The Effect of IT-Enabled Business Process Reengineering On Banks Performance

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Abstract

Until some 40 years ago, the process of bank management was based on assumptions and experience, and with the appearance of computers, management was increasingly based on empirical data and analytical processes. Computerization of banking has began with data processing, then it was moved on to information processing, so that the processing of specialized knowledge in the function of decision-making could be reached in the latest period. Information technology and information systems are increasingly being designed as expert systems, which are in function of banking experts,Due to accelerated expansion of electronic banking systems, it comes to major upheavals in the essence of e-banking, which is becoming synonymous with modern banking. Today, banking business is entirely based on technical and technological resources and ICT becomes a guide for strategy and reengineering.

Key Words : Bank Management , Data Processing , Decision-Making

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Introduction

Until some 40 years ago, the process of bank management was based on assumptions and experience, and with the appearance of computers, management was increasingly based on empirical data and analytical processes. Development and application of more and more perfect computer technology has enabled the appearance of a several tendencies in bank management:

- Firstly, the process of scientific research of the essence of banking business was initiated. Basic principles are analyzed and specific rules are determined in sub-balances of assets and liabilities of banks and on that basis they formulate business strategies.
- Secondly, mathematic modeling of management processes is increasingly used. The relationship between banking assets and liabilities is mathematically modeled for the sake of optimizing banking tendency towards liquidity, safety and profitability.
- Thirdly, the latest tendencies in development of computer technology move towards the use of artificial intelligence in the function of experts for particular banking problems. The so-called expert systems in banking are developed.

Inspired by successful application of management science in other fields, banking experts have more frequently, especially with the emergence of computers, asked themselves a question – could some procedures and techniques be applied in resolution of banking problems as well? In develop market economy, owing to computer technology, banks have improved the technique of giving various types of loans, by applying the scientific approach to management, using statistical models for economic predictions, as well as introduction of linear programming. Computer equipped and mathematically oriented modern banks increase the number of engineers, statisticians and mathematicians in the composition of its staff . Computerization of banking has began with data processing, then it was moved on to information processing, so that the processing of specialized knowledge in the function of decision-making could be reached in the latest period. Information technology and information systems are increasingly being designed as expert systems, which are in function of banking experts. The essence is to operation and apply expert knowledge of bank staff as a set of models and procedures, as well as

hardware and software solutions, which will have the function to replace banking experts, which are engaged in collecting the information, forming the knowledge and data bases and their use in resolution of concrete banking problems .

Due to accelerated expansion of electronic banking systems, it comes to major upheavals in the essence of e-banking, which is becoming synonymous with modern banking. Today, banking business is entirely based on technical and technological resources and ICT becomes a guide for strategy and reengineering.(s. drobnjak ,et ,all,2011)

1.Theoritical aspect

1.1. Business process reengineering definition

Business Process are simply a set of activities that transformed a set of inputs into a set of outputs for another person or process using people and equipments. Business process entails set of logically related tasks performed to achieve a defined business output or outcome. It involves a wide spectrum of activities procurement, order fulfillment, product development, customer service and sale, Thus Hammer and Champy (1993) argued that BPR is “the fundamental reconsideration and radical redesign of organizational process, in order to achieve drastic improvement of current performance in cost, service and speed enjoys a fair measure of consensus”. One can then assume that Business Process Re-engineering connotes the analysis and design of workflows and processes within and between organizations .

Business Process Reengineering relies on a different school of thought. It believes in continuous process improvement, assumes that current process is irrelevant and there is need to commence another one.

Business Process Re-engineering in the actual sense, have mixed successes therefore, business process reengineering projects aimed at transforming inefficient work process. Henceforth ,organizations such as banks and other financial institutions need to optimize results from this model in real business situations.

The reengineering concepts involve four dimensions that are stated below: (follham,2010) ,(kaparty,2009).

a. Innovative Rethinking: This is a process that is itself dependent on creativity, inspiration and old-fashioned luck. Drucker (1993) argues that this paradox is apparent only not real most of what happens in successful innovations is not the happy occurrences of a blinding flash of insight but

rather, the careful implementation of unspectacular but systematic management discipline.

b. Process Function: Taking a systematic perspective, Hammer and Champy (1993) describes process functions as a collection of activities that take one or more kinds of input and creates an output that is of value to the customer. Typical process of this includes ordering of organizational structure, manufacturing, production, development, delivery and invoicing.

c. Radical change: In radical change, a key business process is the transformation of organizational element; it is essential to an organization survival. Change leads to new ideas, technology, innovation and improvement. Therefore, it is important that organizations recognize the need for change and learns to manage the process effectively .

d. Organizational Development and Performance: It takes a look at the firm's level of efficiency

and way to improve its current activity level in order to meet up to standards and survive the competitive pressure.

