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Assessing the achievement of Business-IT Alignment by Algerian public companies

تقييم مدى تحقيق التجانس الإستراتيجي بين نشاط المؤسسة وتكنولوجيا المعلومات من قبل المؤسسات العمومية الاقتصادية الجزائرية

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Abstract:
The paper analyses the achievement of Business-IT Strategic Alignment for Algerian companies. Therefore, it discusses weather these companies are able to meet the goals of Business-IT Strategic Alignment through achieving its processes. This required data collection using a questionnaire. This questionnaire was sent to 80 individuals who work in different companies that act in various sectors. SPSS V23 software used to test the reliability of the questionnaire and data sources, and to treat these data. In order to test the study's hypotheses, One-Sample Tests were conducted at $\alpha = 5\%$. The results show that Algerian companies are not able to achieve Business-IT Strategic Alignment. The findings indicate that there are many gaps in organizational structure and IT management. The results led the searchers to suggest a set of recommendations that aim at enhancing Business-IT Strategic Alignment in Algerian companies.

Keywords: Information Technology (IT), Business-IT Strategic Alignment, Organizational Structure, IT management.

الملخص:

تدور هذه الورقة البحثية حول تحليل التجانس الاستراتيجي بين نشاط المؤسسة وتكنولوجيا المعلومات على مستوى المؤسسات الاقتصادية الجزائرية، ومن أجل ذلك تمت مناقشة ما إذا كانت هذه المؤسسات قادرة على بلوغ أهداف التجانس الاستراتيجي بين نشاط المؤسسة وتكنولوجيا المعلومات، وهذا ما تطلب القيام بجمع بيانات باستخدام استمارة الاستبيان وتحليلها، وقد أرسلت هذه الأخيرة إلى 80 فردا يعملون في مؤسسات مختلفة تنشط في قطاعات متنوعة، ومن أجل معالجة البيانات تم استخدام برنامج SPSS النسخة 23، والقيام بتطبيق اختبار العينة الواحدة عند مستوى معنوية α يساوي 5%، وقد بينت النتائج أن المؤسسات الاقتصادية الجزائرية غير قادرة على تحقيق التجانس الاستراتيجي بين نشاط المؤسسة وتكنولوجيا المعلومات، وهذا راجع إلى الثغرات والنقائص الموجودة في الهيكل التنظيمي وكذا في نمط تسيير أنظمة المعلومات، هذه النتائج قادت الباحثين إلى وضع مجموعة من التوصيات التي تهدف إلى تحسين مستوى التجانس الاستراتيجي بين نشاط المؤسسة وتكنولوجيا المعلومات لدى المؤسسات الجزائرية.

الكلمات المفتاحية: تكنولوجيا المعلومات ، التجانس الاستراتيجي بين نشاط المؤسسة وتكنولوجيا المعلومات ، الهيكل التنظيمي ، إدارة أنظمة المعلومات

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1.INTRODUCTION

Modern companies are investing significantly in Information Technology (IT) with the goal of maximizing their profits and the performance of their human resources **(Alain Pinsonneault,**

1998). In the actual market Business-IT Alignment becomes a critical subject for managers **(Saeid Jorfi & Hassan Jorf, 2011)**. This paper seeks to address the meaning of Business-IT Alignment and its different dimensions. Furthermore, the authors try to investigate the achievement of the previous strategy in Algerian companies.

Study Problematic:

As a consequence, the study problematic is summarized in the following question; **"Is Business-IT Alignment achieved by Algerian public companies?".** This includes using different processes of Business-IT Alignment as indicators to assess this strategy in Algerian companies.

In order to answer the previous problematic, we have formulated the following sub-questions:

- What does Business-IT Alignment mean?
- What is the achievement level of Business-IT Alignment in Algerian public companies?
- Does the full achievement of Business-IT Alignment necessitate some changes?

Study hypothesis:

In order to answer the problem we have developed a null hypothesis, and its alternative hypothesis, which are as follows:

H0: Business-IT Strategic Alignment is achieved by Algerian companies;

H1: Business-IT Strategic Alignment is not achieved by Algerian companies.

