A Descriptive-Correlation Research to Explain Potential of BPR

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Increases in consumer requirements for both product and service efficiency and effectiveness have resulted in business process reengineering (BPR). The re-engineering of business processes is concerned with fundamentally rethinking and redesigning business processes to obtain dramatic and sustaining improvements in quality, cost, service, lead-times, outcomes, flexibility and innovation (Hammer & Champy, 1993). Nowadays, banking industry has reduced structural barriers to competition in domestic markets by abolishing interest rates ceilings on deposits and lending by financial intermediaries in the world. Iran also has not been expected. According to the government's decision, the interest rate is going down to be around 9% (before: 22%, and right now: 15%), and this decision is very risky for the banks in Iran. On these reasons cited above, the banks should employ some strategies to solve their problems. It is because the customers have a vital and key role in this sector, and the banks are dependent to them. BPR is one strategy to help them in this competitive situation. BPR implementation can provide them, to survive in this better customer service, as well as improvement and management of customer expectations satisfaction and loyalty (Winer, 2001). This study is a descriptive-correlation research to explain effect of BPR on strengthening of banking sector, focus on customer satisfaction as potential of BPR. The focus of attention with such applications is customer satisfaction. In this research, a questionnaire was developed containing 18 items, each items employed a 7-piont instrument developed to find existent relationship between BPR implementation and customer satisfaction, relationship between employee's productivity and efficiency and satisfaction level of customer and also effect of information technology on accomplishment of BPR. In order to validate the instrument, validity and reliability tests were performed and to get reliability. Alpha kronbakh has computed according a pilot study as shown in following items: r H1 (with 5 factors) = 75.7%; r H2 (with 7 factors) = 75%; r H3 (with 5 factors) = 81%; R total: (with 17 factors) = 92%.

Keywords: business, process, r-engineering, banking

Introduction

The fragmented processes and specialized structures of company of earlier days are quite unresponsive to large dynamic changes with intensive competition in today's external environment. This movement was motivated, in particular, by the need for companies to remain competitive in markets characterized by an increase in customer numbers and in the supply of services (Venkatraman, 1994). The introduction of technology-based

solutions therefore came about as a way of differentiating companies from their customers' point of view. This evolution contributed towards a change in many companies' strategies and, in particular, the relations they establish with customers (Ricard, Préfontaine, & Sioufi, 2001).

In this environment, banking industry has reduced structural barriers of competition in domestic markets by abolishing interest rates ceilings on deposits and lending by financial intermediaries in the world. Iran also has not been expected. According to the government's decision, the interest rate is going down to be around 9% (before: 22%, and right now: 15%). In order to survive in the present world of competition, banks' marketing strategy needs to be formulated in such a way as to woo the customers. Hence, positive customer perception has become a major thrust area for banks to increase market share, which is created by CRM. This has increased the importance of identifying marketing assets in which to invest and of understanding how the assets provide potential for sustained profits in the long run (Rust, Lemon, & Zeithmal, 2004). CRM is one of the business process re-engineering BPR strategies and techniques.

The purpose of re-engineering is to "make all processes the best-in-class". Frederick Taylor suggested in the 1880s that managers could discover the best processes for performing work and re-engineer them to optimize productivity. In the early 1990s, Henri Fayol originated the concept of re-engineering: "To conduct the undertaking toward its objectives by seeking to derive optimum advantage from all available resources". So, when we apply re-engineering in the business area, it means we discuss about BPR. Business process re-engineering (BPR) is a modern concept with combination of on-going technological and management revolution. Today the survival and growth of the competitive business world depends on speedy product development, speedy delivery and maintaining the quality to the international standard at low cost with added value to the consumers. As traditional management structures cannot provide dramatic result, it is needed to rethink, redesign, retool and restructure the existing organizational systems and process, i.e., in other words to "re-engineer".

Contemplates of BPR

Hammer and Champy (1993) identified three types of organizations that could find solutions to re-engineering: those going through serious problems; those that foresee problems in the mid/long term; and those well situated but wishing to increase their advantage over their competitors. The early dominant interpretation in the United States was to use BPR as a formula to confront and overcome critical situations. In contrast, in another sample only a minority of the firms undertook BPR as a response to survival crises, even though the factors induced change in these organizations.

