The Impact of Application the Information Technology Strategies in Enhancing the Sustainable Competitive Advantage An Empirical Study on a Mobile Communication Sector in Iraq

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Abstract

This study aims to investigating the impact of applying the information technology strategies in enhancing the sustainable competitive advantage: An empirical study on a Mobile communication sector in Iraq. To achieve this purpose has been to build a questionnaire included (3) three strategies for the information technology, and the sustainable competitive, consisted of (25) items, were then test the sincerity of the tool and its reliability, was applied to the study sample of (85) managers. The study reached to many results, including:

1. There was exist statistically significant relationship a (positive correlation) at the significant level ($\alpha = 0.05$), between each strategy of the information technology and the sustainable competitive advantage.

2. There was exist statistically significant impact at the significant level ($\alpha = 0.05$), for the application of the information technology strategies in enhancing the sustainable competitive advantage of a Mobile communication sector in Iraq.

Upon the foregoing results, the study reached to a number of conclusions and recommendations.

Keywords: Information Technology Strategies, Sustainable Competitive, Iraqi Communication.

1. Introduction

Strategy has been a great concern to top management, thus, most companies have worked on the accurate strategy to attain a successful business, especially in this competitive market of business. It is believed that understanding the significance of IT strategy is important for an organization to support any sustainable competitive. It is further stressed that developments in information technology have highlighted how capable and strategically functional IT could be to company strategies. It is vital that IT strategies and processes should be aligned.

Companies today operate in constantly changing environments, requiring an ongoing assessment of strategic alignment to ensure that companies operate at an optimal level. Much attention has been given to take advantage of IT capabilities and there has been an increased interest in producing a model which aligns IT with sustainable competitive. In the process of adopting a strategy, communication, trust, understanding, participation, shared knowledge and IT dependency level.

Information systems strategy guides information systems and business decisions. The process of aligning information systems strategy requires considering the effects of mutual alignment. Reallocating resources under these circumstances could have resulted in a decreased IT budget and increasing business performance.

The purpose of this study is basically to address and understand the concept and theory of information technology strategies and there impact in enhancing the sustainable competitive advantage of the Mobile Communication Sector in Iraq.

2. Methodology

2.1. The Study Problem and its Questions

The problem is that these contradictions impair effective organizational management resource allocation decisions that seem more critical for smaller than larger firms. The decision criticality derives from resource availability. This study will attempt to answer the following questions:

a. What is the applying degree of the information technology strategies at a Mobile communication sector in Iraq from the viewpoint of the study sample?

b. What is the nature of the relationship between information technology strategies and the sustainable competitive dimensions at a Mobile communication sector in Iraq?

c. Is there exist impact for applying the IT strategies in enhancing the sustainable competitive advantage in a Mobile communication sector in Iraq?

2.2. The Study Importance

This study is important since it deals with a very important subject, namely:

a. The conception of the information technology strategies, which are considered a modern concept applying in the management information systems (MIS).
b. The impact of applying the information technology strategies in enhancing the sustainable competitive in a Mobile communication sector in Iraq.
c. The results and recommendations of this study can help the decision-makers to develop the procedures that contribute to increase the interest level in information technology strategies.

2.3. The Study Objectives
The study aims to achieve the following objectives:
a. To identify the concepts of the IT strategies, and sustainable competitive advantage.
b. To investigating the application degree of the IT strategies in a Mobile communication sector in Iraq, and the evaluation level of the sustainable competitive advantage from the viewpoint of the study sample.
c. To identify the nature of the relationship between the information technology strategies and the sustainable competitive advantage.
d. To Measure the impact of applying the IT strategies in enhancing the sustainable competitive advantage in a Mobile communication sector in Iraq.

