Business Process Reengineering: Literature Review of Approaches and Applications

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This study was conducted with the aim to collect and review the work done so far in the field of BPR. Focus of this study was on providing a comprehensive overview of overall development of BPR concept, theories, models, approaches and outcomes, and success and failure causes.

Design/Methodology/ Approach: study was based on secondary source i.e. published and available researches in the field of BPR. Research papers were critically reviewed and then were divided into sub headings i.e. introduction, why do firm need change, background of BPR, BPR methodologies, approaches, causes of success and failure, and BPR in practice (both in public and private sectors).

Research Limitations: Study was restricted to the subject of available researches (online) and to the specific objective i.e. to review the progress in this field of BPR mainly management oriented and not to IT or engineering etc.

Conclusion drawn was based on the previous research studies and it was concluded that there is no universal approach to the BPR nor can it be guaranteed that BPR will ensure the success of an organization.

Business Process Reengineering (BPR) is not an unknown word to the business world. It has been more than two decades since it was introduced for the first time as a tool for change in American business sector. Hammer (1990) was the first person who introduced BPR and is considered as a father of BPR. BPR is a tool used for bringing radical change in the business process and was adopted initially by the private sector (US-based firms) in early 1990s as an replacement of total quality management (TQM, a Japanese approach) (Hammer and Stanton (1995)). BPR is said to be a new approach for the process management that brings radical change (improvement) in organizational performance.

Hammer, M. & Champy (1993) thinks it as radical change and rethinking of overall process to achieve overall performance in terms of cost, quality, service and speed, while Davenport & Short (1990) calls it as a process of analysis and workflow redesign in an organization. Talwar (1993) on the other hand emphasized on rethinking and reconstructing the organizational structure, workflow and value chain.

In the era of technology, globalization and rapid change in customer’s need, it is essential to realize the importance of change. Thus, Change is becoming necessity in today’s environment of massive competition and drastic technological changes thus, it is of great concern for the management and consultants to plan accordingly otherwise, they (company) will get out of competition (out of market). BPR is an important tools used for incorporating change and had proved to be the significant approaches due to its features and the results produced by the effective utilization of these approach over decades. Majed. Al-Mashari, Irani, and Zairi (2001) stated that, every firm wants to achieve efficiency and effectiveness in reducing cost of production, improving quality of product and also by providing timely and speedy products and services to the customer.
thus, these requirements are well delivered by BPR. Thus, BPR is the only (consistent) tool (if applied properly) will produce ground breaking results as said by Weerakkody, Janssen, and Dwivedi (2011).

Gunasekaran and Kobu (2002) argued that the important feature of BPR adaptation is because of its ability and utilization of Information technology (I.T) and computation. It has been further stated that the gaining acceptance of BPR as a tool for change is due to its openness towards the technology. Thus, the major role played in the success of change process (BPR) is because of its development and ability to incorporate latest technology.

However, on the other hand, failure rate recorded by Cao, Clarke, and Lehaney (2001) is as high as 70%. Marjanovic (2000) also found the failure rate of BPR project is as more than 70% therefore, planning and implementing the BPR properly is necessary.

This paper will focus on reviewing the available literature on BPR and will focus on the overall development of BPR concept, theories, models, approaches and outcomes, and success and failure causes. Every reengineering practitioner and BPR experts have their own way of explaining and using this tool. Similarly, there are differences in the approaches towards BPR and even various authors has shown differences in the concepts as well as definitions of this approach (which will be discussed in detail in this paper). Main objective behind this type of study will be to provide a comprehensive discussion on the overall work done in parts on BPR in different phases and to identify the gap so that the interested readers get a holistic insight of this concept and activities in most comprehensive manner as well as to identify the gap for further study in this field. Literature reviewed for this paper concentrated on identifying the need for change, tools and approaches used for bringing change in the organization and the findings of various studies conducted on the firms which utilized those tools for bringing change however, the main focus will remain on discussing BPR as a tool for change, introduction of BPR and development, approaches, methodology, success and failure factors, and comparison of BPR with other tools used for change.

BPR is the tool for change thus, it is important to construct a base regarding the need for change and why firms should bring change. The discussion below will start with the importance of change and then it will be followed by background of BPR, literature on BPR, approaches and applications of BPR in public as well as private sectors.

