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## The Changing Role of Information Technology in Business Process Reengineering: A Case Study of ICICI Bank

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**Abstract-** Improving business processes is paramount for businesses to stay competitive in today's marketplace. Over the last 10 to 15 years, companies have been forced to improve their business processes because customers are demanding better and better products and services. And if we do not receive what we want from one supplier, we have many others to choose from. This brings Business Reengineering on the agenda of many large and mid-sized companies in many industries; manufacturing and banking/finance being the predominant sectors. Among the probable enablers of BPR is information technology (IT). IT makes it possible to obtain improvements in BPR, though not just by itself. Enterprises can make their tasks easier, redesign their organization, change the way they work, and achieve spectacular improvement using, among other enablers, IT. This paper provides an overview of Business Process Re-engineering and demonstrates the importance of IT in one of the most prominent methodologies.

**Keywords-** Business Process Reengineering, Information Technology ICICI Bank, organization, business.

### I. INTRODUCTION

The globalization of the economies and liberalization of the trade boundaries have developed new conditions in the market place which are characterized by instability and intensive competition in the business environment. Competition is increasing with respect to every business aspect whether it is a price, quality and selection, service and promptness of delivery. Removal of trade barriers, international cooperation, and technological innovations have intensified the competition among the business community. Most of the successful business corporations in the world seem to have hit upon an incredible solution i.e. Business Process Reengineering (BPR).

Some of the recent headlines in the popular press read, "Wal-Mart reduces restocking time from six weeks to thirty-six hours.", "Hewlett Packard's assembly time for server computers touches new low- four minutes.", "Taco Bell's sales soars from \$500 million to \$3 billion." The reason behind these success stories is the Business Process Reengineering.

### II. BUSINESS PROCESS REENGINEERING

The Business Process Reengineering encompasses changes in structures and in processes within the business environment. The BPR has changed the entire organizational, technological and human dimensions of the business. The Information Technology plays a major role in Business Process Reengineering. It provides flexibility in manufacturing of the products, reduced the delivery time to the customers, the offices have been fully automated, the business can be operated at different locations by a single entrepreneur, large number of customer support services and paper less transactions ie e-business etc. The information technology has resulted into efficient and effective change in the manner in which the business activities can be performed.

Michael Hammer (1948-2008) a professor of computer science at MIT, first came up with the biggest business idea of the 1990s—re-engineering, which he defined as "Business Reengineering is 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."

The idea was first propounded in an article in *Harvard Business Review*. The success of Business Reengineering projects is measured by the real attainment of project objectives. Companies undertaking Business Reengineering projects typically look for drastic improvements in business process results. A study of Business Reengineering projects in 30 Mexican businesses all from the largest 500 businesses in Mexico demonstrated impressive results (Table 1). Business Reengineering had impacted mainly in management cost (82 %), production cost (57%) and distribution cost (39%) reductions and so on.

Table 1

Areas of Reported Achievements	Improvements in %
• Cost Reduction	69
• Time Optimization	62
• Better Service Efficiency	59

• Productivity Increase	59
• More Precise Information for Decision Taking	52
• Quality Improvement	45
• Better Financial Control	41
• Better Profitability	38
• Hierarchical Levels Reduction	38
• Technology Update	34
• Personnel Motivation	34
• Sales Increase	28
• Market Survival	28
• Reduction of Business Losses	21
• Environment Impact	17
• Increase Market Penetration	14

### **III. USE OF BPR IN AN ORGANISATION**

If the management is committed for a change in the organization, the most important factor for implementing the BPR is the enabling role of information technology. The whole organization is redesigned in such a way that everything is in a certain logical sense so that the maximum results are obtained with minimum results. Now a days the use of internet, intranets and extranets has eliminated the locational barriers in communicating and passing the information among the employees within a organization. The information systems has empowered people by providing information, tools and training.

#### **A. Providing Information:**

The most important work of information systems is to provide information to the people to perform their work. This information can be provided in different ways such as; some systems provide information, which is essential in informing a business processes like the price that is very important for the creation of customers. There can be a system which provides information that can be useful but can be used in a discretionary manner.

#### **B. Providing Tools:**

The information system not only provides right information but also empowers the people by giving them the right tools. The planners in an organization prepare the consolidated plans on the basis of which the individuals plan for their department and divisions. When the appropriate tools are used in the planning process, the numerical parts of the plan are more accurate.

