CHAPTER 2

REVIEW OF LITERATURE

Business Process Reengineering (BPR) was first introduced by Hammer (1990) as a radical redesign of processes in order to gain significant improvements in cost, quality, and services. BPR is a management tool, in which business processes are examined and redesigned to improve cost efficiency and service effectiveness (Lindsay et al., 2003; Vidovic and Vuhic, 2003). In addition, as per latest concept of management, reengineering is necessary, firstly for facilitating processes across the boundaries of the two organizations and secondly for integrating back- and front-office processes (Fadel and Tanniru, 2005; Lin et al., 2002). Re-engineering separates the organizations from their old functions through re-organizing them, eliminating some processes, and discovering new methods of functioning. 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 today’s hypercompetitive environment.

BPR creates changes in people (behavior and culture), processes and technology (Al-Mashari & Zairi, 2000). It does not seek to alter or fix existing processes; yet, it forces companies to ask, whether or not a process is necessary, and then seeks to find a better way to do it (Siha, & Saad, 2008). BPR integrates all departments into a complete process which have been designed to fulfill a specific business goal (Cheng et al, 2006). Successful implementation of BPR enables organizations to achieve dramatic gains in business performance (Shin & Jemella, 2002).

BPR’s implementation is perceived difficult. It requires time and proper paperwork (planning) before introducing this new process otherwise there are great chances of
failure. Many unsuccessful experiences have been reported in literature. Various surveys and assessments reported as many as 60-80 per cent of BPR initiatives having been unsuccessful (Chiplunkar et al., 2003; Dennis et al., 2003). 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%. It is therefore imperative for organization to examine whether they are culturally and structurally ready for reengineer. Specifically, re-engineering requires a strong commitment from owner-managers since they play a decisive role in determining strategic direction. Employee motivation and empowerment is essential to effective internal communication and responsiveness to customers. Training is useful in enhancing managerial knowledge as well as inter-functional work skills. The Information System function has to be repositioned to facilitate BPR by investing in IT tools and provide required end-user skills. Change issues, such as resistance and lack of required skills needs to be managed strategically at two levels: organizational and technological. This is to ensure that re-engineering efforts are implemented as planned and assessed by new performance standards and targets. Conducting pilots and measuring results regularly may significantly increase efficiency.

BPR is a complex and difficult task and has a high-failure rate. It is therefore not surprising that many organizations are not convinced that the implementation of BPR could bring significant and measurable benefits (Vergidis et al 2008). Bashein et al (1994) showed that only 30% of BPR projects achieved performance breakthrough.

Reasons for large failure include:
(i) Lack of sustained management commitment and leadership
(ii) Unrealistic scope and expectation
(iii) Resistance to change.
(iv) Non-encouragement to conceptualization of business process
(v) Non-detailing of rewards and recognition with new business process.

Organizations should not try the BPR before meticulous examination of all phases and stages of the project (Dennis et al., 2003; Schniederjans and Kim, 2003; Terziovski et
al., 2003). BPR project has been continuously referred as risky effort since it brings radical changes in three main organizational areas including human, processes and technology (Crowe et al., 2002). BPR needs to change the culture and behavior of human in each organizational level. These should include the process activities, peoples’ jobs and reward system, the management system performers and managers, the management system, and tools and technologies. Moreover, it is necessary to investigate the underlying corporate culture that holds the beliefs and values influencing everyone’s behavior and expectations (Albano et al., 2001; Guimaraes, 1999; Mertins and Jochem, 2005). Each of these factors can be a reason of BPR failure. Some projects did not follow the clean-slate approach and therefore died off before implementation because of the high cost and lengthy time spent in analysis. Others died in the implementation phase (or shortly thereafter), because the radical, clean-slate approach caused important factors to be overlooked or top management teams neglected to involve the middle managers charged with implementation and therefore they were not committed to the changes. Hammer and Champy (1993) highlight senior managers’ lack of ambition for radical change that is they do not embrace the concepts fully. Hammer and Champy (1995) go so far as to argue that the underlying reason for failure is invariably inadequate understanding or leadership from management. Owing to these high-failure rates reported in the 1990s, research has begun investigating different aspects of BPR projects implementation. One important aspect of them was the social context of implementing BPR. An area of much concern associated with that has been the ambiguity of senior managers’ behavior towards adopting BPR. Considering lack of readiness in organizations will cause failure in BPR.

According to (Malhotra 1998) the reasons are:

(i) Lack of sustained management commitment and leadership;
(ii) Unrealistic scope and expectations;
(iii) Resistance to Change;
(iv) Process being viewed and applied at a tactical, rather than strategic, levels.

