

An Insight on 'Business Process Re-engineering' Initiatives in the Industries in Pakistan

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This Research paper provides an insight on the initiatives taken by selected companies in different industry sectors of Pakistan to re-design and re-structure their business processes with a view to improve their operational efficiencies and performance and achieve market competitiveness. The list of companies and sectors selected for this research is depicted in Table-1.

The evolution of the Idea of 'Business Process Re-engineering (BPR)'

At the very outset, we must understand how the idea of BPR was evolved and what it means. The term 'Re-engineering', which later became popular as 'Business Process Re-engineering (BPR)', was first coined by Michael Hammer (1948-2008), a professor of Computer Science, in his article published in July-August 1990 Issue of 'Harvard Business Review'. This idea became so popular that a survey conducted in 1990 revealed that almost 80 percent of Fortune 500 companies had adopted re-engineering method.

In 1993, Hammer co-authored and published a book titled 'Re-engineering the Corporation', in which he defined BPR as 'fundamental re-thinking and radical redesign of business process to achieve dramatic improvements in performance measures such as cost, quality, service and speed'. The other related terms e.g. Process Improvement, Process Innovation and Process Excellence were also the brain-child of Michael Hammer. According to Hammer, "Process improvements come from "walking in the customer's shoes", finding out what it is that customers really want, and then designing processes to meet that demand".

Most of the Industries in Pakistan have obsolete Business Processes

Rapid changes are continuously taking place in the global markets. Unfortunately, the Pakistani companies are finding it hard to compete, due mainly to obsolete business processes. Majority of them are almost ignorant of new technology and improvement dynamics such as lean management, six-sigma, ERP, business process re-engineering, Just-in-time management etc.

It is a fact that customer preferences are changing fast, demanding better products and services, thus forcing the businesses to improve their business processes. The Pakistani industries, therefore, need to be proactive to implement business processes re-engineering, not only to become competitive and efficient, but also to expand their sales through improved customer services. Several internal and external factors necessitate the Pakistani companies to re-shape and re-

structure their business processes such as:

- International market competition
- Technological advancements
- Increasing Business Risks and Economic Uncertainties
- Rising Cost of Doing Business
- International Quality and Environmental Standards
- Changing customer preferences and expectations

Pakistan's Trade Policy Framework emphasizes on Improving Business Processes

The 'Strategic Trade Policy Framework (STPF) 2009- 2012', announced by the Ministry of Commerce, Government of Pakistan in August 2009, has laid special emphasis on improving business processes of the Pakistani industries and termed it as a national challenge. A relevant extract from the Strategic Trade Policy Framework is reproduced below:

Table1: Sectors and Companies Selected

No.	Selected Sectors	Selected Companies
1.	Textile	1. Kohinoor Textile 2. Crescent Textile 3. Samin Textile 4. Nishat Mills 5. Ibrahim Fibres
2.	Automobile	1. Hino Pak Motors 2. Indus Toyota Motors 3. Atlas Honda Pakistan 4. Agriauto Industries
3.	Pharmaceuticals	1. Abbott Pakistan 2. GSK Pakistan 3. Sanofi-Aventis Pakistan
4.	Cement	1. Lucky Cement 2. Cherat Cement 3. Maple Leaf Cement 4. Pioneer Cement
5.	Sugar	1. Faran Sugar Mill 2. Shakarganj Sugar Mill
6.	Fertilizer	1. Fatima Fertilizer 2. Fauji Fertilizer 3. Pak-Arab Fertilizer
7.	Petroleum & Refinery	1. Pakistan Petroleum Ltd. 2. Pakistan State Oil (PSO) 3. Byco Pakistan 4. Attock Petroleum 5. Attock Refinery 6. Mari Gas Company 7. Pakistan Oil Fields

"Pakistan can only make a progressive difference with sweeping structural changes like enhancing economies of scale, productivity enhancement through process reengineering, improve product coverage, increase in value addition and market diversification"

The Framework states that 'Improving business processes is a national challenge and needs a national response, both by the State as well as by the industry'. It further states that Pakistani industries should quickly re-vamp, re-structure and re-define their business processes, in line with international best practices in order to enhance productivity and improve global competitiveness.