1.2. Elements of Reengineering in an Organization

From the work of Abolo (1997) and Thomas (1996) cited by Ezigbo (2003), the essential element or principles of reengineering include the following: (A.Sidikat,2008).

• Rethinking the theory of the business.
• Challenging old assumptions and discharging old rules that are no longer applicable.
• Breaking away from conventional wisdom and the constraints of organizational boundaries.
• Using information technology not to automatic outdated process but to redesign new ones.
• Externally focus on customers and the generation of greater value for customers.
• Internally focus on harnessing more of the potentials of people and applying it to those
activities that identify and deliver values to customers.
• Encourages training and development by building creative work environment.
• Think and execute as much activity as possible horizontally, concentrating on flows and
processes through the organization.

1.3.Steps Involved in Business Process Reengineering

Davenport and Short (1990) prescribe a five-step approach to Business Process Reengineering. These are:

(a) Develop the business vision and process objectives: Business Process Reengineering is
driving by a business vision which implies specific business objectives such as cost reduction, time reduction, output quality improvement, quality of work life.

(b) Identify the processes to be redesigned: Most firms use high- impacts approach which focuses and most important processes or those that conflict most with the business vision.

Few number of firms use the exhaustive approach that attempts to identify all the processes within an organization and the prioritize them in order to redesigned urgency.

(c) Understand and measure the existing process: For avoiding the repeating of old mistake and
for providing a baseline for future improvements.

(d) Identity information technology (IT) levels: Awareness of IT capabilities can and should influence process. This is because IT is a sine qua non to the business process reengineering.
(e) Design and Build a prototype of New Process: The actual design should not be viewed as the end of the BPR process. Rather, it should be viewed as a prototype, aligns the BPR approach with quick delivery of results and the involvement and satisfaction of customers.

1.4.Relationship Between Business Process Reengineering (BPR) and Information Technology (IT): (Sidikat and Ayanda,2008).

Hammer (1990) considers Information Technology (IT) as the key factor in BPR for organization that wants to witness a "radical change" in its operation. He prescribes the use of IT to challenge the assumption inherent in the work processes that have existed since long before the advent of modern computer and communications technology. He argues that at the heart of reengineering is the notion of discontinuous thinking or recognizing and breaking away from the outdated rules and fundamental assumptions underlying operations. These rules of work design are based on assumptions about technology, people and organizational goals that no longer hold. Aremu and Saka (2006) argued that Information technology (IT) is a strategic resource that facilitates major changes in competitive behavior, marketing and customer service. In essence, IT enables a firm to achieve competitive advantages. (Teng, J., V. Grover, & K.D,2010)

Davenport and Short (1990) further posted that Business Process Reengineering requires taking

a broader view of both Information Technology (IT) and business activity and of the relationships between them. IT should be viewed as more than an automating or mechanizing force; to fundamentally reshape the way business is done.

Information technology (IT) and Business Process Reengineering (BPR) have recursive relationship. IT capabilities should support business processes and business should be in terms of the capabilities IT can provide. Davenport and Short (1990) refer to this broadened, recursive view of IT and BPR as the new industrial engineering business process represent a new approach to coordination across the firm, IT promises and its ultimate impact is to be the most powerful tool for reducing cost of coordination (Davenport and Short, 1990).

Weerakkody and Currie (2003) see that we are living in a period in which organizations particularly in industrialized nations are experiencing a huge growth in the use of IS/IT Information systems have no independent existence of their own unless taken in the context of an organization and its business processes . While IT is seen as a driver of organizational change it can also play a central role in the BPR process and conversely BPR is already changing the way we view IT. Although the relationship between BPR and IT remains a difficult one companies are likely to engage in IT enabled BPR The move from mainframe based legacy systems to PC based distributed network systems is considered as one of the most useful aspects of IT in BPR though this is often a difficult task which includes changing application software as well as platforms .(Hales, H. L. and Savoie, B. J,1994)

More recently, the influence of the Internet has further enhanced the capabilities of IS/IT in the context of business process improvement .While enabling organizations to implement innovative business processes and helping to improve the quality of operations in terms of accuracy and time scale, IS/IT has provided new methods of working that extend the scope of the organization.