It is interesting to note that, among other failure factors are lack of top management support and financial resources (Aggarwal, 1998; Al-Mashari and Zairi, 1999), people
resistance (Stoddard et al., 1996; Peppard and Fitzgerald, 1997; Mumford, 1999; Ranganathan and Dhaliwal, 2001), IT related problems (Al-Mashari and Zairi, 1999; Ranganathan and Dhaliwal, 2001; Smith, 2003), and ineffective BPR teams, lack of project management, and problems in communication (Al-Mashari and Zairi, 1999; Smith, 2003).

The risky nature of BPR has tended to detailed investigation of its critical success and failure factors (Caron et al., 1994; Clemons et al., 1995; Hammer, 1995; Hammer and Champy, 1993, Laudon and Laudon, 1998; Adigun and Biyela, 2003; Reijers and Mansar, 2005; Abdolvand et al. 2008) and many researchers (Ariyachandra & Frolick 2008; Bandara, Gable, & Rosemann 2005) have tried to identify critical success factors of BPR. The critical success and failure factors measurement can determine the risk level in the re-engineering projects implementation.

Critical Success Factor (CSF) approach is “the determination of the set of factors that the manager considers critical for success. CSF can be characterized as: internal (endogenous) or external (exogenous) to the organization. Pinto and Slevin (1987) defined critical success factors as “factors which, if addressed, would significantly improve project implementation chances”. According to Flynn and Arce (1997), “An internal CSF has related actions taken within the organization, while an external CSF has related actions performed outside the organization”. Internal CSF related to situations or issues within managers control while external CSF may not be controlled.

Successful implementation of BRP involves understanding and deployment of several critical success factors. To date, different researchers have defined different CSFs for successful BPR implementation. Guimaraes (1999), Motwani et al. (2005), and Terzirovski et al. (2003) have emphasized on “change management,” and explained “information technology” as two more critical success factors. Project management, strategic planning for BPR projects, change management, competitive pressures, resources availability, IT capabilities, and top management support are examples of some success factors that have shown influence on success of the implementation of BPR projects (Wells, 2000; Terzirovski et al., 2003; Sung and Gibson, 1998).

Jamali, Abbaszadeh, et al. (2011) identified seven CSFs – Collaborative working environment, top management support and commitment, IT infrastructure, training, less
bureaucratic structure, culture, adequate financial resources. Herzog et al (2007) identified seven crucial areas based on a synthesis of BPR literature, which must be practised to achieve effective process reengineering: management commitment, education and training, team work, BPR project characteristics, employee cooperation, information technology support, levers and results

Crowe et al. (2002) have grouped the success factors in four main group and totally 17 sub-factors. Main groups are “egalitarian leadership,” “working environment,” “top management commitment,” and “managerial support.” The failure factor is introduced just as “employee resistance,” which has four sub-factors.

Egalitarian leadership- Leadership has to be effective (Holland and Kumar, 1995; Zairi and Sinclair, 1995), strong (Jackson, 1997; Janson, 1992), visible (Jackson, 1997; Bashein et al., 1994), and creative in thinking and understanding (Hammer and Champy, 1993) in order to provide a clear vision of the future. This vision must be clearly communicated to a wide range of employees who then become involved and motivated rather than directly guided (Carr and Johansson,1995; Hammer and Stanton, 1995). The role of leadership in driving, monitoring and controlling the activities related to the change is very important. Hammer and Champy (1993) mentioned obstacles in leadership as reason for most of the failures in business process changes

Employees should become more responsive. Other members in the BPR team should understand the process.

Cooperative workplace- Friendly and hearty relationships among employees in a cooperative workplace are considered as one of the critical success factors in re-engineering projects (Crowe et al. 2002). The employees in an organization should have friendly interactions with each other. In order to doing activities in a cooperative environment, it is necessary to provide a reliable climate other than friendly interactions among employees. They also should believe that the senior management appreciates their efforts. A cooperative environment based on the group working will result in positive changes in organization’s performance. Successful re-engineering project implementation
requires change in the employee’s attitudes, participation, and also professional teams for creating rapid changes. In re-engineering, all people must be openly and actively involved (Berrington and Oblich, 1995; Jackson, 1997; Bashein et al., 1994; Hinterhuber, 1995; Bruss and Roos, 1993; Arendt et al., 1995; Dawe, 1996) and should be consulted at all stages on the process and its leaders. This includes line managers (Harrison and Pratt, 1993), process owners (Furey, 1993), those involved in IS and human resources (Bashein et al., 1994), and workers (Janson, 1992).

Top management commitment- Top management is responsible for each and every activity at the all levels of the organizations (Singh & Kant, 2008). Top management should provide a clear direction or vision in order to help BPR team members to be directed toward the desired results (Sung & Gibson, 1998). The necessity of clear strategic vision in re-engineering process is an undeniable fact (Crowe et al. 2002). Strategic management is in the highest level of organizational hierarchy and determines organization’s strategic direction. Many researches also stress the importance of commitment from top management (Barrett, 1994). Holland and Kumar (1995) detail the kind of executive support required for reengineering: vision and perspective are needed to keep the reengineering initiative on track, and executive time and energy keep the BPR efforts moving. Also senior management should be aware of organizational conditions. Additionally, management knowledge about re-engineering projects and real expectations from its results is necessary (Crowe et al.2002). In order to achieve successfulness in the re-engineering projects implementation, senior management should have relationship with employees and motivates them and also monitors its executive team. Lack of commitment from senior executives has been shown to be a deterrent to successful reengineering.