It is worth pointing out here that the STP Framework 2009-2012 that within three months of its announcement, the Ministry of Commerce would critically look at those business processes which are hampering Pakistan's export competitiveness and come up with plans to improve the efficiency of these processes with the help of the private sector. However, as far as ICMAP research suggests, there has not been any headway in this regard. The government is strongly recommended to implement this requirement of the STP Framework for which, not only private sector but also the ICMAP would be happy to extend its professional services.

Role of IT and ERP in Pakistani Industries - As part of BPR Initiative

The role of Information technology is quite crucial in the re-engineering of business processes. It acts as a 'facilitator' and an 'enabler' for all re-engineering initiatives and provides the necessary skills and tools to effectively re-design

the processes in any organization. This needs to be kept in mind that the role of IT in re-engineering is not to automate the business process, but it support re-designed processes and facilitates cross-function workflow. Today, the IT department in any company is an essential part of the Business Process Reengineering Team.

Both ERP and BPR methods emerged during the first half of 1990s, focusing on the radical re-design of an organization with the objective to improve productivity and optimize workflow. BPR is an important aspect and part in the implementation of ERP in any organization. In fact, ERP software implementation is based on the results of reengineering of business processes.

ICMAP research reveals that in those companies where Enterprise Resource Planning (ERP) has been implemented, as part of re-engineering initiative, visible improvements have been seen in their business processes, efficiency and output as well as in timely decision-making.

Most of the industries, selected for this research paper, have adopted ERP and other latest Information Technology software which has helped them integrate all their business processes viz. production, sales, marketing, supply chain, accounting and financial, human resource, quality management, projects

managements, customer relationships, data warehousing etc, leading to improved efficiency and performance in their organizations.

It is good to see that during last decade or so, the banking sector, especially private banks, have made considerable improvement in their business processes and performance, in order to meet their customer demands. In fact, computerization and automation of banking processes have greatly enhanced the customer service. This kind of improvement in business process is not seen in other industry sectors, particularly in public sector organizations.

Sectoral Review of BPR Initiatives by Pakistan Industries

(1) Textile Industry

Textile is a major sector, contributing around 65 percent towards foreign exchange earnings of Pakistan. However, what transpires from ICMAP's analysis is that a large number of textile companies, with the exception of few bigger groups, have not taken any significant initiatives towards re-engineering of their business processes, including production process. As a result, the share of Pakistani companies in the global textile exports is not more than one percent.

ICMAP research indicates that one of the main reasons for this dismal performance is use of obsolete technology and absence of cost control measures in the textile industry. Most of the textile companies still rely on traditional approaches and do not consider business process re-engineering or automation as

solutions to improving their performance. Therefore, there is dire need of BPR for improving business process efficiency in the textile industry so as to realize the modern development in the industry.

The textile companies must seriously consider implementing ERP systems, especially in areas of product designing, innovation and business process enhancement. The competitiveness of our textile sector lies greatly on value addition and process re-engineering. Now let's have a look on BPR initiatives taken by a few textile companies.

Kohinoor Textile Mills Ltd. has embarked on route shortening projects in all of its production departments, with a special focus in finishing and cut-and-sew. The Company's processing department has reaped great benefit in this regard due to collaboration with major multinational chemical suppliers who have cooperated with the production teams to substantially reduce water, chemical, and energy usage while maintaining or improving quality, environmental, and technical standards. The Company hopes that further progress in these projects will yield substantial reductions in the costs of energy, labour, and resources such as water. A 'Business Process Re-engineering Committee' has also been formed.

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Crescent Textiles added latest machinery items in spinning, processing, home textiles and power generation facilities to enhance the efficiency of the manufacturing processes. As a result, it achieved operational efficiency of various processes in the range of 88 percent to 98 percent. This helped in achieving yield of 85 percent in spinning and 97 percent in other value added processes. According to Crescent textile, the performance of various operations would have improved had there not been severe gas load shedding. Moreover, new IT assets were added to fulfill business needs more efficiently and existing ones were upgraded.

