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Exploring the Business Process Re-Engineering: National Science Library's Experience

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ABSTRACT

The purpose of this paper is to make people aware that business process re-engineering (BPR) plays an important role for satisfying the users' demand by redesigning the existing activities in the library system. BPR plays an important role for organizational structures also and provides a customer-focused improvement. This paper defines the BPR, the need for BPR in redesigning the activities, satisfying the goals and services of the library. Due to the changes in the information communication technology (ICT), the changes have been occurring in each and every field. The presentation identifies the existed scenario in the National Science Library (NSL – three years back) and suggested for the re-engineering activities in terms of infrastructure development, contents development / access, services using ICT facilities and the satisfaction of the users.

Exploring the BPR for implementation in NSL has changed the visibility to everyone and now it is having better infrastructure like installation of additional systems, LAN facility (service extended), more rooms for CD-ROM database access; contents in electronic format along with print collections, e-consortia formation helped NSL to have more e-journals with full text access and services from issue / return has changed from the windows environment to LAN environment (use of e-granthalaya software for automation) are available over network. Proposals are being identified to implement RFID technology soon. It concludes that every library should try to implement the BPR activities and gain the benefit out of it.

INTRODUCTION

The phenomenal changes seen in library operations in the past five years have led to a review of traditional library organisation and management patterns in many libraries. All kinds of organizations are trying to help employees understand and keep up with organisational change (www.niscair.res.in). Institutes and workshops promise to help employees assess the current culture of the organization, determine needed changes, and then to prepare for the changing environment. The importance of organisational culture has increased in our society, characterized by its global perspective and technological bent. Hence, the traditional libraries and their managers are under tremendous organisational pressure and are facing the probable threat of extinction. Librarians today need to work like their counterparts in the business world. They should rethink how to manage and organise the library operations and activities to reengineer their processes in the new environment (Moren, 2001).

Libraries have been at the forefront of developments in automating their processes, from the development of the first computer-based circulation systems and catalogues. The new information technologies (IT) and new knowledge transfer processes based upon those technologies now offer libraries the opportunity to review their processes and indeed (Al-Mashari & Zairi, 1999), require them to do so, Janson's (1996) analysis of the starting points for BPR is of interest in the context of libraries:

- Make the customer the starting point for change-by identifying customer wants and creating the infrastructure to support these expectations;
- Design work processes in light of organisational goals;
- Restructure to support front-line performance.

Following the publication of the fundamental concepts of BPR by Hammer (1990) and Davenport and Short (1990), many organisations have reported dramatic benefits gained from the successful implementation of BPR (Talwar, 1994). Hammer and Champy (1993) estimate that as many as 70 percent do not achieve the dramatic results they seek. BPR has great potential for increasing productivity through reduced process time and cost, improved quality and greater customer satisfaction, but it often requires a fundamental organisational change. As a result, the implementation process is complex, and needs to be checked against several success/failure factors to ensure successful implementation, as well as to avoid implementation pitfalls. This article deals with BPR and the scenario of National Science Library (NSL) before and after implementation of it.

DEFINITIONS OF BPR

Some of the definitions of BPR are as follows:

- BPR is the logical organization of people, materials, energy, equipment and procedures into work activities designed to produce a specified and result – Davenport and Short (1990).
- Hammer and Champy defines BPR 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”.
- Talwar comments: ...[BPR] requires us to build and communicate a shared understanding of the organization's preferred future, create an environment and infrastructure that actively promotes learning and allows imagination, not conditioning, to guide our decisions.
- BPR consists of rethinking and transforming organisational processes through the use of information technologies to achieve major improvements in quality, performance and productivity.

BPR is also known as BP management, BP improvement or Core process redesign.

BPR SUCCESS FACTORS

Properly designed processes (e.g. that is how work is carried out) are vitally important to the success of any organisation. Periodically, all organisations do need to examine both the need for and the design of their processes. Any organisation that ignores the need to change and improve its processes is risking its future. The pace of change in all organisations is accelerating, and most are experiencing increased competition. Information technology has been widely adopted and should be permitting people to do their jobs in different and better ways.

Creating an effective culture for organisational change - Organisational culture is a determining factor in successful BPR implementation. It influences the organisation's ability to adapt to change. The existing culture contains beliefs and values that are often no longer appropriate or useful in the re-engineered environment. Therefore, the organisation must understand and conform to the new values, management processes, and the communication styles that are created by the newly-redesigned processes.

Factors relating to ***change management*** systems and culture, which involves all human- and social-related changes and cultural adjustment techniques needed by management to facilitate the insertion of newly-designed processes and structures into working practice and to deal effectively with resistance (Carr, 1993), is considered by many researchers to be a crucial component of any BPR efforts.

Revising reward and motivation systems - Staff motivation through a reward programme has a crucial role in facilitating re-engineering efforts and smoothing the insertion of new processes in the workplace.

Effective communication is considered a major key to successful BPR-related change efforts. Communication is needed throughout the change process at all levels and for all audiences (Davenport, 1993), even with those not involved directly in the re-engineering project (Dixon, Arnold, Heineke, Kim, & Mulligan, 1994).

Empowerment - As BPR results in decisions being pushed down to lower levels, empowerment of both individuals and teams becomes a critical factor for successful BPR efforts, since it establishes a culture in which staff at all levels feel more responsible and accountable (Rohm, 1992/93) and it promotes a self-management and collaborative teamwork culture.