2.4. The Study Model
This study aimed to investigating the impact of applying the information technology strategies in enhancing the sustainable competitive advantage, and to achieve that was built the following model:
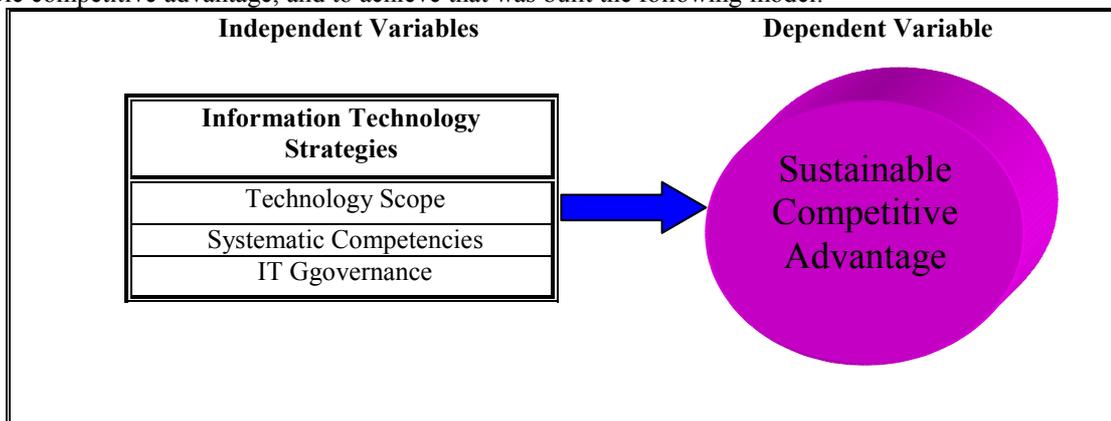

Figure 1: The Study Model

2.5. The Study Hypotheses
To achieve the study objectives, it has been putting some hypotheses as a null form (H_0), as follows:
H_{01}: There is no statistically significant relationship at the significant level ($\alpha \leq 0.05$), between each strategy of the information technology and the sustainable competitive advantage.
H_{02}: There is no statistically significant impact at the significant level ($\alpha \leq 0.05$), for applying the information technology strategies in enhancing the sustainable competitive advantage at a Mobile communication sector in Iraq.

3. The Conceptual Framework
This section addresses the conceptual of the information technology strategies and the sustainable competitive, as follows:

3.1. Information Technology Strategy
Information technology is a manifest element in the pursuit of competitive advantage by giving organizations new ways to outperform their rivals. It can help to gain cost leadership through internal process efficiency, production and inventory cost reduction, and better utilization of resources. As for the differentiation strategy, it offers opportunities to access new markets and customers, and introduce new horizons to produce differentiated products and services (Bruce, 1998). Also, IT can be used in the pursuit of the focus strategy; it provides firms with tremendous information about their customers' patterns and tendencies. However, The President of Information Technology component of the implementation activities of the organization, and the basic rule and in stimulating The change process for the preparation of the strategic structure, operations and management organization, And depends on how integrated into the Activities to strengthen the efficiency and effectiveness. And its positive impact extends to all government organizations, and private, And non-profit (Turban, Leidner,

Mclean & Wetherbe, 2006; Bouwman, Hooff, Wijngaert, 2005). In light of the above, confirms Mortagy, 2003 That the strategy of information technology, Launched to determine the electronic systems are supported and the mouthpiece of the organization's business strategy and vision for the future. The focus of King, 2003 The importance of developing a strategic information technology, and should contain the description of a future for the organization and the situation that must be it. It is noteworthy both Harast, Been and Mangold, 2002 That failure to adopt clear technical planning and implementation strategy based on the work of the organization and monitor the implementation of integrating information technology in the organization on a high index of high Risk and failure and the achievement of the losses during the implementation of information technology project. He says both Pearce and Robinson, 2007 That the speed of change in the external environment resulting from the rapid progress in innovation, Especially in the field of information technology and communication, spread impact on all organizations, And led to the imposition of pressure and clear regulations on the various public And private, which requires the preparation of a strategy, especially in information and communication technology to achieve the objectives of the organization. This is confirmed (Phillips, 2006) That the organization which seeks to preserve the continuity of their activities and performance and adapt to changes in the world, Must resort to the preparation of technical strategy and follow-up change in this area, As well as indicated by the (Marchewka, 2006) Information technology in enabling the organization to provide services and products and new procedures, and its role in Change the relationship between the organization and other organizations, suppliers and customers, as well as to the relationship between Employees in the organization, and stresses Marthucka to achieve a balance between IT strategy And strategy Altnzi L M ensure the success of the supply and application of technical regulations for the implementation of appropriate Activities of the organization.