(V. Weerakkody and W. Currie,2003),(Berrington, C L & Oblich, R L,1995)

A conceptual model explaining the major components of BPR is shown in figure (1) contain:

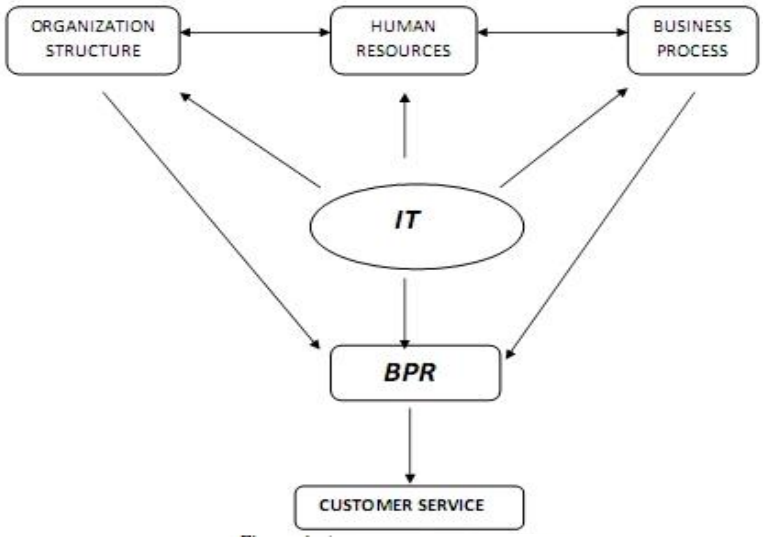

Fig.1.A conceptual model for BPR.

1. There is a link between organizational restructuring and human resources behavioral changes with the help of Information Technology for reengineering business processes, and hence effective process delivery systems, with the objective of improving customer satisfaction.
2. BPR requires organizational restructuring (include the facility location, capacity, types of products, technology, people) and changes in employees' behavior (training, education, job enrichment, job enlargement, and employee empowerment) with a view to accommodating and facilitating radical changes for achieving dramatic improvements in business performance. IT, such as the Internet, E-Commerce, CAD/CAM, CIM, MRP, Multimedia, and WWW, would help to restructure an organization and promote changes with acceptance from Business process reengineering.
3. The reengineering of a business process will result in improved process delivery systems and hence an improved customer service level.
4. Organizational restructuring by standardization and simplification eliminates barriers for a smooth flow of information and materials along the supply chains.
5. The smooth flow of information can be facilitated by the use of various ITs to improve the integration of various functional areas.

6. The basic aim of BPR is to deliver quality goods at competitive prices in a timely fashion. Therefore, a manufacturing system as well as a business organization should be modified emphasizing coordination of the basic business processes in the chain, from suppliers to customers, as opposed to the existing complex structures of the functional hierarchies. The behavioral changes should precede the reengineering. Therefore, issues such as training and education, employee empowerment, teamwork and incentive schemes should be given priority in BPR.(Morrison, C.J. and Berndt, E.R,2011)

In order to reengineer a business process, both internal and external process capabilities, such as product development, production, distribution, suppliers and markets, and inter-organizational relationships, especially in a global manufacturing environment, need to be integrated. Reengineering helps to achieve lean production through the integration of production activities into self-contained units along the production flow.

BPR is a top-down, process-driven approach managed by senior executives, which aims to improve the performance by radical changes in the system over the short term (Ardhaldjian and Fahner 1994). Companies usually have to meet three important goals to achieve effectiveness:

(a) a process, not product perspective,

(b) cross-functional coordination or integration,

(c) consistency between goals and improvement plans (Carr, D K & Johansson H J ,1995, Lockamy and Smith 1997).

IT is an enabler to the reengineered process, and any reengineering program must consider the tremendous advantage offered by technologies such as document image processing and expert systems (Brynjolfsson, E. and Hitt, L. M. 1994, Morris and Brandon 1993).

1.5. BRP IN BANKS:

Experts predict that the most successful banks in the next decade at least are those aimed at building relationships focused on achieving growth and deliver services efficiently into segments its customers through retail banking market successfully and then re-engineer their operations in order to increase productivity, studies indicate contemporary performance of banks that there is a glaring disparity in the performance of branches, whether within the retail branch network as a whole or when compared to bank branches per example, varying operating expenses, which ranged between 30-200 basis points, or disparity in the number of transactions performed by the employee per net Teller per hour which varies between

15-45 treatment, all that indicates the presence of issues worthy of study and treatment (Mac Rabb,1994:4-8).