Ligus (1993, p. 58) claimed that "30%-35% reduction in the cost of sales; 75%-80% reduction in delivery time; 60%-80% reduction in inventories; 65%-70% reduction in the cost of quality; and unpredictable but substantial increase in market share" were all possible through effective BPR. However, Holland and Kumar (1995) noted that 60%-80% of BPR initiatives have been unsuccessful.

Characteristics

Re-engineering looks at the way work is done as well as how people relate to each other. It empowers people, and re-engineering is not down sizing. It is not restructuring, it changes the work process and works itself. Wasteful and useless work is curtailed. Some jobs are merged and even important jobs are created.

Re-engineering contemplates on:
- Rethinking on fundamentals;
- Breakthrough in mind-set;
- Simplifying the multi-active chart;
- Radical redesigning of business process.

Definition

Business process re-engineering is the popular term for reorganizing of processes and structures, prior to the introduction of new information technologies into an organization (Orman, 1993). Business process redesign is "the analysis and design of workflows and processes within and between organizations" (Davenport & Short, 1990). Nickols (1998) states that "Much of management's difficulty in understanding BPR centers around the inherent difficulty in defining the constituents of a 'business process'". This presents much difficulty, as it then becomes unclear what is actually being reengineered. "A set of activities that, taken together, produces a result of value to a customer" (Hammer & Champy, 1993); "A set of logically related tasks performed to achieve a defined business outcome" (Davenport & Short, 1990); "An ordering of work activities with a beginning, end, and clearly identified inputs and outputs" (Davenport, 1993); and "Any sequence of pre-defined activities executed to achieve a pre-specified type or range of out comes" (Talwar, 1993). Ultimately, it was defined by Hammer and Champy (1993) 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. Michael Hammer considers four keywords within that definition as being the most relevant ones:

(1) Fundamental rethinking: According to him, two questions are considered as fundamental thinking and are addressing the companies, justification of existence: What are we doing? And why are we doing so? As Hammer points out, forcing people to question the way they do business leads to rules turning out to be obsolete, erroneous and inappropriate. Re-engineering means starting from the scratch and determining firstly what a company has to do and secondly how to do it.

(2) Radical redesign: Radical redesign of business processes means getting to the root of things, not improving existing procedures and struggling with sub-optimizing. According to Hammer, radical redesign means disregarding all existing structures and procedures and inventing completely news ways of accomplishing work.

(3) Dramatic improvement: Re-engineering is no way for achieving marginal improvements and fine-tuning. It is intended to achieve heavy blasting.

(4) Process: Process-orientation is considered as being the most important aspect of BPR. Hammer claims, that most companies focus on tasks, people and structures rather than processes. The process of re-engineering involves:
- Move towards horizontal instead of vertical;
- Organize by process instead of function;
- Manage as leaders and coaches instead of supervision;
- Empowerment—Making jobs result-oriented instead of activity-oriented.

The positive preconditions for BPR success include: senior management commitment and sponsorship; realistic expectations; empowered and collaborative workers; strategic context of growth and expansion; shared vision; sound management practices; appropriate people participating full-time (cf. CIGNA: BPR as a way of

life); and sufficient budget (Bashein, Markus, & Riley, 1994).

Customer Satisfaction

The commercial banking industry like many other financial service industries is facing a rapidly changing market, new technologies, economic uncertainties, fierce competition and more demanding customers and the changing climate have presented and unprecedented set of challenges (Lovelock & Cristopher, 2001). Intangible assets, particularly brands and customers, are critical to any organization (Lev, 2001) and in today's competitive environment relationship marketing is critical to banking corporate success. Banking is a customer-oriented services industry, therefore the customer is the focus and customer service is the differentiating factor. Customer satisfaction is an important theoretical as well as practical issue for most marketers and consumer researchers (Dabholkar, 1995). Customer satisfaction can be considered the essence of success in today's highly competitive world of business. Thus, the significance of customer satisfaction and customer retention in strategy development for a market-oriented and customer-focused firm cannot be overstated.

Accoriding to Vara (2002), satisfaction is "a customer's emotional response to his or her evaluation of the perceived discrepancy between his or her prior experience with and expectations of product and organization and the actual experienced performance as perceived after interacting with organization and consuming the product" (Satisfaction = Perception - Expectation). Customer satisfaction is an important factor to the success of businesses. In the mass consumption era, one of the aspects that will make a customer choose certain products or companies over others will be the level of customer satisfaction and support before and after the sales services provided.

