CORRELATES OF INFORMATION TECHNOLOGY, BUSINESS PROCESS REENGINEERING AND ORGANIZATIONAL CULTURE: AN EMPIRICAL STUDY IN THE INDIAN CONTEXT

Abstract

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(Regn. No. 1272 OF 15.04.2008)

Submitted in partial fulfillment of the requirement for the Degree of Doctor of Philosophy in Management

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2013
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April, 2013

DECLARATION

I, Rohima Ahmed, hereby declare that the subject matter of this thesis is the record of work done by me, that the contents of this thesis did not form the basis for the award of any previous degree to me or, to the best of my knowledge, to anybody else, and that the thesis has not been submitted by me for any research degree in any other university/institute.

This is being submitted to the North-Eastern Hill University for the degree of Doctor of Philosophy in Management.

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6.1. Introduction:

In the present business world, competition has increased that if an organization cannot keep pace with the other organizations of the same competitive category, it is bound to fail. The market growth, customer demand, product life spans, technological change, the nature of competition etc. are changing rapidly in an unexpected way. As a result, customers, competition, and change have taken on entirely new dynamics in the business world. Faced with global competition and increasingly demanding customers, the companies realized that their old methods for developing, making, and selling products were no longer adequate and some alternative thinking are required for survival in the competitive business world. The initiatives such as TQM, ISO 9000, Six Sigma and BPR have been considered to address the issue. Many of the initiatives concentrated mainly on quality. However, BPR has globally revolutionized way of doing business in last two decades. The organizations implementing BPR have enjoyed radical improvements in terms of business efficiency and thereby got advantage over their competitors. The achieved business efficiency are indicated by the factors like increasing productivity through reduced process time and cost, improved quality, greater customer satisfaction, better collaboration etc. BPR has also become an increasingly significant and integral part of Indian industries. Lately in India, BPR has been implemented in both manufacturing and service industries and its role has grown and changed continuously in both the sectors.

BPR is an approach where processes are re-structured, re-designed and re-engineered so as to maximize an organization’s potential. BPR is adopted by many
organizations in order to achieve a dramatic increase in performance and cost reduction.

The constant evolution of computing has helped businesses to automate and innovate providing them a competitive advantage in the global marketplace. Hence, IT plays a very important role in reengineering of business processes for quality and efficiency improvement initiatives. IT tools such as databases, networking, cloud computing, data mining etc. are extensively used in the business world to automate the existing tasks, central record keeping, helping in making business decisions etc. However this technology penetration in business was considered not to be using technology to its full potential unless the business tasks were reorganized fitting the technology orientation. Therefore this mercurial business environment required a switch from its task orientation to process orientation with the use of IT as a vital enabler. So, it can be said that IT has made reengineering concept more successful.

The organizational cultures represent the character of an organization, which directs its employee’s day-to-day working relationships. It creates social order, continuity, and a collective identity that generates commitment to rules about how we do things and how to get the job done within organizations. The improvement in OC is a vital means of enhancing organizational performance. In BPR, when the major business processes are redesigned for business performance enhancement, OC becomes an important factor in the success of it. When cutting edge technologies like IT are used as enabler of BPR which are difficult to cope up with for the untrained people, it becomes very important to motivate, train and reward them who are directly involved in the BPR process.

India is the third largest Asian economy after China and Japan. Among the major emerging markets, India ranks second in terms of economic growth with the IMF (International Monetary Fund) forecasting a Gross Domestic Product (GDP) growth
rate of 6.9 % for the year 2012. IT, are the major source of economic growth, accounting for more than half of India's output with less than one third of its labor force, which is currently estimated to be 457 million workers.

In the new competitive environment of business, Indian companies need to bring about dramatic improvements in their key business processes to survive and grow in a globally competitive market. BPR has become an increasingly significant and integral part of Indian industries. Therefore, it is important that decision makers of industries be aware of the vision for implementing BPR as an essential aspect of strategic planning for service and management.

From the beginning, the European industries are very much conscious about the quality. The stringent norms in Europe made it possible for their manufacturing industry to be ahead of their counterparts in US. The European automobile industry garnered success following stringent Euro-II Norms. Lately, the Indian Automobile Industry also caught-up with them by adopting the Euro-II Compliance. India’s quality movement is dominated by adoption of ISO 9000 and TQM by large number of industries. The open competition with other global companies has brought in a lot of innovation in the business model of Indian companies.

BPR has been implemented both in manufacturing and service industries and its role has grown and changed continuously in both the sectors. The implementation of BPR has improved many aspects of the organizations. The successful BPR implementation in the organizations has saved time and money, increased revenue and market share, interlinked several functions and units, and improved organizations’ performance by eliminating delay, administrative intermediaries and
redundant processing steps and by providing better access to information, improved decision making etc.