3.2. Sustainable Competitive Advantage
Kay (1999) presents the notion of sustained competitive advantage in organizations obtained through relational architecture, reputation, innovation and strategic assets. At the core of Kay's model is the resource based theory of the firm which focuses on the internal attributes or the resources and capabilities of the firm where, in order for the resources and capabilities of a firm to provide superior performance, they must be (1) valuable in the sense of enabling a firm to exploit its environmental opportunities (and/or neutralize its threats), (2) rare among its current or potential competitors, (3) costly to imitate, and (4) without close strategic.
Porter's (1985) book titled 'Competitive Advantage' propelled the concept of competitive advantage into popular business vernacular. Porter did not articulate the definition of the concept but explained that a competitive advantage refers to organizational factors that enable a firm to outperform its competitors. As such, Porter argued that sustaining competitive advantage should be the central purpose of an organization's competitive strategy and that value creation means attaining the sustaining competitive advantage.

3.3. The Relationship between IT Strategy and Sustainable Competitive advantage
Sustainable Competitive advantage is a management concept that has been so popular in the contemporary literature of management nowadays. The reasons behind such popularity include the rapid change that organizations face today, Competitive advantage is the core of enterprise performance in the competitive market Generate competitive advantage boils down to the enterprise value created for customers: provide the same benefits and relatively low price, or unusual the benefits to compensate for premium and more than Competitive advantage, there are two basic forms: cost leadership, and the standard manifold is different and Industry structure and competitive advantage: Select and enter the appropriate industry value chain and competitive advantage: the cost difference of the value chain(Porter.1985), the complexity of the business environment, the impacts of globalization and unstructured markets, the ever changing consumer needs, competition, the revolution of information technology and communications, and the liberation of global trade. Therefore, when an organization is appropriately aligned, organizational structure, strategic planning and IT correspond to organizational core processes and objectives, ensuring competitive advantage. Furthermore, from RBV perspective, strategic IT alignment can be achieved when it presents a complex process that is heterogeneous and immobile. Strategic alignment can improve business performance (Sabherwal & Chan, 2001), maximize the return on IT investment, achieve the competitive advantage, and provide direction and flexibility to react to new opportunities (Avison et al., 2004). Porter's (1985) book titled 'Competitive Advantage' propelled the concept of competitive advantage into popular business vernacular. Porter did not articulate the definition of the concept but explained that a competitive advantage refers to organizational factors that enable a firm to outperform its competitors. As such, Porter argued that sustaining competitive advantage should be the central purpose of an organization's competitive strategy that creates sustainable value. However, based on the mixed findings of the linkage between IT spending and firm performance, some researchers in the MIS field suggest that IT-business alignment is a construct that can help organizations improve the positive impact of IT on organizational success (Luftman, 2000; Kearns & Lederer, 2001; Sabherwal & Chan, 2001; Croteau & Bergeron, 2001; Chan et al., 2006; Chan & Reich, 2007; Dong et al., 2008; Masa'deh et al., 2008). For organizations to stay competitive in a

dynamic business environment, they have to determine and understand how to manage IT strategically. However, regardless of a growing body of research, recent reviewers (Chan et al., 2006; Chan & Reich, 2007; Masa'deh, et al., 2008; Masa'deh & Kuk, 2009) have continuously called for more research into the factors that affect IT business alignment. Path: a competitive advantage driven Competitive advantage of strategic IT capabilities Stressed the role of competitive advantage drive and then to develop business strategies that support competitive advantage, the use of IT capabilities that support business strategy (Joe Peppard, John Ward, 2004).

4. Method and Procedures
4.1. The Study Approach
In the light of the nature of the problem of the study and its objectives, the researchers adopted a descriptive approach to describe the study sample responses and their estimates about the applying degree of the Information Technology Strategies, as well as evaluate them to describe the level of the Sustainable Competitive Advantage at a Mobile Communication Sector in Iraq. On the other hand, the study used the analytical approach to measure the impact of application the information technology strategies in enhancing the sustainable competitive advantage at a Mobile communication sector in Iraq.

4.2. The Study population and its Sample
The study population consists of all managers whom are working in a Mobile communication sector in Iraq, and numbered (221) manager. And the study sample consists of (110) manager, selected according to simple random sample method, by (50%) from the population.

