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## RESEARCH ARTICLE

### EVALUATION OF THE OPPORTUNITIES OF THE BUSINESS PROCESSES REENGINEERING APPLICATION AS AN APPROACH FOR IMPROVEMENT OF THE COMPETITIVENESS

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A Field Study on the Pharmaceutical Companies which won the ISO in Jeddah

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#### ABSTRACT

This research aims at studying the evaluation of opportunities of applying the process reengineering approach to improve the competitiveness in the pharmaceutical companies in Jeddah. This approach is based on main rethinking and radical redesign of business processes to achieve dramatic improvements in the known measures of performance, then to transmit to the thinking based on the business processes, which includes a change in thought and practices. The researcher came to a result throughout his research and testing of the research hypotheses that it is possible to apply this contemporary administrative approach throughout the senior management approval and support of this approach at the companies in question, the availability of adequate human resources for that, availability of the advanced Information Technology, particularly the information systems of the business processes, the acknowledgment of the necessity of changing the systems and techniques applicable in the business processes at the companies in question, the necessary of awareness of the officers in charge and employees at the companies in question of the importance of this change and the importance of preparation of new systems and developing them for the business processes management at the companies in question.

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#### INTRODUCTION

Over the last years of the 20<sup>th</sup> century, several approaches of change and development which aimed at the achievement of competitive advantage among the organizations and the increase of their competitiveness. The most prominent approaches are "Total Quality Management" (TQM), "Quality Improvement" (QI), and Business Processes Reengineering (BPR) (Davenport, 1993). The approach of Business Processes Reengineering is the fundamental rethinking and radical redesign of the business processes to achieve dramatic improvements in critical contemporary measures of performance such as cost, quality, service and speed. This approach relies on the idea of starting from the beginning and finding up-date techniques for the implementation of work; this requires rethinking of the fundamentals, the radical redesign of activities, then starting to think based on the business processes, which includes a change in thought and practices. This is resulting in achievement of superior substantial revolutionary improvements seeking to revolt against the old-age, destroy the inherited traditions and innovate in using the Information Technology (Spencer, 1995).

The issue of the Business Processes Reengineering for improvement of the competitiveness is considered one of the important issues which are imposed by the changeable environment. It is a vital issue whose study benefits the continuity of companies in the market (Rao, 1997). The Business Processes Reengineering concentrates on the strategic aspect of organizing the productive process in the long run, because one of the most serious problems which face the local industries is to depend on short run measures, mix up with evaluation of the operational performance and the administrative performance. Consequently, it mixes up with the operational efficiency and effectiveness measured by internal standards and measures laid down by the company and the operational efficiency and effectiveness measured by external standards and measures achieved or aimed by local competitors, and other international standards and measures imposed by the competitive countries. This mixture led to deem the operational performance a reflect to the administrative performance, measure the administrative efficiency and effectiveness by short run financial measures, neglect the future vision by the management and overlook the strategic targets for the sake of the financial operational targets. (Kuei and Madue, 2002). The researcher conducted this study because he realized the impotence of the industrial organizations in Kingdom of Saudi Arabia as a whole, and in the pharmaceutical sector in particular, to adapt with the

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A Field Study on the Pharmaceutical Companies which won the ISO in Jeddah.

different environmental variables, to continue the high average of performance and to face the strong competition in light of its current concepts and techniques of work, which became unfit for the new environment of workers.

The research problem: It is revealed throughout the exploratory study conducted by the researcher that the pharmaceutical companies in question as follows:

- 1- The high cost of manufacturing of medicine, the high amount of the unmanufactured materials imported from abroad in this industry, this reflects on the low amount of production of the pharmaceutical industry in general.
- 2- Deficiency of the efforts exerted to improve the capability of the companies working in the pharmaceutical industry field and the poor interest in increasing their productive efficiency.
- 3- The lack of interest in studying the modern techniques of administration and trying to benefit from them to compete the companies which succeeded in using them, benefiting from them to improve their competitive position in the international market, especially in light of application of GATT.
- 4- Additionally, the lack of concern about researches which aim at improving the competitiveness of the companies, their interest in achievement of a maximum profit within a minimum period and non-existence of an integral future plan including a profit plus improvement of the competitiveness at the same time.
- 5- Non realization of the officers in charge in the pharmaceutical companies of the risk which the pharmaceutical industry will face in Kingdom of Saudi Arabia, and their impotence to use the available possibilities, in particular in light of applying the protection of intellectual property agreement.
- 6- Throughout the exploratory study, the research problem can be drafted in questions to be answered:
  - Did the ineffectiveness of the business processes used at the companies in question reflect on non improvement of their competitiveness?
  - Does the inefficiency of business processes in using the productions elements optimally at the companies in questions require a radical change of these business processes?
  - Is it possible to determine the opportunities of applying the approach of Business Processes Reengineering at the companies in questions, and determine the requirements of the successful application of this new administrative approach at the companies in questions?