The company has installed OF (Oracle Financial) to cater its ERP needs, whereas new developments on Oracle based platform are in progress, which would be later annexed to main system. Nishat Mills is also planning to convert its existing OF to Release 12 which is an enhanced version with added features to cope new technology requirements

Samin Textiles Ltd. is a public limited company, owned by a leading industrial group of Pakistan. This company thoroughly reviewed its corporate culture and current process and systems, and formed a 'Re-Engineering Action Team', which is working on different areas to improve the systems and business process. Some of the areas are identification and restructuring of core business processes to save time and encourage inter-dependency; implementing performance benchmarks for each department, monitoring and reducing lead time of order fulfillment by 25 percent. Samin textile has already implemented the Management Information System (MIS) and efforts are being made for development of 'Performance Appraisal System' based on re-engineered process.

Nishat Mills Ltd. has introduced new IT systems in various processes and upgraded integration of running applications at various locations. They have also introduced time management system and new costing systems and extended IT infrastructure to new locations, including Nishat Linen shops. Moreover, Nishat Mills have upgraded their processing plant with narrow width printing machine and installed one hundred stitching machines, along with the switch-track system, which has enhanced the working efficiency to a great extent. They now focus on improving production efficiency by planning to install new bleaching plant and increase the sewing capacity through purchase of new sewing machines, which would enhance their ability to handle large volumes and on time deliveries.

Ibrahim Fibers Ltd., as part of its BMR plan and business process re-engineering initiative, is replacing complete back process of its Textile Plant II Unit I with the latest machinery consisting of complete blow room machines, drawing frames, carding machines and roving frames, which is expected to further improve quality, efficiency and productivity.

(2) Automobile Industry

ICMAP Research indicates that in the automobile industry, **Indus Motor Company (IMC)** has excelled others in improving its business processes through Kaizen initiatives and activities, which has greatly improved its development processes. 'Kaizen' is a Japanese word meaning 'gradual and orderly continuous improvement'. Kaizen business strategy involves everyone in an organization working together to make improvements 'without large capital investments'.

Hino Pak Motors has implemented advanced ERP system in manufacture of components and processes which has given its products a quality edge in the market.

Indus Toyota Motors undertook re-engineering of its production and business processes with a view to identify duplication of activities, missing functionality, integration, control and redundancy within the processes. These initiatives have resulted in overall increase in the efficiency of the company.

In **Atlas Honda Pakistan**, a number of 'kaizens', aimed at improving plant efficiency and reducing cost were undertaken in all areas of operation such as in-house and local manufacturing

of hi-tech machine accessories and fixtures; re-designing of tools, redesigning of coolant tanks for CNC machines; modifying and refurbishing outdated dies, utilizing dead stock items; implementing process automation at Frame Assembly Line; etc. Another important decision taken by Atlas Honda Pakistan was the local procurement of electronic circuitry of CNC machines through importers, rather than

directly from machine manufacturers, which has resulted in sizeable savings in machine repair costs.

Agriauto Industries Ltd. has successfully launched and implemented SAP (ECC 6.0) from February 2012 within record period of six months. This has resulted in highly efficient business process automation. The Company is committed to embrace information technology advancement for maintaining competitive edge and preserving its market leadership.

(3) Pharmaceutical Industry

ICMAP research reveals that BPR is mostly implemented by the multinational pharmaceutical companies, whereas the local Pharma companies have broadly not taken significant initiatives for process re-engineering. Most of the local companies have adopted TQM and BPR to some extent, but not up to the level of multinational companies in this sector.

What ICMAP concludes from the analysis of this sector is that since BPR demands radical changes in the entire system or process, it is difficult or rather impossible for the pharmaceutical companies to implement BPR in full shape and change the whole operational process of manufacturing a drug. They have to follow certain formulation and methodologies to manufacture

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a specific product. To some extent, re-engineering could be implemented by adopting continuous improvement (CI) method.

