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The Role of Information Technology and Business Process Reengineering in Enhancing Enterprise' Value - The Case of Algeria Telecom Company - Souk Ahras Unit -

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Abstract:

Through this paper, we intend to analyze Information Technology (IT) and Business Process Reengineering (BPR) role in increasing the Enterprise Value of the economic company by adopting the Algeria Telecom - Souk Ahras unit as a case, This is based on the fact that the literature that has dealt with the subject has unanimously agreed that BPR supported by IT has the ability to positively impact the Enterprise Value, by controlling costs, improving efficiency and supporting competitive advantages, which is directly reflected in the basic dimensions of value, which are: Profitability, Market Share and Organizational Image. In this paper, we used a descriptive analytical approach as well as an experimental study, where we used a questionnaire distributed to a random sample of 56 staff members and managers in the company in question, and data was analyzed using SPSS v23. The most important results obtained were the existence of a strong positive correlation between IT, BPR, and Enterprise Value, as well as the presence of a positive significant effect of both IT and BPR on enhancing the value of Algeria Telecom Corporation - Souk Ahras Unit, in line with what was reported in the literature that dealt with the topic.

Keywords: Information Technology; Business Process Reengineering; Enterprise Value; Algeria Telecom Company.

Jel Classification Codes: M15; M19; L63; L86.

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1. Introduction:

Over the past decades, Information Technology (IT) has turned into a pillar and an essential tool that should be used by firms that seek to confront the changes and forces regulating the business environment, on the grounds that IT tools can automate repetitive tasks, streamlining processes and reducing human errors. Besides, it facilitates effective communication and collaboration among employees, teams, and departments, in addition, Implementing IT solutions can lead to significant cost savings in various ways. For example, cloud computing can reduce the need for expensive hardware and software infrastructure, while also allowing for scalability and flexibility. Additionally, adopting IT systems provide companies with tools to improve customer service and support, for example, through customer Relationship Management Software, companies can efficiently manage customer interactions and deliver personalized experiences. Further, IT helps companies safeguard their sensitive data and protect against cyber threats. Implementing firewalls, encryption tools, and security protocols helps ensure the integrity and confidentiality of company information, reducing the risk of data breaches and financial losses.

Equally, institutions that seek to be sustained in the market and constantly develop their performance need to adopt the necessary modern tools to fulfill that, where the most significant of which is Business Process Reengineering (BPR), a concept that represent the rethinking and the radical redesign of administrative processes in order to achieve huge leaps in performance levels and its crucial fields, such as quality, costs, speed and service. BPR practices also have many advantages over the organizations that practice and adopt them, like increasing efficiency, enhancing customer satisfaction, quality improvement, flexibility and adaptability, overall, BPR can help companies transform their operations, achieve higher levels of efficiency, and meet changing customer expectations. It enables organizations to adapt to the dynamic business environment and drive sustainable growth. Numerous researches have demonstrated the importance of the interaction between IT & BPR, from the IT-Enabled BPR benefits standpoint, where the most important of these benefits are relates to enabling parallelism, facilitating integration, enhancing decision making and minimizing contact points.

One of the goals that can be achieved by adopting BPR practices and IT tools is to enhance Enterprise Value. In this context, many researches confirmed that the combination of a firm's IT and BPR has a positive and considerable impact on both its value contributed during production and its market value. In brief, IT-enabled BPR has the potential to positively impact Enterprise Value by reducing costs, improving efficiency and productivity, providing strategic advantages, enhancing decision-making, and offering a superior customer experience. However, the actual impact on Enterprise Value may vary depending on the specific context, industry, and effective implementation of IT-enabled BPR initiatives. Based on the foregoing, we seek through this paper to reveal the impact of both IT and BPR on Value enhancement in one of the most important and largest Algerian national companies, namely Algeria Telecom (Unit of Souk Ahras), a company known for adopting technological practices in its business and adopting the BPR approach to improve its performance, equally, it is one of the companies that is working hardly on developing its value in the Algerian market, which leads us to raise the following problematic:

- **How do Information Technology and Business Process Reengineering affect the Value enhancement of Algeria Telecom Company - Souk Ahras unit?**

The above main problematic can be divided into the following sub-questions:

1- How does IT interact with BPR? And what are the expected gains from their interaction?
2- What are the IT-Enabled BPR benefits in the field of Enterprise Value creation and enhancing?
3- How may Algeria Telecom Company gain from of IT and BPR in terms of value enhancement?

This study is based on the following main hypothesis:

- There is a statistically significant effect at a significance level of 5% of IT & BPR on the Enterprise Value of Algeria Telecom company - Souk Ahras unit.

The following two sub-hypotheses are generated from the main hypothesis:

- *1st Sub-hypothesis*: There is a statistically significant effect at a significance level of 5% of IT on the Enterprise Value of Algeria Telecom company - Souk Ahras unit.
- *2nd Sub-hypothesis*: There is a statistically significant effect at a significance level of 5% of BPR on the Enterprise Value of Algeria Telecom company - Souk Ahras unit.

The main objectives we seek to fulfill from this paper are:

1- Exploring the principles connected to both IT & BPR, as well as the significance they have as current ways that firms use to improve their performance determinants;
2- Investigating the nature of the interplay between IT & BPR, as well as the predicted benefits;
3- Determine the impact of IT & BPR on enterprise value and its enhancement approaches.

