Implications for the Role of Information Systems in a Business Process Reengineering Environment

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Organizations are increasingly adopting business process reengineering (BPR) initiatives to achieve multiple performance improvements through fundamental reengineering of work. Because of their expertise, techniques, and style of thinking, IS experts are well positioned to play a significant role in supporting and leading, when appropriate, many of the activities throughout reengineering projects. This role may include, but is not limited to, managing complex large-scale BPR projects, identifying and maintaining a technological vision in support of BPR efforts, developing process-oriented information systems, and managing the ongoing changes in business processes. Implications for such a role include repositioning IS to have business, customer, and information orientations, reinventing its activities, and resharpening its skills to properly function in such a new environment.

Organizations are attempting to adapt to ever-changing economic and competitive conditions by improving customer service, reducing cycle time, flattening the organizational structure, empowering employees, forming new alliances with external forces, and investing in new technologies. Many organizations have adopted business process reengineering (BPR) as the approach to achieve such radical changes. Successfully utilized, BPR results in major improvements in performance by changing the organization's structure, its processes, its people, and its culture, and the way it operates (Tapscott & Caston, 1993, p. 207).

Although the advent of such changes poses a challenge to virtually all groups in the organization, the challenge is particularly pertinent to the information systems (IS) group (King, 1993). BPR relies heavily on the power of information technology (IT) and systems to change the way the work is done (e.g., Hammer, 1990; Hammer & Champy, 1993a, 1993b; Tapscott & Caston, 1993; Davenport, 1993, 1994). Consequently, BPR has become one of the critical issues for IS executives in the 1990s (e.g., Cafasso, 1993; Alter, 1994; Moad, 1994; Revenaugh, 1994).

Given the skills and tools of its experts, the IS function is well positioned to play a major role in initiating and implementing BPR efforts. While the enabling role of IT is widely discussed in BPR literature, little is said regarding the potential role of the IS function in a BPR environment. The purpose of this paper is to elaborate on specific examples of such a role and its implications on the IS function. In this discussion, IS is viewed as a component of the enterprise which provides the internal clients and external customers with products, services and capabilities through the use of IT.

BPR: A Background

Organizations need to reinvent themselves and develop strategies critical to achieve competitive advantages (Hayes & Pisano, 1994). One way to achieve such an objective is to create small organizational units that include all the activities...
necessary to complete a task (Child et al., 1991). BPR involves the examination and alteration of a system to reconstitute it in a new form. It rejects the assumptions inherent in Adam Smith's industrial paradigm—the division of labor, economies of scale, hierarchical control, and all other related roles and principles of an early-stage developing economy. BPR calls for searching for new models for organizing work. It suggests abandoning the existing functional structure altogether, and redesigning the organization itself—or at least key parts of it—to better fit the new reality (e.g., Hammer, 1990; Huff, 1992; Hammer & Champy, 1993a; Moad, 1993; Vogl, 1993; Dixon et al., 1994).

BPR is viewed as the fundamental rethinking and radical redesign of the business processes to achieve major improvements in performance measures such as cost, quality, service, flexibility, and responsiveness (Fried, 1991; Hammer & Champy, 1993a, p. 32). Reengineering demands performance improvements along new dimensions (Dixon et al., 1994). Thus, BPR results in a fundamental transformation in a business—the way it operates, its structure, its business processes, its people, and its culture (e.g., Tapscott & Caston, 1993, p. 207; Caron, 1994; Scott, 1995). Davenport (1993, p. 2), however, views reengineering as only part of what is necessary in order to radically change processes. He argues that "process innovation" efforts target the achievement of radical improvements in the performance of the process through the use of innovative tools and work designs. It also encompasses the envisioning of new work strategies, the actual process design activity, and the implementation of the change in all its complex technological, human, and organizational dimensions.

Whether it is called process redesign, process innovation, process engineering, or process reengineering (Revenaugh, 1994), the goal of BPR is to achieve performance breakthroughs by applying innovative ways of doing business. BPR aims at simplifying every cycle of activity within a business by eliminating non-value added steps and reducing the number of actions in each process. BPR requires the definition of a vision, the creation of new structures, the development and implementation of the new designs, and the establishment of feedback and continues improvement systems.

Although there is universal agreement on the common objectives of BPR efforts, the details of a specific method or approach to performing its activities may vary from one initiative to another (Scott, 1995). This variation can lead to overlooking variables that are critical to the success of BPR projects. Recent BPR literature (e.g., Fried, 1991; Davenport, 1993; Hammer & Champy, 1993b; Tapscott & Caston, 1993; Khalil, 1995) suggests seven key activities (or phases) that are critical to successful planning and implementation of BPR projects. These activities are: (a) assessment of the organization's readiness for change, (b) identification and prioritization of problematic business processes, (c) identification of change enablers (i.e., IT), (d) analysis of business to establish links between its strategy and the visions of the identified process, (e) analysis of the process, (f) design of the new process, and (g) implementation and management of the new process.

Although the undertaking of the large scale BPR projects poses a challenge to virtually all groups in the organization, the challenge is particularly pertinent to the IS group. Because of their expertise, techniques, and thinking style, IS experts are well positioned to play a major role in support of many of the activities throughout the reengineering project (i.e., Davenport, 1993; Martinez, 1995; Tapscott and Caston, 1993). Hence, BPR has become one of the most critical issues for IS executives in the 1990s (e.g., Moad, 1994).

**IS Role in BPR**

While there is a universal agreement on the critical role of the IS function in the success of BPR efforts, experts are still debating the nature of such a role. To some, the unique role and relationship of IS with the various business units of an organization make it the perfect business strategy leader (Tapscott & Caston, 1993, p. 220); and empirical evidence provides some support for the view of the leading role of IS in BPR practices (e.g., Cafasso, 1994; Jovanovic & Mrdalj, 1994). Normally, no other function in an organization has such unique duties and license to cross functional boundaries and to drive change as IS has. In the course of systems planning or data modeling projects, IS experts can identify and expose the problematic aspects of current processes and make business executives aware of them.

On the other hand, some experts assert that IS can not and should not play a leadership role in BPR (e.g., Gillin, 1992; Huff, 1992; Wilder, 1992; Moad, 1993; Tapscott & Caston, 1993, pp. 219-220; Alter, 1994; Maglitta, 1994a; Menagh, 1994; Martinez, 1995). BPR is essentially a learning enterprise that must be undertaken by those who will learn to work together differently. IS simply does not possess the necessary power, and often also lacks sufficient corporate good will and trust to lead such a project. In addition, BPR is not primarily a technological project. Thus, IS should not be a driver of BPR or aspire to run reengineering projects. Instead, it should expect to be a part of the teams that lead these projects.

Nevertheless, IS has an important role to play in the completion of the activities throughout the BPR life cycle as well as in the redesign of the processes and their supporting systems. IS should be a partner that can provide education, support, and leadership, when appropriate. Top executives should ensure an essential role for IS in providing valuable expertise and guidance in BPR projects. The significance of such a role is not just because of IS experts' technical skills, Michael Hammer underscores, but because of their style of thinking, which supports both IS work and BPR approach (Maglitta, 1994a). IS experts understand the organization's