One study suggests that there are ten basic reasons behind the conviction bank management of the need to complete the process of re-engineering as a prerequisite for the survival and competition in the market, namely: (Allen&Cespades,1995)

1 - Bank workers often allocates more than 60% of work time on control and follow up and other operations-oriented inside the bank instead of customer service and increase sales.

2 - Workers believe that many of their responsibilities everyday is without a specific purpose ,does not contribute to the creation of value-added desired by customers.

3 - Separation of senior management from customers because of excessive intermediate organizational levels frequently.

4 - Efficiency ratio (cost incurred by the bank for each one dinar of its revenue) is bellow ambition.

5 - Unnecessary repetition in procedures and processes.

6 - Increase the number of employees in each of the executive departments and consulting above the normal limits.

7 - Investment in new technology does not drive to a significant reduction in costs or an increase in sales.

8 - Pricing is based on just what competitors determined and not to the real value added to products as seen by the customer.

9 – Bank does not seem to achieve advantages in costs or revenues of different operations.

10 - Share price of the bank in the financial market is weak compared to shares of other banks.

For these reasons it must be a re-engineering process, which aims to reduce costs and improve services to customers and improve the internal environment of the bank.

Researchers using data from banking industry found that the impact of IT investment on bank performance was realized after a certain time lag, and the level of impact depended on the extent to which firms supported their IT investments with organizational redesign . Additionally, Devaraj and

Kohli (2000) showed that IT investment contributes to higher revenue after certain time lags, and the effect is more pronounced when combined with BPR initiatives. Bresnahan et al. (2002) studied the effect of three related innovations (information technology, complementary workplace reorganization, and new products and services) on demand for skilled labor, and found firm-level evidence that the demand for skilled labor is complementary with all the three innovations. Bertschek and Kaiser (2004) analyzed a cross-sectional data set to understand the relationship between investment in IT, non-IT investment, labor productivity, and workplace reorganization, and found that workplace reorganization induces an increase in labor productivity that is attributable to complementarities between various input factors, including IT, and workplace reorganization (Abdullah. h, 2003).

Studies show that the bank who succeeds in the process of re-engineering will achieve better performance over 5-10 that follow the process, banks usually resort to re-engineering after suffering from poor performance or achievement of losses, it focuses on how to improve performance through this process and, if successful, re-engineering achieve the following results in the performance of the bank: (Brain,2001),(Mills, M & Mabey, C,1993)

1 - Reduce the ratio of administrative costs to revenue at a rate ranging between 5-10%.

2 - Reduce labor turnover ratio and days of absence and left the service.

3 - Reduce number of erroneous transactions to a very large up to 90%.

4 - Increase financial services revenue ranging between 15-20%.

5 - Net profit increased by ranging between 3-4%.

6 - Increase rate of return on assets and return on equity by 2-4%.

7 - Increase net interest margin by 5-10%.

The above results may not successful in all cases, but in any case, noted that all the successful re-engineering processes lead to improved performance, and it should be noted here that there are a lot of obstacles on successful re-engineering such as: (A. Gunasekaran , and B. Kobu,2002)

1 - Lack of cooperation of employees and dominance of traditional organizational culture atmosphere.

2 - Focus on reducing costs and increasing profits not on customer service.

3 - Look at re-engineering as a redesign or restructuring of some of the activities of the bank.

4 - Lack of integration of process re-engineering with external environmental variables and retreat on the inside.

If these problems appeared or only part of it, the whole project could be failed, many of re-engineering process unsuccessful to achieve desire results on the performance of bank or even lead to bankruptcy, as happened to Bormann international Dutch Bank in 2000 and the Bank of Jorge Town in 2001 as re-engineering in both banks had achieved miserably for different reasons, which led to bankruptcy of first bank after only 3 years of implementation of the process ,the second bank was merged with another bank after suffering major financial difficulties after 5 years of re-engineered. (Srdan, Drobnjak. Velibor and Nenad,2011)

the financial implications of the re-engineering program appears on the medium or long term, reflected in overall standards of performance like return on investment or return to equity which is measured as follows

Return on assets = Net income / assets

Return on equity = Net income / equity

2. Study Methodology

2.1. study problem: Applied results of process re-engineering in the banks vary from one bank to another, some banks may succeed in application of re-engineering, others may fail at that and do not achieve this process goals, therefore study adopts a problem of the extent of the impact of re-engineering in the performance ,will banks that adopt this process leads always to achieve the goals expected of them to reduce costs and increase revenue and improve customer service or no.

