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Allying BPR with Strategy: A New Perspective for BPR

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Abstract

Since early 1990's, Business Process Reengineering (BPR) has become a buzzword around the world. Of the BPR methods and models suggested, the majority has put much attention on redesigning processes at operational levels. Those who stress the importance of strategic process reengineering tend to emphasize that redesigning should be embarked and implemented at a broader scope (cross-functional) in order to obtain greater pay offs, whereas the impact of BPR on strategies is less studied. In this paper, we propose that BPR ally with strategies and, consequently, emphasize the importance of BPR relevant to strategies and the significant role of strategic directions in light of BPR. Thus, we develop a conceptual BPR model that links a firm's strategy, with a real world example. The main purpose of this paper is to demonstrate the inter-relationship between BPR and strategy and to help provide guidelines for better BPR implementation to enterprises.

Keywords: BPR, strategy, ally

1. Introduction

Since early 1990's, Business Process Reengineering (BPR) has become a buzzword around the world. Though success reports are accompanied by a list of failures, firms are still moving ahead with BPR. For example, a survey of 1,000 U.S. Chief Financial Officers expressed their enthusiasm for radical changes: over 90% of the respondents indicated that their companies would embark on new re-engineering efforts in the future^[14]. In response to firms' appeal for better implementation methods, some methods and models of BPR have been suggested. By studying these methods and models we find that many of them are focused on redesigning processes at operational levels^{[1] [4] [6] [8] [9] [11] [12] [15] [16]}. For those who stress the importance of strategic process reengineering tend to emphasize that redesigning should be embarked and implemented at a broader scope (cross-functional) in order to obtain greater pay offs^[14]. Less studied are the important contributions of BPR to strategies and how strategic directions can better guide reengineering. Motivated by these shortcomings, in this paper, we investigate the importance of BPR relevant to strategies and the significant role of strategic directions in light of BPR. The main purpose of this research is to demonstrate a close relationship between BPR and strategy and to help provide guidelines for better BPR implementation to enterprises in China.

Section 2 discusses the literature review on the strategic importance of BPR. Section 3 presents a conceptual model of allying BPR with strategy. Section 4 illustrates the role of strategic directions in light of BPR. Section 5 builds the linkages between BPR and strategy. Section 6 shows a real world example. Section 7 concludes the paper.

2. Literature Review

Along with its great successes, BPR also has a disappointing track record. One of the BPR implementation problems is that firms do not have a proper method supporting a systematic redesign^{[10] [13]}. Many methods and models were presented to help firms redesign processes successfully. Yoon Ho Cho, Jae Kyeong Kim, and Soung Hie Kim^[16] focused their attention on process simulation modeling and analysis of the simulation result (ie. process) based on a role-based concept. They believe that a business process can be defined as a combination of roles that are defined as a set of people and their accountabilities, and the interactions among them, or that a process can be defined as a series of customer-supplier relationships with desirable results at specific points in time. They introduced an object-oriented queuing model and developed a simulator, which tried to find bottlenecks of a process and to reengineer the process. The bottlenecks are regarded as roles that have higher utilization, lower process time/elapsed time ratio, and higher work allocation ratio. Ren-qian Zhang, Fa-jie Wei, Guo-ping Xia, and Si-ping Shan^[11], and Feng Zhang and Yu-liu Zhang^[4] studied how to use activity-based cost (ABC) method to provide useful information in helping understand and reengineer existing business processes, in order to reduce costs. Aalst^[15], and Jian-zhong Li and Liang-qiu Chen^[6] worked on a process technique: EPC (Event Process Chain) or EEPC (Extended Event Process Chain) in implementing BPR. Aalst researched on the improvement of EPC, who defined syntax and semantics of EPC by mapping EPCs (without connectors of type v) onto petri nets. Among many analysis techniques for EPCs, Jian-zhong Li and Liang-qiu Chen^[6] established EEPC model to help identify problems of the exist processes and reengineer them. To adopt EPC models, K-H Kim and Y-G Kim^[8] developed EPRE (enterprise process reverse engineering) process modeling and redesign method, which consists of the following three stages: 1) to analyze form: to define forms and form fields, and to identify field set operations with field type; 2) to generate process model: to generate EPC diagram; and 3) to redesign process: to redesign intra-FSO (Field Set