Collaborative working environment – The basic concept of collaboration is that people from different departments should be able to work jointly to ensure smooth flow of tasks through the processes (Hsiao, Amy, Trappey, Mac & Pei-Shun 2009). Collaborative working environment is one main factors determining readiness for change taking place due to implementation of BPR projects (Tatsiopoulos & Panayiotou, 2000).
A cooperative environment with a friendly interaction, in which employees work in teams, has a chance of improving performance and show that employees are ready for change (Marir & Mansar, 2004).

In order to work in a cooperative environment, and interact in a friendly way, employees should trust each other, and be assured that the top management recognizes their role (recognition among employees) (Crowe et al., 2002; Maull et al., 2003). A cooperative environment with a friendly interaction, in which employees work in teams, has a chance of improving performance (Green and Roseman, 2000; Marir and Mansar, 2004).

Change Management- According to Huang and Palvia (2001) change management and corporate culture have played important role in BPR acceptance in a variety of countries. In most reengineering cases people are expected to adapt quickly to new ways of doing business, regardless of change it requires in their behaviours or work practices. Several authors concentrate on the need to take account of the human side of reengineering, in particular the management of organizational change. Some authors (e.g. Mumford and Beekma, 1994; Bruss and Roos, 1993) suggest that the management of change is the largest task in reengineering. Hedley, Ojiako, Eric Johansen, and Maguire (2010) in their study referring to the study of Balogan & Hope-Hailey (2004) stated that about 70% failure rate was recorded during change process and mostly it fails while implementing objectives. Furthermore the study conducted on banking sector of UK by Hedley et al.(2010) identifies that the change was not communicated properly to all stakeholders and so were the reasons of that change.

It is also apparent from the literature that most of the studies of BPR and OR have focused on the social aspects of change management, rather than the technical and systematic aspects of an organization. These social aspects of change management have included leadership, organizational culture, change-project management, human-resource management, and so on (Thong et al. 2000; Biazo and Bernardi 2003; Hengst and Vreede 2004).

Change management, which involves all human and social related changes and cultural adjustment techniques needed by management to facilitate the insertion of newly-
designed processes and structures into working practice and to deal effectively with resistance (Carr, 1993), is considered by many researchers to be a crucial component of any BPR efforts (Talwar, 1993; Moad, 1993; Zairi and Sinclair, 1995; Towers, 1996; Cooper and Markus, 1995; Hammer and Stanton, 1995; Bashein et al., 1994; Carr and Johanson, 1995; Bruss and Roos, 1993; Janson, 1992; Kennedy, 1994). Revision of reward systems, communication, empowerment, people involvement, training and education, creating a culture for change, and stimulating receptivity of the organisation to change are the most important factors related to change management and culture.

Al-Mashari and Zairi (2000) suggest that reengineering of business processes involves changes in people (behaviour and culture), processes and technology. As a result, there are many factors that prevent the effective implementation of BPR and hence, restrict innovation and continuous improvement. Guimaraes (1999), Ahadi (2004), Motwani et al. (2005), Terziovski et al. (2003), and Ahmad et al. (2007) have emphasized on “change management,” as one of the critical success factor.

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.

Another research, carried out by Ranganathan and Dhaliwal (2001), showed the result of BPR practices in Singapore. They concluded that BPR was becoming important in
Singapore for the future in order to survive in the tight competition and changing environment. It is interesting to note and remember that human factors could become one of the obstacles for the change to happen. The results in Stoddard et al. (1996) and Peppard and Fitzgerald (1997) highlighted that human resistance to BPR could lead to unsuccessful BPR projects. If the change has not been handled and managed carefully, people would resist it, even if it is a top-down approach, i.e. driven from the top. In a recent study of Habib and Wazir (2012) it was found that educating employees and providing them proper training help in successful implementation of BPR in public sector. Similarly, in another study it was supported with evidence that developing cross-sectional teams and encouraging teamwork is a source for successful implementation of BPR (Habib, 2011).

Project Management - is important in order to plan and manage the BPR to be correctly implemented (Al-Mashari and Zairi, 2000). Ahmad et al. (2007) discussed that employees should be adequately trained to get the required skills in doing tasks assigned to them. Lack of suitable project management is one of the important problems that organizations are faced during the project implementation. Kamhawi, M. Emad (2008) described that the “effective project management experiences” and “the ability to build an organizational-wide need for change” are important requisites to gain positive salient beliefs toward accepting BPR. The study also showed that “managers’ cognitive style” and “level of education” had significant influences on their “intentions to adopt BPR approach.” The findings also suggest that other external factors such as “competitive pressures” and “managers’ beliefs about BPR” are significant antecedents to BPR perceived ease of use.