2.2. Importance and objectives of the study: The importance of the study come from the importance of the theme that relatively recent, banks

in the world in general and in developing nations, in particular increasingly interested to improve performance and reduce costs and solve intractable problems through the use of information technology-enabled re-engineering to root re-design of overall operations of the bank to achieve objectives.

This study aims to:

- Clarify the theoretical framework for the re-engineering processes and their importance to improve the performance of banks
- Analyze the performance of banks before the implementation of the re-engineering processes and then
- Contribute to the intellectual debate and knowledge on the subject of re-engineering and its practical applications by international banks and the possibility to benefit from the experiences of these banks for the Iraqi banks.

2.3. Hypothesis of the study: study adopts one basic hypothesis is (re-engineering business processes lead to improve the performance of banks), from this hypothesis we can derivate these four branches hypotheses :

1- re-engineering business processes lead to decreasing of administration expenses.

2- re-engineering business processes lead to increasing of net interest margin.

3- re-engineering business processes lead to increasing of return on assets.

4- re-engineering business processes lead to increasing of return on equity.

2.4. Study Tools: we will use a number of indicators of financial performance for evaluating the performance of study sample banks as follows:

- Administrative expenses / total revenue

- Net interest margin / total loans

- Return / assets

- Return / equity

2.5. Study sample:

The study select (4) international banks that implemented some kinds of BPR in the ten past year ,we choose these banks because of data availability through study period (2000-2011) these banks are:

1- **BTC bank:** The Bethany Trust Company was established on September 19th, 1919. The original location was constructed in 1966. During its humble beginnings it had a capital stock of $100,000. The stock was then divided into 1,000 shares with a par value of $100. In March of 1998 Bethany Trust Company purchased Bank of Gallatin/First State Bank. When the Bethany Trust Company celebrated its 80th anniversary in September 1999, the name of group changed to BTC BANK. At that time assets totaled over $110,539,000. In February 2003 BTC BANK purchased First Bank of Missouri's facility in Patton burg. On July 18, 2011 company expanded across state lines to open long awaited branch in Lamoni, Iowa.

2- **CUA BANK:** CUA is Australia's largest customer-owned financial institution provide everyday banking products and services. It is 100 per cent owned by customers. Instead of paying profits in the form of dividends to shareholders, reinvest profits back into business. This means customers benefit from more competitive products, services and fees. it have a national presence through 78 branches

across Queensland, New South Wales, Australian Capital Territory, Victoria and Western Australia. Customers can use their CUA Visa debit cards, redi CARDS or Australia Post deposit cards to withdraw from or deposit into their CUA accounts at any Australia Post office

3- **ING Vysya Bank Ltd**: is an entity formed with the coming together of erstwhile, Vysya Bank Ltd, a premier bank in the Indian Private Sector and a global financial powerhouse, It was in the year 1930 that a team of visionaries came together to form a bank that would extend a helping hand to those who weren't privileged enough to enjoy banking services.

4- **PNC bank:** it's an USA bank with roots in banking dating to before the Civil War, PNC has grown into one of the leading financial services organizations in the country, with more than $263 billion in assets, offers a wide range of services for all customers, from individuals and small businesses, to corporations and government entities. In total, as of September 30, 2012, it had approximately $112 billion in assets under management and $222 billion of assets under administration, serving our clients from nearly 90 offices in 17 states and the District of Columbia. Table 1 show some information of these banks.

Table(1) sample of study(2011)

Bank	nationality	No. of branches	Capital million $	Assets million $
BTC	USA	60	500	200 000
CUA	Australia	78	780	80 000
ING	Indian	88	1020	120 000
PNC	USA	90	2400	200 000

3. analytical aspects :

Period study has been divided into 3 stages, first one from 2000 to 2004 it's a period before implementation BPR by banks in our study, second one from 2005-2006 the implementation of BPR period, and third from 2007 to 2011 after implementation period, therefore we will analyze the performance of banks sample using financial ratios that we have mentioned in the methodology of the study for the first and third periods and compared the results of the analysis to identify the impact of implementation business process re-engineering in the performance of banks.

3.1. analysis banks performance for first period 2000-2004

3.1.1. Administrative expenses to total revenue:

Table (2) show value of Administrative expenses / total revenue ratios of banks from 2000 to 2004, the result show that there are serious problem in financial performance for all banks, there were increasing in administrative expenses over time and the ratio itself was very high for most of banks, CUA,BTC,ING were over average (0.172), while only PNC was under average (0.082), highest value of this ratio was (0.28) in CUA in 2004 , lowest value was (0.07) in PNC in 2000.

