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An Investigation of Perception of Business Process Reengineering in Indian Manufacturing Industry

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Abstract
The progress of manufacturing industry still sets the tone for the overall business cycle and the health of this sector is very much at the core of India's socio-economic fabric and hence the Government of India is erecting a pentagon of corridor to boost manufacturing sector and to project India as a Global Manufacturing hub of the world. To compete globally Indian manufacturing sector needs to undergo radical change and Business Process Reengineering (BPR) is one such tool for competing in the dynamic business environment. Although BPR as change initiative has various methodologies, techniques and tools for implementation, but these methodologies fail to demonstrate their effectiveness in the absence of clear understanding and the perceptions of the employees towards the initiative. Based on the perception, the organization will identify the right approach towards the BPR implementation and develop relevant appropriate plans for smooth and successful BPR effort.This study aims at investigating the several understandings of BPR in various manufacturing sectors across India by gaging the perception of the internal customers towards BPR effort . The primary data was collected from the various manufacturing industries comprising of Small Scale , Medium scale , Large scale, Very Large scale and Multi National Companies across India using structured self-administered questionnaire. Upon investigation using One-way ANOVA , it is observed that the Indian manufacturing industry has positive approach towards BPR effort across different scales of the organizations and hence makes it fertile for change initiatives.
Keywords: BPR, Business Process Reengineering, Perception, Indian, Manufacturing Sector, Make In India, ANOVA

1.Introduction

Manufacturing has linkages with all the other sectors of the economy. The progress of manufacturing industry still sets the tone for the overall business cycle and the health of this sector is very much at the core of India's socio-economic fabric and hence the Government of India is erecting a pentagon of corridor to boost manufacturing sector and to project India as a Global Manufacturing hub of the world. The Make in India initiative which was announced in 2014 by the Government of India aspires to double employment, triple industrial output and quadruple exports from the region in the next seven to nine years.

This initiative also encourages Foreign Direct Investment (FDI) in various sectors. The entry of foreign companies in the Indian scenario will lead to intense competition for local companies both in terms of quality as well as productivity. To fulfil the aspirations of the initiative, the Indian manufacturing sector would eventually be forced to adopt new techniques and redesign their processes which would result in radical transformation of business processes. The objective of this redesigning process is to make them cost effective, highly productive in nature while maintaining world class quality standards.

According to O'Neill and Sohal (1999), businesses that do not change their approach are going out of competition and soon will be vanished. Hence, it can be concluded that the need to change arises due to diversified and dynamic customers, competition both local and global and technological changes. The business environment is changing with a rapid pace and the only way an organization can survive continual changes in the business environment is by learning to manage and leveraging change effectively.

This calls for a major change in the Indian manufacturing sector as well. Change always brings initial turbulence which needs to be handled with utmost care and sensitivity. Any successful change is always an outcome of extensive planning and precise implementation. Ostadi et al,(2011) defined Business process re-engineering (BPR) as a management technique to aide organisations to primarily reassess how they work to intensely improve customer service, cut operational costs, and become world-class competitors. Hence Business Process Reengineering is one such tool for competing in the dynamic business environment. According to M . Habib A. Shah(2013), it is important to construct a base regarding the need for change and why firms should bring in change. It is not only important to construct a base regarding the need for change but it is also very critical to gage the peoples understanding of the tool and their anticipated consequences based on the perception towards the intervention. This understanding gives the organization a clear cut direction for identifying and selecting the right path.

2.Review of Literature

A business process has structure, inputs, outputs, customers (internal and external) and owners (Davenport and Short, 1990; Hinterhuber, 1995).

Following are the different perceptions of BPR inferred from the outcome of various research studies:

1) The concept of BPR was first presented in two articles published concurrently by Hammer (1990) and Davenport and Short (1990).Hammer and Champy (1993) defined reengineering as the " ... fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance such as cost, quality, service and speed." Goetsch and Davis, 1995 opined that Reengineering is not about small or incremental changes but rather the radical changes necessary to achieve significant performance improvements in those companies that aspire to sustain continued and long-lasting success. 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 customers, thus, these requirements are well delivered by reengineering effort. BPR is the only (consistent) tool (if applied properly) will produce ground breaking results as said by Weerakkody, Janssen, and Dwivedi (2011). Habib (2011) concluded in his paper that radical improvement of organizational performance and process is the key aspect of BPR. Clean slate approach brings in innovative ideas for complete turnaround of the business process. The origin of the clean slate approach can be the customer requirements. And some of the organizations who have used this approach have generated very innovative ideas, which, have yielded maximum benefits leading to radical changes.
2) Most researchers and practitioners consider IT to be a major tool and a fundamental enabler of BPR efforts (Hammer, 1990; Grover et al., 1993; Davenport, 1993a; Jones, 1994; Mac Donald, 1993; Hammer and Champy, 1993; Venkataraman, 1993; Davenport and Short, 1990; and Tapscott and Caston, 1993). Gunasekaran and Kobu (2002) reasoned that the important feature of BPR adaptation is because of its ability and utilization of Information technology (I.T) and computation.
3) While Davenport & Short (1990) calls it as a process of analysis and workflow redesign in an organization. Radical transformation is a result of rethinking and reconstruction thus leading to substantive changes in job i.e changes in competence and skill demands.
4) Talwar (1993) on the other hand emphasized on rethinking and reconstructing the organizational structure, workflow and value chain, which can lead to modification of power arrangements creating resistance and conflicts.
5) Mumford (1994), Gadd and Oakland (1996), Biazzo (1998), Case (1999), Marjanovic (2000) stated that BPR was repackaging the existing process and hence did not contribute anything new to the process.
6) Findings of many researchers show that organizations have used BPR as an excuse to downsize. This has resulted in negative outlook towards implementation of BPR among the employees.