2. Theoretical framework of the study:

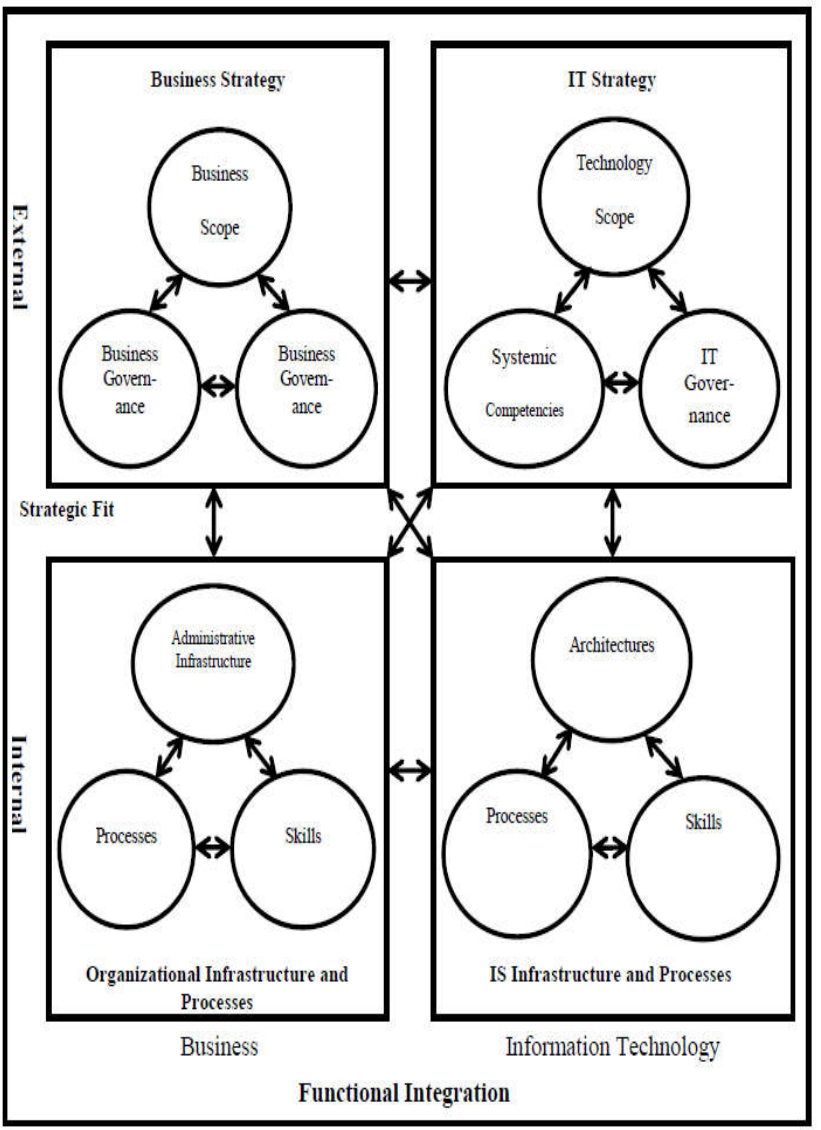
2.1. Definition of Business-IT Strategic Alignment:

Business-IT Strategic Alignment centers around guaranteeing the linkage of business and IT plan; on characterizing, keeping up and approving IT value creation; on adjusting IT processes

with enterprise processes in order to meet the strategic objectives of this enterprise.[1]

2.2. Business-IT Strategic Alignment Model:

Figure 01: Strategic Alignment Model



Source : Wim Van Grembergen (2004), Strategies for Information Technology Governance, IDEA GROUP PUBLISHING, USA, Page: 08

As it is depicted in **Figure 01**, there are two building blocks. The first building block of strategic alignment model is strategic fit, which means that the formulation of IT strategy should be formulated compatibly with external and internal field. The external field is about the company market strategies, and its competitive advantage, while internal field pertains enterprise structure, process and different resources. The second building block is the functional integration, which is about the integration of IT strategy with business strategy.[2] Table 01 summarizes the components of Business-IT Strategic Alignment Model

Table 01: The twelve components of Business-IT Strategic Alignment

Business Strategy
➢ **Business scope:** The components of the market (products, clients, technologies, competitors). ➢ **Extraordinary competencies:** The key success factors of the enterprise , which that enhance it to achieve competitive advantage like culture and behaviors. ➢ **Corporate governance:** The enterprise strategies and management style that assure high performance and conformance.
Organization infrastructure and Processes
➢ **Administrative structure:** The distribution of roles and responsibilities, and the positioning of functions and departments. ➢ **Processes:** It is about the production chain. ➢ **Skills:** The knowledge held by the personnel, and the policies applied by the organization to develop human resources.
IT Strategy
➢ **Technology scope:** Adoption and development of new technologies. ➢ **Systemic competencies:** The quality of information created by IT services, and the empowerment of staff members to accede it. ➢ **IT Governance:** Sharing of IT services between different stakeholders, and management of IT risks and IT value delivery.
IT Infrastructure and Processes
➢ **Architecture:** The features of technology that enable the integration of applications in an effective platform. ➢ **Processes:** Effective Management of IT infrastructure. ➢ **Skills:** IT personnel quality, and the methods applied by the company to develop them such as training and motivation.