Operation defined as a set of activities which processes one or more form fields and is performed at a single location during a single session for a specific customer service) and to redesign inter-FSO. Their process redesign support is restricted to information handling activities. Soung-Hie Kim, Ki-Jin Jang^[12], and Brane Kalpic and Peter Bernus^[1] worked on another process technique: IDEF0. Soung-Hie Kim and Ki-Jin Jang discussed the application of IDEF0 tools to implement the process modeling and performance capabilities. They presented a framework to support analysis of activities and information flows within the scope of manufacturing application. Their effort was to coordinate information flow for activities, to enhance requirement reconfiguration, and to minimize errors and the unplanned evolution of activities in BPR project executions. Brane Kalpic and Peter Bernus utilized the functional modeling language IDEF0 to reengineer the processes of new products development. They followed a simple three-step method of BPR: 1) description phase of a business process, 2) analysis phase that focused on the investigation of facts and characteristics of existing process, and 3) redesign phase where the process model was redesigned based on the findings of the analysis phase and predefined objectives. They stressed the important role of modeling and analysis of functional structure in process reengineering. M. Abdomerovic, and G. Blakemore^[9] focused attention on analyzing process variables in order to discover project process interactions. They argued that understanding project process interactions would help define what influences project results, and discovering factors that influence project results would lead to improvement of the existing processes. For this reason, they believed that the design of project process interaction can serve as a project process reengineering tool. There are other models and methods for BPR implementation: S. Guha's Life Cycle methodology, T. Davenport's framework of process reengineering, R.b. Kaplan's core process redesign, Gateway Company's Rapid Re Method^[7] and method provided by Richard J. Mayer in KBSL (Knowledge Based Systems Inc.) incorporation^[17].

By studying these models and methods, we see that their methods or models do not deviate the theme that consists of: first understanding the existing process, and then identifying and eliminating the problems of the existing process. William J. Kettinger and James T. C. Teng^[14], who stressed the importance of strategy in process reengineering, emphasized much on the idea that embarking of BPR should be at a higher level (cross-functional) instead of a lower level (intra-functional) in order to obtain higher pay offs. Most of them had same hypothesis that the existing strategy is appropriate and need not be examined. They emphasized their study more at the operational level than at the strategic level. But the fundamental question is: when we reengineer processes, does strategy really matter?

3. The Strategic Place of BPR

BPR is defined by Doctor Hammer and Champy as "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."^[5] In their terms, BPR is characterized as a "clean sheet" approach that starts from fundamental rethinking. As time passes, redesign from clean sheet is improved and modified. Some scholars feel that the clean sheet redesign is not feasible in reality. Process improvement and process innovation are presented. But one core of BPR: "fundamental rethinking" presented by Hammer and Champy was universally accepted by scholars and entrepreneurs. Fundamental rethinking requires that people rethink about such fundamental questions as to why an enterprise should do what it is now doing, what resources it owns, what it is going to achieve in the future and how to achieve the goal effectively and efficiently. BPR tries to change an enterprise through process changes to let the enterprise fit the business environment. Therefore, BPR in fact requires that an enterprise stand at the height of the strategic level to re-examine its processes: what it is doing, what resources it owns, what changes it makes to the environment, and why it should do what it is doing to help either create a new value source or to enhance the existing competence. For example, Wiltel^[3] is traditionally a natural gas pipe company. When they were faced with such basic questions as "What do we actually own?" they found that they actually owned utility rights of pipes and nation wide roads. After rethinking how they can make most effective use of these resources and what are the benchmarks in the industry, they made an innovation by providing new optical fiber cables in order to full making use of the existing establishment. Consequently, they are able to compete with such major telecom companies as MCI and AT&T. Their rethinking at the strategic level created a new value source. Reebok and Compaq are other examples of enhancing competence through re-thinking on their fundamental issues. Reebok raised the basic question "Why should we make shoes?" This rethinking helped Reebok realize that making shoes is not pivotal to company. As a result, they shifted their attention from production processes to design and marketing^[3]. Likewise, Compaq decreased their production of terminal products by 30% and concentrated on marketing and R&D^[3]. Re-thinking on a company's core business ensures that the company does the right things, which is considered the corner stone of BPR.

BPR must start from rethinking a firm's basic business model is obliged by customer needs and ever-changing business environment. Customers care more on service results than on production processes although service results are the product of production processes. In fact, production processes determine the service results, and the service results in turn guide the directions in improving the production processes. An enterprise must change its business processes for better service results required by its customers, through such BPR as enlarging, shrinking, or abandoning its production processes. According to the Economist Intelligence Unit, 57% of the companies surveyed claim that they have experienced profound innovation in the past five years, and 79% of the subjects anticipate that they would

launch a profound innovation by year 2010^[3]. Companies that do not change to enhance competitiveness will fail and competence increases should not be limited within the industry. An enterprise must increase competence not only to survive, but also to thrive in the global marketplace. Having the right direction to implement BPR is by far the most important thing for any company to ensure. Otherwise, the enterprise will fail the competition even if it has excellent processes. Therefore, that a firm should re-think why it should do what it is doing and what it should do is the first priority of business process reengineering.