## Importance and Objectives of Research

### Importance of Research

The importance of research is a result of its contributions introduced at the scientific and practical levels

#### a. The Scientific Importance:

The approach of Business Processes Reengineering is considered one of the contemporary approaches in the administration field in general, whereas there are few studies

which dealt with this subject, especially in Arabic. The researcher tries in this research to clarify how to achieve the improvement and development in the business processes at the companies in questions, and consequently to achieve the improvement of the competitiveness throughout applying this approach and specifying its requirements.

#### b. The Practical Importance

- 1- The pharmaceutical sector is important, whereas it affects different categories of society in Kingdom of Saudi Arabia.
- 2- Also, in light of the application of protection of the intellectual property Agreement, based on the study of the international and local situations, our industrial relationships with the other countries and determination of our medicinal needs, we find that growth of innovative and practical capabilities of the pharmaceutical Companies in Kingdom of Saudi Arabia so as to face the expected changes is a necessity ordained by the reality of current international circumstances.
- 3- The pharmaceutical industry in Kingdom of Saudi Arabia need more studies of the policies and integrated plans to know the actual needs of the industry, and to raise the industry level and improve its competitiveness.
- 4- The research handles the subject of change by using the Business Processes Reengineering, which is an up-to-date subject due to the development of the administrative and productive techniques, and the increase of competition among the companies locally and internationally.

### Objectives of Research

It aims at achieving the following targets:

- 1- Identifying the approach of Business Processes Reengineering in terms of the concept, requirements, main elements needed for that.
- 2- Studying the possibility extent of application of the Business Processes Reengineering approach, and its effects in improving the competitiveness of the pharmaceutical companies in Kingdom of Saudi Arabia.
- 3- Setting the determinants or the factors which affect the potentiality of application of the Business Processes Reengineering approach in the pharmaceutical companies in Kingdom of Saudi Arabia.
- 4- Suggesting the provision of an adequate environment to apply the approach of Business Processes Reengineering throughout some recommendations and suggestions in light of the research results.

### Hypotheses of Research

#### First Hypothesis

There is no significant relationship between the senior management approval in the pharmaceutical industries companies in question and the possibility of applying the

approach of Business Processes Reengineering in these companies.

### Second Hypothesis

There is no relationship having immaterial significance between the current human possibilities at the pharmaceutical companies in question and the possibility of applying the approach of Business Processes Reengineering in these companies.

### Third Hypothesis

There is no significant relationship between the available Information Technology at the pharmaceutical companies in question and the possibility of applying the approach of Business Processes Reengineering in these companies.

### Fourth Hypothesis

There is no a relationship having immaterial significance between the conviction about the necessity of making a radical change in the business processes at the pharmaceutical companies in question and the possibility of applying the approach of Business Processes Reengineering at these companies.

### Variables of Research

In light of the forgoing hypotheses, it can determine the variables of research as follows:

#### Independent Variables

They are the determinants of application of the Business Processes Reengineering approach, including:

- The approval of senior management in the pharmaceutical companies for applying this approach.
- The available human possibilities in the pharmaceutical companies in order to apply this approach.
- The technology effect on the pharmaceutical companies in applying this approach.
- The conviction about the necessity of making a radical change in the business processes in the pharmaceutical companies.

#### The Dependent Variable

It is the possibility of application of the Business Processes Reengineering approach.

### Research Methodology

The research methodology consists of two main techniques:

#### Research Academic Frame

It is to form the academic frame of the research by collecting the scientific material relevant to the research from its secondary sources: books, scientific references, scientific journals, prints and circulars of Ministries and managements and other entities in connection with the research subject.

### Field Study

This is to collect the primary data on the ground in the community and the sample of research, throughout designing an adequate list of exploration for this purpose, for testing the correctness or incorrectness of the research hypotheses by using statistic techniques and programs compatible with this purpose.