2. Literature Review:

2.1. Information Technology:

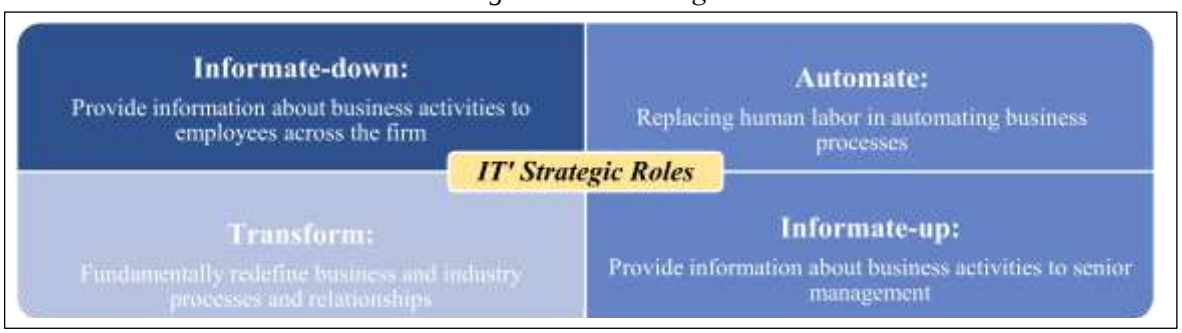
During recent years, the importance of IT within a business environment increased significantly, it is the term that encompasses all forms of technology adopted to create, capture, manipulate, communicate, exchange, present, and use information in its various forms, like business data, voice conversations, still images, motion pictures, multimedia presentations, and other forms, including those not yet conceived (Ricky, Thomas, & Hans , 2004), In other words, this definition of IT includes computer hardware, software, and communication systems, whereas some authors also include personnel and resources dedicated to supporting these capabilities, where IT can be internally oriented or outwardly directed, Information systems that do not directly involve external organizations are called internal IT, where many organizations have begun using IT to manage information between organizations, and that is what we call shared or external IT (Stump & Sriram, 1997).

Information Technology Association of America (ITAA) defined IT as "the study, design, development, implementation, support or management of computer-based information systems, particularly software applications and computer hardware. Researchers in information systems area have developed diverse views of IT, extending a widely accepted view of IT which includes hardware, soft- ware, supporting services, and infrastructure that are used to store, convert, process, retrieve, and securely transmit data and information (In, 2009).

Orlikowski and Gash defined IT as "any form of computer-based information system, including mainframe as well as microcomputer applications." Where the range and strategic impacts of such systems are vast (Thomas & Anne , 1997).

Information technology has very important strategic roles for organizations wishing to invest in such areas, and for the organizations which seek to enhance their market value. The IT strategic role was conceptualized by Schein (1992) and Zuboff (1988) as the following figure:

Figure 1. IT' Strategic Roles



Source: Adopted from (Bruce & all, 2003)

It is important to understand that IT strategic role functions at both the organizational and sector-level. Prior research has applied the IT strategic role construct both at a firm level, e.g., Armstrong and Sambamurthy (1999), and at an industry-level, e.g., Chatterjee et al. (2001). The targeted strategic function of the announced investment in IT, its dominating strategic role in the industry, and the interaction between these two variables are typically taken into account when examining the response to an IT investment. Although it is obvious that when a firm announces an investment in information technology, that investment's strategic role could be significantly different from the overall strategic role of the company's IT (Bruce & all, 2003).

The opportunities it offers in the field of complementary practices between organizations, which may occur at the level of five separate and integrated levels at the same time, are another way that information technology's critical importance for business organizations is evident. These levels are:

- Integration of IT infrastructures (for example, IT hardware, data communications networks, operating systems);
- Integration of information technology applications and data;
- Integration of human resource management practices in the field of information technology;
- Integration of IT Practice Supplier Management;
- Integration of IT strategies formulation practices.
- In this regard, in 1990, "Milgrom and Roberts" were of the opinion that these five complimentary sectors simultaneously compete and improve one another's performance, allowing integrated businesses to increase their returns and boost their market value (Hüseyin & Vahap , 2011).

2.2. Business Process Re-engineering:

According to Michael Hammer, new organizations will look considerably different from those that exist today, and they will operate significantly differently in terms of how they procure, produce, market, and deliver goods and services, they will be communities built efficiently to function in the worlds of today and future.

BPR is not a quick fix for organizations, claims Michael Hammer. This is not a novel technique to magically raise a product's or service's quality or reduce specific prices. It is not a campaign to energize the workforce or the sales force. An outdated computer system won't operate much faster as a result. There is no fiddling with anything during BPR. While in order to reengineer, much of the expertise gained over two centuries of industrial management must be left aside. To determine the ideal way to work today, it is assumed that we would forget how we worked back when there was a mass market (Michael & Steven, 1995).

The most comprehensive definition of BPR is that given by Hammer and Champy in 1993, as "a management approach that involves the thorough redesign and reorganization of an organization's processes, systems, and structures to achieve significant improvements in performance, cost-effectiveness, and customer satisfaction" (Michael & James, 1993), where Process defines as "a structured, measured set of activities designed to produce a specified output for a particular customer or market. It implies on a strong emphasis how work is done within an organization". In this way, BPR focuses on radical and fundamental changes rather than incremental improvements, aiming to streamline and simplify processes, eliminate unnecessary activities, and optimize the use of technology to better meet the needs of customers and achieve strategic goals. BPR emphasizes a shift from a traditional functional perspective to a cross-functional, end-to-end view of processes, with an emphasis on reconfiguring activities to achieve breakthrough results.