In the financial service industry, this is a major oversight since the banking industry relies on customer satisfaction for most of their business transactions, and provides a service and not a tangible product. The only thing customers have to gauge their expectations about these service offerings is customer care (Allen, 2000). Price pressures induced many organizations to focus on customer satisfaction (Keber, 2000). A review of articles on the financial services industry revealed that corporations know what the consumers are looking for and that value is measured through quality (Kerber, 2000). The threat of increased competition, slower growth rates, and price pressures induced, while addressing the issue of customer relationships, one should not forget that the banks are evolving, re-designing and delivering the best possible products and services which will strengthen the bond between them and their customers. In this context, the banks have to transform themselves into customer-centric service centers rather than transaction-processing centers or centers of interest-based services.

Banking

The banking sector in Iran is undergoing major changes due to competition and the advent of technology. The customer is looking for better quality services which can provide him/her with satisfaction. The Iran banking industry is also embracing technology rapidly. Big players among the private and public sector banks are reengineering and automating their core banking processes.

Banking Sector of Iran in a Glance

But the basic purpose of Iranian banking system is to serve around 70 million people, making profit is secondary goal. All banks in Iran are under the control of Central Bank of Iran Islamic. Iran Islamic Bank is

responsible for regulating and implementing of the country credit and monetary policies. Some information about Iranian banks related to this textual are as follows in Table 1.

Table 1

Part of E-banking Equipments in Iran Till End of 2009

Banking card	POS	ATM	Branches	Banks			
				Electronic	Private	Specialized	Government
				2	16	4	7
65,000,000	1,300,000	18,500	18,000	2		27	

We can divide all the banks customers in two categories: non-profitable customers and profit customers.

Non-profit Customers

Non-profit customers can be further subdivided in two groups as shown below:

(1) All the government's and company's employees, those who get salary through banking system.

(2) All amount of owners in Iran including (landed property, vehicle) those, who pay bills like (electricity, water) through banking system (around 112,000,000 bills monthly). This category includes majority of customers. Banks cannot give good services to them, because they are non-profit customer and engage employees in their work. For this reason, such category causes decline in the service qualities of the banks.

Profit Customer

Profitable customers are those who deposit, get loan and pay to the banks for their services or from whom bank make profits from. These are those customers on whom banks try to focus on, because they are the real customers. Banks make money from them by providing services like bank deposit, fix deposit, providing loans, credit services, transfer of funds, and etc.. People in this category are much less as compare to the first category.

Iranian economy has a highly liquid, large amount of money flow in and out of the country and within the country which is mostly done through banks. People prefer to deposit their money in banks despite of low return (as interest) because of the low risk involved and liquidity of their fund. And on the other hand, according the above information in Table 1, we understood that banking facilities and devices are less for this section of customers. And banks are going to increase all of them by the end of 2011. And also BPR in the banking sector has not performed properly yet. It is because present structure of banking sector is not fit of this amount of the customers and also is not to do these jobs like payment bills direct and so on for them.

Research Methodology

Primary data: Researcher collected primary data through structured questionnaire which is having 18 items and measured on Likert scale from strongly agree 7-point scale to strongly disagree 1 point on scale. Through questionnaire additional information includes demographic variables, like age, gender, educational level and technical knowledge. Researcher used convenient sampling in which respondents were senior managers of the banks from different places in Iran (Mashad). Sample size (360), response (147).

Secondary data: To support primary research, researcher reviewed existing literature from books, magazine, IT journals, Internet, etc..

Hypothesis

Synthesis of the literature review has uncovered an absence of studies that empirically characterize successful BPR efforts. Attempts to explore the BPR phenomenon have manifested themselves as either case studies, which were highly criticized (Cole, 1994), or as conceptual frameworks that lacked empirical testing. The review of the previous research suggests an association between various socio-demographic and e-banking usages like age, sex, income level, the social status etc.. But no study aims to find the effect of BPR on performance of banking sector of Iran. As it is a known fact that people's satisfaction depends on service quality through e-banking and banking sector has to apply new strategy jointly with modern technologies. Hence this study aims to understand the effect of BPR on banking. Based on the literature review, the following hypotheses were articulated for testing:

Hypothesis 1: BPR offers novel service and goods according to the customers' requests and demands.