Then the researchers distributed (110) questionnaire at members of the sample, were recovered (91) questionnaire, where the percentage of questionnaires recovered is (82.7%), and after review and audit questionnaires recovered, were excluded (6) questionnaires for not expire because of lack of accuracy of the information contained in each , and failure to respond to a number of items in others, and thus the number of valid questionnaires for statistical analysis (85) questionnaire, and the percentage of the number of valid questionnaires with respect to recovered is (93.4%).

4.3. The Study Tool
In order to achieve the objectives of the study, and after returning to the literature of the information technology strategies and sustainable competitive advantage, the researchers built a tool to measure the extent of the applying and its impact on enhancing the sustainable competitive advantage at a Mobile communication sector in Iraq. The tool consisted three parts, the first part included the personality variables of (gender, job title, qualification, and experience years), while the second part dealt with the information technology strategies, and included (15) items, distributed on the three dimensions by (5) items for each dimension, while the third part dealt with the dimensions of the sustainable competitive advantage and consists of (10) items. Has been used Likert Scale, to measure the applying degree of the information technology strategies, and the evaluation level of the sustainable competitive advantage. Was the adoption of a measure the information technology strategies, and the sustainable competitive advantage is divided into three levels, where it calculated by dividing the difference between the highest value (5) and the lowest value (1) at three levels, that is mean, the cut-off grade is $\{((1-5 / 3 = 1.33\}$. Thus, the three levels as follows:

Low applying degree	Medium applying degree	High applying degree
1-2.33	2.34-3.67	3.68-5

After that was measured the tool sincerity and its reliability, as follows:
a. Tool Sincerity
Has been verified honesty virtual (Face Validity) of the study tool, through display on a group of experts and arbitrators with expertise and knowledge programs of the information technology and competitive advantage in the Iraqi universities, and the goal of arbitration examining the extent of appropriate formulation of items linguistically, and the extent of items belonging to the variables of the study. Has been taking into account the observations of experts and arbitrators, as been reworded some items and delete the others from them.

b. Tool Reliability
The reliability coefficient was calculated for the tool (internal consistency of the questionnaire items) using (Cronbach Alpha) coefficient, and the reliability coefficient for the overall tool is (0.87), as shown in Table (1) the following:

Table 1. Results of Reliability (Internal Consistency of the Questionnaire items)

The Variables	No. of items	Cronbach Alpha	Stability Ratio
Technology Scope	5	0.79	79%
Systematic Competencies	5	0.72	72%
IT Governance	5	0.75	75%
Sustainable Competitive Advantage	10	0.80	80%
Overall Tool	**25**	**0.87**	**87%**

4.4. The Statistical Methods

After completion of the discharge resolution data in the computer, were used some statistical descriptive and analytical methods, which its available in the Statistical Package for Social Sciences (SPSS), in order to answer the study questions and test the hypotheses, and the statistical methods that were used for the purposes of statistical analysis of data are:

1. Coefficient of Cronbach alpha.
2. Means and Standard Deviations.
3. One-Sample Kolmogorov – Smirnov Test.
4. Variance Inflation Factor (VIF) Criteria .
5. Correlation Coefficient (Spearman).
6. Stepwise Multiple Linear Regression.

5- The Statistical Analysis of Data

The purpose of this section to present the results of statistical analysis of data subjects' responses of the study, which was reached through the use of Statistical Package for Social Sciences (SPSS).

Before answering the study questions and the hypotheses test, should be verified from the distribution of the data, and is the data distributed (Normal Distribution) or not? By test the following statistical hypothesis:

H_0: A questionnaire data is distributed normal distribution.

H_1: A questionnaire data is not distributed normal distribution.

To test the previous hypothesis was used (One-Sample Kolmogorov – Smirnov) Test, as shown in Table (2) the following:

Table 2. Results of (One-Sample Kolmogorov – Smirnov) Test

The Variables	No. of Observations	Calculated (Z)	P-value
Technology Scope	85	1.327	0.059
Systematic Competencies	85	1.485	0.054
IT Governance	85	1.353	0.057
Sustainable Competitive Advantage	85	1.127	0.158

Critical value of (Z) is (1.96) at the significant level ($\alpha = 0.05$).

The final results in Table (2), explained the calculated values of (Z) for all variables are less than the critical value of (Z) (1.96), as well as that all (P-values) are greater than the significant level ($\alpha = 0.05$). In the light of previous results will be **accept** the null hypothesis (H_0), which states that {A questionnaire data is distributed normal distribution}.