According to the authors, this definition comprises four central and powerful key words, namely "Fundamental," "Radical," "Dramatic," and "Processes." These key words, as per the authors' explanation, are to be comprehended in the following manner (Tor, 2014):

- *Fundamental*: According to Michael Hammer and James Champy, BPR begins with no assumptions and no givens. The most fundamental questions about their businesses and how they run must be asked while BPR: Why do we do what we do? And why do we proceed in this manner? These fundamental inquiries compel people to consider the unspoken guidelines and presumptions that guide how they operate their enterprises. Frequently, these guidelines prove to be out-of-date, incorrect, or inappropriate.
- *Radical*: The second important term is "radical," which comes from the Latin word "radix," which means root. Radical redesign entails going to the core of the issue rather than making little adjustments or tinkering with what is already in place. Radical redesign in BPR refers to the creation of entirely new work processes, ignoring all current structures and procedures. BPR focuses on business reinvention rather than business enhancement, modification, or improvement.
- *Dramatic*: 'Dramatic' is the third important term. BPR should only be used when severe blasting is necessary since it aims to achieve quantum leaps in performance rather than minor or gradual gains. While huge advances need demolishing the old and installing the new, marginal gains just require minor adjustments.
- *Processes*: 'Processes' is the fourth keyword. Although this term is the most crucial, most business managers find it to be the most challenging. The majority of businesspeople are not "process oriented," instead concentrating on activities, jobs, people, and structures rather than procedures.

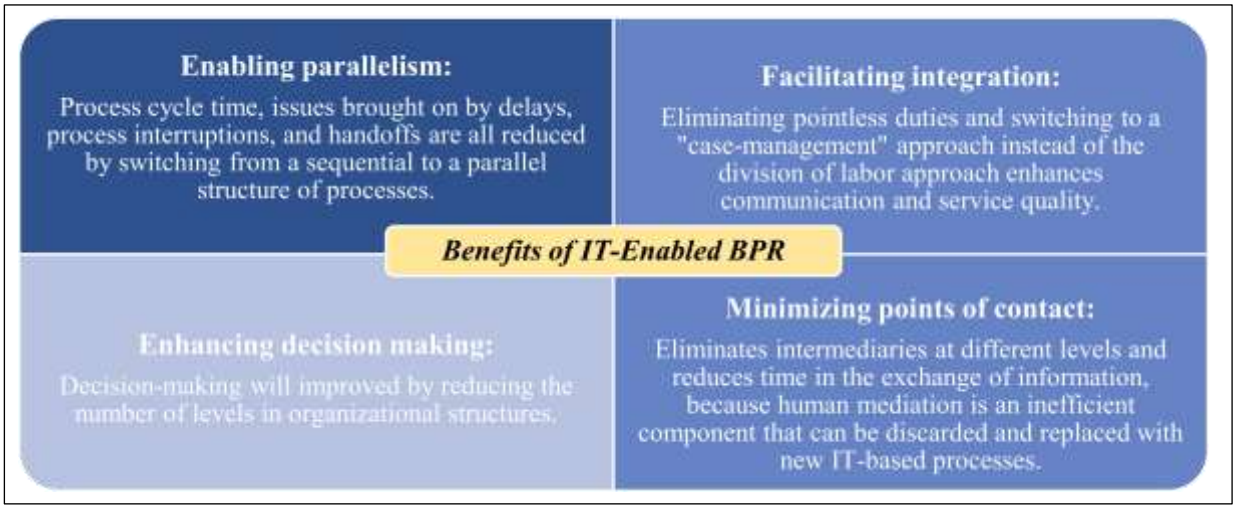
In summary, BPR begins by asking fundamental questions about businesses and how they operate. The goal is to challenge outdated or inappropriate assumptions and guidelines. Radical redesign involves going to the core of the issue and creating entirely new work processes. BPR should only be used when significant improvement is needed, rather than minor adjustments. Processes are crucial in BPR, although many managers struggle with the concept.

A number of obstacles must be overcome in order to assure the success of BPR, such as obtaining senior leadership support, carrying out organizational change management, developing processes, and coping with various cultural and environmental situations. The management of organizational transformation from a human and behavioral perspective presents the most significant barrier to the project's overall success. This ultimately leads to the conclusion that nearly all of the conditions for BPR success outlined in the literature are focused on minimizing change resistance, in the following, we discuss the main commonly BPR success cited conditions (Jessie & all, 2013):

- *Leadership Support*: Establishing attainable goals and objectives for the BPR activities requires significant BPR understanding from senior leadership, middle management, and support staff members.
- *Organizational and Incentives Structure Supporting Cooperation and Communication*: One of the key activities in BPR is establishing a common understanding of the way that work is currently being performed across the organization, this is what requires organizational and incentive’s structure supporting cooperation and communication over the entire organization' levels.
- *Minimize Unnecessary Customization*: Once a decision is made to pursue a material solution, a fit-gap assessment is conducted to determine the level of alignment between the desired processes and the implementation by IT. If a gap is found, there are two options: customization of the software or adjusting the organization's processes. It is generally recommended to adapt business processes when the software already supports the enterprise objectives, rather than customizing the software itself.