The above mentioned heterogeneous perceptions towards BPR have been generated across the globe. Many researchers and practitioners have a very positive perception based on their experience. 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 more than 70% , which has created a negative outlook towards BPR among some people.

Based on the review of research works, following perceptions towards BPR have been enlisted:

1. BPR improves corporate performance significantly through radical transformation using clean slate approach
2. IT is the key enabler for making transformations of the business possible
3. BPR means repackaging the existing process
4. BPR is an excuse to downsizing
5. BPR leads to modification of power arrangements and disruption of social arrangements leading to resistance and conflicts
6. BPR brings in substantive changes in job i.e. changes in competence and skill demands

The above mentioned perceptions were used to frame questions for further research.

3. Research Methodology

The intent of the study was to use the perceptions and experience of a range of BPR practitioners from the Indian manufacturing industry as the basis for exploring the perceptions towards BPR effort. Their perceptions were measured using a questionnaire incorporating a series of BPR understandings based on the review of literature.

The questionnaire was sent randomly to manufacturing industries across India. The Indian manufacturing industries are classified into five categories namely Small Scale Industries (SSI), Medium Scale

Industries (MSI), Large Scale Industries (LSI), Very Large scale (VLSI) and Multinational Companies(MNC's) based on the criteria provided by the Government of India . Responses from only those organizations were considered who have implemented BPR. Total of 489 responses from 163 organizations were obtained from different Indian manufacturing industries. The respondents mainly consisted of Top managers and middle level managers, since they play a key role in planning and then eventually implementing the BPR effort.
The various sectors included are Automobile, Auto component, Cement, Chemical and Petrochemical, Food, Fashion and apparel, Gems and Jewellery, Power and automation, Footwear, Cosmetics, Rubber, Electronics and electrical, Packaging ,Furniture, Paper and forest products, Defence equipment, Steel Industry and Textiles to name a few.

In order to measure the perceptions of the BPR practitioners, a series of questions were framed using a five-point Likert scale (Rossi et al. 1983), ranging from 'strongly disagree' to 'strongly agree'.

Mean and Std deviation values were used to ascertain the most common perception of BPR in the Indian Manufacturing Industry.

One way ANOVA using SPSS 19.0 was carried out to scrutinize the significant difference in the perception of BPR across different scales of the Indian manufacturing organizations.

3.1Need for the study

According to literature review carried out by Herzog,Polajnar Tonchia(2007), some of the researchers support BPR as a management intervention tool appearing as an answer to continuous market changes, customers demand and competition whereas some researchers carry an opposite view , claiming that BPR has failed to meet the expectations that were placed on it , and that the rise of BPR was just a rehashing of old ideas to fit a new context. These heterogeneous opinions towards BPR are primarily based on literature review of works of various authors and are not supported with much empirical evidence. Hence this study aims to empirically ascertain the understanding of BPR in the Indian manufacturing industry.

3.2Statement of the problem:

Although BPR as change initiative has various methodologies, techniques and tools for implementation, but these methodologies fail to demonstrate their effectiveness in the absence of clear understanding and the perceptions of the employees towards the initiative. Based on the perception, the organization will identify the right approach towards the BPR implementation and develop relevant appropriate plans for smooth and successful BPR effort.
This study aims at investigating the several understandings of BPR in various manufacturing sectors across India by gaging the perception of the internal customers towards BPR effort .

3.3 Objectives

1. To ascertain the common perception of BPR in Indian Manufacturing Sector.
2. To examine significant differences in BPR perceptions by the manufacturing organizations of different scales in India.

3.4 Hypothesis

H0: There is no significant difference between the perception of BPR based on the scale of manufacturing industry in India.