Hypothesis 2: BPR offers better services by employees.

Hypothesis 3: IT has an important role to implement the BPR.

Objective of the Study

The main objectives of this study are:

(1) To find relationship between BPR and offering novel service and goods according to the customers' requests and demands;

(2) To find the existing customer satisfaction level in the bank;

(3) To recognize the relationship between employees productivity and effectiveness and customer satisfaction level;

(4) Role of information technology on BPR implementation.

Rsearch Design

This study is a descriptive-correlation research and has used descriptive statistics like Frequency, Mean, Std D and so on. So to hypothesis analysis used statistics of one-sample t-test. The research design is exploratory in nature. The research has been conducted in some different banks in Mashad city (Iran). Convenience sampling method has been adopted and an attempt has been made.

Data Collection

Keeping in mind the objectives of the study, the primary data was collected from a sample of 147 respondents belonging to the senior managers of the banks, which was distributed, pilot tested and re-framed for the study and included open-ended. The data so collected was analyzed with the help of various statistical techniques.

One possible limitation of this study might be that the sample size is small (148 possible respondents in total). However, Roscoe (1975) argued that sample sizes greater than 30 and less than 500 are appropriate for most research projects. Wilcox (1998) stated that increasing sample size can increase the likelihood of affecting type second errors and accepting the research finding when in fact they should be rejected as even weak relationships could reach significant levels with large samples.

Instrument Validation

In order to validate the instrument, validity and reliability tests were performed, correlation coefficients between the realized constructs were examined. Validity of this questionnaires has done by experts panel and to

get the reliability, Alpha kronbakh has computed according to a pilot study as shown in following items:

r H1 (with 5 factors) = 75.7%; r H2 (with 7 factors) = 75%; r H3 (with 5 factors) = 81%; and R total (with 17 factors) = 92%.

Analysis of Data and Discussion

Descriptive analysis. In descriptive analysis, it has proceeded to some data according to some statistics like Mean, Std D and Frequency.

(1) Descriptive analysis of Table 2

As can be seen in Table 2, factor No. 1: with Mean 5.8776, Std D 1.28505 and Frequency 149 and factor No. 2: with Mean 6.2245, Std D 1.10426 and Frequency 149 are high rank, which means these factors have more effective on first hypotheses than others, and factor No. 5: with Mean 6.4490, Std D 0.76543 and Frequency 149 is low rank. It means effect of this case on the first hypothesis is less than others.

Table 2

Rank	Variables	Std D	Mean	F/N	Mean rank
1	BPR effects on customers' expectation	1.28505	5.8776	149	1125.39847
2	BPR effects on recognizing of customers' needs and requests	1.10426	6.2245	149	1024.14649
3	BPR uses customers' opinion	1.00424	6.3061	149	943.59284
4	BPR causes to offer optimum goods and services to the customers	0.88448	6.2653	149	825.68835
5	BPR causes to increase productivity and efficiency of employees	0.76543	6.4490	149	135.50245

(2) Descriptive analysis of Table 3

As can be seen in Table 3, factor No. 1: with Mean 5.9592, Std D 1.54055 and Frequency 149 and factor No. 2: with Mean 5.7500, Std D 1.42172 and Frequency 149 are high rank in this hypothesis which means these have much effective on second hypothesis than others, and factor No. 7: with Mean 6.6122, Std D 0.53293 and Frequency 149 is low rank. It means effect of this case on the second hypothesis is less than others.

Table 3

Rank	Variables	Std D	Mean	F/N	Mean rank
1	Bank employee's behaviors effect on degree of customers, satisfaction	1.54055	5.9592	149	1367.88639
2	Response late to the customers cause their unsatisfaction	1.42172	5.7500	149	1218.05861
3	Education level of employee effect on their service quality to offer	1.27409	5.9592	149	1131.29101
4	BPR causes making a good and intimate relationship between employee and customers	1.15138	6.3878	149	1095.86299
5	BPR has specific standard to report	0.99586	6.6327	149	895.23635
6	Elimination of unnecessary control and rules cause increasing employees, productivity	0.81650	6.5714		799.46667
7	Employees are effect to make intimate and friendly relationship with the customers	0.53293	6.6122		525.05212

(3) Descriptive analysis of Table 4

As can be seen in Table 4, factor No. 1: with Mean 6.4082, Std D 0.86406 and Frequency 149 and factor No. 2: with Mean 6.5510 Std D 0.61445 and Frequency 149 are high rank, which means these factors have more effective on third hypotheses than others, and factor No. 5: with Mean 6.6122, Std D 0.49229 and Frequency 149 is low rank. It means effect of this case on the third hypothesis is less than others.