**Why do firms need to change?**

Keith Grint (1997) having his own point of view regarding change and called this as “fashion” where every year a new fashion emerges. Archer and Bowker (1995) stated that markets are changing drastically and these changes are demanding change in production, traditional approach towards innovation, adaptation of latest technology to produce high level of products and services and to adjust business as per market and global needs. Businesses that do not change their approach are going out of competition and soon will be vanished. Having a more focused discussion, Zinser, Baumgärtner, and Walliser (1998) argued that the main cause of change for the firm are mostly customer focused and that change aims to please, to attract and to retain customers. Furthermore, bringing innovation for the purpose of maintaining competitive position and utilization of advanced technologies is another reason. Similarly, some companies adopt change for quality leadership, cost reduction and very few uses this
(reengineering) for creating differentiation of products and services offered. Similarly, Marjanovic (2000) conducted a study which supports the fact that business environment is changing rapidly and it requires companies to change their way of doing business to meet the expectations of customers and thus be able to survive. Coulson-Thomas (1995) investigated to find out the type of firm that adopts change and concluded that it is learning organization which adopts change and believes in continuous learning and is always ready to accept changes. Hence, it can be concluded that the need to change arises due to customers (diversified), competition (local and global) and change (technology) O’Neill and Sohal (1999). Thus, it is the business environment that is changing with a rapid pace and the only way an organization can survive continual changes in the business environment is to learn to manage and take advantage of change effectively. Furthermore, it can be concluded that change is a continuous process which forces firms to adjust and readjust there activities (process and services etc.) with every passing day. During the period of organizational change, mostly the focus of an organization remains of bringing change in the organizational structure, organizational process, policies and procedure. Subsequently, change can affect humans (employees), system, process, organizational culture, and part of organization or the whole organization (depending on the nature of change). To adopt the change and to cope with change, it is necessary to know what kind of change a company want and to what extent? Therefore, it is necessary to examine the type of change and the available tools for change. Smith (2002) explains that organizational change means “an intentional change in the way the organization does business that affects the strategic position of the organization vis-à-vis its competition”. Furthermore, the major organizational changes that are frequently occurring includes; merger and acquisition, expansion of business (any type), change in organization culture (including customer orientation), and bringing change in technology (including ICT), process up gradation or reengineering, structural change, total quality management (TQM), and change in strategies etc. There are four major types of change in an internal environment of an organization; Structural Changes, Strategic Changes, Process Changes, and People-centered change. These changes are interlinked and change in one can lead to force an organization to bring change in the other area as well. Process oriented changes are commonly an attempt to develop overall workflow efficiency and productivity. They may include implementing technology changes, such as robotics in manufacturing or requiring sales teams to begin documenting and reporting activities in a new way. Thus, among all the types of changes, this Process change is having a central value and importance in an organization and is considered as the most difficult type of change as well. (CliffsNotes.com).

**BPR as a tool for organizational change**

**Development of BPR**

Bhandiwad (1998) argued that in 1970s people were after productivity while in 80s the trend shifted towards quality while since 1990s almost every organization is at least talking about “process improvement”, “process redesign” or “process reengineering” as
a source (way) to cope with the dramatic changes in technology and competition. Among various techniques and management approaches BPR is new and most commonly used in this era of globalization and technology. Venkartraman (1991) elaborates the birth of BPR in his study as for the first time effort of BPR was to align the I.T with strategy. This effort started in 1984 during research program at M.I.T. This was the first time that a proper procedure was developed and had dramatic results in the 1980’s and 90’s. Later on researchers and scholars had designed other process by studying and evaluating the outcomes as discussed by McKay and Radnor (1998).

Grey and Mitev (1995) concluded that there are three essential Cs in BPR i.e. customers, competition, and change. These Cs are in other word reasons why companies are adopting BPR. They want to satisfy customer’s need and wants, achieve competitive advantage and to move with constantly changing environment.

T. H. Davenport and Short (1990); (Hammer, 1990) are the pioneers in the field of BPR who introduced this concept to the world and are known as the fathers of BPR. Hammer & Champy (1993) defined Business process Research (BPR) as “the fundamental rethinking and radical redesign of business process to achieve dramatic improvement in critical contemporary measures of performance, such as cost, quality, service and speed”. Another definition of BPR was from T. Davenport (1993), "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."

Changes in business process are named differently by various authors for example; Habib (2011) collected the various definitions and approaches and stated that, “Interpretation of business process varies from author to author (for example Hammer & Champy (1993) thinks it as radical change and rethinking of overall process to achieve overall performance in terms of cost, quality, service and speed, while Davenport & Short (1990) calls it as a process of analysis and workflow redesign in an organization. Talwar (1993) on the other hand emphasized on rethinking and reconstructing the organizational structure, workflow and value chain. Petrozzo & Stepper (1994) call it synergetic and synchronized redesign of firms’ process and overall system to improve the operations (as cited in Greasley & Barlow, 1998). O’Neill & Sohal (1999) argued that focus of the business process or change differs among many researchers. Hammer (1990) called it BPR (Business Process Re-engineering), Davenport & Short (1990) used BPR (Business Process Redesign), Harrington (1990) used term Business Process Improvement while Business process transformation term was used by Burke & Peppard (1993) etc. In all discussion, it is clear that the authors are obvious about the importance of BPR and all agree on the result i.e. improved performance, efficient and effectiveness, cost minimization and increase in production. In short it can be said that radical improvement of organizational performance and process is the key aspect of BPR”.

According to Sentanin, Santos, and Jabbour (2008), the concept of BPR originated in 1990s enabling companies to improve productivity and relationships with customers and reduce time to launch new products and services in terms of cost quality customer satisfaction and shareholder’s value in line with the strategy by identifying the most important processes of the company. It is to assess the stages of the company in line
with the processes the company is going through to enable a company for process improvement process redesign and radical reengineering.

Similarly, Cao et al. (2001) considers BPR as a tool for managing change, increasing productivity, reducing cost, tool for improving satisfaction of customers and quality of products produced. Furthermore, Majed Al-Mashari and Zairi (2000) says that, BPR is about bringing radical (major) change to provide satisfaction to customers, to achieve competitive advantage, to improve quality of products and services, and to minimize cost. In struggle for survival in this dynamic business environment, globally $2.2 billion were spent on BPR between 1996- 2000 with an annual growth exceeding 46%. This shows the urgency of companies towards adjusting their business in histrionic and world-shattering changes.

Moreover, Goksoy, Ozsoy, and Vayvay (2012) considers BPR as a strategic tool for organizational change and stated that firm needs to bring moderate change every year and undergo a major change almost every fifth year if they want to survive in todays’ hypercompetitive environment.