Source: Jerry N. Luftman (2000), Assessing Business-IT Alignment Maturity, Communications of Association for Information Systems, Volume 4, Article 14, PP: 07-08

2.3.The processes of Business-IT Strategic Alignment:

The strategy of Business-IT Strategic Alignment includes many processes that are summarized as follows:

- **IT Framework Management:** Includes different mechanisms and effective processes that enable effective information management to support company governance.
- **Strategy Management:** Making IT strategy compatible with enterprise strategy.
- **Enterprise Architecture Management:** Effective for business process engineering, which is supported by a suitable information technology infrastructure.
- **Innovation Management:** Apply the good methods for realizing IT creativity, and to benefit from it as well as from conventional technology.
- **Portfolio Management:** Apply the good methods to control and organize the programs of projects as well as IT portfolio. Furthermore, this processes aims at aligning project program with IT program.
- **Management of Budget and Cost:** Ensure that the budget allocated for IT and business is sufficient, and that business-IT alignment costs are rational.
- **Human Resource Management:** Execute effective policies and procedures that have positive impacts on personnel performance such as training, and the good distribution of roles and responsibilities.
- **Relationships Management:** Make formal correlation between business and IT, including the balancing between budget, cost and risk. This correlation should be communicated with stakeholders, using a clear and exact language.

- **Service Agreements Management:** Improve both IT services and company service levels, and make them compatible, respecting the norms included in the service agreements between the enterprise, the clients and the stakeholders.
- **Suppliers Management:** Ensure that suppliers provide effective and compliant IT-enabled services.
- **Quality Management:** Execute an effective direction for different processes to ensure the satisfaction of stakeholders with the quality of services. This includes applying a monitoring system, which assess the quality of these services.
- **Risk Management:** Execute an integrated risk management system to identify and mitigate IT risk.[3]

3.EXPERIMENTATION:

3.1. Methodology:

3. 1.1. Data sampling and analysis:

The data used in this study were collected through a self-administered questionnaire.. A total of 80 respondents completed the questionnaire. **Table 2** summarizes the distribution of these respondents according to their industries.

Table 2: The distribution of respondents according to their industries

Industry	Percentage (N=80)
Energy	25 %
Telecommunications	16.30 %
Manufacturing	3.80 %
Transportation	2.50 %
Commerce	3.80 %
Banking	11.30 %

Insurance	25 %
Pharmaceutics	1.3 %
Other industries	11.3 %

Source: By the authors

Concerning the jobs occupied by the targeted individuals, the following table shows their positions in their companies.

Table 3: The distribution of respondents according to their current jobs

Current job	Percentage (N=80)
Chief executive officer (CEO)	1.30 %
Chief information officer (CIO)	0 %
IT department chief	1.3 %
IT auditor	0 %
Manager	43.80 %
Admin	15 %
Accountant	13.80 %
Other job title	25 %

Source: By the authors

The following table presents the roles played by respondents concerning IT in their companies. The results show that most of the respondents are IT users (61.30 %).

Table 4: The distribution of respondents according to their roles relevant to IT function

Role	Percentage (N=80)
Programming software	7.50 %
Making procurement decisions on hardware and software	5.00 %
Developing information systems	1.30 %
Using Information Technology	61.30 %
Planning IT budgets	7.50 %
Managing IT projects	1.30 %
Participating in setting IT policy	16.30 %
Other role	0 %

Source: By the authors

SPSS V23 was used to assess the reliability of the questionnaire and data sources. The level of significance is set at 0.05 for all relationships. In order to verify the study's hypotheses, the following statistical techniques were used:

- Descriptive statistics to analyse the sample characteristics, and to measure the items of Business-IT Strategic Alignment;
- Cronbach's α coefficient to test the reliability of the constructs;

- One-Sample Test to verify the hypotheses.