India continues to grow globally; the professionals are getting exposed to various modern styles of management. Since the economy is booming and there is an increase in multinational business ventures in India, hence a study of such a nature is extremely relevant. It is the matter of the above sorts that prompted us to undertake the study on the subject ‘Correlates of Information Technology, Business Process Reengineering and Organizational Culture: An Empirical study in the Indian Context’.

The information technology and organizational culture are important conditioners for the success of BPR. However, no efforts have been made to study information technology and organizational culture and business process reengineering altogether. This study has uniquely covered all the three important components with an aim to find the correlation among them. Additionally, the research model included the other complementary enablers of BPR i.e., top management commitment and leadership, strategy and human resources.

The main focus of this research is to identify the extent to which the research model deduced from the literature of BPR initiative is valid.

- To determine whether radical improvement is only possible when the organization reengineers itself using information technology as the vital enabler.
- To comprehend the manifestations of organization culture in the backdrop of BPR initiative.
- To determine what complementary enablers are emerging in the discourse apart from technology.
To establish the correlation of vital and complementary enablers with each other and their impact on BPR.

To meet the objectives, the following hypotheses have been framed:

- There is a positive correlation between the Use of IT and BPR outcome.
- The organizational culture acts as a pull factor/push factor affecting the BPR process.
- Various enablers of BPR operate synergistically.

A non-experimental quantitative research design was used for this research study to assess the influence of the different enabling factors of BPR. However, a qualitative research was also conducted on selected cases. This study has followed triangulation approach which is a combination of qualitative and quantitative methods. The qualitative methods involve case studies and interviews and the quantitative method is based on questionnaire based survey. Questionnaires designed considering expert views on BPR and its enablers were used for data collection. This study further employed personal interview to obtain additional information on the specific areas that the questionnaire instrument did not cover. The secondary data source is extracted from the company’s annual reports, journals, textbooks and other relevant publications.

For the purpose of the study, a total number of 400 questionnaires were sent to five organizations viz, (i) Mahindra & Mahindra (M&M), (ii) State Bank of India (SBI), (iii) Income Tax Department, Govt. of India, (iv) Oil and Natural Gas Corporation (ONGC) and (v) Kirloskar Brothers Limited (KBL). Very less number of responses (only four) has been received from one organization i.e., KBL. From the remaining four organizations, 92 numbers of cases found valid and reliable which are used for analysis.
This entire thesis is presented in six chapters. The introduction to the thesis has been presented in the first chapter. Chapter 2 presents a thorough literature survey on the theme of the research. Literature review covers the major studies in the area of relevance. The research framework and hypotheses framed which is drawn based upon the literature review are presented in Chapter 3. The research questions drawn from this framework are also presented in this chapter. Chapter 4 describes the methodology used to collect the data for the purpose of the study. This chapter covers the basic research approach, sample design, data collection and analysis procedures. This chapter also examines the data entry and data screening, missing value analysis, confirmatory factor analysis and reliability and validity of the construct. Chapter 5 presents the quantitative and qualitative data analysis. This provides a brief description of respondent’s demographic variables. The hypothesis framed for the research study has been also been tested. Chapter 6 presents the important findings of the research along with the recommendations and direction for future research.

6.2. **Empirical Findings:**

Against the aforesaid background relating to the present study, the main findings of the study are summarized as follows:

1. The IT has been extensively used by many firms/organizations as a major enabler while implementing BPR. In this research, we have attempted to find the relationship between use of IT and BPR outcome in the context Indian firms/organizations. The correlation study explored that the use of IT is closely associated with achieved BPR outcome ($r=0.516, \ p=0.000$).
2. The firms/organizations which have undergone BPR program using IT as a major enabler has achieved business excellence in terms of lower operating costs, greater flexibility, increased efficiency, reduced cycle time, improved communication, better collaboration etc. The study found that the increase in business efficiency is a major achievement for Indian firms/organizations after implementation of BPR.

3. The study revealed that the impact of IT on the components of BPR outcome is more in case of increased efficiency which is followed by reduced cycle time, improved communication, better collaboration, greater flexibility and low operating cost.

4. The correlation matrix analysis among OC and components of BPR indicate that increase in business efficiency is highly correlated with BPR supportive organizational culture whereas lower operating cost is not significantly significant indicated that the organizational culture has very little impact on reducing/controlling the operating cost. This may be due to lack of cost consciousness among the corporate entities. Hence, an urgent step is warranted for immediate reduction of operating costs.

