore, flat management reassigned the power systems, adopting measures of decentralized management. Thus, the middle and lower managements can have an access to decision-making to some extent. Table I shows the comparison of the differences between functional organization structure and process organizational structure.

TABLE I. FUNCTIONAL AND PROCESS ORGANIZATIONAL STRUCTURE CONTRAST

Organization	Functional	Process
Organizational sectoral basis	Tasks as a starting point	Process as a starting point
Organization	Pyramid hierarchy type	Flat organization
Objectives	Maximize performance	Optimal overall goal
To adapted market environment	Single product and changes slowly in the market	Highly customer demand and market competition
organization forms	production oriented	customer-oriented
Management style	Emphasis on specialized and less communication among various departments	Requirements ability to enhance communication
Corporate	Non-cooperation type	Cooperation-oriented
consciousness of innovation	monotonous work, lack of innovation	filled sense of innovation

- Staff

Through the survey of 6000 north American and Europe's largest enterprise reengineering progress, Champy found that the established indicators of BPR (production cycle shorten by 70%; costs decrease by 40%; customer satisfaction, quality and revenue growth by 40%; market share increase 25%) are achieved no more than 70%. What's worse, some companies did not achieve substantial effect. The main reason of this discovery is that the managers' thinking transformation falls behind the change of business process change. To some degree, BPR is the people redesign which include the change of thought, ability, character and relations.

Hence, to make the BPR project in accordance with the established goals, we should manage the personnel to reduce resistance. Main approaches involve: notion transformation, attention of the leadership, employee involvement, good project management, timely training and performance assessment.

- Enterprise culture

There is a close relationship between business process and corporate culture. Consulting firm Delphi via a investigation on BPR in 1993, found that two-thirds of respondents thought cultural resistance is a major bottleneck obstacles to BPR well-implemented.

In the process of BPR, the corporate culture could influence the design and implementation of the process. When the business process changed, corporate culture must be re-shaped, including enterprise business philosophy and values. Before the implementation of BPR, enterprises adopt hierarchical organizational structure and the market environment changes little fierce. Employees work according to instructions below the traditional enterprise culture. While, BPR requires the establishment of a new corporate culture so that employees can work through the self-discipline to achieve a higher level of self-realization and satisfaction, to encourage the spirit of innovation and

motivation of the employees. These show in Table 2.

TABLE II. THE EFFECTS OF BPR TO CORPORATE CULTURE

content influenced	before BPR	after BPR
core of work	work task	customer
personal performance evaluation standard	To complete a task	The contribution to the overall performance of the enterprise
teamwork and communication	Lack communication and cooperation	Communication and cooperation orientation
working manner	Obedience to superior instruction	work independently and self-realization
staff roles	be managed	be authorized
personal capacity requirements	skilled in some field	comprehensive ability promotion
the way to solve the problem	report to superiors	Analyze and solve problems independently
innovation ability	restricted	improved greatly
work initiative	in the collar	be proactive

IV. CONSTRUCT THE BPR INTERNAL INFLUENCING FACTORS MODEL

Based on the BPR internal influence factors from the four stages of the business process reengineering, combining with the literature review of previous chapter, I concluded

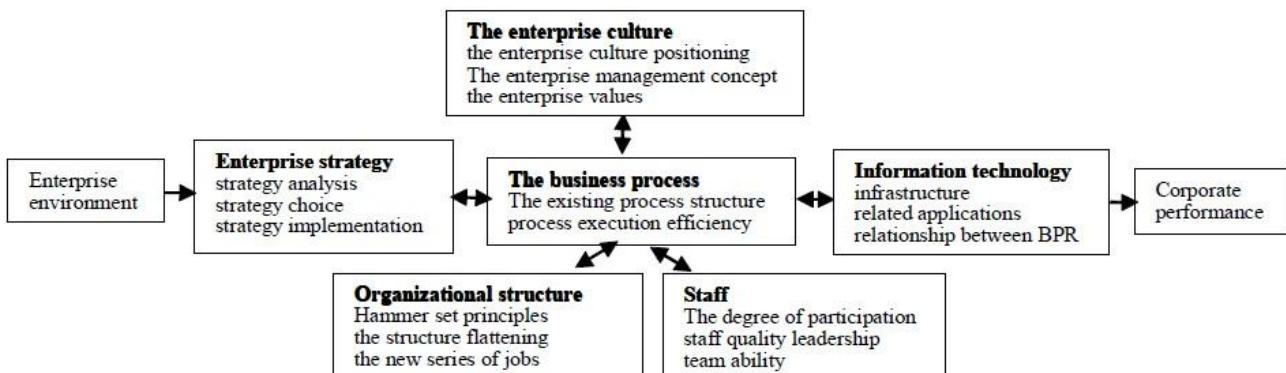


Figure 2. BPR internal influencing factors model

In the organization, if there are no intervention on the dominant factors, they will appear more and more disorderly with the continuous development of organization. For example, if all information systems of departments in the organization can't be integrated, more and more isolated information islands will appear in the organization, preventing the information sharing and communication between members of the group. So the dominant factors must change along with the development of the organization, which is a passive adaptation process. Hidden factors reflect people's consciousness and will. Hence the active learning process could change the organization. Therefore, these factors are also important content in the process of implementing BPR.