IT and BPR are often seen to be inextricably related. Without IT, Walmart, for instance, would not have been able to redesign the procedure for producing and distributing mass-market retail items. Ford used IT in combination with BPR to reduce staff in the procurement department by 75% (Al-Mashari & Zairi, 2000). From various angles, several scholars have explored the function of IT in BPR. In 1996, Childe et al examined how IT is used in BPR. They divide them into two categories: support and change technologies. They define support technologies as being connected to put in place Information Systems that support the appropriate process configurations. Change technologies refer to activities that analyze, model, and map current processes, evaluate their efficacy and efficiency, measure performance, and offer structured assistance for the management of the change project and any related planning and control activities. The requirements for efficient IT usage in BPR are covered by Higgins in 1993. According to him, there are three main components to the role of IT in BPR: the 1st understands the new business prospects made available by computer-based technologies, the 2nd is developing an active platform of systems and capabilities, and the 3rd is concentrating on the process of introducing new systems. Lyons (1997) focuses on the forms of support that different technologies might offer for different business-process needs based on how well they support various business-process requirements. He divides the currently available ITs into eight categories, including front-end data capture and validation, process coordination and control, integrated work support, information storage and access, document management, process-work support, and process-systems development. IT may provide company a lot of advantages, including cost savings, time savings, and mistake reduction when combined with BPR initiatives. However, there are other advantages, most of which are connected to process orientation supported by IT (Al-Mashari & Zairi, 2000). These can be summed up as in the next figure:

Figure 2. Benefits of IT-Enabled BPR



Source: Adopted from (Al-Mashari & Zairi, 2000)

2.3. Enterprise Value:

The firm's enterprise value is the total worth of the benefits that will be created by all of the firm's assets. Enterprise value differs from equity value in that the former analyzes all future advantages, whilst the latter examines just those benefits that flow to equity holders. Thus, enterprise value and equity value vary in that enterprise value takes into account all sources of financing for the firm's assets, but equity value solely takes into account financing given by common shareholders. As a result, enterprise value exceeds equity value (Jennifer, 2016).

Porter's value chain paradigm is the most well-known value creation study at the business level. The value chain analysis identifies the firm's operations and then investigates the economic

repercussions of those actions. It consists of four steps: (1) defining the strategic business unit, (2) identifying critical activities, (3) defining products, and (4) determining the value of an activity. The following are the primary issues addressed by the value chain framework: (1) what activities, and how should a corporation do them? And (2) how is the firm's activity configuration such that it may provide value to the product while competing in its industry? Value chain analysis investigates primary activities, which have a direct influence on value creation, and support activities, which have an impact on value solely through their impact on the performance of primary activities. Inbound logistics, operations, outbound logistics, marketing and sales, and service are the primary processes that include the manufacture of physical items. Total revenue, according to Porter, is a measure of value. A company is profitable if the value it commands exceeds the expenses of producing the product. Value may be produced through differentiating at each stage of the value chain, resulting in goods and services that cut buyers' costs or improve their performance. Policy decisions (what activities to perform and how), linkages (within the value chain or with suppliers and channels), timing (of activities), location, activity sharing among business units, learning, integration, scale, and institutional factors are all drivers of product differentiation and thus sources of value creation. According to Porter and Millar (1985), IT provides value by supporting differentiation initiatives (Raphael & Christoph, 2001).

Researchers have long been interested in determining the link between IT investments and business value. According to Griliches (1981), investments in equipment and processes, such as information technology, that enable enterprises to generate new goods and services are of special importance (Rajiv & all, 2012). While Ramirez (2010) sees that the combination of a firm's IT and BPR has a positive and considerable impact on both its value contributed during production and its market value (Ronald & all, 2010), the table below illustrates the most recent and important previous studies on IT, BPR and Enterprise Value:

Table 1. Recent previous studies on IT and Enterprise Value

Study	Analytical Approach	Key Findings
Dos Santos et al. (2012)	Event analysis	IT investments to maintain current applications are unaffected by economic conditions; but, expenditures in new IT applications are. The IT value of items regarded to be value-added decreases over time
Mithas et al. (2012)	Panel regressions	Profitability benefits from information technology. IT investments have a greater impact on sales and profitability than other discretionary spending like as advertising and R&D
Dewan and Ren. (2011)	SUR regressions	Increased IT investment combined with increased corporate diversification yields higher profits and lower risk
Henderson et al. (2010)	Regression	IT expenditures provide insight into future performance. Markets may misprice due to a lack of trustworthy information on IT spending
Ramirez et al. (2010)	Regression	IT investment in conjunction with BPR results in a positive return on value added and firm market value
Kobelsky et al. (2008)	Regression	Budgeted IT spending has an impact on both business performance and shareholder profits. The effects of context-driven and idiosyncratic IT budget levels differ

Source: Adopted from (Rajiv & all, 2012)

3. Methods and Materials:

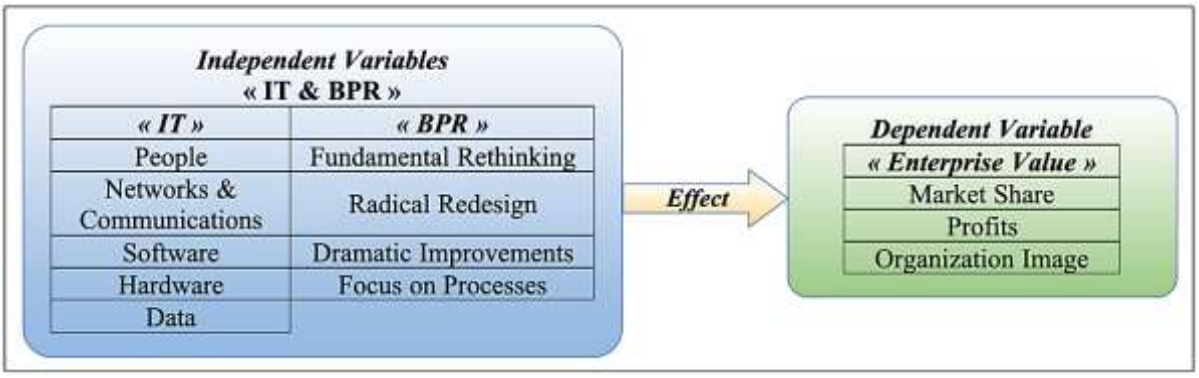
In this study, the analytical descriptive method was mostly relied on, in terms of assessing and examining the literature on the subject of the study and its variables. In order to extract and generalize sample results, the empirical method was adopted, where the experimental research was used in the applied study to investigate the effect relationships between the factors of the phenomena under examination. The target community includes the total employees of Algeria Telecom company, regardless of their experience and job position, as the company is a leading institution in the field of wired and wireless communication services, and it is one of the marketing

and IT-based companies, and it has known important practices in the field of BPR, this is on the one hand, and on the other hand, it is considered one of the most important corporations concerned with creating and developing value in the Algerian market. In this context, an electronic questionnaire was distributed according to the Google Forms service to the company's employees for the Souk Ahras branch, and 56 answers were retrieved to the distributed questionnaire as a random sample, which we believe is a sufficient number to conduct this study, where that questionnaire includes 51 sentences was divided into four main sections:

- *1st Section:* Includes respondents' important ***Professional Data***, namely "Academic Qualification", "Job Position" and "Years of Experience".
- *2nd Section:* included phrases about the first independent variable ***IT***, where it included 20 sentences through which the views of the study sample were polled on the practices and components of information technology, where the axis was divided into five sub-components: "People", "Networks & Communications", "Software", "Hardware" and finally "Data".
- *3rd Section:* included statements about the second independent variable ***BPR***, which included 16 sentences through which the views of the study sample were polled on the extent to which the institution adopts re-engineering as a performance development tool, and this axis was divided into four subgroups that collectively express the elements of BPR, namely: "Fundamental Rethinking", "Radical Redesign", "Dramatic Improvements", and finally the "Focus on Processes".
- *4th Section:* included statements about the dependent variable ***Enterprise Value***, which included 15 sentences through which the opinions of the study sample were polled on the basic dimensions of value, where this axis was divided into three subgroups: "Market Share", "Profits", and finally the "Organization Image".

The entire information about dimensions which measure the three main variables of this study were collected by the adoption of five-point Likert scale, where the study conceptual model is shown and detailed in the following figure:

Figure 3. The conceptual model of the study



Source: adopted from literatures

4. Results and Discussion:

Below, the descriptive characteristics of the study sample are discussed, including the trends in individuals' answers about the questionnaire items, then the Multiple Linear Regression conditions availability are verified, finally, hypotheses are tested to draw conclusions.

4.1. Cronbach's Alpha Reliability Test Results:

The study questionnaire reliability was verified by adopting the "Cronbach's Alpha" coefficient and the results were as shown in the table below:

Table 2. Cronbach's Alpha Reliability Test

Axis	Number of Sentences	Cronbach's Alpha value
IT	20	0.845
BPR	16	0.795
Enterprise Value	15	0.823
All Axes	**51**	**0.878**

Source: adopted from SPSS V.23 Outputs

It is clear from the above results that the value of the "Cronbach's Alpha" coefficient for all axes of the resolution was (0,878) which is a statistically high value as it is greater than (0.6), which indicates that the study instrument has high reliability.

4.2. Statistical Description of the Sample:

The following table summarizes the statistical description of the sample that the study had included:

Table 3. Statistical Description of the Sample

Academic Qualification			**Job Position**			**Years of Experience**		
Category	**Freq**	**%**	**Category**	**Freq**	**%**	**Category**	**Freq**	**%**
Secondary	20	35,7	Employee	42	75	Less than 10	0	0
Collegiate	31	55,4	Service Head	11	19,6	More than 10 & less than 15	3	5,4
Postgraduate	05	8,9	Department Head	0	0	More than 15 & less than 20	21	37,5
			Higher Management	3	5,4	Greater than 20	32	57,1
Total	**56**	**100**	**Total**	**56**	**100**	**Total**	**56**	**100**

Source: adopted from SPSS V.23 Outputs

The descriptive analysis of the study sample according to professional characteristics indicates that most of the respondents were of university academic qualification, and with regard to the job position, most of them were Employees, with a significant percentage of Heads of Departments, and with regard to the distribution of the sample according to professional experience, most of its members were from those with experience for greater than 20 years, and these characteristics would enhance the results of study, as the respondents are able to understand the included variables.

4.3. Analyze of the Respondents' Answers to the Questionnaires:

In the following, the respondents' answers results on the questionnaire sentences related to the three variables are presented and analyzed.

Table 4. Respondents' Answers trends

Axis	Dimension	Mean	SD	Ranking	Trend
IT	People	4,343	0,632	1	Very strong
	Networks & Communications	3,844	0,803	3	Strong
	Software	3,145	0,679	5	Medium
	Hardware	3,866	0,481	2	Strong
	Data	3,233	0,491	4	Medium
	IT Axis	**3,686**	**0,576**	**/**	**Strong**
BPR	Fundamental Rethinking	2,981	0,675	4	Medium
	Radical Redesign	3,994	0,742	2	Strong
	Dramatic Improvements	3,784	0,633	3	Strong
	Focus on Processes	4,225	0,616	1	Very strong
	BPR Axis	**3,746**	**0,615**	**/**	**Strong**

Enterprise Value	Market Share	4,378	0,660	1	Very strong
	Profits	2,788	0,729	3	Medium
	Organization Image	4,145	0,691	2	Strong
	Enterprise Value Axis	**3,770**	**0,640**	**/**	**Strong**

Source: adopted from SPSS V.23 Outputs

With regard to the IT axis, the data of the above table indicates the strong agreement of the respondents on the "People" dimension, which defined a general average of (4,343) responses in a general trend of "Very Strong", while the general trend of the IT axis was "Strong" with a general average of (3,686), which indicates the interest of the firm under study in providing IT requirements and devoting its practices.

