

Investigates the implementation of Computer Systems and Internet technologies in BPR

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Abstract - Business Process Reengineering (BPR) provides organizations with a valuable tool to assess business processes. It can help to reduce costs and improve quality, customer satisfaction, flexibility and productivity. Flexibility is defined here as the ability to meet a wide variety of customer demand (versatility) in a short period of time (agility). Business Process Reengineering is most successful when coupled with targeted use of Information Technology in designing new processes. Information Technology has been central to the development and implementation of redesigned business processes from the first appearance of the term "Business Process Reengineering". IT has also been found to be the principal impediment to the realization of redesigned processes, in practice. This paper examines the role of IT, both as a BPR project support tool.

Keywords – Business process Re-engineering, Industrial engineering and management, Virtual enterprises

I. INTRODUCTION

Business Process Re-engineering (BPR) is a powerful change phenomenon and an approach that has made radical and fundamental changes to the way organizations conduct business [1]. The purpose of these changes is to redesign the existing business processes and implement new ones with the objective of cost reduction and improved efficiency and effectiveness, including profitability, customer satisfaction, return on assets, growth, and market share. [2].

Because of the pervasiveness of changes, organizations undertaking BPR must redesign not only their business processes, but also their products, assets, culture, thought patterns, behaviors, and/or technology spanning across functional areas [3]. Many researchers even contended that the larger the scope of process change, the greater the potential for radical performance improvement [2].

Business Process Reengineering (BPR) is described in [4,5,6,7,8,9,10]

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Business Process Reengineering (BPR) provides organizations with a valuable tool to assess business processes. It can help to reduce costs and improve quality, flexibility, customer satisfaction and productivity. Business Process Reengineering is most successful when coupled with targeted use of Information Technology in designing new processes. Flexibility is defined here as the ability to meet a wide variety of customer demand (versatility) in a short period of time (agility).

Information Technology induced Business Process Reengineering is being offered as a solution to organizations to achieve competitive advantage in an intensely competitive environment. However, just radical changes in business processes will not help an organization sustain competitive advantage as successful business process reengineering projects can be cloned by competing organizations, thereby negating the competitive advantage developed by any one organization. Instead, if an organization were to design and implement information systems for strategic management of information as a resource, then use of such systems can lead to sustainable competitive advantage.

Interesting mechanisms, which are liable to reengineering for your production, are described in [11,12].

IS function, which includes all IS groups and departments within the organization [13], has served an increasingly important role in many organizations to proactively shape new competitive strategies to improve the operational or managerial work processes. The successful management of IS function in such endeavors is inextricably linked with the effective management of a number of processes associated with the planning, development, acquisition, implementation, and control of an organization's IT and IS. Due to the importance of an effective IS function on the organization's performance, the management of IS function has received close scrutiny from MIS scholars and practicing managers [14]. In fact, many research studies have even indicated that the assessment of IS function performance is a critical issue facing today's IS executives [13].

The application of information technologies could be analyze by two aspects:

1. The software for BPR (BPR Tools)
2. Using of global information nets

We will consider one by one these two opportunities.

II. BPR TOOLS AND INFORMATION SYSTEMS COMPONENTS

Currently, more than 80 BPR tools are available, but there has been little research to determine which features of BPR

tools are important for BPR success and how important BPR tools are in BPR projects.

Although a large number of software tools to help BPR efforts have emerged in the market, the survey by [15] revealed industry practitioners note that the lack of user-friendly, yet flexible, software to support BPR is a major problem. It is surprising that despite the discrepancy between user needs and available tools, there have been only a few studies about BPR tools. [16]

The information system divides in three parts. (Fig.1):