Thus, BPR, with so many names and differences in the approach leads to create confusion in the mind of readers therefore, it is necessary to review those approaches and different schools of thoughts for the purpose to identify the areas of agreement and disagreements.

Approaches to BPR and Schools of thoughts

Muthu, Whitman, and Cheraghi (1999) in their study focused on presenting a consolidated methodology for business process reengineering (BPR) however, their approach was based on the shortcomings of the previous studies and models (see in table:1) (presented by Furey, Timothy.R., (1993), Harrison, Brian.D., Pratt, Maurice.D., (1993), Manganelli, Raymond.L., Klein, Mark.M., (1994), Mayer, Richard.J., Dewitte, Paula.S., (1998), Underdown, D. R.,(1997)) and provide their own model for BPR. Muthu et.al,(1999) stated that BPR is the process for those who wants 10 times improvement thus, it should not be used for minor improvement in business processes. Before incorporating BPR, the authors insists on having process maps (department wise) as an important tool for getting insight of the area that needs radical change. However, authors were unable to provide any evidence that how to develop process map and how to compare “As-Is business process” and “To-Be roadmap for reengineering”.

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<td>• Set Direction</td>
<td>• Determine Customer Requirements &amp;Goals for the Process</td>
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<td>• Baseline and</td>
<td>• Map and Measure the Existing Process</td>
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<td>• Create the Vision</td>
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Consolidated methodology based on previous studies (shown in Table 1) was named IDEF0 (Integration Definition for Function Modeling) comprised of five steps; prepare for BPR, Map and Analyze As-Is process, Design To-Be process, Implement and Improve continuously. However, this model is unable to provide anything new or ground breaking solutions. As the major focus of this model was to combine the previous work while authors were unable to add something new to the existing BPR process and model. Furthermore, the model is followed by series of other models IDEF1, IDEF2, IDEF3 etc. with the help of “Structured Analysis and Design Technique (SADT)” which is complex software and is only used for developing model based on information provided. Moreover, in conclusion of the paper, researchers were unable to provide any validation and success ratio of this model. BPR is customized approach and is different needs, implication and varies from organization to organization therefore, it is very difficult to provide a consolidated model equally applicable in every organization.

Coulson-Thomas (1995) argued that it is learning organization which adopts change and believes in continuous learning and is always ready to accept changes thus, BPR is made for such organizations. This study was based on the findings of COBRA (constraints and opportunities in business restructuring – an analysis), a team designed to study BPR projects, experiences and studies and report to Commission of the European Communities. Their task was to organize seminars, workshops, discussion forums and case based interviews to study current practices, policies and methodologies of BPR in practice and later on come up with guidelines and suggestions for private, public and voluntary sectors. 80 cases were examined and BPR was divided into two sub methods (i.e. Davenport’s BPR approach to process improvement or process simplification and Hammers’ re-engineering). Comparison of both processes is given in Table below;
Table: Simplification or Re-engineering

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<th>Process Simplification</th>
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<tr>
<td>• Incremental change</td>
<td>• Radical transformation</td>
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<td>• Process-led</td>
<td>• Vision-led</td>
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<tr>
<td>• Within existing framework</td>
<td>• Review framework</td>
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<tr>
<td>• Improve application of technology</td>
<td>• Introduce new technology</td>
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<td>• Assume attitudes and behavior</td>
<td>• Changes attitudes and behavior</td>
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<tr>
<td>• Management-led</td>
<td>• Director-led</td>
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<td>• Various simultaneous projects</td>
<td>• Limited number of corporate initiative</td>
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Despite the vows delivered by reengineering in the field of change, Mansar and Reijers (2007) focused on the concept of redesign (also known as Business process redesign (BPR)) which is less fruitful and less risky as compared to reengineering. The focus of study was to identify the best practices in this field for which a framework was designed having six major components (i.e. Customers, Products/Operation view, Behavioral view, External environment, Organization: structure, and Organization: population) as authors considered them as best practices in implementation. Furthermore, this framework was based on the selection of ten best practices of BPR in the past (most frequently used) i.e. Task elimination, Task composition, Integral technology, Empower, Order assignment, Specialist-generalist, Integration, Parallelism, and Numerical involvement.

Keith Grint (1997) having his own point of few regarding change and called this as “fashion” and every year a new fashion emerges. Every type of approach i.e. TQM, BPR, JIT, BSCs (balance score card) and other TLAs (three letter acronyms) are all in line with any related fashion. These approaches itself possess some characteristics that are causing problems. Author further divides his work into two categories i.e. waves and drowning.