### Previous Studies

#### a- Study of Shin and Donald (Shin and Donald, 2002)

This study tested the techniques of the Business Processes Reengineering as an adequate technique for the financial institutions, based on a study of the case of Manhattan Bank. This study tries to introduce an obvious proof that the Business Processes Reengineering in the Bank will help in improve the performance. It came to a result that the Business Processes Reengineering will contribute in introducing new products and services, increasing the revenue and saving processes.

#### b-Study of Zhang and Mei (Zhang, and Mei, 2002)

In response to the universal trend and the competitive environment, flexibility to fulfill the market changeable needs and the success in the Business Processes Reengineering in general, at the company, the study reached that the organizational structure should change from the hierarchical organization to the flat organization. The management objectives should change to achieve the optimization at the international level. Additionally, the measurements of guidance of the business processes and the employees should change to the guidance of the team. The rethinking in business processes should change to integral systems distinguished with the flexibility, competitiveness and modernization.

#### C-Study of Romany (Romany, 1995)

This study dealt with the fundamentals and basics of the Business Processes Reengineering which set by Hammer. It emphasized the importance of being guided by these fundamentals and basics which increase the success opportunities of the Business Processes Reengineering approach. Also, it emphasized the importance of dependence on the technique of performance in such a manner that the processes are being adapted, the exigency of the radical change from the old techniques of performance to completely up-to-date techniques and the importance of creating a substantial change in the organizational structure of the Organization, in proportion with the up-to-date techniques and systems resulting from the Reengineering. The study concluded that the most important factor of Reengineering success is to get support and approval of the senior management of the organization, and this requires complete awareness and comprehension of the Reengineering approach and the existence of senior employee's who support and approve such Reengineering in the organization.

**d-Study of Groverd and Others (Groverd *et al.*, 1995):** This study focused on specifying the determinant factors for the success of Reengineering efforts, throughout an exploratory study involving some inquiries such as: What are the problems

relevant to the application of the Business Processes Reengineering approach? To what extent are these problems dangerous? How are such problems connected with the success of the Business Processes Reengineering approach? This study reached that the capability of change the management is considered the most important problems hindering the Reengineering approach, whereas the Reengineering requires organizational changes including the powers, liabilities, the standards of performance, the organizational structure, the organizational culture, skills and abilities, the system of incentives, the organizational relationship among the Departments working in the organization, telecommunication system, the information system and other internal changes in the organization.

**e-Study of Champy (Champy, 1994):**

This study was carried out on a 621 companies sample out of the biggest European and American Companies. It was found out that 69% of the American Companies and 75% of the European Companies have implemented the Reengineering programs, which basically aim at serving the clients throughout decreasing the cost of productive and service processes. This study revealed that the Reengineering programs in such Companies have achieved advantages; the most important ones are: the increase of the investment revenue, the increase of market share of these companies, the decrease of costs and the uprising of the customers' satisfaction. The current study is different from the forgoing studies because it tries to study the possibility of application of the Business Processes Reengineering approach in a new environment in the pharmaceutical companies to contribute in enhancing their competitiveness; and it suggests the necessary recommendations for possibility of application of this contemporary administrative approach.

**Research Community and Sample**

The community and sample of research was out of the biggest companies working in the pharmaceutical companies in Jeddah, which won the ISO for the general work quality, and the ISO with regard to the environment 14001, as follows:

Company Name	Employees Count in the Senior and Middle Management
Amgen	12
Middle East Pharmaceuticals	20
Saudi Medical Supply Company	14
Saudi Medical Services Company	12
Salehiya Medical	10
United Pharmaceuticals	20
Pharmaceutical Solution Industry. Ltd	20
Al-Haya Medical Company	12
Total	120

Source: Prepared by the Researcher from the information of these companies.

A sample will be selected to be a sample throughout application of the statistic sample law:

$$n = \frac{\pi(1-\pi)}{\frac{\pi(1-\pi)}{n1} + \frac{d^2}{(d-m)^2}}$$

Since:

Q: The maximum limit of availability of features required to be studied in any community, and the researchers often deem them 50%.

D: The permitted percentage of mistake, which are often 5%.

D. M: The standard value corresponding to the confidence factor selected by him, which is 95%; and the standard value corresponding to it is 1.96.

N1: Research Community:

Throughout application of the sample law, the sample volume is (91 items); and the researcher distributed the lists of exploration proportionally among the companies in question.