With regard to the BPR axis, the data of the above table indicates the consensus of the study sample about the "Focus on Processes" dimension, which was defined as an average value of (4,225) and a "Very Strong" general trend, as well as the general trend of the BPR axis was "Strong" with a general average of (3,746) which indicates the interest of the Algeria Telecom corporation about BPR practices.

The data of the above table with regard to the "Enterprise Value" axis indicates a consensus of the respondents about the "Market Share" dimension, which was at an average of (4,378) and in a "Very Strong" trend. The general trend of the axis was "Strong" with an average of (3,770), which indicates the company's interest in developing its market value. And searching for ways to enhance it.

4.4. Verifying the Multiple Linear Regression Assumptions:

There are five main Multiple Regression validity assumptions:

a. Linear Relationships between Variables:

The first assumption of the Multiple Regression Model is the existence of linear correlations between the dependent variables and the independent variable. The linear correlation test results were according to the table below:

Table 5. Linear Correlation matrix

Variables	IT	BPR	Enterprise Value
IT	/	0,342** Sig (0,000)	0,879** Sig (0,000)
BPR	0,342** Sig (0,000)	/	0,920** Sig (0,000)
Enterprise Value	0,879** Sig (0,000)	0,920** Sig (0,000)	/

Source: adopted from SPSS V.23 Outputs

According to the data in the table above, the initial assumption of the multiple linear regression model between the research variables has been confirmed, where the correlation coefficient between IT and enterprise value was positive and significant at a value of (0,879), and the correlation between BPR and value was also positive and significant at a value of (0,920).

b. Multicollinearity:

What is meant by Multicollinearity is the presence of a high correlation between the independent variables, which would reduce the quality of the Multiple Regression Model. According to the results of Table above, the correlation coefficient between IT and BPR in the investigated company was significant with a value of (0,342) which is a value less than (0,70). Therefore, according to (Tabachnick, 1989), the second assumption of the Multiple Linear Regression is also met.

c. Tolerance and VIF:

In order to ensure the validity of the Multiple Regression model, we perform the Tolerance and the VIF analyze between the independent variables (IT & BPR). The Inflation Variance Coefficient (VIF) test was proposed by Glauber & Farrar in 1967, and developed by Marguardt in the 1970s. The areas of use of this scale vary in commenting on the existence of a multicollinearity problem, there are those who consider the level of VIF≤10 acceptable, while Gunst & Mason in 1980 contented themselves with the level of VIF ≤ 4 to judge the absence of this problem, and Sheather & Simon in 2009 considered A level of VIF ≤ 5 is sufficient to consider that there is no multicollinearity problem (Sheather, 2009), while many studies adopt the level of VIF < 3.

The table below contains the VIF and Tolerance analysis results:

Table 6. VIF and Tolerance analysis results

Variables	IT	BPR
VIF	1,132	1,132
Tolerance	0,883	0,883

Source: adopted from SPSS V.23 Outputs

The data of the above table indicate that the value of the VIF for both independent variables of the study was at the level of (1,132), a value completely less than (3,00), where the Tolerance value for the both independent variables was (1,132), which is completely greater than (0,1). All of this indicates that there is no problem of multicollinearity, which it ensures the third assumption of the Multiple Regression Model.

d. Distribution' Moderation:

In the context of verifying the moderation of the distribution, we can rely on the analysis of Skewness and Kurtosis of the three study variables (IT; BPR; Enterprise Value), as the results of the analysis were according to the table below:

Table 7. Skewness and Kurtosis analysis results

Variables	Skewness			Kurtosis		
	Skewness	Std. E Sk	skewness/Std. E Sk	Kurtosis	Std. E Ku	Kurtosis/Std. E Ku
IT	0,325	0,244	1,332	0,75	0,508	1,476
BPR	- 0,388	0,244	-1,590	- 0,405	0,508	-0,797
Enterprise Value	- 0,324	0,244	-1,328	0,095	0,508	0,187

Source: adopted from SPSS V.23 Outputs

In order to judge the distribution moderation for the three variables data, and by employing the skewness value, we can rely on the quotient of dividing the skewness value by its standard error, then comparing the obtained value with the Z-scores value (± 3,29) for medium-sized samples

(50<n<300) (Hae-Young, 2013). The data of the table above indicates that the quotient was between the range of (- 0,797 and + 1,476) for the three variables.

The same applies in the case of adopting the kurtosis, where the value of the quotient of dividing the kurtosis value by its standard error for the three variables is within the range of (- 1,590 and + 1,332), and all of this indicates the data moderation distribution for each of IT, BPR and Enterprise Value.

Equally, in this context, we can adopt the Normal Distribution test for the study variables, under the following assumptions:

H_0: The collected data follows a normal distribution at a significance level of 5%;

H_1: The collected data do not follow a normal distribution at a significance level of 5%;

To test those hypotheses, we perform both of Kolmogorov-Smirnov & Shapiro–Wilk tests, where the results are shown in the table below:

Table 8. Kolmogorov-Smirnov & Shapiro–Wilk normality tests

Variables	Kolmogorov-Smirnov		Shapiro–Wilk	
	Test value	Sig	Test Value	Sig
IT	0,108	0,200	0,960	0,251
BPR	0,142	0,082	0,935	0,056
Enterprise Value	0,138	0,103	0,901	0,128

Source: adopted from SPSS V.23 Outputs

It is clear from the results of the above table that the probability value of the "Kolmogorov-Smirnov" and "Shapiro-Wilk" normality tests for all study variables was greater than 0.05, this is what we lead to adopt the null hypothesis (H_0), which indicates that the questionnaire data follows a normal distribution, confirming the fourth assumption of the Multiple Linear Regression.

e. Residuals' Normal Distribution Test and Outliers Absence:

The Residuals Normal Distribution is verified by relying on the Mahalanobis test value, in this context, the value of the Mahalanobis test can be compared with the critical value for the chi-square distribution. Regarding the absence of outliers, we can rely on the value of the Cook's Distance test, as in order to prove the absence of this problem, the test value must be completely less than (1,00). The table below shows the results of the two tests.