Table (2) administrative expenses/ total revenue

banks	2000	2001	2002	2003	2004	average
BTC	0.12	0.15	0.17	0.23	0.25	0.184
CUA	0.22	0.26	0.23	0.24	0.28	0.246
ING	0.09	0.11	0.23	0.21	0.23	0.174
PNC	0.07	0.08	0.08	0.09	0.09	0.082
average	0.125	0.15	0.178	0.192	0.213	0.172

3.1.2. Net interest margin to total loans:

Table (3) show net interest ratio to total loans ratio of banks from 2000 to 2004, the result show there were a decreasing trend in interest margin for all banks from 2000 to 2004 except CUA that achieved a fluctuation values in this ratio from year to year , ratio was below average in BTC, CUA , and above average in ING, PNC , highest value of ratio was (0.05) in PNC for year 2000, lowest one was (0.016) in CUA in 2001.

Table (3) net interest margin / total loans

banks	2000	2001	2002	2003	2004	average
BTC	0.03	0.03	0.024	0.023	0.022	0.026
CUA	0.02	0.016	0.023	0.019	0.02	0.02
ING	0.04	0.03	0.033	0.034	0.025	0.032
PNC	0.05	0.03	0.03	0.025	0.023	0.032
average	0.125	0.15	0.178	0.192	0.213	0.027

3.1.3. Return on assets:

Table (3) show return on assets of banks from 2000 to 2004, its one of most important ratio in bank performance , there were a clear decreasing trend in value of it from year to year for ING it was (0.05) in 2000 dropped to (0.02) in 2004 although his performance remained over average (0.032), and highest compared with other banks pushed by high performance in early years of study, for other banks there were a fluctuate from lowest value (0.008) in 2004 for BTC to highest one (0.2) in 2000 for CUA and PNC , all these three banks were under average (0.0178).

Table (3) return on assets

banks	2000	2001	2002	2003	2004	average
BTC	0.01	0.009	0.009	0.01	0.008	0.009
CUA	0.02	0.015	0.01	0.008	0.01	0.0126
ING	0.05	0.04	0.03	0.02	0.02	0.032
PNC	0.02	0.02	0.017	0.017	0.012	0.0172
average	0.025	0.021	0.0165	0.01375	0.0125	0.0178

3.1.4. Return on equity:

Like ROA , ING achieved better performance in ROE compared with other banks in this study, with average (0.178), value dropped from (0.20) in 2000 to (0.16) in 2004, but the highest value was achieved by PNC in 2001 that is (0.22) because of decreasing equity value in PNC compared with ING, in other bank this ratio fluctuate from (0.10) in 2002-2004 for CUA , to (0.20) in 2000 for BTC , only CUA performance was under average (0.157) other three banks were over that. Table (4) show these finding.

Table (4) Return on equity

banks	2000	2001	2002	2003	2004	average
BTC	0.20	0.18	0.17	0.16	0.15	0.172
CUA	0.15	0.12	0.10	0.10	0.10	0.114
ING	0.20	0.17	0.18	0.18	0.16	0.178
PNC	0.17	0.22	0.15	0.17	0.11	0.164
average	0.18	0.173	0.15	0.153	0. 13	0.157

3.2. Analysis banks performance for third period 2007-20011

3.2.1: Administrative expenses to total revenue

Table (5) show administration expenses to total revenue for period 2007-2011 ,its clear that all banks success in reducing this ratio by different values compared with first period (2000-2004) before implementing reengineering program, average of ratio was (0.14) it was decline by (17.25%) comparing with first period (0.172), BTC achieved higher decline in this ratio by (22%) ,ING achieved lowest decline by (8%) only as average of periods , CUA still have higher average of it (0.192) , PNC also still have lowest one (0.072). these results approve hypothesis one.

Table (5) administrative expenses/ total revenue

banks	2007	2008	2009	2010	2011	average	Average (period 1)	Change %
BTC	0.20	0.17	0.13	0.10	0.07	0.134	0.184	-27
CUA	0.22	0.20	0.17	0.17	0.20	0.192	0.246	-22
ING	0.18	0.16	0.16	0.15	0.15	0.16	0.174	-8
PNC	0.07	0.07	0.06	0.07	0.09	0.072	0.082	-12
average	0.168	0.15	0.13	0.123	0.128	0.14	0.172	-17.25

3.2.2: Net interest margin to total loans:

Unexpectedly all banks suffer from high decline in net interest margin to total loans that fluctuate from higher ones (-77.5%) in PNC to lowest ones (-4%) in CUA , average of it was (-45%) , all banks average decline above that except CUA that achieve highest average in period two (2007-2011) by (0.0192), while PNC have lowest one (0.0072) in same period, it seems that decline in interest rate in financial market all over the word because effects of financial crisis was the main cause of this deterioration in net interest margin for all banks in this period, table(6) show these results that disapprove hypothesis two .