**Business Processes Reengineering Concept and its Success Element**

Many writers believe that the Business Processes Reengineering approach starts in the beginning in Information Technology field, whereas several companies made radical changes in their main business processes, resulting in essential improvements in their performance average. Therefore, Reengineering is a process ending up with an achievement or innovation at work, restructure of the organization physical entity or its business processes. This requires a mutual vision for whatever is required to be implemented, (Hammer and Champy, 1990). So, it needs to review the current activities which take place inside the organization radically and comprehensively, not partially. (Stevenson, 1998)

The Business Processes Reengineering can be defined as an analysis and redesign of the main strategic business processes- not the marginal processes- in an innovative, radical way, without being confined in advance to any presumptions and postulates with regard to the current situation of processes. Hence, the objective is a quick, substantial improvement in the performance fields. This improvement includes decrease of the stages, times and costs of business processes, increase of their revenue or surplus value, decrease of the period of new product for the market and determination of competitive prices based on a rationing cost structure. This contributes in increasing the market share, sales, profits and the income of the investment capital, as well as the speed, swift response to the customers' demands by employees motivated and boosted by an effective system of information. (Pereira and Aspinmall, 1997)

The perception of the senior management and the senior employees in the organization of the importance of customer, the importance of fulfillment of his needs and expectations, the value of time and money and the flexibility of performance which leads to win the competition over their competitors. This will lead to (Harrington *et al.*, 1997):

1. Changing the organization culture, namely, the values, trends and behaviors of the management and the employees, in order to change toward rebuilding.
2. Encouraging the employees to propose suggestions.
3. Enhancing the creative, innovative thinking skills which contribute in the efforts of change management.

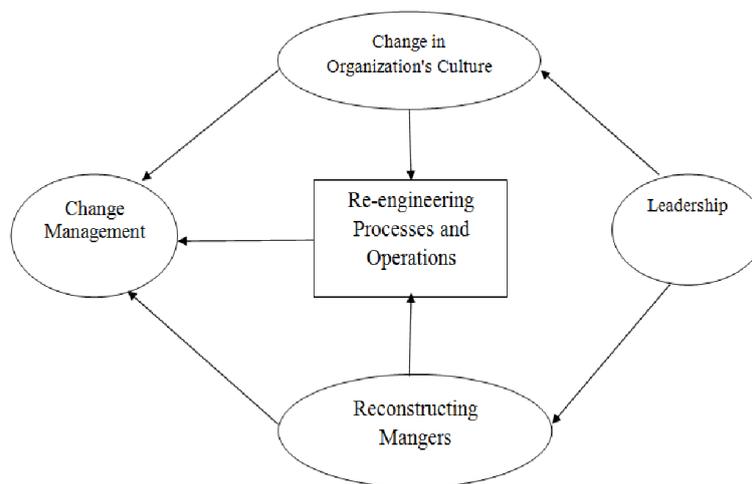


Figure 1. The Business Processes Reengineering Axes

**Elements of the Business Processes Reengineering Success**

There are several elements of success in this respect, the most important elements: (Yeomans and Beckett, 1996)

1. A sufficient apprehension for fulfillment of the customers' desires and expectations.
2. A valid analysis of the organization position and the design of change objectives.
3. The management belief of the importance of change and the encouragement of management to the employees to be changed.
4. Determination of priority substantial processes to be the object of Reengineering, then moving to the next process in terms of the importance until the Reengineering has been totally completed.
5. A perfect analysis for each substantial business process and its components.
6. Encouraging the suggestions and innovation, as the Reengineering relies on the employees' capabilities of imagination as a basis of the innovation.
7. The objectivity of the organizational structure rebuilding as a result of the Business Processes redesign, thus it may cancel one or more organizational departments, or create another department, or redesign the specialties of a department, a management or an employee.
8. A new, cautious formulation to the policies, procedures and maps of the workflow, caring of the new structure of work after the Reengineering.
9. An objective redesign of the performance standards to measure the difference between the time and cost of the business processes after and before the rebuilding.
10. Benefiting from Information Technology in building a developed system of information to be a basic for speed, reasonable decisions and activities.
11. Dealing with the objection of some bodies as an ordinary reaction, and understanding the reasons of such objection as a base of treatment.

