

Investigation about the Influence of Information Technology and Communication on Formulation and Implementation of Strategic Plans, Case Study: Kish Free Zone Organization

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Abstract

The purpose of this research is to evaluate the influence of information and communication technology on formulation and implementation of strategic plans in Kish free zone organization. The statistical population of this study as a descriptive correlation type research includes all managers, experts, and organization staff of Kish free zone, 50 people. To determine the sample size, Cochran formula was used by available sampling. The data were gathered by the researcher questionnaire and from statistical tests we employed correlation and simple linear regression by SPSS. The results represented that information and communication technology is effective on codification and in different levels implementation of strategic plans and the plan components.

Key words: Information and communication technology, Codification and implementation of strategic plans

INTRODUCTION

Due to the increasing complexity of activities, and changing and turbulent environment of today's world, managers are faced with a lot of difficulties and neglecting these issues will bring about irreversible consequences. There were many successful organizations that lost their leading positions and were eliminated from the competition as a result of unconsidered strategies and disregarding the environment that emphasizes on this fact. In recent years, many reasons have made the managers to understand this fact that traditional planning is unable to solve today's problems. This fact emerged apparently after twenty century as evolution of management (Khorasani and Almasifard, 2017). Therefore, as a necessity using strategic planning has been raised in organizations and communities (Brison, 1993). Every organization with the ability of proper strategic

planning based on a good management will be successful in practice, and when the strategy of organization is improper, it doesn't have a great chance for stable perpetuity in today's changing condition despite within the organization case success or sectional efficiencies (Shani, 2004). Therefore, we can say that in terms of health and survival of the organization, codification and proper implementation of strategies are extremely important. If managers and other involved forces in codification process and implementation strategy aren't enough aware of effective factors on this process and the reason of their failure in practice, and don't use the offered theoretical frameworks of the experts, then the successful implementation of strategic plans will be difficult or impossible. Some of these important motives are the effects of information technology in work places because the rapid growth of technology has affected all aspects of organizations such as identification of all strengths and weaknesses based on internal factors, the identification of opportunities based on external factors and identification of threats based on external factors. Scientists and theorists have agreement on this concept that the usage of codification and implementation of strategic plans requires various abilities that the most important of them is the information technology of organizations (Torabi, 2011).

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Therefore, according to the importance of information in functions and activities of the organization, information is required to be circulating properly.

So, different kinds of information systems in different areas of organizations will be established. Information technology includes some titles such as computer, telecommunication devices and electronic devices that all help in the storage processing, and publication of organizational information such as oral, text, message and numerical information. In another word, information technology includes some tools and devices used for the exchange of information in organizations. The information technology is known as different types of computers, soft ware, hardware, communication networks that connect two computers, public and private networks, combination of computers and information technology and the systems that make powerful computers. If we consider the information technology as a triangle, its three tops are information systems, automation, and communication, the relationship between these parts means information technology (Sagheb Tehrani and Tadayon, 2007).

Therefore, in the codification of strategy, first, the usable strategies must be listed, and then we can choose better strategy using information technology mentioned in strategic management discussion, and based on the obtained results of analyzing the situation of organization. In this level, middle and even low level managers should be involved to be motivated. For implementation and codification of strategy, the following dimensions should be utilized:

- Organization structures match with strategies
- synchronization of skills and abilities of the organization at the level of implementation
- creating organizational culture match with the new strategy of organization

In this regard, the researcher looks for answer to this question, whether Information and Communication Technology (ICT) is effective in codification and implementation of strategic plan?

BACKGROUND OF THE RESEARCH

Jester (1987), in his article, entitled using key factors of success in planning, has evaluated the role of success key factors in strategic planning. As a main challenge of managers in successful implementation of strategic plan, he points to the identification, selection and supervision on information. In another part, he cognizes entries approach for identification of strategic plans through the key factors of success and relates the key factors of

success to internal and external conditions of company (Khorasani, 2014), for example the customer acceptance on comparative moves or those who have competence or human or financial resources. In this article, it's concluded that proper isolation on the progress of important and strategic issues of the company is necessary for leaders and managers. This article offers a framework for companies to build a bridge on senior management slot and successful strategy implementation.

Hid and colleagues (2000), in their article, entitled evaluating the barriers of successful implementation of strategy codification, they studied non- considering the barrier factors of successful implementation of strategic plans. They concluded that successful implementation of strategic planning requires focusing on issues such as information and education systems, allocation of resources, formal structure, personnel management, political and cultural factors of organization. Rick (2007), in his article entitled key factors of success in strategic planning and how to prevent ten common mistakes in strategic planning, discussed some issues such as identification and determination of realistic goals, clarification of the needs for achieving the goals, making time and required staffs for implementation of strategic plans, as well as ten common mistakes on this issue.