Table (6) net interest margin / total loans

banks	2007	2008	2009	2010	2011	average	Average (period 1)	Change %
BTC	0.016	0.014	0.012	0.013	0.012	0.0134	0.026	-48
CUA	0.020	0.020	0.017	0.019	0.020	0.0192	0.02	-4
ING	0.018	0.016	0.015	0.015	0.016	0.016	0.032	-50
PNC	0.007	0.007	0.006	0.007	0.009	0.0072	0.032	-77.5
average	0.168	0.15	0.13	0.123	0.128	0.14	0.027	-45

3.2.3: Return on assets:

Regard of strong decline in interest rate margin in all bank, return on assets suffer from same decline in two of bank, PNC,ING, the first one have higher decline (-24%), second have (-4) only , other two bank could keep their (ROA) on good level although the decline on their net interest margin , CUA, achieved increasing by (19), BTU, achieved increasing by (11%) in same period average changing was (0.5%) for period two compared with period one, average of (ROA) was (0.01775) , ING still have highest (ROA) by (0.0306) , BTC also still have lowest one by (0.01) , it seems that BTC and CUA could earned another sources of return shifting interest , like brokerage on new services to consumers and achieved good level of decline in administrative expenses, table(7) show these result for all banks that disapprove hypothesis three.

Table (7) return on assets

banks	2007	2008	2009	2010	2011	average	Average (period1)	Change %
BTC	0.01	0.01	0.011	0.009	0.01	0.01	0.009	11
CUA	0.015	0.012	0.015	0.018	0.015	0.0174	0.0126	19
ING	0.035	0.031	0.029	0.028	0.03	0.0306	0.032	-4
PNC	0.014	0.016	0.013	0.011	0.011	0.013	0.0172	-24
average	0.0185	0.01725	0.017	0.0165	0.0165	0.01775	0.0178	0.5

3.2.4: Return on equity:

Table (8) show return on equity for banks for period two, like result of return on assets , effects of decline in net interest margin continued in effecting of return on equity, when return on assets decline , usually return in equity decline too, average of this ratio was (0.16) it was higher average of period one (0.157), the change was (4%) only, but this change was due high performance of CUA only that achieve raising in his (ROE) by (30%) , BTC have only (2%) increasing in this ratio other two banks (ING, PNC) suffered from falling of their (ROE) by (-7%,-9%) succession , all those three banks have change below average. These results disapprove hypothesis four.

Table (8) Return on equity

banks	2007	2008	2009	2010	2011	average	Average (period 1)	Change %
BTC	0. 16	0. 18	0. 19	0. 17	0. 18	0. 176	0.172	2
CUA	0. 14	0. 14	0. 15	0. 15	0. 16	0. 148	0.114	30
ING	0. 17	0. 18	0. 16	0. 17	0. 15	0. 166	0.178	-7
PNC	0. 15	0. 14	0. 16	0. 16	0. 14	0. 15	0.164	-9
average	0. 155	0. 16	0. 165	0. 163	0. 158	0. 16	0.157	4

Finally, we find that there are different effects of re-engineering in banks performance from bank to bank, that possibly return to many factors like differences in business environments between banks, financial crisis that effects all banks operations all over the world , different levels or types of re-engineering that undertaken in banks of this study, then we need to other studies that study other factors , more banks numbers , more detailed of business process re-engineering in banks for conclude real effects of it in banks performance.

4. concludes and recommendations

4.1: concludes:

1- BPR have different effects on banks performance , it leads to decrease administration expense clearly , and improve profitability if other factors were move in right directions.

2- Effects of BPR need to appropriate period for appear , this period maybe extend for 5 years or more depending on levels of it.

3- Although all banks suffer from decline in net interest margin because of financial crisis , but some them can achieve good performance in return in assets and return on equity because they can reduced their administration expanse and have new resources of earning.

4-. BPR is an overall process effects all banks operations and focus on radical changes not on rebuilding or restructuring only.

4.2: Recommendations

1- Banks should implementation BPR to improve their performance , but they need to study all factors may effect on success it.

2- Conduct other studies that take more factors , more banks, another time series and more details to obtain more accurate results in this filed.

3- Iraqi banks should rethinking seriously about all their operations and directions about the markets and consumers depending on basics of BPR if they want to compete worldwide.