ICMAP analysis further concludes that BPR need to be implemented in pharmaceutical sector for effective cost saving operation in order to lower fixed cost and achieve overall cost effectiveness. This is also important in view of the fact that price increase is the core issue of Pharma sector in Pakistan. Secondly, to remain competitive, the Pharma companies need to have in place lean and cost effective operation and adopt BPR measures. Unfortunately, most of the Pharma companies in Pakistan are operating on historical traditions and assumptions, and are unable to differentiate BPR with other improvement technologies, though they are implementing incremental changes in day to day business. By adopting BPR, these companies can set new benchmark level guiding them to remain competitive in the international market.

Abbot Pakistan has set up a 'Cross-function Simplification Team' which integrates simplification and business process improvements into all aspects, which, interalia covers ethics and compliance, social investment and CSR, product quality, and safety and relationships with stockholders. This team report to the higher management. Abbot Pakistan also launched the 'Lean Sigma Green Belt' initiative at its plant for productivity improvement and waste elimination. It has also started 'Overall Equipment Effectiveness (OEE) measurement in key areas to reduce cycle time and improve productivity. The collective contribution of these BPR initiatives greatly contributed towards improving the company's financial performance.

GSK Pakistan has established an in-depth in-control process system, which keeps the management informed that the business processes are well in control. Any shortcoming identified and reported is rectified immediately. Similarly, lean documentation is in place whereby the packaging component specification sheets are merged as per the materials classification so as to simplify the process flow and improve process efficiency. An automation initiative viz. system statistical calculation of microbiological assay has also been developed to improve process efficiency and ensure method reliability.

Sanofi-Aventis Pakistan is continuously investing in workflow projects for internal efficiency and some of its BPR initiatives have been quite successful in improving business processes, such as up-gradation of ERP SAP to latest version; medical leaflet workflow system for internal tracking of documents and approvals; electronic business travel authorization for efficiency in travel approval and communication with third party travel agency; and new HR Appraisal system for all employees.

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(4) Cement Industry

Lucky Cement is in continuous process of improving operational and cost efficiencies and has made huge investment in recent years. They have achieved another milestone by successful operation of the Waste Heat Recovery Project of Karachi Plant which has replaced almost 23% power generation related fuel cost, which is expected to enhance its cost competitive strength. Furthermore, Lucky Cement have migrated their Management Information Systems (MIS) to an advanced version of Oracle 10G, giving a new interface to their in-house developed application modules. They are now focusing on automating the business processes at plants for efficient and smooth running of the processes.

Cherat Cement has entered into a contract with IBM Pakistan to implement SAP-ERP system to further streamline its business processes and improve system controls, as well as sharpen the decision making capabilities and analytic skills of the management. The company has implemented all modules within a record time, which is one of the fastest successful implementation of SAP ERP system by a company in Pakistan.

The use of SAP will allow the company to further leverage its capabilities by analyzing the impact of its decisions and enhance its efficiencies to the next level.

Maple Leaf Cement is constantly working to improve the efficiency and effectiveness of the automated plant. With the increase of furnace oil prices, the Company has adopted coal as a more cost efficient and

environmentally friendly fuel for kiln firing and is exploring possibilities of alternative and cheaper fuel such as waste firing to reduce cost.

While looking at the conversion process of the cement industry from furnace oil to coal fired system, it comes to notice that **Pioneer cement** was the first one to convert its cement plant to the coal firing system. During financial year 2001, the company incurred a heavy loss of Rs284 million, which turned into a profit of Rs44 million in the financial year 2002. The conversion of furnace oil plant to coal fired system significantly reduced the production cost of the company.

(5) Sugar Industry

Faran Sugar Mill has successfully implemented the sugar industry-specific ERP system, which is expected to improve business processes and operations of the company. Many modules in existing ERP system have also been upgraded and modified to enhance ERP functionalities. The legacy accounting system has been abandoned and replaced by state-of-the-art enterprise software application. The company is gradually moving towards office automation and securing IT infrastructure by implementing Microsoft tools, and now all the major business

processes, including cane, stores, accounting, sale etc are running on SQL at back-end and Visual Basic runs on client's PC's for reporting purposes.