On the other hand, the researchers used the (VIF) criteria, to test the Multicollinearity between the independent variables (information technology strategies). And the Table (3) shows the results as follows:

Table 3. Results of (Variance Inflation Factors -VIF) Criteria

The Strategies	Tolerance	VIF
Technology Scope	0.765	1.307
Systematic Competencies	0.773	1.294
IT Governance	0.908	1.101

Critical value of (VIF) equals to (5)   ,   Whereas: VIF = (1/ Tolerance).

The results in Table (3), explained that there is no Multicollinearity between the strategies of the information technology which are (Technology Scope, Systematic Competencies, IT governance), which are confirmed by

the calculated values of (VIF) criteria, and all these values are less than the critical value of (VIF) criteria which is equal to (5).

After it was certained that the distribution of the data is (Normal Distribution), and there is no (Multicollinearity) between the (strategies of the information technology), it has become possible to test the statistical hypothesis (correlation analysis and the regression analysis).

To facilitate the display the study results, were classified according to the sequence of questions and the hypothesis contained therein, as follows:

5.1. The results related to study question
What is the applying degree of the information technology strategies at a Mobile communication sector in Iraq from the viewpoint of the study sample?

To answer of the study question, it has been calculated the means and standard deviations to evaluate the study sample about applying degree for each strategy of the information technology strategies.
The results in table (4), refers to the responses analysis of the sample study about applying degree of the information technology strategies at a Mobile communication sector in Iraq. The table includes the means and the standard deviations for all strategies**.**

Table 4. Means and Standard Deviations for the Information Technology Strategies

No.	The Strategies	Mean	Std. Deviation	Rank	Applying Degree
1	Technology Scope	4.14	0.58	3	High
2	Systematic Competencies	4.16	0.52	2	High
3	IT Governance	4.30	0.43	1	High
-	**Information Technology Strategies**	**4.20**	**0.38**	**-**	**High**

The results in Table (4), refers to increase the mean of the (**Information Technology Strategies**), where the mean (4.20) which is larger than the test criteria (3) of (5) on (Likert Scale), with standard deviation (0.38). Also, the results refers to inclination the strategies means of the (Information Technology Strategies) to rise from the viewpoint of the sample study in a Mobile communication sector in Iraq, with means (4.14, 4.16, and 4.30) respectively, and all means larger than the test criteria (3) of (5) on (Likert Scale). These results indicate to the possession of the managers a clear vision about the importance of each strategy, which indicates that the evaluation of the study sample for applying degree of the information technology strategies at a Mobile communication sector in Iraq was a (positive), and this means that the Mobile communication apply the strategies mentioned are (High) degree, from the viewpoint of the study sample in the mentioned sector.

5.2. The results related to test the hypotheses
Will test the hypotheses of the study related to the correlations and measuring the impact, by using the correlation coefficient (Spearman), and the Stepwise Multiple Linear Regression, respectively. The following is a detailed explanation of the results of hypothesis testing, as follows:
5.2.1. Test the first hypothesis
H_{01}: There is no statistically significant relationship at the significant level ($\alpha \leq 0.05$), between each strategy of the information technology and the sustainable competitive advantage.
To test the previous hypothesis, was used the correlation coefficient (Spearman), as shown in Table (5) the following:

Table 5. Correlation coefficients (Spearman) between each strategy of the information technology and the sustainable competitive advantage

The Variables	Technology Scope	Systematic Competencies	IT Governance	IT Strategies
Sustainable Competitive Advantage	0.497**	0.438**	0.345**	0.556**
P-value	0.000	0.000	0.001	0.000

The results in Table (5), explained that there exist a positive correlations and statistically significant at the significant level ($\alpha = 0.05$), between each strategy of the information technology and the sustainable competitive advantage. Which is supported by the calculated (P-values) for correlation coefficients, and all the

values are less than the significant level ($\alpha = 0.05$), this means that will be **reject** the null hypothesis (H_{01}).

5.2.2. Test the second hypothesis

H_{02}: There is no statistically significant impact at the significant level ($\alpha \leq 0.05$), for applying the information technology strategies in enhancing the sustainable competitive advantage at a Mobile communication sector in Iraq.