Macdonald (1995) argues that the nature of business environment is changing dramatically, the competitive pressure and demand of customers are increasing day by day therefore, alone TQM (steady improvement) will not be sufficient and there is a need for radical change for the organizational sustainability and survival. One of the misconceptions about process redesign is that most of the firm’s considering it as a BPR because redesign engages companies in designing cross-functional teams and is having customer focus as well however, it focuses on redesigning existence processes for improvement with the help of cross-functional boundaries thus in broader sense it is what TQM is all about. However, the only difference between process redesign and earlier approaches is that it uses I.T for development. Lastly reengineering (BPR) is “fundamental rethink and radical redesign of business processes” with an objective to meet companies requirements that cannot be achieved through improvement processes with dramatic improvements. Furthermore, dramatic changes via BPR will be achieved by cutting down product development cycle (50%), reducing delivery time, cost reduction by 60 to 80%, and at the same time service improvement is what BPR does. BPR is radical but involves high risk, time consumption, costly while it provides dramatic results (see Figure).
Failure recorded in this radical change is 50 to 70% however the same is resulted in TQM. An author suggests that BPR and TQM are “complementary rather than in opposition”. TQM will provide cultural framework for BPR as TQM focuses on change of behavior and attitude while this change can create a supportive environment for BPR implementation. As combination of BPR and TQM will overcome the deficiencies of each other e.g. BPR is management driven while TQM is people driven, BPR is top to bottom while TQM is bottom top approach, BPR focus of coping with external pressure while TQM is used to deal with issues that are arises internally thus, to implement radical change it is essential to create an internal environment and culture supportive. Thus, the above discussion can be summarized with the statement that there are differences in the opinion and approaches of scholars. Pruijt (1998) argues that there is a lot of contradiction between authors’ point of view about BPR. Some authors interprets and see BPR as “a break with Taylorism”, few consider it as a “direct continuation of Taylorism”, other consider it as "very different from continuous improvement" while there are some who refuses to point out any major difference between BPR and continuous improvement. According to author, BPR is having four various identities i.e. BPR as management fad (BPR-F), BPR as a neo-Taylorist movement (BPR-N), BPR as a euphemism for downsizing (BPR-D), BPR as a non-normative label for business process oriented change efforts (BPR-P). “BPR as management fad (BPR-F) is derived from management consultancy and literature and there are authors like Peter Drucker, Hammer and Champy believes that BPR is new and it has to be done. BPR as a neo-Taylorist movement (BPR-N) is considered as a new or modified form of Taylorist movement where BPR focuses on integration business process and on cross-functional borders however, in contrast to Taylorism of division of labor, skills and control, BPR shows no concern over these attributes. Moreover, BPR focuses on radical change while the fads of change management and implementation remains same to Taylorism. Taylorism involves HR in decision making and supporting the role of HR in an organization however, Neo-Taylorism has characteristics i.e. a top-down streamlining of operations, unproblematic acceptance of typical Taylorist solutions, asserting that the outcome for workers is an upgraded work content. Furthermore, BPR-F has replaced TQM largely while there are substantial
difference among TQM and BPR-N (TQM gives control to subordinates, while BPR does not). Managers who believes TQM is not working have adopted BPR as more authoritarian approach). BPR as a euphemism for downsizing (BPR-D) is of the point of view that in either way (directly or indirectly) BPR results in downsizing (in some cases 50 to 90%). In last, BPR as a non-normative label for business process oriented change efforts (BPR-P) thinks that BPR is not that young phenomenon and it is full of history where almost every firm has reengineered even before the name BPR was coined. However, there have been additions to this process and still it remains open for contribution and refining. Furthermore, there is a wide chance of choosing between radical and incremental change with the help of workforce (bottom top approach) or without them (top to bottom). Thus, this means that BPR is not as an axe, it is up to the choice of decision makers that they swallow BPR as continuation to Taylorism or they consider it unique.

Methodologies and frameworks
Mansar and Reijers (2007) focused on the concept of redesign (also known as Business process redesign (BPR)) which is less fruitful and less risky as compared to reengineering. The focus of study was to identify the best practices in this field for which a framework was designed having six major components (i.e. Customers, Products/Operation view, Behavioral view, External environment, Organization: structure, and Organization: population) as authors considered them as best practices in implementation. Furthermore, this framework was based on the selection of ten best practices of BPR in the past (most frequently used) i.e. Task elimination, Task composition, Integral technology, Empower, Order assignment, Specialist-generalist, Integration, Parallelism, and Numerical involvement. The aim of the study was to find out the use and impact of those practices in the field of redesign thus, for investigation, a survey was designed with the sample of UK and Dutch BPR practitioners (60 from UK and 31 from Dutch) with an average of 20 years of experience in this field. The response rate was 20 and 42 % respectively. The results indicated that most of the concern among BPR framework components was towards the customers and followed by product and information system (3.72, 3.40 and 3.36 mean respectively). It further revealed that the most practice of BPR was of task elimination (removal of unnecessary tasks from the job) with a high percentage of 94, as well as 94 % used was Integral business technology, followed by task composition (89% used), Parallelism (88%), while organization structure (order assignment) was the least used best practice by the practitioners in the field of business process redesign with only 53 % usage by them. Thus it has been concluded that customers are the key reason for redesigning of business process and the best practice most frequently adopted for that purpose was of task elimination (for fast and efficient service) and inclusion of IT in the organization. However, almost similar is the purpose of most of the organizations that adopted reengineering and showing the same concern (reason) for incorporating change. Thus, this study also helped in showing the similarities that are possessed in redesign and reengineering.