Project should include a detailed scheduling with clear milestones (Sarker and Lee 1999). Resource management is another essential part of the project. Resources include financial resources, technical resources, human resources (Wells 2000). Role of the different stakeholders in the project should be identified. Risk management also is an integrated part of the managing the project (Shin and Jemella 2002; Khong and Richardson 2003).
Beside the success factors, many authors also highlighted some failure factors in implementing BPR. Aggarwal (1998) highlighted failures of BPR implementation, which were related to managers’ arrogance, resistance, crisis, cost, vision, etc. BPR failure can frequently be traced to lack of a cross-functional project team (Hoffman, 1997), difficulty in finding suitable teams members (Grover et al., 1995), lack of IS staff credibility and involvement in re-engineering teams (Moad, 1993; Davenport and Short, 1990; Grover et al., 1995; 1996; Hoffman, 1997); lack of authority given to BPR teams (Grover et al., 1995) are some of the reasons for the failure of BPR projects. Malhotra et al. (1996) asserted that cross-functional coordination and/or partnering is an important organizational enabler for an innovative BPR environment. Most of the time companies fail to build proper teams and because of the need for cross functional teams, it creates problem for management.

Hammer and Champy (1993) highlighted some failure factors like failure to have a process perspective, a fixed process which is not flexible enough to be responsive to the needs and requirements, not involving employees (i.e. bottom-up) in decision making, assigning someone who does not understand BPR, technology limitations, designing a project but with focus on cost reduction and downsizing, having a weak team, and problems with communication. Lack of training and, education for those affected by BPR and poor understanding of BPR is another failure factor in the successful implementation of BPR within the organization (Davenport, 1993; Grover et al., 1995; Hall et al., 1993). Mabin et al. (2001) discussed the importance of training to make people well equipped with all sorts of knowledge and skills, which therefore would reduce the fear of uncertainty.

Resistance to change- Re-engineering creates comprehensive changes throughout the organization and then employees resist such changes. George and Jones (2008) posited that change is necessary to maintain a competitive edge, but is not always a smooth process. Aggarwal (1998) mentioned the resistance is especially high among employees who directly affected by those changes. In fact if no resistance detected, the BPR effort is not being done. As an organization you should anticipate anxieties and arrange actions that will be taken when employees fear become real. This resistance is one of the most
important reasons of re-engineering projects failures (Maull, R.S. et al. 1995). Palmer (2004) concurred that the employees resist because of the uncertain future initiated by BPR changes among which are job loss, authority loss, and anxiety. Successful re-engineering project implementation requires changing employee’s attitudes, their participation, and also professional teams (Chiplunkar, C. et al. 2003). The employees resist re-engineering projects because of uncertainty about future changes that are the results of re-engineering projects implementation. Fear of losing their job and organizational status are the most important reasons of why employees resist changes (Abdolvand, N. et al. 2008). As mentioned by McNamara (2002), many people are affected by change, though some may not openly criticize their superiors, causing silent disgruntles within the company. Maull et al. pointed out that the organizations face a series of fundamental issues in the re-engineering project implementation. They also considered the role of information technology important in the successful re-engineering project implementation.

Al-Mashari and Zairi (1999) hypothesized the impact of organizational culture which fosters resistance to change in BPR. An egalitarian culture, whereby all employees are treated equally, are informed and involved in projects, makes the positive changes take place with little resistance. Hammer and Champy (1993) argued strong management commitments are a prerequisite for the success of BPR projects. Getting managers committed with such kind of anxiety (fear of losing position) is in fact a paradoxical philosophy that leads to unfavorable project result. The employees should therefore be assisted in the transition period to the new working environment (Crowe et al. 2002; Liu and Seddon, 2009). Schniederjans and Kim (as cited in Abdolvand et al. 2008) concluded that organizational resistance is the most common impediment to the success of BPR.

Organizational culture- is an important factor in successful BPR implementation. This is because culture plays an important role to enable successful change implementation and avoid stress and resistance to change among employees which is acknowledged as being a fundamental block to change (Mabin et al., 2001). It is clear from the findings, that it was stressed how organisational culture – teamwork and quality influences BPR. Authors like Alavi and Yoo (1995) and Lee and Asllani (1997) stressed the importance of organisational culture to ensure success in incremental or radical process change.
Cooperation, coordination, and empowerment of employees are the standard characteristics of an innovative organizational culture. Effective utilization of employees’ ideas enables organizations to achieve their expected results. Further, a strong appropriate culture makes positive changes, avoids stress and reduces resistance to change. Egalitarian culture supports these attitudes (Ahadi, 2004). An egalitarian culture should be developed in the organization to enable successful implementation of any organizational change. Egalitarian culture makes the positive changes take place with little resistance (Crowe et al., 2002).