3.1.2.Construct Measurement:

The construct includes 13 items. A four-point Likert scale based on Rating Scale introduced by ISACA (2013) (0= Not achieved, 1= Partially achieved, 2= Largely achieved, 3= Fully achieved) (See **Table 5**).

Table 5: Four-point Likert Scale

Likert Scale	Interval	Description
0	0-0.75	Not achieved
1	0.76-1.51	Partially achieved
2	1.52-2.27	Largely achieved
3	2.28-3.03	Fully achieved

The analysis of reliability was carried out through calculating Alpha Cronbach Coefficiet**.** The results showed that there is a high internal consistency between items ($\alpha = 0.923$).

3.1.3. Results and discussions:

The study analyses the achievement progress levels of the processes of Business-IT Alignment that are realized by the targeted Algerian companies. **Table 6** shows that the mean values of all the items fall into the second interval (0.76-1.51). Thus, they correspond to the second degree (Partially achieved (>15 to 50%)) on the four-point Likert scale.

Table 6: Means and standard deviations of the processes Business-IT Alignment

Items	Mean	Std. Deviation
IT Framework Management	1.125	0.862
Strategy Management	1.312	0.820
Enterprise Architecture Management	1.237	0.815
Innovation Management	1.225	0.856
Portfolio Management	1.325	0.808
Management of Budget and Cost	1.250	0.803
Human Resources Management	1.275	0.914
Relationships Management	1.262	0.924
Service Agreements Management	1.362	0.889
Suppliers Management	1.275	0.841
Quality Management	1.250	0.834
Risk Management	1.300	0.786
Security Management	1.325	0.808

Source: By the authors using SPSS V23

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So
table.

Table 7: The results of sub-hypothesis H2-2 test

	Test Value = 1.5							
	Mean	Std. Deviation	t	Mean Difference	df	Sign. (2-tailed)	95% Confidence Interval of the Difference	
							Lower	Upper

Table 7 shows that the weighted arithmetic mean of Business-IT Strategic Alignment construct equals to 1.271. This value exceeds the mean of Likert scale with a mean difference equals to /-0.229/ at a freedom degree of 79. It falls into the second interval (0.76-1.51), which corresponds to the second degree (Partially achieved) on the four-point Likert scale. Furthermore, the results show that there is a significant difference between the achievement of the processes of Business-IT Strategic Alignment and the test value ($p < 0.05$). This requires rejecting the null hypothesis that Business-IT Alignment is achieved by Algerian companies, and accepting the alternative hypothesis.

The previous results indicate that the targeted enterprises suffering from the poor effectiveness of organizational structure, because it is not flexible to resist against environmental changes. Furthermore, the communication channels are not suitable to develop the staff knowledge concerning IT use and development. This latest has a negative impact on the innovation in IT area. In the other hand, these companies are not able to economize the use of their resources because of the lack of good governance system as well as the absence of applying Total Quality Management to optimize the use of company resources and systems.

Finally, targeted firms are not capable to deal with cybercrimes and all informational malicious. This is due to the absence of effective risk management system, which enhances the enterprise to avoid losses that are caused by cyber damages.

4. CONCLUSION:

From the outcome of our investigation it is possible to conclude that most of Algerian companies are not able to achieve Business-IT Strategic Alignment. The results obtained indicate that the framework of these companies are not effective in aligning human resources with IT. Furthermore, these companies are not qualified to get the certification of TQM norms especially with regard to information security and IT Portfolio management. These poor scores necessitates significant changes in organizational culture, structure, resources and systems.

Next, it has been found that it is possible to investigate practically the achievement level of Business-IT Strategic Alignment due to the availability of suitable metrics that are used in previous scientific articles. These metrics are useful tools for managers and experts to discover weak processes and resources as well as to assess the effectiveness of governance system in meeting the goals of Business-IT Strategic Alignment.

Recommendations:

From the research that has been carried out, we present the following recommendations:

- To establish a new organizational culture, which includes synergistic interaction between the company staff members and IT in order to obtain the optimization of IT investment, through coaching sessions and effective communication.
- To ensure the availability of sufficient resources that are necessary for a successful Business-IT Strategic Alignment, through recruiting qualified human resources, adopting well-developed Information Technology, and allocating sufficient budget.

- To sub-contract digital start-ups that are able to realize effective IT project, which includes the Business-IT Strategic Alignment as main tasks.

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