Table 9. Mahalanobis and Cook's Distance test results

Test	Mahalanobis	Cook's Distance
Value	5,161	0,431

Source: adopted from SPSS V.23 Outputs

The above table data indicates that the Mahalanobis test value was at (5,199), which is completely less than the critical value of the chi-square distribution table (5,99).

As for the Cook's Distance test value, it was, according to the table above, at the level of (0,431), which is completely less than (1,00), and all of this confirms the fifth assumption of the Multiple Linear Regression.

4.5. Hypotheses Test:

a. Testing the Main Hypothesis:

The main hypothesis of this study was formulated as follows:

H_0: There is not statistically significant effect at a significance level of 5% of IT & BPR on the Enterprise Value of Algeria Telecom Company - Souk Ahras unit.

H_1: There is a statistically significant effect at a significance level of 5% of IT & BPR on the Enterprise Value of Algeria Telecom Company - Souk Ahras unit.

The Multiple Linear Regression results are shown in the table below:

Table 10. Multi Linear Regression test results

R	R^2	F		Constant			"IT" Coefficient			"BPR" Coefficient		
		F	Sig	Value	t	Sig	Value	t	Sig	Value	t	Sig
0,931	0,866	171,527	0,000	**- 0,086**	- 0,383	0,703	**0,332**	2,774	0,008	**0,682**	6,076	0,000

Source: adopted from SPSS V.23 Outputs

The results of the above table indicate that there is a positive significant effect of the independent variables (IT & BPR) on the dependent variable (the Enterprise Value), which is explained by the value of Fisher's statistic (171,527) and its probability value that was (0,000), where the Determination Coefficient value shows that independent variables explained 86,6 % of the dependent variable changes. The regression coefficients for IT & BPR were positive and statistically significant, as their value was (0,332) and (0,682) respectively. This analysis leads us to adopt the alternative main hypothesis which states that "There is a statistically significant effect at a significance level 5% of IT & BPR on the Value of the Algeria Telecom company - Souk Ahras unit" and the results of the multiple regression test enable us to write the multi-Regression equation according to the following mathematical formula:

$$Z = 0{,}332\ X + 0{,}682\ Y - 0{,}086$$

Where: ***Z*** (Enterprise Value); ***X*** (IT); ***Y*** (BPR).

b. Testing the 1st Sub-Hypothesis:

The first sub-hypothesis was formulated as follows:

H_0: There is not statistically significant effect at a significance level of 5% of IT on the Enterprise Value of Algeria Telecom Company - Souk Ahras unit.

H_1: There is a statistically significant effect at a significance level of 5% of IT on the Enterprise Value of Algeria Telecom Company - Souk Ahras unit.

The Simple Linear Regression results are shown in the table below:

Table 11. Simple Regression test results for IT & Enterprise Value

Variables	R	R^2	Calculated F		Constant			Regression Coefficient		
			F	Sig	val	t	Sig	val	t	Sig
IT & Value	0,879	**0,773**	183,861	0,000	**0,058**	0,203	0,840	**0,976**	13,560	0,000

Source: adopted from SPSS V.23 Outputs

The results of the statistical analysis in the above table show that there is a statistically significant impact of the IT on value enhancing in Algeria Telecom company - Souk Ahras unit, based on the Fisher test statistic value, which was with a probability value (Sig = 0,000) less than 0,05. The value of the Determination Coefficient, which expresses the extent to which IT interprets the Enterprise Value variable, was at the level of (0,773), which is a high value, while the value of the regression coefficient was (0.976), which indicates the positive effect of the model. This analysis leads us to confirm the alternative 1st sub-hypothesis which states that "There is a statistically significant effect at a significance level 5% of IT on the Enterprise Value of Algeria Telecom Company - Souk Ahras unit".

c. Testing the 2nd Sub-Hypothesis:

The second sub-hypothesis was formulated as follows:

H_0: There is not statistically significant effect at a significance level of 5% of BPR on the Enterprise Value of Algeria Telecom Company - Souk Ahras unit.

H_1: There is a statistically significant effect at a significance level of 5% of BPR on the Enterprise Value of Algeria Telecom Company - Souk Ahras unit.

The Simple Linear Regression results are shown in the table below:

Table 12. Simple Regression test results for BPR & Enterprise Value

Variables	R	R^2	Calculated F		Constant			Regression Coefficient		
			F	Sig	val	t	Sig	val	t	Sig
BPR & Value	0,920	0,847	298,350	0,000	**0,141**	0,636	0,527	**0,958**	17,273	0,000

Source: adopted from SPSS V.23 Outputs

The results of the above table show that there is a statistically significant impact of the BPR on value realization in Algeria Telecom company, based on the value of the Fisher test statistic value, which was with a probability value completely less than (0,05), where the Determination Coefficient (R^2) value was at the level of (0,874), which is a high value too, while the value of the regression coefficient was (0,958), which indicates the positive effect of the model. Equally, this analysis leads us to confirm the alternative 2nd sub-hypothesis which states that "There is a statistically significant effect at a significance level 5% of BPR on the Enterprise Value of Algeria Telecom Company - Souk Ahras unit".