Table 4

Rank	Variables	Std D	Mean	F/N	Mean rank
1	Information Technology (IT) decreases transaction time	0.86406	6.4082	149	825.23324
2	IT decreases expenditure of goods and services to offer to customers	0.61445	6.5510	149	599.7640306
3	Some facilities like telephone bank, mobile bank, Internet Banking and ATM causes to offer optimum service to the customers	0.56620	6.6327	149	559.55978
4	IT has important role to manager's decision making	0.50843	6.6939	149	507.10356
5	IT has important role in planning of BPR	0.49229	6.6122	149	4,850.01287

Status of socio-demographic and analyzing. As can be seen in Table 5, mean of respondents age in this study is 34 and less age is 20 and high age is 50 years old. It means the respondents have good experience in the bank and they are known employees. Seven percent in sample are female and 93% are male. Respondents with diploma are most with 51, and respondents with postgraduate and above are least with 15. These amount are very less to the banks those who want do e-banking and set up BPR strategy, it is because to set this strategy, banks request more high educational employees. So nobody was illiterate and under diploma. Upper surface of respondents for professional knowledge were 9 and lower surface were 24 and medium surface were 78, and also the banks those who want do BPR strategy, request to professional employee as well as knowledge.

Table 5

Demographic-socio Table

Variables		F/N	Mean	Std D	Max	Min	Percent
Age		96	34	9.05	50	20	-
Sex	Male	120	-	-	-	-	93
	Female	9					7
Education	Under diploma	-	2.7	7.2	-	-	-
	Diploma	51					
	Under graduated	39					
	Graduated and above	15					
Professional knowledge	High	9	2.14	0.585	-	-	-
	Medium	78					
	Low	24					

Hypothesis analysis. To perform of *t*-test, all the questions have become valued with two groups of high satisfaction and opposition and then have analyzed (Before each questions it has been employed a 7-piont Likert scale, fully anchored by strongly disagree at one end to strongly agree at the other).

As can be seen in Table 6, the result of one-sample *t*-test is as below.

Table 6

Result of T-test to Hypothesis Test by One-Sample T-Test

Number	Hypothesis	F/N	Mean	Significant	P-value
1	H1	148	1.93	0.000	***
2	H2	148	1.92	0.000	***
3	H3	148	1.99	0.000	***

Note. *** $P < 0.001$.

(1) Hypothesis 1: BPR is affective to offer novel service and goods according the customers' requests and demands. With 99% confidence, there is a strong and significant relationship between BPR and offering novel service and goods according the customers' requests and demands. Besides mean of 1.93 shows on very general tendency and high satisfaction;

(2) Hypothesis 2: BPR is affective to offer better services by employees. According obtained data, we can analyses that, with 99% confidence there is a strong and significant relationship between BPR and offering better services by employees, then we can't reject this hypothesis. So 1.92 mean shows on very general tendency and high satisfaction;

(3) Hypothesis 3: IT has an important role to implement of BPR: Accepted this hypothesis, it's because there is a strong and significant relationship with 99% confidence on that, IT has an important role to implement of BPR.

Conclusion

This study looks into the existing relationship between BPR implementation and offers novel service and goods according to the customers' requests and demands, relationship between employee's productivity and efficiency and satisfaction level of customer and also role of information technology on accomplishment of BPR.

Based on three hypothesis tested in this study, according to literature review and expert's panel opinion, there is a meaningful and strong relationship between accomplishment of BPR and IT and also customer satisfaction. Therefore, we emphasize to perform the BPR at any cost and also (to invest IT infrastructures) in Iran banking system more and more. Because they have large number of retail customers, most of them do not benefit the banks, and engage banks' facilities to themselves. After this, all of their work like to pay bills, fund transfer, and so on will done through electronic-banking and other related technologies. Ultimately, Iran banking system will have high growth rate and can guarantee its survival in the long run.

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