Shakarganj Sugar Mills has implemented Oracle application suite, an Enterprise Resource Planning system for its financial, supply chain, manufacturing, projects and human resource management system.

(6) Fertilizer Industry

Fatima Fertilizer Co. has implemented Oracle R12 which is expected to bring improvement in accurate costing of inventory and increased standard reporting. The migration from legacy system to Oracle R12 has allowed Fatima Fertilizer to further refine the 'Chart of Accounts', thereby improving the reporting and decision-making processes and ensuring inventory stocks at optimum level. The Enterprise Data Network has been enhanced and a central data centre is in place to achieve cost reduction through consolidation of all resources from all locations. They are now working towards a complete fully integrated ERP covering all areas of manufacturing, inventory, procurement, finance and HR.

Fauji Fertilizer Co. has successfully implemented SAP - ERP system, which has cut down the processing time of financial transactions and improved the efficiency of business processes. The company is now focusing on integrating its operational functions at Head Office - Rawalpindi, Marketing office Lahore, Plant sites Goth Machhi and Mirpur Mathelo.

The implementation of ERP has improved the business processes by reducing time lags and duplication of work.

Pak Arab Fertilizer Co. has upgraded the current Oracle ERP system to Version R12, which has improved reporting and decision making processes. They are now working towards achieving centralized monitoring of all critical applications through a single site and team. They also intend to introduce standardization of all IT assets for creating a common application infrastructure for easing all transactions and processes within the company.

(7) Petroleum and Refinery Industry

Pakistan Petroleum Ltd. (PPL) has embarked upon 'project revolution' as part of its business process re-engineering initiative, spearheaded by in-house SAP Competence Center. The objective is to maximize return on investment in SAP system by aligning PPL's current business processes with SAP best practices and monitoring identified Key Performance Indicators (KPIs). The ultimate aim is to set Continuous Performance Improvement Cycle with better process integration, data consistency and less paper work. The Assessment phase of the project has been accomplished by

joint efforts of SAP Consulting Services and the Process Owners. Business Process Blueprints documents have been completed with a roadmap for the Optimization phase of this project. Moreover, as first step towards IT Infrastructure transformation at the front-end, recent adoption of unified storage and blades servers is a step further to mitigate security risks and improve operational performance at the back-end. Servers and desktop virtualization is a next logical milestone in the data centre transformation roadmap for more service-orientation, agility and protection of information assets. PPL is also focusing on enhancing the resilience of enterprise messaging and content management system, with later being gradually extended to field locations to position electronic messaging as the most preferred mode of communication and collaboration. A new dimension of collaboration has been added with Microsoft Office Communication Server (OCS) deployment at Head Office and Islamabad Office to set the stage for implementation of enterprise wide unified communication system.

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Pakistan State Oil (PSO) has also taken some re-engineering initiatives which include implementation of electronic approval systems, automation of procurement process, improving procurement cycle, which resulted in business process efficiency. As per information collected, the company-wide implementation of 'Lotus Notes workflow' applications is a revolutionary change in PSO's corporate culture, which provides it the ability to automate, manage and monitor business processes

and helps reduce the burden of paper-based work. This initiative has accelerated approvals process significantly. A series of applications have also been developed by PSO, including Gate pass Request, E-Recruitment, Joining Report, Mobile Requisition Form, Material Creation Form and Note for Approval Application. SAP Authorization through Lotus Notes was implemented in September 2008. Similarly, a 'Procurement Process Automation (PPA)' has also been implemented, which has improved efficiencies in the procurement processes. The scope of the PPA is to review and award approvals required for Purchase Requisitions, Technical Evaluation Reports and Note for Approvals.

Byco is Pakistan's emerging energy company, engaged in businesses of oil refining, petroleum marketing, chemical manufacturing and petroleum logistics. The company has adopted Enterprise Resource Planning (ERP) and Management Information Systems (MIS) for improving its business processes. SAP, one of the leading ERP software is already in place and being implemented in Byco since 2006, which has enhanced system efficiencies by providing real time information to management for decision making. Various enhancements have been done in the system to cater to new

Business Process Requirements mainly related to Chart of Account, Material Master Coding, stocking, daily sales and tank lorry master data.