Motwani, Kumar, Jiang, and Youssef (1998) presented a framework on BPR (as shown in figure bellow) comprising of six phases (stages). At the initial stage (phase 1), it is of very importance that the top management realize and understand what they want and
why they want it? It is also very important that the top management should show their full commitment towards the initiative. In the second stage, vision is required to make all the energy to run in the right direction thus, it is also the task of the top management to provide a proper vision and objectives to the rest of the employees so that the activities of the firm are channelized. Third stage is related to the benchmarking, where the current process and activities are evaluated to find out the areas of real concern and then establish the baseline for the BPR project. Forth stage is related to transformation where pilot study takes place and the work is evaluated to calculate the scope of change and the resources needed for this transformation. When this pilot study is conducted successfully then stage 5 is about the implementation where the BPR project is implemented organization wide. This stage is very crucial thus it requires support of top management and the commitment of middle managers to educate employees, provide leadership, alignment of the structure, implementation of IT and modification of reward system so that the integration is completed as a successful project. To avoid resistance, a proper and continuous communication should be there among all levels of the organization. The last stage of this model is about monitoring and evaluation of the whole project where the success of the project is monitored regularly as well as the areas that needs modification (continuous improvement) are also identified.
Luo and Tung (1999) undertaken a study on devising a framework which will help in selecting appropriate BPR modeling method with an aim that many organizations are adopting BPR due to increase in competition and dynamic business environment (local as well as internationally). Availability of complete information at the time of BPR planning and then right tools selection for the analysis of situation that best suits organizational requirements is vital for BPR success. According to authors Business Process modeling (BPM) is defined as “The techniques for characterizing and analyzing business processes”. There are many methods and software that helps researchers and practitioners in designing BPM however, selection of right approach to BPR is still vital. Researchers in this study insist on selecting BPM method that is having desirable perspective towards BPR and the organizational objectives. Base of this study relied on several types of business processes suggested by previous studies (Denna et al. (1995), Davenport and Short (1990) and Curtis et al. (1992)) focusing on different aspects of BPR process and its objectives. Denna et al. (1995) identified three basic types: 1 acquisition /payment, conversion and sales/collection (as discussed in the
paper acquisition or payment and sales/collection is having almost similar procedure in most of the organizations while conversion i.e. production and operation mainly vary from company to company thus is crucial in nature to the success of BPR project. Davenport and Short (1990) elaborates business processes in terms of entities, objects and activities. Entities refer to the consideration of all processes ranging from internal-personal to inter-functional and above all inter-organizational process. Objects refer to the type of (physical or informational) area of organization that need to be handled and activities (operational or managerial) that requires consideration. According to Curtis et al. (1992) as discussed in study identified most common perspectives of BPR modeling i.e. functional, behavioral, organizational, and informational. Moreover, authors are of the opinion that before undertaking BPR one should consider better understanding of existing process and then mapping new process (alternative) process and preparing measurement (evaluation) tools. Similar to other studies discussed in literature this study is also of the opinion not to rely on single model instead of concentrating on multiple modeling processes. A framework for selecting BPM method should be based on certain pre-defined objectives that require clear perspective and characteristics for reengineering. Objectives can be classified into three categories; communication (clear understanding, simplicity, clarity in terms of process, knowledge and reason for change), analysis (aim to analyze and improve existing process and identifying the areas that are of main concern) and control (managing and monitoring the modeling and later stages).

Salegna and Fazel (1996) argues that although TQM (total quality management) and BPR are two prevalent techniques used for change but most of the efforts to transform this effort as a successful projects is turned out as a failure. Authors justify their statement as being of having lack of integrated framework for implementing those projects and further due to not having alignment with company’s plan (Vision and mission), competitive environment, culture of organization and its strategic objectives. Many of the management teams consider TQM and BPR as mutually exclusive and choose any one of them however, in the perceptiveness of authors the quality and reengineering should be unified for sound results. Both approaches will provide successful results only in case they are properly linked with strategic objectives of organization and properly planned however, there is difference between the tools and techniques and the areas that are covered by these approaches. However, both are known for its payoffs i.e. reduced time-cycle, cost efficiency, customer and employee satisfaction. For the success of both Majed Al-Mashari and Zairi (2000) presented a holistic framework for BPR implementation (See Figure).
It has been proved by above discussion that BPR is having no universal approach, model or system that can be used for reengineering by firms all across the globe. Despite of the differences, there are several factors that are considered and reported time to time as causes of success and failure therefore, it is important to discuss those factors as well.

**Causes of success and failure**

Cao et al. (2001) considers that there may not be a single reason that causes high rate (about 70%) of failure to BPR implementation however; there may be several reason that contributes to the failure of implementing change successfully. Objectives of this study were to provide a “holistic view of managing change” and to discuss the possible
methodology for incorporating change. According to the authors (based on previous studies) organizational change requires change four dimensional change i.e. change in organizational process, structure or design, change in organizational culture and change in organizational politics (i.e. change in organizational power distribution etc.). If one wants to bring change in any dimension, it will raise a need for change in the other dimension (as they are interrelated and interdependent). However, it is a well-known fact that every department and function of an organization is interrelated and interdependent. Subsequently, a negligence towards the other issue may create problem and will result is failure. Thus, authors of this study suggest not to use a single method rather insists on use of multiple methods to incorporate change and implement BPR successfully. However, change in culture is considered to be very difficult to mend and it is one of the major reasons that were not highlighted in their arguments. This study concluded that BPR is a process that is used for bringing radical change in an organization but it is having over emphasis on bringing change in organizational process and it almost ignores the rest of three dimension that are likely to deal more frequently with the human (workforce) and behavioral side of organization and suggests that different approaches should be used for different dimensions of change and the interaction of different dimension should be considered while bringing change. The arguments provided in this study are valid to some extent however, the purpose of BPR is to bring a radical change into every part and process of organization therefore several researchers are of the opinion to educate the change and provide training before it takes place (Habib and Wazir (2012))