References:

1-Abdullah hasan , Technology enabled re-engineering ,a business strategy for advancing Bangladesh, Master of Science in Management of Technology ,Massachusetts Institute of Technology , 2003

2- Adeyemi, Sidikat, Impact Assessment of Business Process Reengineering on Organizational Performance, *European Journal of Social Sciences – vol. 7, no. 1,115-125 (2008)*

3-A. Gunasekaran , and B. Kobu, Modeling and analysis of business process reengineering, int. j. prod. res. vol. 40, no. 11,2002, 2521-2546

4- Ardhaldjian, R. and Fahner, M., Using simulation in the business process reengineering effort. *Industrial Engineering*, vol.26, no.(7),1994, 60-61.

5-Berrington, C L & Oblich, R L *, Translating Business Reengineering Into Bottom- Line Results*, Industrial Engineering, vol.27,no.8,1995, 24–27.

6- Brynjolfsson, E. and Hitt, L. M .Computing Productivity: Firm Level Evidence. Working Paper, MIT and University of Pennsylvania,2002.

7-Carr, D K & Johansson H J , *Best Practices In Reengineering: What Works & What Doesn't In The Reengineering Process*, McGraw-Hill, Ny, 1995.

8- follham, r. Integrating Business Process Reengineering with Information Systems Development: Issues & Implications,uk, 2010.

9-kaparty, k. r, reengineering in service organizations , McGraw-Hill,NY.2009).

10- Hales, H. L. and Savoie, B. J., Building a foundation for successful business process reengineering. *Industrial Engineering*, vol. 26, no.(9),1994, 17-19.

11-Hammer, M & Champy, J , *Reengineering The Corporation : A Manifesto For Business Revolution*, Harper Collins Publishers Inc., Ny.1993

12- Mills, M & Mabey, C , *Automating Business Process Reengineering With Business Design Facility*, John Wiley & Sons Ltd., UK.1993

13-Morrison, C.J. and Berndt, E.R. Assessing the Productivity of Information Technology Equipment in the U.S. Manufacturing Industries. National Bureau of Economic Research Working,2011

14-s. drobnjak ,k.bolt , f.daser ,Remodeling a company via systems reengineering. *International Journal of Operations & Production Management*, vol.16 no.(7),14-19.,2011

15- Srdan, Drobnjak. Velibor and Nenad ,n reengineering of the process of granting credit cards annals of the Oradea university , Fascicle of Management and Technological Engineering, Volume X (XX), 2011, NR3.

16- Teng, J., V. Grover, & K.D. Fiedler. Business Process Reengineering: Charting a Strategic Path for the Information Age. *California Management Review , vol. 22 no.3,445-*

17- Vishanth Weerakkody and Wendy Currie ,Integrating Business Process Reengineering with Information Systems Development: Issues & Implications,uk,2009.

اثر عمليات اعادة هندسة الأعمال المستندة الى تكنولوجيا المعلومات في الأداء المصرفي

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المستخلص

قبل اكثر من اربعين عاما كانت عمليات ادارة المصارف تستند الى الخبرة والافتراضات الشخصية ولكن مع مرور الزمن والتطورات الكبيرة التي تمثلت بظهور الحاسوب بدأت هذه الادارة بالاستناد الى العمليات التحليلية والبيانات العملية ومن خلال الاعتماد الكبير على التقنيات تم استحداث عمليات الصيرفة الالكترونية التي اصبحت الصيغة الاكثر انتشارا في عالم الصيرفة ونظرا لشدة المنافسة فقد لجأت المصارف الى عملية اعادة الهندسة المستندة الى التكنلوجيا لتحقيق الاداء المتميز الذي يمكنها من البقاء والاستمرار. لقد جاءت هذه الدراسة لاختبار مدى امكانية استخدام اعادة هندسة عمليات الاعمال المصرفية في تحسين الاداء باعتبارها مدخلا اداريا حديثا ومتجددا خاصة في مجال ادارة المصارف وقد تم تحليل هذة العمليات في اربع من المصارف العالمية التي قامت بعمليات مختلفة لاعادة الهندسة خلال الفترة من (2000-2011) وقد تبين من خلال تحليل مؤشرات الاداء قبل القيام بعمليات اعادة الهندسة وبعدها بان هناك تاثيرات واضحة في مجال تخفيض التكاليف الادارية وتحسين العائد على الموجودات على الرغم من ان نتائج عمليات اعادة الهندسة تحتاج الى فترات طويلة نسبيا للتحقق.

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