Bernez and colleagues, in their article entitled key factors of success of strategy implementation, have evaluated the process of strategy codification to implementation in Latin American companies. This article has focused on the 5 dimensions of effective analyzes on strategy implementation. These include the process of strategy codification, systematic implementation, following and controlling the implementation, management of implementation, senior management, staffs and finally collaborative supervision that leads to the change. This study assumes that by systematic development of these 5 mentioned dimensions, definite progress for the successful implementation of strategic plans is achieved. This research considers some factors such as explicit and clear strategy, organizational culture; employee participation, organizational structure, periodic implementation pursuit of senior management, leadership support in the implementation of strategy, proper and motivated human resources as success factors of strategic plans implementation. The conclusions of this research are as following:

Explicit strategy: %90 of more successful companies has a necessity for successful implementation of business strategy in company.

Employee participation: among the majority of successful companies, %98 of them considers active involvement of

a significant number of high-level managers in strategy codification as a very important factor for successful implementation of strategic plans. Employee participation is a key factor of success in the implementation of the strategy.

According to the experience of author to the participation of employees, generally it's determined as more than %80 of important ideas in final strategy of the companies and they commit to the final consequence of what comes.

Culture: %86 of more successful companies consider the culture as an important part of strategy versus %55 of unsuccessful companies. This result represents that values and culture of company aren't considered as given preconditions by successful companies but considered as factors in line with predetermined management of company's strategy.

Organizational structure: %86 of successful companies have considered organization structure design reflecting strategic capabilities and company's preferences as major and central definition of success. This percentage has been less successful (%60) in business companies.

Executive periodic pursuit of senior manager: even though %79 of more successful companies consider this issue as an important part, high percentage of less successful companies (%85), consider this issue too. This result represents that periodic pursuit is considered in both companies.

Proper and motivated leadership of management and staffs: the results represent the importance of this dimension which is the second important dimension of success in the strategy implementation. Most successful companies admit that the support of general director or CEO (chief executive officer) is a key part of 3 mentioned dimensions; pursuit of proper and motivated personnel, as well as proper management team for implementation of efficient strategy are effective factors of success.

Leadership support in the implementation of strategy: %91 of successful companies versus %80 of less successful companies, have evaluated the support of CEO and leadership as an important part of executive strategy.

Motivated and proper human resource: from the total %93 of successful companies (versus %55 of less successful companies), motivated and proper human resource is a very important element in choosing strategy.

Keili (2009), in his article entitled important factors of the success of strategic planning, pointed to 10 important

factors of the success of strategic planning. These factors include employee participation, CEO support, clear explanation of the needs, proper planning, real expectation, stages of the project, proper facilities, ownership vision and clear goals, great effort and focus on the required issue. Oreali and colleagues (2010), in the article entitled the state of management and leadership issues and the role of manager in setting executive strategy, points to the role of leadership as an organization key element in providing and implementing strategic plans. He states that strategic understanding of leadership on the performance of organization requires simultaneous evaluation of different levels of leadership in the organization. He also declares that in different levels, the leaders affect on strategic plans and their implementation and in this regard, he has evaluated the relation between leadership setting and executive strategy in a big health care organization. Then, he has concluded that successful implementation of strategic plans requires the process and tangible and intangible resources which has occurred in two levels and two areas. The first level is mainly on explanation of new and proprietary strategy of tangible resources to support the focused change and in the second level, emphasize has been on changing nature of interactions between patients and doctors.

Bochoor (2010) released an article entitled "possible model for estimation of success planning of strategic information systems." The findings of research have supported the proposed model practically and experimentally: the combination of approach and SISP text for estimation of impact on the basic relation between SISP KSF and its success and the best prediction for long term successes of SISP process, was according to the triple interactions between KSF SISP and its approach and domain. Moreover, specific combination of SISP approach and SISP text was used for increase or decrease size of the paradox of planning.

Doft (2009) explains that these days the organizations consider the information technology as a tool by which they can enhance the performance of their staffs and adapt to the changes. In order for organizations to improve the performance of their staffs, they should pursue and encourage their staffs to use technology in line with the speed of changing technology. The findings of Doft represent that every organization can use information technology to make necessary coordination between vertical and horizontal structure of organization and support the activities.

As a result of his research, Kooper (2008), states that information technology can respond to the new responsibilities by creating new structures and new organizational duties.