5. The organization culture is considered to be an important facilitator for process changes. It is observed that innovative culture helps in understanding the technology used and gains the maximum out of it. The study further found that a flexible culture is important for overall achievement through BPR implementation. This is followed by awareness, task focused culture and innovative culture.
6. The relationship between the role of top management commitment and leadership and outcome of BPR implementation is not found as important as it was expected. It is found that there is a lapse in motivating the employees from the top level management of a firm. Further, the top management of Indian firms looks not having a realistic expectation from the BPR project. The result further indicates that the top level managers should increase the frequency of communication with the employees to achieve the goal of BPR implementation.

7. This study also hinted that the human resources as a complementary enabler is very important for the BPR outcome. The training of employees emerges out as a very important factor in human resources. The employees should be properly motivated to take up challenging task.

8. This study found that the role of strategy in successful implementation of BPR program is very much crucial. The analytical result explains that to be successful in implementation of BPR program, having a right strategy is very important. The planning and employee performance measurement is indicated as high by the result of the analysis.

9. The result of regression analysis reveals that role of IT, organizational culture and human resource are significantly important in optimizing the outcome of BPR implementation. The other enabling factors such as strategy, top management commitment and leadership are also important for performance enhancement of a firm/organization but with less significance.
The qualitative study partially confirms the result of quantitative analysis. No interviewee denied the vital role of IT in successful implementation of BPR. Few managers view IT to be game changer in today’s business world. The innovative organizational culture can accept the changes in business process and adapt to the environment quickly. Proper organizational strategy is also found to be an important requirement for the success of BPR project. However the significance of top management commitment and leadership and human resource are highly found to be rated.

The result of qualitative and quantitative analysis shows a gap in the role of top management commitment and leader in successful implementation of BPR project. The possible reason of such gap may the difference in sampling for both types of studies.

6.3. Hypotheses Verifications:

The following operational hypotheses have been verified:

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Predicted Relation</th>
<th>Result parameter</th>
<th>Accepted/Rejected</th>
</tr>
</thead>
<tbody>
<tr>
<td>The information technology is not a vital enabler for determining the radical improvements in BPR</td>
<td>Positive</td>
<td>r=.516, p=.000</td>
<td>Accepted</td>
</tr>
<tr>
<td>The organizational culture acts as a push factor affecting the BPR process</td>
<td>Positive</td>
<td>r=.383, p=.000</td>
<td>Accepted</td>
</tr>
<tr>
<td>The strategy has a positive impact on BPR outcome</td>
<td>Positive</td>
<td>r=.253, p=.045</td>
<td>Accepted</td>
</tr>
<tr>
<td>Top management commitment and Leadership has a positive impact on BPR outcome</td>
<td>Positive</td>
<td>r=.065, p=.539</td>
<td>Rejected</td>
</tr>
<tr>
<td>The human resource has a direct impact on BPR outcome</td>
<td>Positive</td>
<td>r=.371, p=.000</td>
<td>Accepted</td>
</tr>
</tbody>
</table>
6.4. Limitation of the research:
This study encompasses a mix of Indian firms/organizations chosen from various sectors. A study on specific type of firms/organizations would have revealed more interesting and realistic result.

6.5. Direction for Future Research:
1. The identification of BPR outcome is really interesting academic exercise. However, a study considering specific type firms/organizations may be taken up so that the result can be a well representative of the considered type.
2. This study only considered the significant enabler of BPR. However few more enabling factors such as worker productivity increase, defect reduction, customer satisfaction etc. could have been also considered. An extensive study involving the entire BPR enabling factor should be worthy and interesting.

6.6. Conclusion:
BPR has provided a dramatic improvement in terms of efficiency; cost reduction, customer satisfaction etc. In recent times, IT has become a hygiene factor for today’s business. Most of the successful business organizations have adopted IT in a large scale to stay in competitive market. The adoption of IT in business processes necessitates redefining the business processes. Therefore, many organizations which underwent BPR used IT as a major enabler. A sudden change in the business processes made it difficult for the employees to cope up with. The resistance from the employees involved in the reengineered processes became inevitable. Top management of such organization needed to play an important role in making the employees understand about the plan and expected out come from BPR implementation. The culture of an organization impacts in accepting such innovative changes. The study involves the important enablers of BPR such as IT,
organizational culture, role of top management, organizational culture, strategy and human resource. The business organizations in India have achieved magical improvements in terms of lower operating costs, greater flexibility, increased efficiency, reduced cycle time, improved communication, better collaboration implementing BPR using IT as a vital enabler. Organizational culture is also significantly important in making most out of the BPR implementation. The result shows that OC helps in understanding the technology used and gains the maximum out of it. The study indicates that there is a lapse in motivating the employees from the top level management of a firm. The outcome of this research might help in making a proper strategy and plan for BPR implementation. The suggestions from this piece of research might help the Indian business organizations in getting the best outcome from BPR implementation.

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