To test the previous hypothesis was used the Stepwise Multiple Linear Regression, as shown in the Table (6):

Table 6. Results of Stepwise Multiple Linear Regression Analysis to measure the impact of the information technology strategies in enhancing the sustainable competitive advantage

Information Technology Strategies	Unstandardized coefficients (β)	(t) value	P-value	Standardized coefficients (Beta)
Constant (β_0)	2.040	5.686	0.000	-
Technology Scope	0.270	3.466	0.001	0.365
Systematic Competencies	0.210	2.427	0.017	0.255
Correlation coefficient (R)	0.532	Determination coefficient (R^2)		0.283
(F) value	16.216	(F) Sig.		0.000

The results in table (7) show that:

a. Validity of multiple linear regression is proven, this is asserted by the value of calculated (F) which is (16.216) and that the statistical significance value (P = 0.000) is less than the significant level ($\alpha = 0.05$).

b. The statistical significant of regression coefficients (β) for two strategies (Technology Scope, and Systematic Competencies) is proven. Therefore, there is a statistically significance impact at the significant level ($\alpha = 0.05$) for the above strategies in enhancing the sustainable competitive advantage at a Mobile communication sector in Iraq. Depend on the statistical significance values (P-values) (0.001, and 0.017) respectively, and all the values less than the significant level ($\alpha = 0.05$). This means that the null hypothesis (H_{02}) is **rejected.**

While, the strategy (IT Governance) was not proven the significance, which means that the mentioned strategy has no impact in enhancing the (sustainable competitive advantage) at a Mobile communication sector in Iraq.

c. The value of Determination coefficient (R^2) which is (0.283) shows that the internal strategies in the regression model (Technology Scope, and Systematic Competencies) interpret (28.3%) of changes that happen in the (sustainable competitive advantage), while the remaining percentage (71.7%) is attributable to another variables that have not been entered into the multiple linear regression model.

d. The values of the standardized coefficients (Beta) calculated for the strategies (Technology Scope, and Systematic Competencies) which are (0.365, and 0.255) respectively, show that increase of the mentioned strategies by a unity standard deviation will lead to improving the (sustainable competitive advantage) at a Mobile communication sector in Iraq by (36.5%, and 25.5%) respectively.

6. Conclusions and Recommendations

In this section will be presentation some conclusions, and includes the most important recommendations of the study in light of the results, as follows:

6.1. Conclusions

The study reached to a number of conclusions, among them the following:

a. The results related to the responses analysis about the **(Information Technology Strategies),** refers to increase the mean of the (Information Technology Strategies), where the mean equal to (4.20) from the viewpoint of the sample study in a Mobile communication sector in Iraq.

b. Also, the results of the responses analysis refers to inclination the strategies means of the (Information Technology Strategies) to rise from the viewpoint of the sample study in a Mobile communication sector in Iraq. These results indicate to the possession of the managers a clear vision about the importance of each strategy, which indicates that the evaluation of the study sample for applying degree of the information technology strategies at a Mobile communication sector in Iraq was a (positive), and this means that the Mobile communication apply the strategies mentioned are (High) degree.

c. The results of the correlation analysis, explained that there was exist a positive correlations and statistically significant at the significant level ($\alpha = 0.05$), between each strategy of the information technology and the sustainable competitive advantage.

d. The results of the stepwise multiple linear regression analysis, explained that there was exist statistically significant impact at the significant level ($\alpha = 0.05$), for the application of the information technology strategies in enhancing the sustainable competitive advantage of a Mobile communication sector in Iraq.

While, the strategy (IT Governance) was not proven the significance, which means that the mentioned strategy has no impact in enhancing the (sustainable competitive advantage) at a Mobile communication sector in Iraq.

6.2. Recommendations

In light of the results, the study recommended the following:

a. Working to increase the attention of all employees in a Mobile communication sector in Iraq, for all strategies of the information technology in the mentioned Sector, Specifically (IT Governance) strategy.

b. Necessity working to specialize the workshops held on a regular basis, which is to clarify the importance of applying the strategies of the information technology and its impact in enhancing the sustainable competitive advantage of a Mobile communication sector in Iraq.

c. The study recommends that a comparative studies between the Iraqi Communication Sectors which it applying the information technology strategies, in order to identify the variations that may appears in the communication sector's performance and sustainable competitive advantage, and to determine the weaknesses that are believed to hinder the process of applying the information technology strategies.

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