Belmiro, Gardiner, Simmons, and Rentes (2000) studied BPR in UK and Brazilian companies who adopted BPR. In both countries, firms are lacking the basic concepts of BPR and this leads to the birth of so many unanticipated problems and issues and problems. These issues play role as a barrier and finally a failure to all the efforts. This is due to more focus on short term objectives rather than long-term orientation, among the sample firms; streamlining was done successfully but proper reengineering was yet to be conducted. Ignorance towards HR, team building, job security and organizational culture are the major causes of failure. This is due to lack of basic awareness and ignorance of understanding the process flow and not communicating the causes of redesigning. Thus the researchers recommends that all those companies who are in thinking or implementing process of reengineering should work on organizational structure, re-work design, reducing burden and to increase flexibility and competitiveness, firms’ should reduce the number of layers between company and client. Furthermore, emphasis should be given to training and education. For educating and implementing the radical change, top management should play their role. Finally, authors suggested that educational institutes are having an important role in fulfilling the market need by providing educated fresh blood to the economy and also in mentoring. Luo and Tung (1999) stated that, availability of complete information at the time of BPR planning and then right tools selection for the analysis of situation that best suits organizational requirements is vital for BPR success.

Majed Al-Mashari and Zairi (1999) conducted an extensive study on the analysis of success and failure factors of BPR implementation process (both soft and hard factors). Literature suggests that these factors broadly includes; change management, management competency and support, organizational structure, project planning and
management, and I.T infrastructure. Change management is one of the most important factors which plays vital role in successful implementation of any change brought into the organization. Change management includes adjusted human and social related changes as well as adjustment to organizational culture. This includes adjusting reward system to bring motivation, communication channels (top to bottom, bottom to top, horizontal and vertical), shifting power and accountability to as lower level as possible (empowerment), involve personal from every level and cross functional departments and encourage participation, educate employees about the change taking place and provide them exclusive training (also suggested to increase 30-50% training budget), organizational culture is an important attribute in change management so common goals may play an important, and openness to change i.e. positive perception towards change and support the change process. Management competencies and support is another important factor in success of BPR. This factor includes; commitment from top management and transformational leadership having strong will to bring and manage change, and risk management (planning and managing) skills. Next success factor defined in this study was of organizational structure including; adequate job integration approach (organizational structure that is also known as HR infrastructure of an organization should be adjusted as per need of BPR to support the radical change), to support BPR firm needs to develop cross functional and effective team (that is skillful, experienced, competent and credible), and proper definition of job (i.e. job description, specification) and distribution of responsibilities. Yet another factor which is related to BPR project management is a very basic and fundamental factor for success and sub factors in this category includes; creating a link of BPR strategy with organizational (corporate) strategy and effective planning for project management. To identify and measure organizational performance and defining goals to achieve will serve as a benchmark and roadmap for BPR success and it includes; arranging and providing sufficient resources to achieve goals, organization should setup their own methodology that best fit to their organization and helps in achieving goals effectively and efficiently, keeping an eye on external environment (for customer research, analysis of competitors and setting standards), (if needed) hire the expertise of consultants and take advantage from their skills, constructing a sound vision for the organization, redesigning the process effectively that clearly explains the core and supporting process, link BPR with TQM and Organizational development (OD) etc., and this profit should create values for all stakeholders. Finally the factor that is known as call of the day i.e. Information technology is among the most important factor for the success of BPR which includes; interaction of IT infrastructure with BPR strategy, transforming process with the help of latest technology, IT induction at every level of organization, developing information system (IS), and effective use of software tools.

However, same factors may be a cause for failure thus they need to be considered, planned and worked very carefully. BPR process may fail due to change management and factors including are; problems with communication i.e. change may not be communicated properly, failure may be due to poor communication or lack of reward and motivation, resistance to change is one of the common factor faced by most of the organization and one of the biggest barrier in change. Furthermore, lack of organizational readiness for change, cultural changes, and lack of training and education might be other reasons for failure caused by change management system not
properly management. Support from top management is also found to be a cause of failure as lack of commitment, support and absence of leadership, championship and lack of sponsorship from top management might be reasons for failure. Some authors are of the opinion that organizational structure with flaws might cause failure to BPR as ineffective BPR teams and problems with integration, lack of description and allocation of duties and responsibilities are of key concern. Some other factors that may be caused as failure including; lack of BPR project planning and consideration, lack of proper modeling and ineffective design of goals, having no or narrow focus on technology, resource allocation, and selecting wrong I.T structure for organization. Most of the time reengineering effort fails because of resistance as it is considered as a threat to middle management. Other reasons for BPR failures are communication gap, always aiming for profitability from top management while employees resists because they consider failure as too risky and resulting in bankruptcy, lack of commitment and lack of coordination among cross-functional groups. Bureaucratic system will not work in BPR as in process of change organization needs to involve workforce and empower them. According to author, there is a strong need for empirical work in the field of BPR to test the theories and concepts in reality as very less focus is on this side of effort however, the work of authors itself was not empirical [Grey and Mitev (1995)]

First factor proposed by Hammer and Staton (1995) as success is Reengineering Leadership. Success of reengineering project’s needs “process orientation” by top managers. Whenever change is planned in an organization it should be communicated throughout the organization in a motivating way, so that employees may welcome the change process (Davenport 1993, Grint et.al 1993). Style of Implementation is the third factor change should be made according to organizational resources.