H1 : There is significant difference between the perception of BPR based on the scale of manufacturing industry in India.

4. Results and discussions

The data was collected from 163 manufacturing industries in India. The table(table no 1) gives the distribution of the industries based on the scale of the organization :

4.1Reliability Tests :

Based on the review of literature, 6 perceptions of BPR were listed and same were a part of the questionnaire. Cronbach's alpha was computed to assess whether the 6 items in the question that were used to investigate perception of BPR formed a reliable scale.

For all the items, the alpha value was above 0.61 , which indicates that the items form a scale that has a sound internal consistency, which is the recognized guideline for the development of new variables, established by Nunnally and Bernstein (1994).

4.2 Mean Scores and Std deviation :

The table no 2 contains the respective Mean score and standard deviation values for every perception of BPR

based on the responses obtained from the BPR practitioners. Chart no 1 displays the variations graphically in the BPR perception using mean scores and std. deviation values.

4.3 One –way ANOVA

The primary statistical technique used for the hypothesis testing is ANOVA. ANOVA (Analysis of Variance) is a technique used to examine the differences in various categories within each of the factors. One – way ANOVA technique was used in this study to investigate the significant differences in the perception of BPR across various scales of the industry. The hypothesis was tested at a significant level of 0.05.

5. Findings

Distribution of industries based on the scale of the organization (Table no. 1) indicates that out of all the classifications, more number of Multinational Corporations (MNC) have implemented BPR. However Large Scale Industries (LSI) and Medium Scale Industries (MSI) have also executed BPR in some numbers. Small Scale Industries (SSI) show a very insignificant embracement of the technique and Very Large Scale Industries (VLSI) are also trailing behind LSI and MSI.

Based on the responses from the BPR practitioners, the mean scores and the std deviation values for the perceptions of BPR were calculated. From table no.2, it is evident from the highest mean scores that, the BPR effort is considered as a technique which significantly improves corporate performance through radical transformation using clean slate approach in the Indian Manufacturing Industry. These industries also perceive that BPR brings in substantive changes in job with respect to competence and skill demands. It is also observed that IT is considered to be a key enabler for making transformation in Business Processes.

Interestingly, the perception that BPR is an excuse to downsizing, repackaging the existing process and BPR effort creates conflicts and resistance due to modification of power arrangements and disruption of social arrangement have garnered low scores, which indicates that Indian manufacturing industries hold positive outlook towards BPR effort. However these perceptions have a very high variances thus pointing that there is varying understanding across different organization. In order to validate these high variances, hypothesis testing was carried out to check the significant difference between the perceptions through various organizations whose classification was based on the scale i.e. VLSI, LSI, MSI, SSI and MNC. Hence, a hypothesis was tested using one –way ANOVA as a statistical tool using SPSS 20.0. As observed in the table no.3, which summarizes the F values and significant values, the P-values for all the different perceptions are greater than 0.05 (P-value > 0.05) , hence, we fail to reject null hypothesis. Therefore, the difference between the perceptions based on scales of the organization in Indian Manufacturing Sector is not significant.

6. Conclusion

The Indian manufacturing industry has positive approach towards BPR effort. Organizations of large to medium scale and those having global presence prefer to undergo radical transformation. This preference could be attributed to need for sustainability and to gain competitive advantage in the global scenario.

Improvement in corporate performance significantly through radical transformation using clean slate approach brings in more easy acceptability of the change. Thus making the organization more fertile to implement and manage changes. This perception also leads its way to innovation since it supports clean slate approach. If this effort is properly managed, it can motivate employees to give out of the box solutions which perpetually can add up to help the organization to gain competitive edge. From the study, it is also observed that the perception that BPR brings substantive changes in job with respect to competence and skill has also scored high. Anticipating appropriate changes in competence and skill demand will lead to strategic alignment of the BPR effort with the organization and will give clarity to the organization to source right kind of human resources.

The perception of BPR does not differ with respect to scale of industries; hence it is easy for the Government of India to bring this understanding on a common platform in order to make the ‘Make in India’ initiative very successful. Various strategies can be devised to reinforce positive approach towards radical transformation. Sharing of success stories of organization who have rewardingly executed BPR effort can be one such strategy. Further a macro level study can be undertaken for subsector classification like Automobile, Textile, Food etc to name a few. This will enable a customised approach towards BPR effort. Understanding BPR leads to balanced approach towards planning as well as implementing the intervention. By considering perspectives from multiple stakeholders, management would be further competent to achieve organizational consensus, make critical decisions, and allocate resources that are required to make BPR implementation projects successful. As the saying goes “Well begun is half done” , prelude to the quote cane be now “Better understanding is well begun”

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Table no 1 : Distribution of industries based on scale of the organization