**RESULTS AND DISCUSSION**

**Design of Exploratory List**

The exploratory list was designed to collect the primary data of the research sample items (91 items). The researcher

conducted the test of Cronbach's alpha on all the questions of exploratory list in order to examine the total internal consistency of the exploratory list. Cronbach's alpha coefficient value was /0.9782/ which indicates the existence of a high degree of consistency in the exploratory list. Also, this test was carried out over the questions expressing the study hypotheses, each hypothesis alone. The results of his test were as follows:

Table 2. Cronbach's Alpha Test on the Exploratory List Results

Variables	Questions Count	Cronbach's Alpha Coefficient Value
Independent Variable X1 with Dependent Variable Y	10	0.9490
Independent Variable X2 with Dependent Variable Y	10	0.9119
Independent Variable X3 with Dependent Variable Y	9	0.9781
Independent Variable X4 with Dependent Variable Y	10	0.9705

Source: Statistic Analysis by using Program SPSS, Version

**RESULTS**

Additionally, it is apparent throughout the previous table that Cronbach's alpha coefficient value was high with regard to the questions expressing all the study hypotheses, which indicates the existence of a good consistency of the questions expressing all the study hypotheses.

**Testing the Research Hypotheses**

**First Hypothesis**

There is no relationship having immaterial relationship between the approval of senior management of the pharmaceutical companies in question and the possibility of application of Business Processes Reengineering approach at them.

**The Independent Variable:** Y (The possibility of application of Business Processes Reengineering approach) and the following questions were set to measure it:

**The Independent Variable:** Y (The possibility of application of Business Processes Reengineering approach) and the following questions were set to measure it:

**The Dependent Variable:** XI (The Senior Management approval for the application of Business Processes Reengineering approach). The following questions were set to measure it:

It is revealed throughout the results of first hypothesis analysis that the value of correlation coefficient between the two variables is 0.897, which indicates the existence of a strong correlation degree between the two variables. It is found out throughout the Analysis of Variance Table ANOVA that the value of calculated F is bigger than the value of tabulated F 6.90, which is immaterial at the immateriality level 0.000, namely, the confidence level is high, consequently we reject

**Table 3. Questions of Measurement of the Variable (The possibility of application of the Business processes reengineering approach)**

Question No.	Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
1	Creating a New Thought for the Business Processes activity at the company					
2	Radical Redesign of Business Processes at the company to achieve dramatic Improvements in the Performance measurements					
3	Creating Revolutionary Improvements seeking to revolt against the age-old and Destroy the inherited Traditions and Innovate in Using Information Technology					
4	Reconsidering the Business Processes Activity technique at the company and the Current Concepts of Activity					

Source: Prepared by the Researcher.

**Table 4. Questions for Measuring the Independent Variable (The Senior Management Approval for the application of Business Processes Reengineering approach)**

Question No.	Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
5	Senior Management Members' Knowledge of the Reengineering Concept					
6	The Company Encouragement to This Approach					
7	Setting a Strategic Plan to the Business Processes Systems at the Company					
8	Changing the employees' Culture of this Approach at the Company					
9	Changing the Organizational Structure to be Consistent with this Approach at the Company					
10	Designing the Business Processes Systems to be Consistent with this Approach at the Company					

Source: Prepared by the Researcher

The Test Result of this Hypothesis was as follows:

**Table 5. Results of Correlation Analysis of the First Hypothesis**

**Correlations**

		Y	X1
Y	Pearson Correlation	1	.908**
	Sig. (2-tailed)	.	.00
	N	91	91
X1	Pearson Correlation	.908**	1
	Sig. (2-tailed)	.000	.
	N	91	91

\*\*Correlation is significant at the 0.01 level

Source: Results of Statistic Analysis by Using Program SPSS, Version 11.5

**Table 6. Results of Correlation Analysis of the First Hypothesis**

					ANOVA <sup>b</sup>
Model	Sum of Squares	Df	Mean Square	F	Sig.
1	99.113	1	99.113	419.684	.000 <sup>a</sup>
Regression	21.018	89	.236		
Residual	120.132	90			
Total					

a. Predictors: (Constant), X2

b. Dependent Variable: Y

Source: Results of Statistic Analysis by Using Program SPSS, Version 11.5

the hypothesis of nullity and accept the alternative hypothesis, which is there is a relationship having an immaterial significance between the current human possibilities at the pharmaceutical companies in question and the possibility of application of the Business Processes Reengineering approach at them.