Before entering into real estate industry in Hong Kong, a well-known entrepreneur, Jia-cheng Li, was successful in plastic flower production with the nickname “king of plastic flower.” Li was good at asking himself what he should do. Re-thinking the basic question made him change his business directions at the right timing. Instead of continuously increasing the competence in the industry he shrank his plastic flower production business and began investing in real estate, which proved to be a correct strategic change^[18]. Similarly, Wen-han Liu, another famous entrepreneur in Hong Kong, was once called “Father of Hairpiece.” He also changed his business orientation from hairpiece production to a new industry at the right time by asking himself what he should do. Rethinking the strategy prevented him from a possible failure when customers’ enthusiasm in hairpiece decreased^[18].

4. The Role of Strategy in BPR

To embark process reengineering, a BPR project must be guided by strategy. There are three most important roles of strategy in business process reengineering.

First, BPR under strategy will ensure that process reengineering increases the company’s competence, and avoid the possibility of performance increase in part but hurt in the whole. For example, one big American insurance company transfers human and technology resources from an investment management process to a new insurance policy issuing process. Though the latter has been improved, the reengineering hurts the performance of the estate investment, which contributes to its bankruptcy^[3].

Second, business strategies guide the dimensions of the reengineering with four possible options: value creation, cost reduction, quality improvement, and cycle time reduction. In the past, BPR was often linked only with cost reduction and staff reduction. However BPR can do more. For example, when high-risk drivers were rejected by other insurance companies, Progressive Insurance^[1], the ninth-largest auto insurer in the USA decided to create a new value source. They re-generated the underwriting process to make it more detailed and more precise than that of their competitors, which led to a very precise price decision. When their competitors began imitating, they changed their

reengineering focus to quality improvement. It reengineered their claim process by exploiting a technique called “immediate response.” Now, Progressive can dispatch an adjuster to examine a claimant’s car on the day of the accident - in many cases, going to the accident site themselves. Guided under a strategic rethinking, its BPR helped Progressive poach on new territory and increased customer satisfaction and, as a result, increased competitiveness. Example of cycle time reduction can be found with Kodak, where it reduced its research cycle time of 35mm focus camera from 70 weeks to 38 weeks^[5].

Third, strategies can help define the reengineering scope and select processes by means of three different levels: company strategy, business unit strategy, and function strategy. The company level strategy guides the business unit strategy and the business unit strategy, in turn, guides the function strategy. The company strategy includes vision or mission statements as well as goals and objectives. Vision or mission statements delineate the directions an organization wants to pursue or avoid. Goals and objectives can cascade down from mission statements, which are usually more specific and quantitative. There are a wide range of strategic tools, including mission statement, competitive intelligence, environmental scanning, technology assessment, portfolio matrices, SWOT, core competence, value chain, scenario analysis, stakeholder mapping, market value addition (MVA), and economic value addition (EVA). Different levels of strategies and various strategic tools can help determine the reengineering scope, select the reengineering processes, and help set definite and clear reengineering goals that are essential for BPR. For example, when Belgium Communication^[3] found that improving the company’s image is vital for the future development, it selected two critical processes for reengineering – the supply process and the maintenance process, which had close connection with its customers.

5. Allying BPR with Strategy

Figure 2 shows a conceptual model for reengineering, as opposed to traditional models summarized in Figure 1. Table 1 compares the traditional and the conceptual new models to highlight the differences and commonalities. It is seen from Table 1 that the traditional models focus more on the selection of the processes and tools for reengineering under the guidance of strategies, whereas the conceptual new model emphasizes on the re-examination of organizational strategies on the basis of understanding their business environment and value-added processes. In other words, the more a firm understands the existing processes, the more it helps understand its potential resources relevant to the global business environment.