Communication-Top management should provide employees with channels of communication and improve their ability of understanding each other (open communication). Effective communication is vital to organizational decision making (Grant, 2002; Tatsiopoulos and Panayiotou, 2000). This is supported by Smith (2003) who stress that communication at all levels becomes one of the critical elements here. To empower employee and cooperate in a new system, top management should establish inter- and intra-organizational confidence and trust. Groupware techniques significantly decrease the time required for performing the analysis phases of BPR (effective use of subordinates’ idea). Involving employees and effective use of their idea enable top management to achieve optimal process operation (Maull et al., 2003; Terziovski et al., 2003).

Use of Information Technology- Disregarding the role of IT in BPR projects can result in failure. Gunasekaran and Nath (1997) notified BPR and IT form an integral system in improving the performance of employees and companies. Basically, IT can save time, improve accuracy, can be used in transferring and exchanging information, reduces or remove errors while performing tasks and gives many more values. Grover, et al. (1995) notified document management, database and communication networks are technologies that enable employees to function and be successful. It plays more for BPRs success. Attaran,(2004) has shown that IT capabilities should support business processes, and business processes should be compatible with the capabilities of IT or in other words these should complement the business processes. Motwani, et al. (2005) and Shin and
Jemalla (2002) described successful application of IT contributes a lot for fruitful BPR project and employee performance. Davenport and Short (1990) attributed this problem to a lack of understanding of the deeper issues of IT. They claimed if properly implemented IT can improve the competitive position of the organization and employees but wrong implementation may create hurdle response to excellent employee performance. Motwani, et al. (2005) told other issues that need to be addressed under this success and failure factor are the role of information technology, use of up to date communication technology and adoption of IT.

Abdolvand (2008) determined the readiness indicators to minimize the risks of implementing business process reengineering (BPR) by measuring readiness. The readiness indicators include six categories. The first five categories, egalitarian leadership, collaborative working environment, top management commitment, supportive management, and use of information technology are positive indicators. The sixth category, resistance to change has a negative role. Assessing these factors measures the readiness of initiating a BPR project.

A questionnaire approach is considered to assess the readiness. As mentioned, a list of critical success and failure factors are extracted and mapped to readiness/unreadiness indicators in hypotheses. In the same way, proposed questionnaire by previous researchers are reviewed and combined based on the new categories. Then each question is mapped to each readiness/unreadiness indicator.

The internal reliability for this scale has been computed by Cronbach’s a coefficient. This measures the interrelationship between items in the questionnaire. A reliability of 0.70 or higher is acceptable (Terziovski et al., 2003; Wu, 2002). In this research, the Cronbach a is equal to 0.76 (all ranked higher than 0.70). This analysis indicates that the scales used in the study are reliable. A factor analysis test as a construct validity computing produced a single factor solution accounting for 63 per cent of the average extracted variance.

The correlation analysis identified that there is strong relationships with all measures of indicators. The correlation between the considered indicators had the highest correlation
at the strongest significance level (0.473 at \( p = 0.001 \) in Company A and 0.486 at \( p = 0.001 \) in Company B).

The simple statistical calculations are used for evaluating the indicators. Elements are scored in the range of four (always) to zero (never). Each significant element had equal weights. Each indicator has been calculated by summation of its sub-components divided by the number of its questions. The total readiness of the case will be calculated by aggregating all indicators, while the negative indicators carry a negative mark. That is:

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\text{Readiness total} = \sum \text{IN}_j - \text{IN}_j, \quad \text{for effect (IN}_j > 0 \text{ and effect (IN}_j < 0

In order to analyze the level of BPR readiness in the Iranian companies accurately, the scores are dissected into five ranks. Those are “Total unready, Unready, Moderate, Ready, and Absolutely ready” for the range of “0-0.5, 0.51-1.5, 1.51-2.50, 2.51-3.5, 3.51-4”, respectively.

For all indicators’ value in Company A, first and second highest responses refer to moderate and unready ranks. The results of Company B show that the highest results for three indicators are in the moderate rank and for other three indicators in the ready rank. The former are “egalitarian leadership” (IN1), “cooperative working environment” (IN2) and “supportive management” (IN4). The latter are in “top management commitment” (IN3), “use of information technology” (IN5), and “resistance to change” (IN6).

This research explores a new area on BPR readiness based on analyzing critical success and failure factors, which is referred to as readiness positive and negative indicators. Assessing BPR readiness can address strong points, weak points and risks, and hence the rank of readiness in the organization. In other words, as there is readiness, a BPR project can be initiated. Or else, it should be delayed in order for an organization to get ready. Readiness guarantees the success of BPR projects. In this research, firstly, the positive and negative BPR readiness indicators are reviewed and six indicators are extracted. Egalitarian leadership, collaborative working environment, top management commitment, supportive management, and use of
information technology have been known as positive factors that have a direct relation with readiness. Finally, resistance to change has been introduced as a negative factor, which decreases the readiness.