Drago and Geisler (1997) also pointed towards the mistakes management is making as undertaking BPR and therefore it is not that much fruitful to them as it should be. As this technique is to improve productivity, reduce cost, and improve efficiency and the quality of goods and services to the end users. Thus, it requires change in organizations’ vision and mission statements as well as in the whole process. Information technology (I.T) and adaptation of latest technologies are the key “enablers” of the success of BPR and it is essential for the survival in todays’ dynamic business environment. Among many of problems faced by BPR is lack of sufficient preparation. BPR in early 90s was one of the top most subject (issue) to talk over and thus without estimating the worth of this process so many companies adopted BPR as a tool for change and ignoring other change process. The perceived importance given to this process and ignorance of the other change processes was one of the problem and reason for increase in the chances of failure. Top management should know what type of improvement they need, how they want to achieve and what is the best source of achievement of such performance. There are other problems that includes; lack of proper planning, narrow scope, lack of direction, improper involvement of I.T, and considering a change as a normal process may also create problems and results in insufficient planning for BPR. At the time of implementations, problems that can be faced include; lack of management commitment towards implementation of BPR, status quo (i.e. not willing to change their attitude), unable to communicate vision and organizational goal (expectations from BPR), focus on cost reduction, not utilizing I.T, not supporting employees (involved directly or indirectly in implementation process), top and middle managements’ unwilling to change
management style, not considering change as a strategic while considering it as operational process, not justifying paradigm shift and poor team development, and ineffective decision making abilities are the problems faced during implementation. In response to problems discussed above, authors in this study suggested that companies undergoing through radical change should plan effectively each and everything (from vision till goal setting and also plan the implementation), involve the most loyal and willing people to change, select areas and emphasize on efficiency and effectiveness, always keep contingency plans and design effective control system. However, authors were unable to provide any statistical evidence to the problems and their ratio (commonality) of occurrences. Moreover, the guideline provided is not justified. Additionally BPR proves is customized and varies from company to company (based on requirements) thus, these needs to be tested.

Ranganathana and Dhaliwal (2001) undergone to study the success and failure of BPR efforts in Singapore because of the fact that Singapore has been ranked very high on the basis of technology use and is one of the top competitive country. Findings of survey revealed that 64 firms (i.e. 50.4%) were having BPR projects while 37 firms (29.1) had strong intentions for BPR projects in near future while this ratio was less in USA (45%). Findings also revealed that private MNCs and other small local businesses are having more of BPR (current) projects than public sector firms (having intention to undertake BPR within 3 years). BPR was used by manufacturing firms (29.82% implemented and 40% planned intention) more than others followed by, retailing (21.05% on going and 8.57% planning to undertake) and financial sector (17.54% undertaken while 20% planned). Furthermore, the major motive behind BPR project in Singapore was found to be for improving efficiency (mean= 4.40) followed by customer service improvement (mean of 4.08), cost reduction (mean of 3.68), and lastly to increase profitability (3.56). Additionally, question was asked from the respondents to identify the role of key members in BPR efforts (top management, IS executives, functional executives and external consultants) and the findings were that the respondents consider top management to act as initiators and as BPR champions while the role of IS executives should be of BPR project coordinators and facilitators, role of functional executives was defined to be of communicators mostly and the role of external consultants should majorly be of project facilitators. Finally, the problems in BPR effort were found to be of lack of adequate human and financial resource (mean=3.24) as a major problem and followed by having no capable IT expertise in the firm (with mean of 3.21), lack of support (3.19), lack of BPR champion (3.18), cooperation between cross-functional teams (3.18), difficulty in adopting right process, organizations’ supportive structure, lack of vision, and least problems were arise from lack of adequate IT infrastructure in the firm.

Abdolvand, Albadvi, and Ferdowssi (2008) assessed the readiness of two companies from Iran towards the BPR and to understand the degree of success and failure factors effect on the readiness. These factors were derived from previous studies, CSF was categorized in four main and 17 sub categories (factors) while only one failure factor (category) of resistance to change was taken for this study (see figure below).
Ahmad, Francis, and Zairi (2007) conducted a study on identification of CSF of BPR in higher educational sector. It was found that the common CSFs were:

- Teamwork and quality culture
- Quality management system and satisfactory rewards (motivational incentives)
- Change management (very difficult to deal with HR)
- Less bureaucratic and participative
- IT/ IS
- Project management
- Adequate financial resources
As these CSFs are proved to be the most significant contributors in the higher educational institutes of Malaysia and the previous studies has also confirmed that they are important for the success of BPR regardless on sector, firm or departments. Authors have also suggested that for better results, OD (organizational development) for managing change in the organization so that employees gets satisfied in all aspects and they get the right amount of information as required.