1. Physical Systems
2. Logical Systems
3. Information

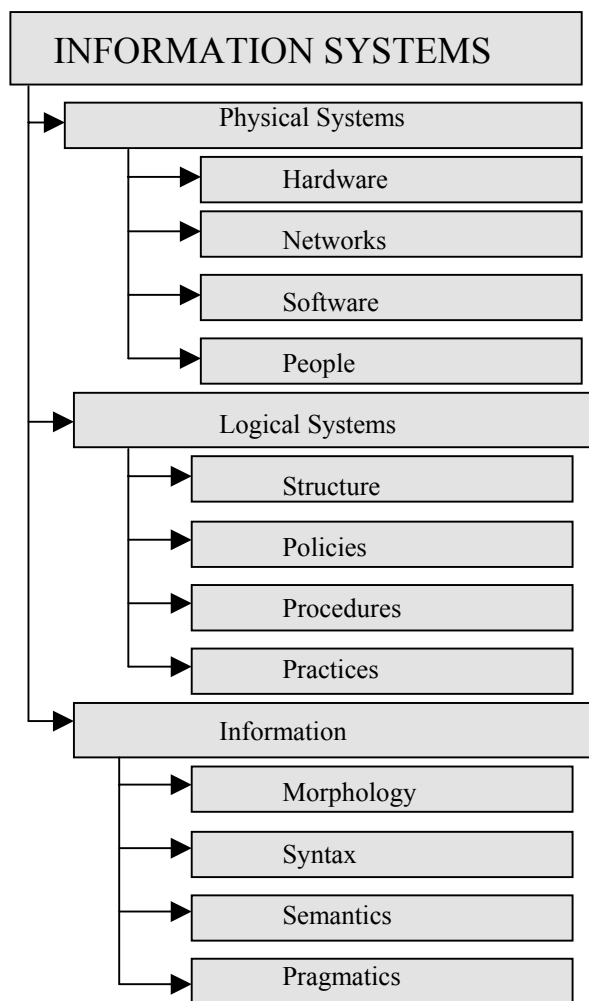


Fig.1

Many failures observed in computer-aided software engineering (CASE) tools [17,18] have brought concerns about similar patterns of BPR tools. There are likely to be similar difficulties in BPR projects, because both tools are common in that they support what are considered to be professional efforts, and they require learning to be fully utilized. On the other hand, there are many differences between the two tools. For instance, CASE tools can support virtually all aspects of software development, while BPR tools

cannot support many steps of BPR such as process implementation [16].

III. REQUIREMENTS BY BUSINESS PROCESS REENGINEERING TOOLS AND INFORMATION SYSTEMS

Necessary condition for successfully function to BPR Tools is the Information System interaction effective with others components (Fig.2). By this interaction depend the positives results of re-engineering.

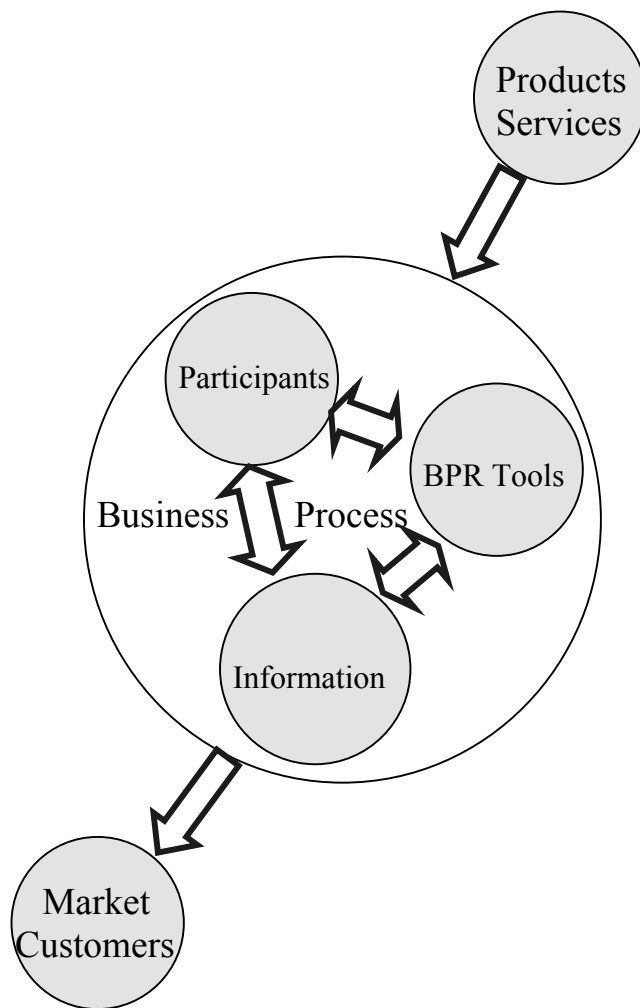


Fig.2

Every BPR Tool must do:

- 1.Capturing the essential elements of strategic planning, operations analysis, and project evaluation through accepted frameworks.
 - 2.Highlighting and maintaining the linkages between related plan elements.
 - 3.Automating cumbersome cost computations, assisting with the clerical tasks, and summarizing the elements
- For more flexibility in work, is necessary for BPR Tool to use data of the other programs and also to give up data for the other applications. Examples for this:

- 1.Import initiative cost data from a Microsoft Project file.
- 2.Print your detailed worksheets directly the BPR Tools or have them included in the Microsoft Word report.