Two Iranian companies, which have been eager to try BPR, are evaluated to measure the level of their readiness. The results imply that Company A is not ready. In fact, the company is placed in a moderate position. However, the high rate of resistance to change addresses necessity of some kind of cultural, managerial, supportive and technological reform. This can lead to enhancement in positive indicators, as well. The results of Company B almost indicate the moderates and ready situation. Nevertheless, the low rate of resistance to change requires more accelerated and efficient programs to improve the situation and a successful BPR project. Both companies, particularly Company A, can utilize the implication for management guidelines, which are discusses, to increase the readiness level and hence success rate.

A similar kind of research study was carried out by Harb, H (2011). Researcher in his paper made an effort to suggest an approach to minimize risk of implementing Business process Reengineering(BPR) initiatives by identifying certain factors crucial towards creating readiness for BPR. While there are many different pros and cons for the implementation of BPR, an appropriate model for assessing the readiness for BPR is valuable for its successful implementation. Managers need correct information about those factors defining the current situation, vision of future that is desired and a workable strategy to move from current state to envisioned state. There is a need to find a model that may enable the organizations to make employees ready for the impending change that would minimize the probable resistance, otherwise resistance to change poses serious challenges for organizational leaders.

Lack of readiness is main factor behind high rate of BPR failures. Extensive literature review and interviews from the panel of experts provided sufficient background information. Leadership style, Information technology (IT), Top management commitment and collaborative working figured out as critical factors towards creating readiness. Regular leadership actions consistent with organizational environment,
collaborative working, Information Technology and Top management commitment could promote coherence in organizational members' readiness perceptions. Assessing BPR readiness can address strong points, weak points and risks, and hence the ranking/level of readiness in the organization. Readiness is a token of success for BPR projects (Abdolvand, Albadvi and Ferdowsi, 2008).

Harb as 2011 has reported that organizations that may be aspiring to embark upon a BPR initiative must be well conversant with an approach towards readiness for change so that essentially required readiness can be developed for the purpose. In this study, researcher seeks to conceptually define organizational readiness for change and develop a framework of its determinants. With this background, this study is directed to achieve the objective of suggesting an approach to create organizational readiness for successful implementation of BPR initiative.

Keeping in view the challenges identified through review of literature, interviews from the panel of experts were carried out so as to gain an insight into the issue. The adopted approach enabled the researcher to remain flexible towards acquiring sufficient background information on readiness development. Data was collected in textual form on the basis of observation and interaction with the participants. It was qualitatively analyzed without conversion into numerical format. Subsequently four factors likely to create readiness for change were highlighted and conceptual model formulated.

Readiness for change can best be assessed by considering four factors:

- Leadership
- Top Management Commitment
- Use of Information Technology
- Collaborative Working Environment

A model is offered by Harb (2011) that describes the influence of four related factors on readiness. Change management experts have emphasized the importance of establishing organizational readiness for change and recommended various strategies for creating it that sounds reasonable but those are without substantial scientific basis. It is important to
consider those circumstances that help develop perception of readiness shared across the entire organization. Regular leadership actions consistent with organizational environment, collaborative working, Information Technology and Top management commitment could promote commonality in organizational members' readiness perceptions. The model presented in this study is not empirically tested, yet provides a rational based approach towards readiness for BPR that can make a BPR plan implementation a complete success.

Maleki, T and Beikkhakhian, Y. (2011) tried to identify and analyze critical success factors for the successful implementation of BPR in Iranian small and medium enterprises. Through a comprehensive review, critical success factors (CSFs) that influence the success of BPR programs were identified. Then, using a DEMATEL methodology, these CSFs and the causal relationships among them were analyzed. Based on a comprehensive review of the literature, viewpoints of the academics and interviews with several SME managers, 7 BRP CSFs were identified.

Collaborative working environment
Top management commitment and Support
IT infrastructure
Training
Less bureaucratic structure (flatter structure)

The result of the study showed an increasing number of Iranian SMEs attempt to implement BPR to achieve its benefits. Researchers applied a DEMATEL methodology to better understand the CSFs. This paper identified 7 CSFs and developed a causal model of them, which indicates the inter-relationships between these CSFs. The identified CSFs also classified into two groups of driver and dependent factors. From the values of \((D - R)\), it is observed that four factors namely "top management commitment", "IT infrastructure", "training" and "adequate financial resources" are driver, while the other CSFs are dependent. Therefore these four CSFs play a main role in BPR implementation. The finding of this paper can be used as guideline for managers to concentrate on the most influential factors.
Ringim, K.J. et al. (2012) examined the Critical Success Factors (CSFs) of Business Process Management (BPM) and Small Medium Bank performance in Nigerian banking industry.