**BPR in practice (Public and private sector)**

MacIntosh (2003) examined BPR project and its applications in both private and public sectors of UK (United Kingdom), from private sector a manufacturing firm was selected while from public sector two higher educational institutes were selected for study. Number of staff involved during planning of BPR were; In FixCo there were 15 (all stuff later on involved in training and implementation), while in Edu1 there were 12 (35 in process of redesign) and in Edu2 were 18 (37 in implementation). However, time of adaptation varied significantly i.e. October 1993-May 1995 (FixCo), November 1996-March 2000 (Edu1) and March 2001-January 2003 (Edu2). Common attribute in all these processes are the cross-departmental interaction and increasing value for end user. Model used were also different (i.e. FixCo used IDEF0 designed by consultants, Edu1 used DFD (Data Flow Diagrams) with the help of planning team while Edu2 used flow charts designed by internal planning team. Process mapping was done with the help of generic (FixCo) and context specific (edu1 and edu2). FixCo and edu2 used BPR as radical change while edu1 used it for incremental change. Thus the result shows that there were significant improvements in performance of FixCo and edu2 while no improvements were recorded in edu1. Furthermore, FixCo and edu2 readjusted their organizational structure according to the need of radical change while edu1 had brought no change in structure moreover, roles were also redefined in these organizations except edu1 and time taken at implementation of BPR in edu1 was more compared to rest of the firms in this study. Study of Archer and Bowker (1995). has shown an important aspect of BPR and its result i.e. BPR should be used for radical change not for incremental change and organizational structure should also be adjusted as needed. Furthermore, roles must be defined and it should be implemented as soon as it is planned and communicated. However, the sample organizations selected were not as they were supposed to be i.e. either all sample should be from higher education or from production. A method (comprising of five steps) to undertake BPR project i.e. Prepare study, Analysis of current business processes, Redesign the processes, Implement redesigned processes, and continuously improve the process while the method suggested by Burke and Peppard comprised of four steps i.e. Have a vision, Identify and understand the current business processes, Redesign the processes, Implement redesigned processes. Furthermore, the results stated that most of the firms' consider technology (IT) as an important factor of BPR. Moreover, study also revealed that there are many critical success factors for any BPR project i.e. communicating a clear vision 100%, staff participation 100%, instilling process ownership 95%, process improvement teams with staff from all levels 90%, instilling a BPR culture 90% and organizing staff around the process 90%.
K. Grint and Willcocks (1995) said that “The reengineering process should be scoped correctly”. Project members should be authorized to take decisions for making change in management systems before implementation of reengineering projects. Change should be made according to organizational resources. Research design of this study is quantitative. Online questionnaire was used. Senior managers and project leaders were the population of the study. 1000 Australian both public and private organization’s top managers and project leaders were taken as sample. 69 % of respondents stated that decision of reengineering process is taken in their organizations for “cost reduction”. While increase in “worker productivity” is the second important factor (46%) followed by increase in “satisfaction level of customer” was third factor (45%), fourth factor was “cycle time reductions” (36%) and fifth factor was “defects reduction” (24%).

Hammer and Stanton (1995), stated that three factors scores should be more than 24, 28, and 18, respectively, with the total more than 75 if the firm want to go for reengineering process. Results have shown that Hammer and Stanton have set their “threshold scores” very high. In a two tailed correlations test results showed that all correlations between the four readiness variables are significant at the 0.001 level. “Correlations with success are negative.” Then linear regression is used, adjusted R-square results showed that for these regressions it was poor, for senior managers it is 0.097 (n=132) and for project leaders it is 0.028 (n=95). Hence it showed that Hammer and Stanton’s “diagnostic variables are not good predictors of success of reengineering projects.

Jurisch, Ikas, Palka, Wolf, and Krcmar (2012) conducted a study to identify the success factors of BPR in both public and private sectors with the help of previous studies and to highlight the majors elements that are required for successful implementation of BPR in public sector. Study was based on 67 previous published research papers (29 public sector, 16 private and remaining were general). However, the selections of papers were not on the basis of most citation rather it was on the availability and relevancy of title and abstract. Findings (analysis of previous studies) of this study revealed that there are five dimensions;

1. Project scope: before starting BPR, its scope must be defined along with the realistic expectations, clear vision and goals.
2. Top management commitment: is one of the most important dimensions for the success of BPR.
3. Availability of resources: sufficient resources (BPR know-how, I.T, and others) are also required to insure success.
4. Project management: plays vital role at the implementation phase (particularly process analysis and suitable implementation mapping)
5. Change management: plays exclusive role in the success of change process

Sub-categories of these dimensions are shown in figure below. According to the authors’ finding, top management commitment and support is the central dimension while the remaining revolves around it.
Upon further investigation, authors' found that there is significant difference in the approaches of public and private sector BPR projects and this is the major reason for differences in success ratios of both sectors (See figure below). On the basis of dimensions found in literature authors concluded five propositions for successful implementation of BPR in public sector;

Proposition 1: Public organizations are less likely to initiate BPR efforts,

Proposition 2: Public and private organizations derive differing benefits from BPR projects.

Proposition 3: BPR efforts need to be initiated top-down in order to guarantee economic as well as political support and feasibility.

Proposition 4: A small-scale approach to BPR will increase success rates of BPR endeavors in the public sector and,

Proposition 5: Sharing of knowledge and experiences via trans-institutional knowledge management platforms would positively impact the implementation of BPR in public administrations.
Thus, BPR in public sector is not different from private sector however, the situations are different and the reasons for adaptation vary among these sectors. Furthermore, no breakthrough discussion was revealed in this study. However, in some cases public sector firms are directly in competition with private sector e.g. Pakistan International Airline (PIA), Pakistan steel mills etc. needs to adopt similar BPR as adopted by private sector. Moreover, there is a strong need for empirical study to testify the propositions that are elaborated from previous studies.
Conclusion
In this paper, BPR was discussed in depth and width from its origin to the practical implantation and results. Literature showed that BPR is universal approach however; it is lacking agreement between researcher’s point of view as well as practitioner’s approaches. Different authors are having their own explanation and methodology for BPR and similarly it is concluded from the literature that BPR is customized approach i.e. every firm is using it in their own way to fulfill their requirements and needs. Furthermore, it is also found that the concept of BPR is mostly misunderstood and it is used just for IT induction or redesign of an organization. There is still a need for exclusive and universally acceptable model for BPR as well as a commonly applicable methodology.


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