It is important to note that this model requires the enterprises to conduct BPR effect evaluation. This means that BPR implementation is not a single ring process, but a process of constant feedback. Therefore, this model provides us with a "map" of BPR implementation and makes our thinking of BPR has a clear structure. However, it can not be ignored that in the process of implementing BPR, in addition to the above six factors, the enterprise may also be influenced by other factors. For example, money is the bottleneck factor affecting enterprise's implementation of

that the six key internal factors of the process reengineering are enterprise strategy, business processes, information technology, organization structure, enterprise staff and corporate culture, each item of which is made up of several items. The construction of BPR's internal influencing factors model can be seen from figure 2.

Within the organization, the dominant factors refer to the organizational structure and information technology, etc, which are the "hard". It can be seen and they are foundation of enterprise operation, known as the infrastructure of the enterprise. Recessive factor refers to the enterprise strategy, business process, personnel management and corporate culture, etc., which are the "soft". They are designed and carried on through a series of plans and measures within an enterprise, file content, measures and activities and in addition, they can't be seen. Dominant factors are necessary in the modern enterprise management and perform as the basic guarantee for enterprise operation; at the same time, the hidden factors play a key role in the core competitiveness of enterprise, which is the guarantee of enterprise high performance operation. What's more, the recessive factors play a fundamental role in BPR and are the key to the enterprise's success.

BPR. In conclusion, it also suggests that there are many factors that can affect the effect of BPR implementation. This model only summarize some of the key factors, not excluding other factors.

BPR management also has the process management of the implementation order. Generally speaking, according to its surroundings, the enterprise make strategic planning, and determine the enterprise vision, strategic objectives and strategic plan. According to the goals and strategic focus, the enterprise managers select core processes, key process and the core processes which need re-engineering and design new processes with key process as the core. In accordance with the new process, the enterprises set up or optimize the organization; according to the new organization of the responsibilities and requirements, determine the number of jobs and choose the right employees; At the same time enterprise should set up or optimize the enterprise information system according to the new process and make the process curing by IT. Finally enterprise need to establish adapting corporate culture according to the new business process, organization structure and information systems. Corporate culture plays a role of support for the whole process of business process reengineering and consolidate its results. As shown in figure 3.

V. CONCLUSION

Considering the existing business process reengineering models at home and abroad, based on analysis and research, the author found that existing models are not suitable for Chinese enterprises, and is lack of integrity and systemic. Therefore, embarking from the enterprise business process reengineering model, the author found six internal influence factors of the enterprise business process reengineering: enterprise strategy, business processes, information technology, organizational structure, personnel, the enterprise system and corporate culture. By further analyzing the relationship between these factors and business process reengineering are presented. The dominant factors include organizational structure and information technology and invisible factors are enterprise strategy, business processes, enterprise staff, enterprise system and corporate culture. Dominant factor must be changing along with the development of the organization. So, this is a passive adaptation process. And recessive factor is the embodiment of consciousness and will, which can cause changes in the organization through active learning process, but this kind of change requires a certain guidance and education. Thus, they

are also important content in the process of implementing BPR.

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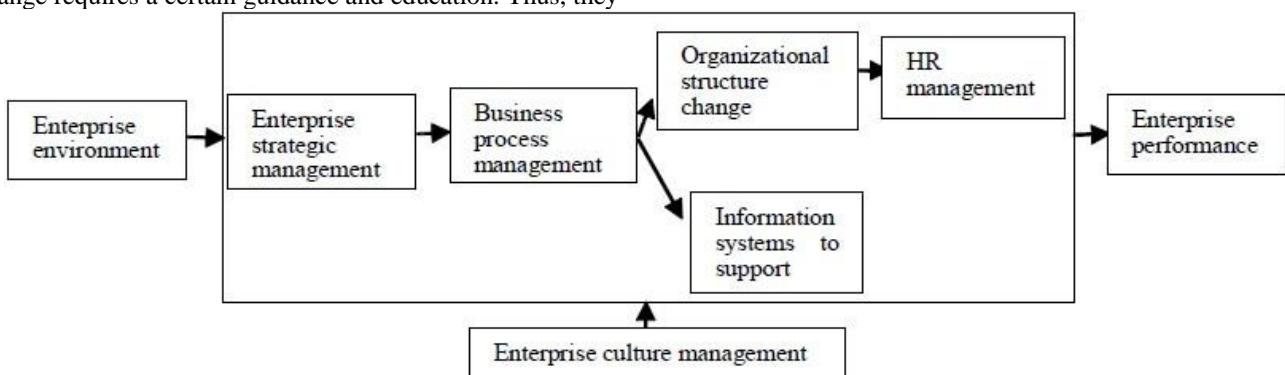


Figure 3. relationship among the influencing factors of the process reengineering