When restructuring the business process, the content of jobs and organizational structures changes for all employees to bring about radical changes in values and beliefs. As a result, reengineering is not complete until all elements of the business system i.e. business processes, jobs and structures changes because people, jobs, managers and values are linked together (Hammer and Champy, 1993).

There are a lot of literatures on CSFs of BPR implementation with evidence of performance effect, hence, there is need to critically examine these success factors in relation with performance (Devaraj & Kohli, 2000). The importance of BPR implementation in Nigerian financial service industry was understood by the bank manager as a tool to achieve competitive advantage, and many do not fully understand the success factors that drive the implementation (Ringim, Razalli and Hasnan, 2011).

The objective of the study of Ringim (2012) was to examine the relationship between CSF’s of BPR and organizational performance of small and medium bank. Overall, the result of the correlation analysis shows that all the variables between BPR factors and organization performance were significant except for customer focus, reward and training and education. The result of the correlation analysis suggests that BPR factors are related with organization performance. Multiple regression analysis was conducted to examine the most contributory explanatory variables among the BPR factors that best predict organization performance variables (cost reduction, customer service management, zero error processes overall performance). Four models of standard regression were developed and all the models were statistically significant at 1%. The result indicates that IT investment, personnel commitment, volume of financial activities, strong capital base, strategy alignment, reward system, communication, customer focus, training and education jointly explained 21.0% of the variance of customer service management, 15.0% of the variance of zero error processes, 7.0% of the variance of cost reduction and 27% of the variance of overall organization performance. The models suggest that the impact of the BPR factors on overall performance is the highest then followed by customer service management compared to other performance variables. Although, some
BPR factors were not significantly related to organization performance, the overall results of this study confirm that BPR factors contribute toward organizational performance. Thus, Nigerian banks should strive to associate the implementation of BPR with IT capability. Special attention need to be given to specific factors of BPR that is associated with a particular organization performance variable. To improve service management performance, organization needs to focus on personnel commitment and customer relationship management.

In a study carried out by Mlay, S.V. et al. (2013) in Uganda the researchers tried to identify the factors impacting on BPR and possible causes of BPR failures. The identified emotional response of the users towards the BPR implementation ranges from Acceptance to Testing, Indifference and Anger. Based upon the study findings, the researchers have formulated the set of recommendations for organizations implementing BPR. The general objective of this study was to identify the impact of different factors, including organizational resistance to change, on Business Process Reengineering. To achieve this objective the researchers employed the following methods: cluster sampling technique for identifying the organizations; pre-coded questionnaires and self-administered survey for collecting the data from the respondents (quantitative); purposive sampling technique for selecting the respondents within organizations; observation for collecting the data; descriptive analysis of the collected data using statistical packages SPSS 17.0, EViews 3.0 and Microsoft Excel 2007; analysis of the secondary data on existing BPR models and practices (qualitative).

The above study showed that only 30.4% of BPR projects in Uganda have delivered the intended usable systems. The list of the identified human-related factors impacting on BPR includes: (1) user competence in adoption of an IT project, (2) the respondent’s cautiousness before adopting any new initiative, (3) the respondent’s cautiousness before adopting any new IT project, (4) possible staff layoffs/reduction as a result of an IT project, (5) the respondent's input becoming no longer needed with a new IT project, and (6) the old business process being considered satisfactory. The list of the identified organization-related factors impacting on BPR includes: (1) redefining organizational
mission prior to BPR, (2) intention to serve clients better, (3) users’ awareness of plans to reengineer processes, (4) full collection of user requirements prior the new project, (5) involvement of the users during the BPR development, (6) training the users, (7) provision of adequate management support for the project, and (8) high implementation speed.

Mlay, S.V. et al. (2013) have identified possible causes of BPR failures: (1) technical incompetence of the implementers, (2) underestimation of the challenge at hand, (3) failure to define organizational objectives, (4) poor communication between the implementers and the management, thus inability to inform the management of arising challenges, (5) project management failure to respond to delays adequately, (6) organizational resistance to change, (7) lack of organizational ownership of the project, (8) significant cost overruns, (9) significant time schedule overruns, (10) project management failure to create awareness of the project, (11) poor users’ requirements collection and analysis, (12) failure to train the users, and (13) project failure to meet organizational goals. Identified emotional response of the users towards the BPR implementation and use is as follows: 48% of the respondents had accepted the projects, 33% were testing and may probably accept it, 12% were indifferent or not sure of whether they like or dislike the system while only 7% were still angry.