THEORETICAL FOUNDATION OF THE RESEARCH

Concept and Definition of Strategic Management

Strategic management is a set of administrative activities and decisions that determines long term performance of an organization and it includes codification, implementation, evaluation and controlling the strategy. Therefore, strategic management points to the supervision and evaluation of opportunities and environmental threats by emphasizing on the identification of strengths and weaknesses of the organization (Tomas and Hunger, 1987).

In another word, strategic management is an organized response or a serious responsibility in general management domain, so that it can guarantee the stable prosperity of the organization and prevents sudden events, connects the organization and environment, and positions (Ansof, 2000).

Strategic Planning

Strategic planning is a systematic method that confirms and supports the strategic management process. Strategic planning contains all actions that lead to the definition of goals, and determining appropriate strategies in order to achieve those goals for the whole organization (Brisson, 1995).

Strategic planning is a formal process of definition of requirements for the most efficient results (Kafman et al., 2003).

Strategic planning concludes a framework for the implementation of strategic thinking, and conducting operation to achieve certain and planned results (Amstrang, 2005). Strategic planning is determining organizational goals, and making decisions on the comprehensive operational plans that lead to achieving long term and vital goals of the organization in a competitive environment. Also, outline of activities and long term missions of the organization are determined along with it (Moshabaki, 2002).

The system of strategic planning is responsible for the codification of integrated and consistent plan and facilitation for long term conformation of organization with the changes of external environment. There should be investment on the strengths and measures to eliminate weaknesses. When there're some environmental properties associated with the organization, the process of comprehensive planning can lead to better performance of the organization to be introduced as a method and a path toward the codification and choosing strategies (Feghhi, Farahmand, 2009).

The Codification of Strategy

The codification of strategy includes determining the mission of organization, identifying some factors that threaten the organization in external environment or make some opportunities, determination of long term goals, different strategies and choosing specific strategies for achieving the goals must be considered (Haghighi, 2008). The process of strategy codification is a dynamic and continuous process with participation between different levels of organization and combination of experimental, intuitive, scientific, logical, and contingency factors is always changing (Feghhi, Farahmand, 2009).

Basic measures of strategy codification as a logical activity include identifying opportunities and threats in the organization, and considering certain degree of potential risks on the existing solutions (Kowin and colleagues, 2003).

THE CONCEPT OF COMMUNICATION AND INFORMATION

What is Information?

There is various definition of information and some of them are based on semantic and some others of definitions are based on quantity. Some of these definitions are:

- * According to the definition of ALA glossary, information includes all ideas, realities, and all innovations of the mind which is recorded, published, distributed any way, formally or informally, documented or undocumented.
- * In a definition, based on the information theory, information is a quantity measured by Bits, and is defined according to the possibilities of appearing symbols. (This definition doesn't care about the meaning)
- * In informatics, information includes each set of digital letter elements or symbols with clear definition and can be exposed to the automatic processing
- * Information is processed data; the receiver can interpret and understand. It should be notified that the person who sends the information, changes it. Since the process of thinking and understanding is different in people, the message can mean differently. To change the data to information, it should be analyzed, summarized and processed (Sagheb Tehrani and Tadayon, 2001).

What is Communication?

- * Communication is the process of bilateral exchange of information with the others and information is any thought that the managers tend to exchange bilaterally. In general, communication means that a person sends a message to one or some people and all those people understand a common message (Feizi, 2004).

- * communication is transfer and exchange of information, concepts, meaning and feeling between people directly or indirectly (Alvani, 2006).
- * communication is a process that connects organisms. This organism may point to two friends talking to each other, newspapers and their readers, the country and its postal and telephone system.

In every communication, there're 4 main elements:

- A. Sender, B. receiver, C. message, D. communication environment

The purpose of communication is transferring message (symbol) through communication environment between receiver and sender (Fathian and Mahdavi nor, 2008).

THE RESEARCH HYPOTHESIS

*Information and communication technology is effective on the codification of strategic plans.

METHOD OF THE RESEARCH

Evaluating the effect of information and communication technology on the codification and implementation of strategic plans in this research has been measured in Kish free zone. The information and communication technology is independent variable and implementation of strategic plans is dependant variable. In this research the method of gathering

data is by distributing questionnaire between the staffs of Kish free zone organization. Available sampling was used and 50 staffs were selected. Some questionnaires were prepared for testing the research hypothesis. Also for gathering data of the subject, the library procedure and taking note from articles, thesis and existing documents in universities have been used. Therefore, according to the conducted researches, the hypothesis was formed and after gathering data through questionnaire, it was analyzed by SPSS software.

NORMALITY TEST

In order to evaluate the normality of distributing variables of the research, Kolmogorov- Smirnov test is used.