Human involvement - In re-engineering, all people must be openly and actively involved and should be consulted at all stages on the process and its leaders.

Training and education - Many researchers consider training and education to be an important component of successful BPR implementation.

FEATURES OF BPR

Factors related to change of management systems and cultures are:

- Problems in communication,
- Organisational resistance,
- Resistance to change,
- Lack of organisational readiness for change,
- Problems related to creating a culture for change,
- Lack of training and education,
- Problems related to commitment, support, and leadership,
- Problems related to championship and sponsorship,
- Ineffective BPR teams,
- Problems related to the integration mechanism, job definition, and allocation of responsibilities,
- Problems related to planning and project management,
- Problems related to goals and measures,
- Inadequate focus and objectives,
- Ineffective process redesign,
- Problems related to BPR resources,
- Unrealistic expectations,
- Ineffective use of consultants,
- Miscellaneous problems,
- Problems related to IT investment and sourcing decisions,
- Improper IS integration,
- Inadequate IS development,
- Ineffective re-engineering of legacy IS.

STATUS OF NSL (before BPR)

Libraries are making efforts to change in ways that will make them more responsive and effective in the future. The vision of NSL is to acquire all scientific documents like books, periodicals, standards, etc. which is not procured in Delhi libraries and for the subjects in library and information science, management science and computer science. NSL helps mainly for the students of library and information science and for document delivery services of National Institute of Science Communication And Information Resources (NISCAIR), where the NSL is located. Also it acquires CD-ROM databases from IEEE, IEL, etc. Scepanski (1996) suggests that libraries should consider reengineering as a way to radically adjust what they do in response to current technological and social changes. He further states that a radical re-examination of librarianship may lead to the rejection of many things that librarians traditionally do. The librarians have to “slaughter some sacred cows” when reengineering processes begins (Piggott, 1995). They must eliminate activities which have become endemic processes but which add no value to library services or the process.

The planning of a BPR outlines steps for the strategic, cultural and technical aspects of an organisation and in this case a library. Fitzgerald and Murphy (1996) advocates a practical methodology developed by the Executive Systems Research Centre. It is expressed by following series of phases:

- Select process to be reengineered
- Establish process team
- Understand the current process
- Develop visions of improved process
- Identify the actions needed to move the new process
- Execute a plan to accomplish these actions

Wilson (1998) considers BPR in libraries and focuses on the following major objectives:

- taking the customer as the “starting point” for change by identifying user needs and redesigning processes for more customer/user satisfaction;
- redesigning work processes of the library to reflect organisational goals; and
- supporting the “front line” performance of the parent organisation.

In order to expand the learning capacity, the delivery services are planned to be more convenient, accessible, affordable and useful to the society. With this transformation it planned to leverage the basic infrastructure, content, services and people (Chia, 2001). Existing infrastructure were before BPR implementation like with few systems, only printed documents with few CD-ROM databases in full text, DOS version of library automation package and with limited user access and services.

STATUS OF NSL (after BPR implementation)

After implementation of the BPR plans for infrastructure, content, services and people, over the last 2-3 years, a tremendous infrastructural changes occurred by having installed many P IV systems (instead of P III) in acquisition, serials division, electronic library division, circulation and OPAC with many terminals. It has been augmented with a reliable LAN and every system is connected with Internet facility also. Ergonomically designed types of furniture have been added, wherever facilities are extended with system. E-mail has become the basic use for communication among themselves and also for outside, including for users for services and to publishers for library management activities. More reading space has been added in the first and third floors of the NSL. A new division called E-Journals division has been formed, with the provision of CSIR Consortium (more than 5400 e-journals full text access), for which ten terminals are kept for walk-in-users for availing the services, along with access to NISCAIR employees in the building. Staff of libraries is able to have access to Internet, by which their performance have increased in every aspect of library services, including downloading the catalogue entries, easy usage of data, creation of reports for any type of activity, provision of services to users, etc.

Different types of contents in e-formats have been added with e-journals consortium, along with the provision of access to international databases for information retrieval and even table of contents from few publishers have been added. By replacing the Granthalaya software (DOS mode) with e-Granthalaya software, under windows version, has the better facility for all library automation activities. New library services have been introduced for the users as well as barcode labeling have been introduced for the documents. Periodicals have been segregated as Indian / Foreign periodicals and arranged in second and third floors of the library. Users can reserve the

documents, by checking the OPAC of the library, if it is issued to some other user. Proposal for the implementation of RFID technology is on the way.

ADVANTAGES

There are many advantages of BPR implementation, which are as follows:

- BPR helped the NSL to have better infrastructure with LAN /WAN connectivity
- Easy access to e-journals (Full text)
- Circulation and OPAC facility.
- Integrating the people with the organization and human resources.
- Users are able to get not only the local sources and also able to have other related resources, due to the searching facility available.
- Helps for e-publishing activity for the users.

CONCLUSION

Redesign is not simply a matter of new technology, nor it is about changing professional roles; it is about neither changing the culture of the organization and this is neither as easy nor an overnight task. The real solution is to rationalize the work and greater responsibility for individuals. BPR has received much attention in private sectors and now extended to every sector, including the library sector. Library science professionals should take it as a challenge, as it helps to plan and implement the activities and services, which are needed by the users in order to satisfy them on time.

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