#### **C. Providing Training:**

As the information systems are designed in such a way that they provide needed support to the employees and management. Appropriate training is provided to the employees so that they can use the information systems in the performance of their duties. The IBM has developed an expert system for fixing computer disk drives. The expert system is an organized collection of the best knowledge to be used in the organisation.

#### **D. Eliminating Unproductive Uses of Time:**

Business Process Reengineering involves the radical redesign of core business processes to achieve dramatic improvements in productivity, cycle times and quality. In Business Process Reengineering, companies start with a blank sheet of paper and rethink existing processes to deliver more value to the customer. They typically adopt a new value system that places increased emphasis on customer needs. Companies reduce organizational layers and eliminate unproductive activities in two key areas. First, they redesign functional organizations into cross-functional teams. Second, they use technology to improve data dissemination and decision making.

#### **E. Eliminating Unnecessary Paper:**

One common way to improve data processing is to eliminate unnecessary paper. Although paper is familiar and convenient for many purposes, it has major disadvantages. It is bulky, difficult to move from place to place, and extremely difficult to use for analysing large amounts of data. Storing data in computerized form takes much less physical space and destroys fewer forests, but that is only the beginning. It makes data easier to analyze, easier to copy or transmit, and easier to display in a flexible format.

#### **F. Eliminating Unnecessary Variations in the Procedures and Systems:**

In many companies, separate departments use different systems and procedures to perform essentially similar repetitive processes, such as paying employees, purchasing supplies, and keeping track of inventories. Although these procedures may seem adequate from a totally local viewpoint, doing the same work in different ways is often inefficient in a global sense. Whenever the systems must change with new technology, new regulations, or new business issues, each separate system must be analysed separately, often by someone starting from scratch.

#### **IV. ROLE OF IT IN BPR**

BPR is a methodology that promotes change and introduces new processes and new styles of working. So certain elements will be required to make change possible. These elements are known as enablers and may be defined as elements that act as vehicles for processes to change. IT promotes changes in organizations, mainly changes in the nature of the work, the integration of business functions, and the transformation of competitive forces. IT can help make the changes promoted by reengineering, and it can be considered as an enabler of BPR.

The applications of IT to reengineering require inductive thinking, which is the ability to first recognize a powerful solution and then seek the problems that it might solve. A fundamental error that most companies commit when they look at technology is to see how a new technology will help in solving problems in their existing process. The companies have to think how a technology can help them to do things that they are not doing in current process. Reengineering is about innovation. It is about exploiting the latest capabilities of technology to achieve entirely new objectives.

IT has a power to break the rules and make people think inductively and give the company a competitive advantage. The company that used the disruptive power of IT to break all rules and gain competitive advantage. The key effective use of IT lies not in moving the information faster but in doing right things with it. IT has to be used to make proactive decisions to improve business performance rather than report on it after the fact. In the design phase of implementation of reengineering, the capabilities of IT can be used to stimulate a model of the design and thereby validate the new design.

#### **V. A CASE STUDY OF ICICI BANK**

ICICI Bank was originally promoted in 1994 by ICICI Limited, an Indian financial institution, and was its wholly-owned subsidiary. ICICI's shareholding in ICICI Bank was reduced to 46% through a public offering of shares in India in fiscal 1998, an equity offering in the form of ADRs listed on the NYSE in fiscal 2000, ICICI Bank's acquisition of Bank of Madura Limited in an all-stock amalgamation in fiscal 2001, and secondary market sales by ICICI to institutional investors in fiscal 2001 and fiscal 2002. ICICI was formed in 1955 at the initiative of the World Bank, the Government of India and representatives of Indian industry. The principal objective was to create a development financial institution for providing medium-term and long-term project financing to Indian businesses.

In the 1990s, ICICI transformed its business from a development financial institution offering only project finance to a diversified financial services group offering a wide variety of products and services, both directly and through a number of subsidiaries and affiliates like ICICI Bank. In 1999, ICICI become the first Indian company and the first bank or financial institution from non-Japan Asia to be listed on the NYSE

ICICI Bank is India's largest private sector bank with total assets of Rs. 6,461.29 billion (US\$ 103 billion) at March 31, 2015 and profit after tax Rs. 111.75 billion (US\$ 1,788 million) for the year ended March 31, 2015. ICICI Bank currently has a network of 4,450 Branches and 13,916 ATM's across India.