In Table 1, the significance level is more than 0.05 and it indicates the normal distribution of variables. So, parametric tests were used.

THE FINDINGS EXPLAIN

The Table 2 indicates that there's a meaningful and positive relationship between communication and information technology and the codification of strategic plans ($r=0.63$, $p< 0.005$) and there's also a meaningful relationship between the score of communication and information technology and implementation of strategic plans ($r=0.29$, $p> 0.005$).

REGRESSION MODEL PROCESS

First Hypothesis

The correlation between independent variables and dependant variable is 0.635, the coefficient of determination is 0.403, and this value indicates that

0.40 percent of strategic plan codification relates to the information technology. This amount doesn't consider degree of freedom, so adjusted coefficient of determination is used that equals 0.40 percent. Since the statistic value of Watson camera is in the standard distance of 105-205, so we conclude independence of residuum. According to the mentioned indicators, the model has the required competence.

In Table 3, the meaningfulness of regression is calculated by ANOVA test.

Table 1: The results of normality test of variables distribution

Variable	Information and communication technology	Codification of strategic plans	Implementation of strategic plans
Z	1.050	0.976	0.894
Significance level	0.220	0.297	0.299

Table 2: Correlation results of information and communication technology with codification and implementation of strategic plans

Row	Variables	1	2	3
1	Communication and information technology	1		
2	Codification of strategic plan	0.63**	1	
3	Implementation of strategic plans	0.29**0	71/0	1

Table 3: Correlation between variables (Regression competence indices)

Watson camera	The standard deviation of error	Adjusted coefficient of determination	The coefficient of determination	The correlation coefficient
2.103	2.62603	0.402	0.403	0.635

According to Table 4, the meaningful level calculated for statistic is 0.000 and it indicates the meaningful regression in the level of 0.99 percent.

According to Table 5, we can conclude that dependant variable will change by upgrading a unit of independent variable to the coefficient. In another word, by increasing a unit of information technology, 0.229 unit of success deviation of strategic plan codification will increase.

The results of impact coefficient test related to the regression coefficient also admit the impact of independent variable on dependant variable.

Second Hypothesis

The correlation between independent variables and dependant variable is 0.296, the coefficient of determination is 0.021 and this value indicates that 2 percent of the success changes of strategic plan implementation are related to the technology of information. This value doesn't consider degree of freedom, so adjusted coefficient of determination is used for this purpose and it is 0.01 in this test. The statistic value of Watson camera is in the standard distance of 1.5 to 2.5, so we conclude independence of residuum. According to the mentioned indices, the model has the required competence.

In Table 6, the significance of regression is calculated by the ANOVA test.

Table 4: ANOVA test

Model	Sum of squares	Degree of freedom	Mean squares	F	Sig
Regression	1781.121	1	1781.121	258.281	0.000
Remaining	2634.294	48	6.896		
Total	4415.414	49			

Table 5: Regression impact coefficient

Variables	B	Standard error	Beta	t	Sig
Fix	4.908	0.434		11.313	0.000
Codification of strategic plan	0.757	0.047	0.635	16.071	0.000

Table 6: Correlation between variables (regression competence indices)

Watson camera	Standard deviation of error	Adjusted coefficient of determination	The coefficient of determination	The correlation coefficient
1.698	2.31693	0.019	0.021	0.296

According to Table 7, the calculated meaningful level of the statistic is 0.000, and it indicates the meaningful regression in level of %0.99

According to the results of Table 8, we can conclude that by upgrading one unit of independent variable to the coefficient, the dependant variable will be upgraded. In another word, by increasing one unit of information and communication technology, 0.296 units will be increased to the standard deviation of strategic plan implementation. Also, the results of the impact coefficient test related to regression coefficient approve the impact of independent variable on dependant variable.

FUTURE SUGGESTIONS

1. Studying on the infrastructures at different scientific and research levels of information technology related to the codification and implementation of strategic plans in organizations.
2. Detailed and comprehensive study on the situation and infrastructure of communication and information technology in organizations based on the standards and conformed indices.
3. Evaluation and study of the best strategies of the effectiveness of communication and information technology on the codification and implementation of strategic plans.

Table 7: ANOVA test

Model	Sum of squares	Degree of freedom	The mean squares	F	Sig
Regression	44.412	1	44.412	8.273	0.004
Residuum	2050.647	48	5.368		
Total	2095.060	49			

Table 8: Regression impact coefficient

Variables	B	The standard deviation	Beta	t	Sig
Fix	12.403	0.383		37.630	0.000
Implementation of strategic plan	0.120	0.042	0.296	2.876	0.004

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