The above study has also identified the strongly negative impact of organizational resistance to change on the success of the BPR implementation. It has been found that most BPR failures are due to resistance caused by divergent factors. Some of the identified factors (such as lack of users' involvement, poor communication, lack of organizational culture and low employees’ ability to use IT, among others) can breed resistance. Therefore organizations intending to reengineer processes should put a lot of emphasis on soft issues of the BPR implementation

Hassan-gholipr et al. (2013) in their study offered a new framework for measuring the risk level in the implementation of re-engineering projects by analyzing its critical success and failure factors. Successful implementation of the re-engineering project is a
difficult function and depends on different key factors. This study seeks to offer a new framework for measuring the risk level in the implementation of re-engineering projects by analyzing its critical success and failure factors. These factors were identified through reviewing the research literature and exploring the expert’s viewpoint. The framework that was offered in this study consists of five success factors and one failure one. The success factors include uniform leadership, cooperative workplace, senior management commitment, supportive management, and the use of information technologies. Also the failure factor includes resistance to change.

After determining the extent of every critical success and failure factors importance and their scores in the studied company, the risk level of every factor in the re-engineering project implementation was calculated. For this purpose, the total score was calculated based on the formula 1. Also in this study, risk level analysis was performed based on the total risk level score.

\[ S = \sum_{i=1}^{19} W_i \cdot P_i - \sum_{j=1}^{4} W_j \cdot P_j \]

Formula 1:

In this formula, s is indicator of total score, Wi refers to the extent of every critical success factors importance, Pi refers to the score of every critical success factor, Wj refers to the extent of every critical failure factor importance, Pj refers to the score of every critical failure factor. With respect to the formula 1, the total score was calculated in this company that is 48.563. In order to analyze the risk level in the re-engineering project implementation, a range of five points was used. If the total score is less than 0, re-engineering project implementation is very high risky; if this score is between 0 and 50, re-engineering project implementation is high risky, if this score is between 51 and 100, re-engineering project implementation is moderate risky; if this score is between 101 and 150, re-engineering project implementation is low risky, and finally if this score is more than 151, re-engineering project implementation is not risky.

The results of this study indicated that re-engineering project implementation in this company is risky and likely this project fails in this company. The results of this study also refer to the company’s weakness in terms of using information technology so that
these factors have the minimum scores in our study. The results also indicated that there is a deep gap between senior managers and employees in this company that prevents collective behaviors, information sharing, and interaction with senior managers. Additionally, these results indicated that there are low trust and intimacy among employees. Re-engineering requires changing employee’s culture and behaviors in all of the organizational levels. As indicated, management performance is a key factor in the successfulness of re-engineering project implementation. Implementation of friendly session with employees in the workplace and education culture can facilitates the structural changes and also leads to employee’s more and more participation.

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;

i. Project scope: before starting BPR, its scope must be defined along with the realistic expectations, clear vision and goals.

ii. Top management commitment: is one of the most important dimensions for the success of BPR.

iii. Availability of resources: sufficient resources (BPR know-how, I.T, and others) are also required to insure success.

iv. Project management: plays vital role at the implementation phase (particularly process analysis and suitable implementation mapping)

v. Change management: plays exclusive role in the success of change process

According to the above 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. 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, management platforms would positively impact the implementation of BPR in public administrations.

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.

Habib, M.N. (2013) in his case study concentrated on HR factors, employees’ empowerment, education and training, skills requirement, teamwork and employees’ cooperation. This study is also focusing on factors relating to HR and its role in BPR, therefore based on available literature about the role and importance of HR factors (being CSF) in BPR cannot be ignored.

As several authors just mentioned HR factors or involvement of Human factors being CSF for BPR but fell short to provide complete evidence as what major aspects of HR are the Critical Success factors in BPR. Therefore, this study analyzed and was based on the employee education & training, and teamwork as CSF defined (used) by Herzog et al. (2007); Top management Commitment; Education and Training; Project of BPR; Team work.; Information Technology support; Employee Cooperation.
Bringing change into an organization is very difficult and very much demanding. Proper planning from top management is very important in accordance with the organizational needs and resources. The supportive role of management is a key to successful implementation as well as it has been suggested by several authors that involvement of HR in planning and implementation is also essential. Is should be understood by management and companies that BPR is a customized change tool thus, do not copy what your competitors are doing or else it will result in only failure.

Therefore, all those enterprises 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.

With special reference to objectives of this thesis the above survey of literature clearly instructs that assessment of readiness before implementation of BPR within the enterprises requires essential care of its determinants (factors) viz. age, education, work experience, style of management, leadership style, project management, cross-functional cooperation and top management commitment.

The above survey of literature related with readiness for BPR in particular and other aspects of the BPR in general have enlightened a path of modeling for assessing readiness for BPR. The resultant directions of the existing review have been useful in framing hypotheses, methodology and database. The stochastic modeling with multiple regression that includes concepts of multicollinearity, heteroscedasticity and the use of residuals in assessing readiness for BPR as anticipatory management-modelling is attempted in further chapters.