**The second hypothesis:** There is no significant differences relationship between the current human potential at the under study pharmaceutical manufacturers, and the possibility of applying re-engineering entrance of process within it. The relationship between the dependent variable y and independent variable X2, the independent variable was measured by the following questions: It is revealed throughout the results of first hypothesis analysis that the value of correlation coefficient between the two variables is 0.897, which indicates the existence of a strong correlation degree between the two variables. It is found out throughout the Analysis of Variance Table ANOVA that the value of calculated F is bigger than the value of tabulated F 6.90, which is immaterial at the immateriality level 0.000, namely, the confidence level is high, consequently we reject the hypothesis of nullity and accept the alternative hypothesis, which is there is a relationship having an immaterial significance between the current human possibilities at the pharmaceutical companies in question and the possibility of application of the Business Processes Reengineering approach at them.

**Table 7. Questions to measure the independent variable (the current human potential at the pharmaceutical manufacturers)**

Question No	question	Strongly Disagree	Not agree	Neutral	Agree	Strongly Agree
11	Placing the right person in the right place					
12	Availability of appropriate scientific qualification among the company staff that contributes in the implementation of re-engineering entrance					
13	Working with Team spirit among the different units within the company					
14	The spread of process re-engineering idea that is responsibility of each individual within the company from the lowest level to the highest level					
15	Training and developing of human resources at the company's on modern administrative trends					
16	Developing administrative leaderships at the company to understand and apply modern style in process					

Source: prepared by the researcher

The Test Result of this Hypothesis was as follows:

**Table 8. Results of Correlation Analysis of the Second Hypothesis**

		Correlations	
		Y	X1
Y	Pearson Correlation	1	.897**
	Sig. (2-tailed)	.	.000
	N	91	91
X1	Pearson Correlation	.897**	1
	Sig. (2-tailed)	.000	.
	N	91	91

\*\*Correlation is significant at the 0.01 level

Source: Results of Statistic Analysis by Using Program SPSS, Version 11.5

**Table 9. Results of Correlation Analysis of Second Hypothesis**

ANOVA <sup>a</sup>					
Model	Sum of Squares	df	Mean Square	F	Sig.
1	96.695	1	96.695	367.193	.000 <sup>a</sup>
Regression	23.437	89	.263		
Residual	120.132	90			
Total					

a. Predictors: (Constant), X2

b. Dependent Variable: Y

**Table 10. Questions for the Independent Variable Measurement (Information Technology at the Pharmaceutical companies)**

Question No.	Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
17	Availability of Electronic Data base of the Employees of the Company					
18	Availability of Contemporary Telecommunication means at the Company					
19	Availability of Information Systems Applications of the Business Processes at the Company					
20	Existence of Computers at all Managements at the Company					
21	Existence of Effective Participation of the Employees at the Information Center in applying the Business Processes Reengineering at the Company					

Source: Prepared by the Researcher.

**Third Hypothesis**

There is no relationship with immaterial significance between the available Information Technology at pharmaceutical companies in question the possibility of application of the Business Processes Reengineering approach at them. The relationship between the independent variable Y and the dependent variable X3, the independent variable was measured throughout the following questions:

This Hypothesis Test Result is as follows:

It is apparent throughout the analysis of the third hypothesis that the correlation coefficient value between the two variables is 0.957; this indicates the existence of a strong correlation degree between the two variables. Also, it is revealed throughout the Analysis of Variance Table ANOVA that the confidence level is high. Hence, we reject the hypothesis of nullity and accept the alternative hypothesis, namely, there is

an immaterial significant between the available Information Technology at pharmaceutical companies in question and the possibility of application of Business Processes Reengineering approach at them.

**Table 11. Result of Correlation Analysis of the Third Hypothesis**

		Correlations	
		Y	X3
Y	Pearson Correlation	1	.957**
	Sig. (2-tailed)	.	.00
	N	91	91
X1	Pearson Correlation	.957**	1
	Sig. (2-tailed)	.000	.
	N	91	91

\*\* Correlation is significant at the 0.01 level

Source: Result of Statistic Analysis by Using Program SPSS, Version 11.5.

**Table 12. Analysis of Variance Results of the Third Hypothesis**

ANOVA <sup>b</sup>					
Model	Sum of Squares	Df	Mean Square	F	Sig.
1	110.051	1	110.051	971.644	.000 <sup>a</sup>
Regression	10.080	89	.113		
Residual	120.132	90			
Total					

a. Predictors: (Constant), X3

b. Dependent Variable: Y

Source: Result of Statistic Analysis by Using Program SPSS, Version 11.5.