	Frequency	Percent
LSI	33	20.24
MNC	71	43.55
MSI	35	21.47
SSI	9	5.52
VLSI	15	9.20
Total	163	100

Table no 2 : Mean scores and Variances of Perception of BPR in Indian Manufacturing Industries

Code	*Groups*	*Average*	*Variance*
Bp1	1. BPR improves corporate performance significantly through radical transformation using clean slate approach	**4.20**	**0.021**
Bp2	2. IT is the key enabler for making transformations of the business possible	**3.75**	0.905
Bp3	3. BPR means repackaging the existing process	**2.52**	1.135
Bp4	4. BPR is an excuse to downsizing	**2.08**	1.015
Bp5	5. BPR leads to modification of power arrangements and disruption of social arrangements leading to resistance and conflicts	**2.74**	1.137
Bp6	6. BPR brings in substantive changes in job i.e. changes in competence and skill demands	3.94	0.755

Table no. 3: One –Way ANOVA

Perceptions of BPR		N	Mean	Std. Deviation	F value	Sig value
1. BPR improves corporate performance significantly through radical transformation using clean slate approach	LSI	99	4.19	.841	1.385	.238
	MNC	212	4.23	.891		
	MSI	106	4.08	.801		
	SSI	27	4.11	.801		
	VLSI	45	4.40	.618		
	Total	489	4.20	.021		
2. IT is the key enabler for making transformations of the business possible	LSI	99	3.66	.991	1.610	.170
	MNC	212	3.85	.839		
	MSI	106	3.63	.908		
	SSI	27	3.63	1.079		
	VLSI	45	3.82	.860		
	Total	489	3.75	.905		
3. BPR means repackaging the existing process	LSI	99	2.51	1.248	.547	.701
	MNC	212	2.56	1.119		
	MSI	106	2.56	1.105		
	SSI	27	2.41	1.217		
	VLSI	45	2.31	.973		
	Total	489	2.52	1.135		
4. BPR is an excuse to downsizing	LSI	99	2.05	1.082	.143	.966
	MNC	212	2.08	1.000		
	MSI	106	2.13	1.033		
	SSI	27	2.00	.877		
	VLSI	45	2.11	1.005		
	Total	489	2.08	1.015		
5. BPR leads to modification of power arrangements and disruption of social arrangements leading to resistance and conflicts	LSI	99	2.64	1.147	1.364	.245
	MNC	212	2.78	1.124		
	MSI	106	2.87	1.139		
	SSI	27	2.74	1.196		
	VLSI	45	2.44	1.119		
	Total	489	2.74	1.137		
6. BPR brings in substantive changes in job i.e. changes in competence and skill demands	LSI	99	3.89	.754	1.178	.320
	MNC	212	3.92	.790		
	MSI	106	3.92	.726		
	SSI	27	4.22	.641		
	VLSI	45	4.00	.707		
	Total	489	3.94	.755		

Chart No. 1: Perception of BPR across Indian Manufacturing Industries

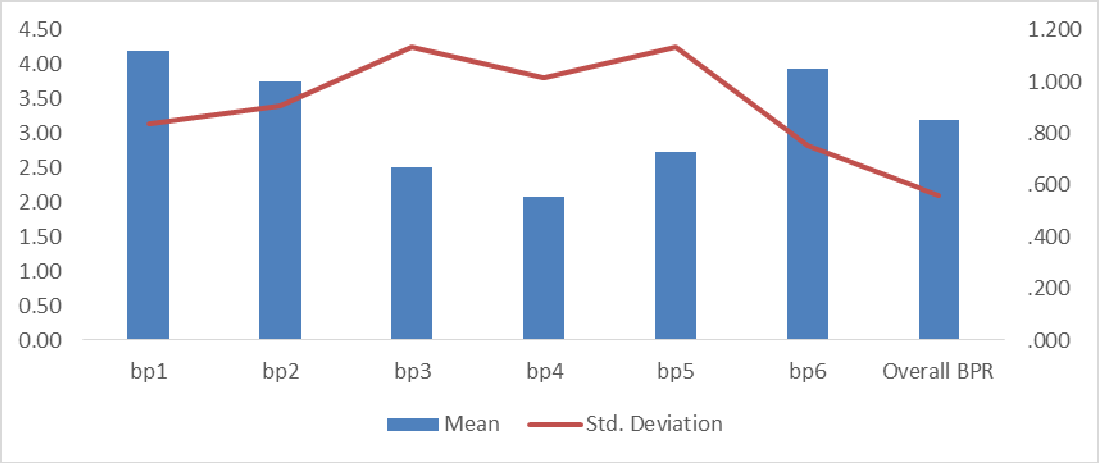

Chart no.2: Perception of BPR across different scales of the Indian Manufacturing Industry