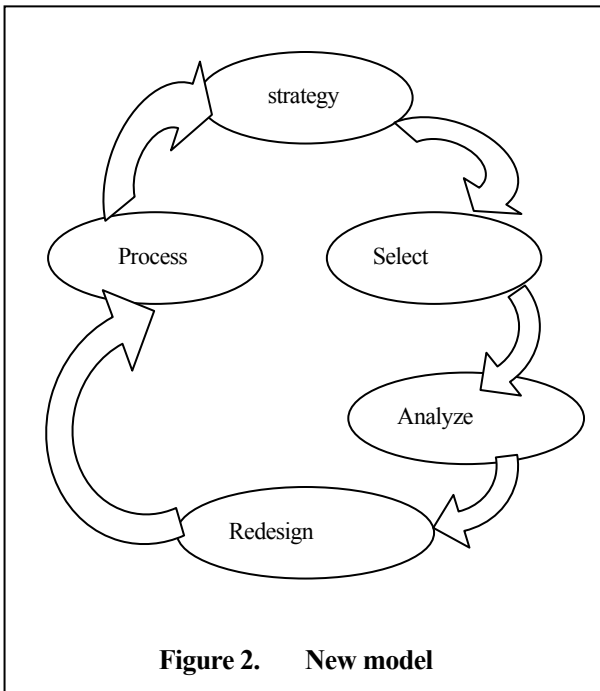
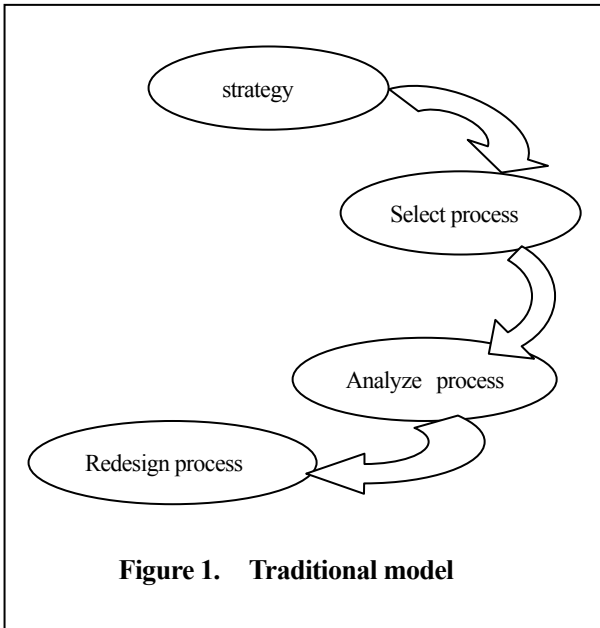


Table 1. Difference between the Traditional and the New Models

	Traditional Model (Figure 1)	New Model (Figure 2)
Hypothesis	The existing strategy need not be re-examined.	The existing strategy need be re-examined.
Start Point	Understand existing strategy.	Rethink about the basic question of the company.
Basic Question	How can process be better implemented?	Why process should exist? Then how can

to Answer		process be better implemented?
Focus	Establish various models to help identify problems of existing process and redesign new process.	Not only concern establishing various models but also concern how to cascade strategy to definite and clear goals to guide BPR.

6. An Example

Without loss of generality, let us consider XYZ, a subsidiary of a big American IT company, as an example. This company was established in China in 1999 with its headquarters in Hong Kong. It has staff over 600 and has established branch offices in 24 major cities in China. When they decided to embark reengineering, they did the following:

First, XYZ analyzed its six business lines: 1) system product, 2) net product, 3) product component, 4) consumption product, 5) engineering solution, and 6) electronic commerce. XYZ divided its products and services into two types: low value-added products and high technology, high value-added services.

Second, XYZ classified its customers into three groups - retailers, distributors, and service suppliers who provide the system with high value-added services – including such companies as Haier, Changhong, Nokia, First Department Store of Shanghai, Beijing Modern Shopping Center, China Software, Tide.

In doing so, XYZ found that their business lines were long and diversified. Further analysis showed that long and diverse business lines resulted in high level of inventory stock. Sometimes monthly turnover was only ¥30,000,000, but stock occupied capital over ¥130,000,000.

Third, XYZ identified its main competitors and finished SWOT analysis. Through benchmarking, it realized the gap between XYZ and its main competitors: it sold a big portion of low value-added commodities, whereas the proportion of high technology, high value added services were low. Moreover, XYZ felt that it needed to pay much more attention in establishing its brand name.

Fourth, XYZ analyzed the internal production capability and facilities.

Thus, the company re-aligned its mission statements and differentiated itself as the best supplier of scientific and technological products in the world. Consequently, it delivered the biggest benefits to its stakeholders and, at the same time, modified its goals and objectives in accordance with its mission. For future development, they decided that they should establish its brand name recognition, and that they should raise the turnover ratio of high value added services and products and change their marketing from sales promotion to customer satisfaction. In light of its mission and objectives, XYZ chose the marketing process as its reengineering focus. They set the reengineering target as integrating marketing oriented capital resources and

strengthening macro-control ability to help achieve this objective. Sub-targets were determined through further analysis and six sub-processes were redesigned. As of today, XYZ is one of the most successful companies in the industry in Hong Kong, as well as in the world.