#### Fourth Hypothesis

There is no immaterial significance between the necessity of creating a radical change in the Business Processes in the pharmaceutical companies in question and the application of Business Processes Reengineering approach at them. The Relationship between the Dependent Variable Y and the Independent Variable X4, the Independent Variable was measured by the following Questions:

**Table 13. Questions for the Independent Variable Measurement (Conviction for the Necessity of Creating a Radical Change in the Business Processes)**

Question No.	Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
22	Existence of Admission of Necessity of Changing the Systems and Techniques applicable in the Business Processes System at the Company					
23	Existence of Apprehension of Officers in Charge at the Company of the Importance of such Change in the Current Systems					
24	Existence of Apprehension of Employees of the Company of the Importance of such Change in the Current Systems					
26	It's Expectable that the Various Departments of the Company will cooperate in applying the proposed Approach to reengineer its Business Processes					
27	It's expectable that New Systems of Business Processes Management will be prepared and designed at the Company					
27	It's Expectable that the Change will be basically made in Thought and Practices , not just in Holders names of Offices					

Source: Prepared by the Researcher.

#### Result of This Hypothesis Test is as follows:

It is observed throughout the fourth hypothesis analysis results that the correlation coefficient value between the two variables is 0.944; this shows the existence of a strong correlation degree between the two variables. Additionally, it is obvious

throughout the Analysis of Variance Table ANOVA that the value of calculated F is bigger than the value of tabulated F which is 6.90, and it is immaterial at the immateriality level 0.000, namely, the confidence level is high. Thereby, we reject the hypothesis of nullity and accept the alternative hypothesis, i.e. there is a relationship having immaterial significance between the conviction for the necessity of creating a radical change in the Business Processes at pharmaceutical companies in questions and the possibility of application of Business Processes Reengineering approach at them.

**Table 14. Correlation Analysis Results of the Fourth Hypothesis Correlations**

		Y	X4
Y	Pearson Correlation	1	.944**
	Sig. (2-tailed)	.	.00
	N	91	91
X1	Pearson Correlation	.944**	1
	Sig. (2-tailed)	.000	.
	N	91	91

\*\* Correlation is significant at the 0.01 level

Resource: Result of Statistic Analysis by Using Program SPSS, Version 11.5.

**Table 15. Analysis of Variance of the Fourth Hypothesis**

ANOVA <sup>b</sup>					
Model	Sum of Squares	Df	Mean Square	F	Sig.
1	106.962	1	106.962	722.830	.000 <sup>a</sup>
Regression	13.170	89	.148		
Residual	120.132	90			
Total					

a. Predictors: (Constant), X4

b. Dependent Variable: Y

Resource: Result of Statistic Analysis by Using Program SPSS, Version 11.5.

#### Conclusions

Based on the field study and the research hypotheses, the researcher can determine the research results according the following:

1. The results of first hypothesis test, throughout depending on the correlation model and the slight inclination model, indicate the existence of a strong, direct correlation relationship between the independent variable (the support of the senior management at the pharmaceutical companies in question, and the dependent variable (the possibility of application of Business Processes Reengineering approach at the companies). As to the immaterial relationship between the two variables, it shows that the possibility of application of this new approach requires the approval, support and aid of the senior management, the existence of leaderships at these companies who encourage the application of this approach and change and the adaptation with its application requirements.
2. The results of second hypothesis test indicates, throughout depending on the correlation model and the slight inclination model, the existence of a strong, direct correlation relationship between the independent variable of the availability of the human possibilities in the pharmaceutical companies in question and the dependent variable of the possibility of application of the Business Processes Reengineering approach at these companies. As to the relationship between the two variables, this shows that the possibility of application of this new approach requires the availability of human resources having the proper scientific qualification at the company, the team work spirit at these companies, training and promoting the human resources of the company on the contemporary administrative trends including the Reengineering and the cultivation of the administrative leaderships of the companies in question to comprehend and apply the fresh thought in the business processes.
3. The results of third hypothesis test indicates, throughout depending on the correlation model and the slight inclination model, the existence of a strong, direct correlation relationship between the independent variable of the available Information Technology in the pharmaceutical companies in question and the dependent variable of the possibility of application of Business Processes Reengineering approach in these companies. As to the relationship between the two variables, this shows that the possibility of application of this new approach requires the availability of advanced electronic data base and information systems with regard to the business processes, the necessity of existence of computers in the various managements and departments of the companies and the exigency of existence of effective participation by the employees working in the company in applying this new approach.
4. The results of fourth hypothesis test indicates, throughout depending on the correlation model and the slight inclination model, the existence of a strong, direct correlation relationship between the independent variable of the conviction for the necessity of creating a radical change in the Business Processes in the pharmaceutical companies in question and the dependent variable of the possibility of application of this new approach in these companies. It requires the admission of necessity of changing the systems and techniques applicable in the business processes systems at the companies in question, the necessity of