Attock Petroleum Ltd. has successfully managed to increase its process efficiencies and engaged in effectual time management. In order to meet the mid country fuel demands, a terminal is build and commissioned at Machike. This terminal connects APL with MFM (Mehmoodkot-Faisalabad-Machike) pipeline and WOPP (white oil pipeline). This terminal has a storage capacity of HSD, PMG & SKO. This storage / dispatch facility has further increased APL market share & is a step towards company's prosperous future. The other major achievements are in the sector of quality assurance unit, by setting up of quality control lab at Machike & mobilization of another quality control mobile unit for central Punjab.

Attock Refinery is planning to establish a structured, measured set of activities designed to produce required results for customers and market. Over recent past, the company has efficiently managed its resources for process improvement and proficient time management. As part of its business process re-engineering initiatives, Attock Refinery is planning to install its oil terminals at Mehmoodkot, Gatti and Shikarpur (after successful completion of Machike terminal) to captivate oil market of South Punjab, Faisalabad industrial area and Central Sindh. These terminals will be connected to White Oil Pipeline (WOP) and Mehmood-Kot-Faisalabad-Machike Pipeline (MFM) and are expected to increase APL market share in oil and gas sector

Mari Gas Co. has successfully implemented SAP R3 ERP which is specific for the oil and gas industry. SAP implementation is expected to yield improved practices, procedures and smooth business process and operations of the company. They are focusing on developing integrated enterprise wide information architecture for enhancing organization efficiency.

In **Pakistan Oil Fields Ltd.** all the processes are subject to continuous evaluation and improvement. Being an oil and gas exploration and production company, research is an integral part of its operations and a significant part of exploration activity. Data acquisition, processing and interpretation during geophysical activities involve the selection of optimum data acquisition parameters through careful experimental comprehensive research to understand the behavior of sub-surface locations of any area, using latest sub-surface imaging technology, before a drillable project is developed. Research is also conducted to study reservoir behavior to optimize recovery from a field.

As a part of Business Process Reengineering (BPR), after successful installation and smooth running of Oracle Financials and HRMS Modules for Human Resource Management and

Payroll process, implementation of other two Modules of Oracle E-Business suite namely 'Oracle Purchasing' and 'Oracle Inventory' have been completed in test environment and expected to go live in the near future, resulting in maximum integration of the Management Information System (MIS). To make implementation of Oracle Inventory more fruitful, another exercise was undertaken wherein the existing inventory data has been cleansed by a third party. A software namely 'Standard Modifier Dictionary' (SMD) has also been acquired to bring the existing and all new inventory items description in a logical and symmetrical order. For efficient handling of inventory through bar codes a pilot project of 'Stock Receiving and Issuance Automation' (SRIA) has been completed and tested satisfactorily. To further support this integration, infrastructure has been improved by extending existing radio connectivity to Balkassar and Meyal fields and within various locations in Khaur field.

Role of Management Accountants in Business Process Re-engineering

One of the basic purposes of Business process re-engineering is to 'manage costs' and improve customer value, which is also the core objective of Management Accounting. In a broader

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sense, the Management Accountants have definite and instrumental role in planning and implementing Business Process Reengineering (BPR). In fact, by having specific knowledge about cost elements and their flow throughout the operational processes, they can effectively support the BPR planning and implementation. In the planning stage of BPR, a Management Accountants can help coordinate information flow between various process departments; plan information

execution system requirements, identify alternate methods of operation; organize bench-marking activities and assess current and required costing methods. Similarly, in the implementation stage, he can monitor the new process after BPR exercise; analyze if information objectives have been fulfilled; identify areas for further improvement. In the context of Pakistan, Management Accountants need to adopt expertise in re-engineering and use it as a tool for bringing innovations in the business processes of organizations with a view to control costs to bring out productive results.

Components of Process Re-engineering