3.Formatting in ASCII text or Microsoft Word document.
The requirements for more effective work with BPR Tools are:

- 1.Providing both on-screen guidance and a comprehensive help system to assist users in strategic planning, functional economic analysis, and business process reengineering.
- 2.Expand your detailed worksheets to full-screen size for easier editing.
- 3.Paste worksheet values between sheets.
- 4.Include up lot of year of data for each performance measure, initiative, and the AS-IS operations costs.
- 5.Create detailed worksheets to describe your initiative impacts upon performance.
- 6.Attach initiative-specific notes for initiative costs, performance impacts, and cost impacts.

IV. THE STRUCTURE OF BPR TOOLS

For execute his functional purpose, one system for BPR must to do analyze of condition of enterprise and to generate beneficial decisions.

Consequently, one BPR Tools must be constructed by the modules, who are: (Fig. 3):

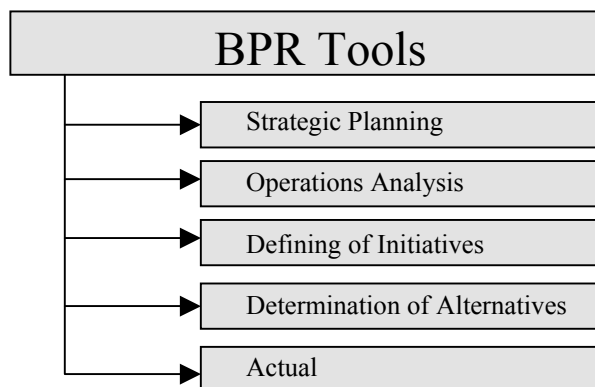


Fig.3

1. Strategic Planning
2. Operations Analysis
3. Defining of Initiatives
4. Determination of Alternatives
5. Actual

A. Module Strategic Planning

The module Strategic Planning must to contain:

- 1.Defining of Goals
- 2.Defining of Performance Measures
- 3.Determination of Strategies
- 4.Link a Strategy to multiple performance measures

B. Module Operations Analysis

- 1.The module Operations Analysis must to contain:
- 2.Enter AS-IS Operations Cost
- 3.Edit and transfer data from detailed worksheets to Operations Costs screen
- 4.Modify an Activity Tree
- 5.Activity Based Costs
- 6.Add and Delete Products and Services
- 7.Data for Products and Services
- 8.Allocate Activity Costs to Products and Services

C. Module Initiatives

The module Initiatives must to contain:

- 1.Create and link initiatives to strategies
- 2.Enter initiatives
- 3.Initiative years and costs
- 4.View Plan tool
- 5.Impact of initiatives on performance
- 6.Impact of initiatives on operations costs

D. Module Alternatives

The module Alternatives must to contain:

- 1.Package initiatives into Alternatives
- 2.Analyze the Economic Value of Alternatives
- 3.Analyzing Alternative Costs
- 4.Compare the Performance of Alternatives

E. Module Actual

The module Actuals show us how to compare actual cost and performance data to projections. When an alternative is approved and implemented, it becomes the new functional baseline. However, this new baseline contains cost and performance forecast errors. In the future, when actual cost and performance data become available, you can compare the actuals to projections. By tracking the actual cost and performance, you can refine your future years' forecasts.

The projected performance measure is the sum of target performance values from the Strategic Planning module and the initiative impacts of all included initiatives. The initiative costs are pulled from the Initiatives module. Total (alternative) cost is the sum of the AS-IS operations costs + initiative costs + initiative impacts (for the included initiatives).

V. USING OF GLOBAL INFORMATION NETS

One of the aspects to development of BPR is the virtual enterprise. The global information net is used by virtual enterprise for:

- 1.To make the work of the employees more creative.
- 2.To remove the barriers between the distantly working employees.
- 3.To decrease the distance between the industrial enterprise and the market.

4.To create the opportunity for interactive marketing decisions.

5.To create the possibility for effective and interactive teamwork.

6.To decrease the number of the staff. The information technology process contributes an entirely decreasing of the unpleasant and non-creative work.

The opportunities of virtual enterprises are detailed described in [19].

VI. CONCLUSION

The global conclusions, which we can draw on the basis of this material, are:

1. BPR uses in his development the newest achievements of information technologies.

2.The elaboration of software for BPR is one of the priorities tendencies in this attitude.

3.Another tendency for using of information technologies are as they call it "Virtual Enterprise". The specialists use here the opportunities of global information nets for communication, management and marketing.

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