7. Conclusion

BPR is an essential and effective endeavor for enterprises to increase their competitiveness and to thrive in the global marketplace. Since speed of change is faster and faster nowadays, BPR must ally with strategies. First, BPR must start with rethinking on an enterprise's strategic issues. That is, it should start BPR at the strategic level by asking such fundamental questions as what are we doing, what do we have, and why should we do what we are doing. Starting at such a strategic level will ensure that the enterprise is advancing in the right directions. Second, BPR must be guided by strategies, which will ensure that BPR increases the enterprise's competence as a whole, instead of increasing performance in one part but hurting as a whole. In order for strategies to better guide BPR, they must be cascaded into definite, clear, and specific objectives and sub-objectives. Since strategy management can be classified into the category of management research, the interfaces between strategy management and BPR is a direction for future research, which may help answer such questions as how to depose higher level of strategies into more specific and clearer goals and objectives of BPR implementation.

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Reference

- [1] Brane Kalpic and Peter Bernus. "Business Process Modeling in Industry - The Powerful Tool in Enterprise Management." *Computers in Industry*, Vol. 47, pp. 299-318, 2002.
- [2] Colin Armistead, Jean-Philip Pritchard, and Simon Machin. "Strategic Business Process Management for Organizational Effectiveness," *Long Range Planning*, Vol. 32, No.1, pp. 96-106, 1999.
- [3] The Economist Intelligence Unit. *Vision 2010: The Learning Organization, Building Process Excellence (in Chinese)*, Xinhua Press, pp. 4-9, Beijing: 2000.
- [4] Feng Zhang and Yu-liu Zhang. "Application of ABC Method in BPR (in Chinese)," *Jtsinghua University (Science & Technology)*, Vol. 40, No.9, 2000.
- [5] Hammer M. and Champy J. *Reengineer the Corporation: A Manifesto for Business Revolution*, Nicholas Brealey Publishing, London: 1993.
- [6] Jian-zhong Li and Liang-qiu Chen. "Application of Extended Event Process Chain (EEPC) in BPR (in Chinese)," *Systemic Engineer*. Vol. 18, No. 1. Jan. 2000.
- [7] Jian Ma and Li-hua Huang. *Business Process Reengineering/Improvement - Concept and Application (in Chinese)*, pp. 71-93. Joint Publishing Co., Ltd., Hong Kong: 1998.
- [8] K-H Kim and Y-G Kim. "Process Reverse Engineering for BPR: A Form-based Approach," *Information & Management*, Vol. 33, pp.187-200, 1998.
- [9] M. Abdomerovic and G. Blakemore. "Project Process Interactions," *International Journal of Project Management*, Vol. 20, pp. 315-323, 2002.
- [10] M.G. Martinsons. "Radical Process Innovation Using Information Technology: The Theory, the Practice and the Future of Reengineering," *International Journal of Information Management*, 15(4), pp. 253-269, 1995.
- [11] Ren-qian Zhang, Fa-jie Wei, Guo-ping Xia, and Si-ping Shan. "ABC Analysis in Business Process Reengineering (in Chinese)," *Industrial Engineering Journal*, Vol. 3, No.4. Dec. 2000.
- [12] Soung-Hie Kim and Ki-Jin Jang. "Designing Performance Analysis and IDEF0 for Enterprise Modeling in BPR," *International Journal of Production Economics*, Vol. 76, pp. 121-133, 2002.
- [13] T.H. Davenport. *Process Innovation: Reengineering Work Through Information Technology*, Harvard Business School Press, Boston: 1993.
- [14] William J. Kettinger and James T. C. Teng. "Aligning BPR to Strategy: A Framework for Analysis," *Long Range Planning*. Vol.31, No.1, pp.93-107, 1998.
- [15] W.M.P. van der Aalst. "Formalization and Verification of Event-driven Process Chains," *Information and Software Technology*, Vol. 41, pp. 639-650, 1999.
- [16] Yoon Ho Cho, Jae Kyeong Ki Soung Hie Kim. "Role-based Approach to Business Process Simulation Modeling and Analysis," *Computers & Industrial Engineering*, Vol. 35, Nos. 1-2, pp.343-346, 1998,m, and
- [17] Yu-liu Chen, Oing Li, and Feng Zhang. *Business Process Reengineering and Systems Integration (in Chinese)*, Tsinghua University Press and Springer Press, pp.12-52, Beijing: 2001.
- [18] Yu-wen Ma. *Jia-cheng Li's Business Wisdom to Grow from Small to Big (in Chinese)*, China Commercial Press, pp137-141, Beijing: 2001.