apprehension of the officers in charge and the employees at the companies in question of the importance of this change and preparation and development of new systems for the Business Processes management at the companies in question.

### Recommendations

Based on the Results of Research, the Researcher recommends as follows:

1. The rational leaderships in the pharmaceutical companies must adopt the thought of Business Processes Reengineering approach, as it positively affects on these companies, contributing in fostering their advantages relative and strengthening their competitiveness, as emphasized by many previous studies. And these leaderships have to create a new culture and thought at their companies in order to apply this new administrative approach in their Business Processes.
2. A plan should be prepared for a specific period so as to make all the employees at these companies, particularly the leaderships, acquire new skills and knowledge about the Business Processes Reengineering; and it can use Information Technology in this matter.
3. All managements of companies must cooperate in applying the Business Processes Reengineering approach, and to work together as one team which focuses on the improvement and integration of Business Processes systems at these companies.
4. It must give interest to Information Technology at these companies whereas it connect all parts of the company together, and use the advanced information systems in regard to the Business Processes to be able to adapt with and apply this new administrative approach.
5. The researcher recommends new studies to be carried out about the possibility of application of this contemporary administrative approach in other organizations and sectors in Kingdom of Saudi Arabia so that this administrative approach can be spread and applied to contribute in development and progress of our organizations in Kingdom of Saudi Arabia throughout authorization of the up-to-date administrative techniques.

### REFERENCES

- Champy, J. 1994. Reengineering Management. Harvard Business Review, No.4, 25-40.
- Daveport, T. H. 1993. Need Radical Innovation and Continuous Improvement-Integrate Process Reengineering and TQM, Planning Review, Vol. 21, No. 3, 6- 12.
- Grover, V. and et al. 1995. The Implementation of Business Process Reengineering. *Journal of Management Information System*, Vol. 12, No. 1, 109-144.
- Hammer, M. and Champy, J. 1990. Reengineering the Corporation – A Manifesto for Business Revolution, New York: Harper Collins Books.
- Harrington, B. and others. 1997. Business Process Reengineering in the Public Sector: A case Study of the Contributions Agency, New Technology, *Work and Employment Journal*, Vol. 13, No. 1, pp. 43- 50.

- Kuei, C. H, and Madue, C. N, 2002. "Developing Supply, Chain Strategies Based on The Survey of Supply Chain Quality and Technology Management", *International Journal of Quality & Reliability Management*, Vol. 19, No.7.
- Pereira, Z. L. and Aspinmall, E. 1997. Total Quality Management Versus Business Process Re- engineering, *Total Quality Management Journal*, Vol. 8, pp. 34- 40.
- Rao, P. 1997. "Greening The Supply Chain: A New Initiative in South East Asia", *International Journal of Operation & Production Management*, Vol 22, N° 6, p.633.
- Romany. M. 1995. Business Process Reengineering. *Internal Auditor*, Vol. 52, No. 3, 25- 28.
- Shin, N. and Donald. F. J. 2002. Business Process Reengineering Improvement- The Caseof Chase Manhattan Bank, *Business Process Management*, Vol. 8, No. 4, 351- 363.
- Spencer, L. M. 1995. Reengineering Human Resources, John Wiley & Sons, Inc, New York, 10.
- Stevenson, W. 1998. Production/ Operations Management, Fourth Edition, Irwin, USA, 426
- Yeomans, M. S. and Beckett. J. L. 1996. Achieving Breakthrough Improvement Through Business Process Reengineering, *Armed Focus Comptroller Journal*, Vol. 14, No. 1, pp. 5- 13.
- Zhang, Q. and Mei. C. 2002. Business Process Reengineering for Flexibility and Innovation in Manufacturing, *Industrial Management Data Systems*, Vol. 102, No. 3, 146- 152.

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