##### **A. Reasons for BPR Initiative:**

- In the year 2000 and later when anytime, anywhere banking came to our country, ICICI Bank had to move away from the branch-centric model and make its services available nationwide. The solution was to centralize its applications.
- Legacy systems: the traditional system at ICICI Bank were very centric to the branch. For example a server at New Delhi was specific to the branch in that city; the ATMs were standalone catering only to the city branch. The banking transactions were thus limited to the respective branch offices as customer data was not available in other branches. This made banking a limited service and very branch specific.
- ICICI realized the importance of offering nationwide banking but this would be possible only by having a centralized data repository.

##### **B. Team involved:**

- Infosys is one of technological partner for ICICI bank which gave the assistance to implement Finacle for handling all the banking activities.
- Bill desk for online payments
- SYBASE: Sybase an SAP company
- SAS for business analytics software and services

##### **C. Project design:**

- The basic network was set up for providing the e-mail facility, but none of the applications were linked to the network. With growing business and rapidly increasing accounts, the company found it extremely difficult to administer and manage the system.
- The centralization procedure started around late 1999 ICICI Info. Tech (a company promoted by ICICI) made the first network design for the group in 1999. It was a hub and spoke architecture
- Centralizing the operations was not the solution, but centralization of data was the problem, ICICI bank faced with the legacy systems was that they were standalone systems and the data from one branch was not available with another branch. These problems led us to the new design of the hub and spoke architecture.

##### **D. The solution:**

- The ICICI Info Tech Team designed the initial network topology in 1999. The team had put forward a series of designs, not radically different from each other. Eventually, a design with a mix of VSATs, leased lines, radio-

links and ISDN was selected. A mixed design was selected because of the disparate locations of the group across the country.

- The network follows a hub and spoke architecture, a mix of VSATs, leased lines and radio links. It has around 800 leased lines, about 600 VSATs, approximately 800 ISDN lines and multiple 34Mbps lines.
- The most important aspect to setting up a network was to have a good relation between the technology consultant (network integrator) the vendor and the client.
- There is a primary site from where spokes go out to the regional branches and the other offices. The secondary site has the disaster recovery system.
- High-end Cisco routers and switches have been deployed for connectivity. The network is monitored using HP OpenView and CiscoWorks. Over 30 portals are operating using a highly secure state-of-the-art security architecture, which consist of firewalls, intrusion detection systems, virus protection and various other tools.
- Hardware at both these sites varies from low-end NT servers to the high- end SUN E 10K along with 12 terabytes of data storage at each end connected through a Storage Area Network• Unix is the preferred OS for most of the hardware while most of the databases use Oracle with a few on Sybase and MS SQL.
- With the ICICI group having several companies under its umbrella,Finacle needed to seamlessly integrate with multiple applications such as credit cards, mutualfunds, brokerage, call center and data warehousing systems.

## VI. CONCLUSION

BPR is a methodology by which important improvements are obtained, although it requires big changes in organization and work style. This involves the need to change or even increase working styles, job functions, needed knowledge, and organization values. In this way, reengineering requires long-time dedication, resources, and effort. These are made easier by using elements called enablers.

ICICI Bank has been at the forefront in leveraging technology including the current and emerging transformational trends of mobility, digitisation and rapid growth of social media, to bring value to its customers. The bank has leveraged its technology capabilities to facilitate faster and convenient processes, create best-in-class technology platforms and reduce transaction costs. The innovations in recent years have enhanced the customer franchise and improved the overall customer experience. At March 31, 2015, the bank had 101 fully electronic Touch Banking branches across 33 cities. These branches give customers the ability to complete their banking transactions at their convenience and also access 24X7 customer service support. A key initiative launched during the year was 'Pockets', a digital mobile wallet which is India's first digital bank, allowing users to undertake a complete suite of banking and e-commerce transactions. During the year, bank launched a redesigned and intuitive Internet banking website and a new mobile website. Together with the comprehensive mobile banking application, 'iMobile', these platforms are seeing robust growth in transactions. The bank also launched a contactless, 'Tap n Pay' payment solution, which enables customers to simply tap their cards for quicker payment transactions. It has a strong presence in social media through banking on Facebook, which has further strengthened by becoming the first bank in Asia to introduce payment services on Twitter. The bank also invested in corporate Internet and mobile banking platforms to improve the customer experience and to provide value-added solutions to the government sector. The bank continued to expand its distribution network during the year. It added 297 branches and 1,136 ATMs to in the network in fiscal 2015. The network of 4,050 branches is the largest among private sector banks in India, supplemented by the network of 12,451 ATMs. All this is just because of the Business Process Reengineering.

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