5. Conclusion:

In this paper, the importance of the interaction between IT and BPR and their combined role in enhancing the Enterprise Value was addressed, by applying to the case of the Algeria Telecom Company - Souk Ahras unit, where the assumption on which this paper was built was the existence of significant impact of IT & BPR on the Enterprise Value of the company in question, this was based on the literature that dealt with this subject, which was unanimous on the one hand on the need for interaction between IT & BPR because of the gains that would improve the institutions performance that adopt and make efforts to develop such practices, and on the other hand, they unanimously agreed on the critical importance of employing and exploiting BPR programs supported by IT in order to enhance and develop the Enterprise Value, as IT-enabled BPR has the ability to positively affect the Enterprise Value by controlling costs, improving efficiency and supporting competitive advantages, which is directly reflected in the basic dimensions of value that have been focused on, namely Profitability, Market Share and Organization Image.

To achieve the study objectives, the most important literature on the subject of IT, BPR, and Enterprise Value was reviewed, and an experimental study was conducted to drop theoretical concepts and what was confirmed by literature on the case of Algeria Telecom Company - Souk Ahras unit, where the most important results reached through this paper were as follows:

1. The existence of a strong positive correlation between the IT and the Enterprise Value in the Algeria Telecom Company - Souk Ahras unit, which indicates the company's interest in technological practices and tools in the administrative field and their employment in the field of value creation and development;
2. The existence of a strong positive correlation between BPR and the Enterprise Value in the Algeria Telecom Company - Souk Ahras unit, which confirms the enterprise's tendency towards adopting the most important modern practices in the field of improving its performance and exploiting it in the field of value creation and development;
3. The results of the Multiple Regression Analysis concluded that there is a positive significant effect of IT and BPR on enhancing the Enterprise Value with its basic dimensions (Profitability, Market Share and Organization Image) for Algeria Telecom Company - Souk Ahras unit, in

accordance with what has been found in the literature dealing with the subject variables, and in a way that increases the theoretical and field significance for this study.

Given the importance and benefits of the interaction between IT and BPR in enhancing Enterprise Value, as well as the field results obtained, it appears clear that Algerian enterprises must move toward adopting modern management practices and technologies in order to enhance their abilities, enhance their value, and achieve the greatest gains in terms of competitive advantages and critical performance criteria.

Referrals and references:

- Al-Mashari, M., & Zairi, M. (2000). Creating a Fit Between BPR and IT Infrastructure: A Proposed Framework for Effective Implementation. The International Journal of Flexible Manufacturing Systems, 12, 253.
- Bruce, D., & all, e. (2003). The Value Relevance of Announcements of Transformational Information Technology Investments. MIS Quarterly, 27(4), 639.
- Hae-Young, K. (2013). Statistical notes for clinical researchers: assessing normal distribution using skewness and kurtosis. Consulté le Jun 2023, sur National Library of Medicine: http://www.rde.ac/
- Hüseyin, T., & Vahap , B. (2011, December). Cross-Business Information Technology Integration and Acquirer Value Creation in Corporate Mergers and Acquisitions. nformation Systems Research, 22(4), 704-705.
- In, L. (2009). Selected Readings on Information Technology and Business Systems Management. New York: Hershey.
- Jennifer, F. (2016). Enterprise Value. Dans A. Mie, & J. David , The Palgrave Encyclopedia of Strategic Management (pp. 500-501). London: Palgrave Macmillan.
- Jessie, R., & all. (2013). Improving Air Force Enterprise Resource Planning-Enabled Business Transformation. Consulté le Jun 2023, sur RAND Corporation: https://www.rand.org/pubs/research_reports/RR250.html
- Michael, H., & James, C. (1993). Le BPR, Traduit par Michel Le Seac'h. Paris, France: DUNOD.
- Michael, H., & Steven, S. (1995). The BPR Revolution (Vol. 1). Harper Collins Publishers Ltd.
- Rajiv, K., & all. (2012, Dec). Does Information Technology Investment Influence a Firm's Market Value? A Case of Non-Publicly Traded Healthcare Firms. MIS Quarterly, 36(4), 1148-1149.
- Raphael, A., & Christoph, Z. (2001, Jun/Jul). Value Creation in E-Business. Strategic Management Journal, 22(6/7), 496.
- Ricky, R., Thomas, R., & Hans , G. (2004). The Impact of Information Technology Deployment on Trust, Commitment and Value Creation in Business Relationships. Journal of Business & Industrial Marketing, 19 (3), 197-207.
- Ronald, R., & all. (2010, Nov). Information technology infrastructure, organizational process redesign, and business value: An empirical analysis. Decision Support Systems, 49(4), 418.
- Sheather, S. (2009). A modern approach to regression with R. Dans R. D. G. Allen, Springer Texts in Statistics. New York: Springer.
- Soudabeh, K. (2013). Business Process Re-Engineering Application in Healthcare in a relation to Health Information Systems. International Conference on Health and Social Care Information Systems and Technologies, Procedia Technology 9, p. 950.
- Stump, R., & Sriram, V. (1997). Employing Information Technology in Purchasing: Buyer-Supplier Relationships and Size of the Supplier Base. ndustrial Marketing Management, 26, 127-136.

- Tabachnick, B. G. (1989). Using Multivariate Statistics. New York: Harper & Row, Publishers, Inc.
- Thomas , C., & Anne , D.-M. (1997, May). Information Technology as Competitive Advantage: The Role of Human, Business, and Technology Resources. Strategic Management Journal, 18(5), 376.
- Tor, T. (2014). Managing Process Innovation through Exploitation and Exploration - A Study on Combining TQM and BPR in the Norwegian Industry. Springer Gabler, 27-28.