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# AN INTEGRATED MODEL OF IT STRATEGY AND ITS ALIGNMENT WITH ORGANIZATIONAL STRUCTURE, CULTURE AND BEHAVIOR STRATEGIES

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**ABSTRACT**
Today, information is known as a strategic resource along with other organizational resources (financial resources, human resources, equipment and technology). Thus, technologies related to the provision and use of information have gained a strategic importance for organizations. Organization is a system in which all components must have the necessary cooperation and synergy. In this regard, the alignment and coordination among strategies, especially between IT strategy and organization strategy is one of the important issues for the effectiveness of the organization. It can said that today the strategic alignment of IT with organizational factors is one of the greatest challenges for organizations. For the purpose of achieving a competitive advantage, organizations use different approaches to create strategic alignment. The organizational structure is an effective approach which makes possible the strategic alignment of information technology applications and business needs in addition to optimal management of information technology. The purpose of this study is to investigate and present an integrated model of IT strategy and its alignment with the organizational structure, behavior, and culture strategies. The findings indicate a significant relationship between IT strategy and organizational structure, behavior, and culture strategies.

**KEYWORDS**: information technology, strategy, organizational structure, organizational culture

## INTRODUCTION

New technologies have become an integral part of everyday life. They affect all aspects of our lives and are a component of human development as long as they work effectively. New technologies are all irresistible, infinite and unstoppable; but what matters is to take control of the evolutions and impacts of this technology. According to studies by Venkatraman at MIT in 1991, organizations have been facing a critical stage in the use of technology in the late nineties and early twentieth century. He developed "IT-Induced Business Reconfiguration" model which helps managers to redefine the role of technology in their business (Austin, and Jalali Lavassani, 2007). Thus, studying the technology and evaluating its position in the industry and organizations are both considerable issues. The reason is that they are very important and require a particular management policy as well as strategy and decision-making process. Investigating IT studies suggests that everyone looks at the technology through their own vision, and thereupon, there are different interpretations to its definition. For instance, some consider it as a science and others as an ability. European Industrial Research Management Association (EIRMA) defined technology as the means by which knowledge, science and discoveries are applied to produce goods and services (Helsdingen, 2013). The phenomenon which today is referred to as information and communication technology (ICT) is not only the product of a new technology in specific areas of the organization, but it is also the result of an evolution that its effects encompass all aspects of the organization. Information technology plays a strategic role in the contemporary knowledge-based organizations and it is known as an organizational enabler in the global competition. Because of the critical role of information technology in organizations, the strategic alignment of this technology with the business is very important (Mohammadi, 2007). Strategies for the design and implementation of ICT in large organizations is one of the concerns and issues of academic experts and executives; and despite the increasing importance of this issue, approaches and models to define and implement strategies of information technology in organizations are not sufficiently comprehensive and do not provide a vision for a better understanding of the strategic management of information technology and ways to develop and operationalize it in organizations, as it deserves. In this paper, the importance of aligning IT with the business is explained and the studies on IT strategy, organizational factors, and models raised in the area are discussed. Then, the relationship between the issue of alignment among IT strategies and organizational factors is described and the research hypotheses are examined.

### Theoretical Framework

Examining the views of strategic management experts shows that each of them look at the strategic management from one of the scientific, quantitative, or process approaches. Some explain the framework of strategic management based on the limited decision making model which is considered as a scientific approach. In most models of strategic

management, examining the internal and external environment conditions (contingency approach), and the interaction between organizational elements in order to comply with the environment (systemic approach) have been taken into consideration. It should also be noted that in today's dynamic world, the effective application of information technology is one of the requirements of organizations success. In this regard, it is required to develop an information technology strategic plan. The strategic attitude towards advanced information technology refers to understanding the strategic benefits of this tool and the ability of the new science to make major changes in institutions and organizations, since the structure of the information technology effects on all the communicative structures and objectives of organizations. It should be noted that any strategy, in addition to responding to environmental conditions, should be aligned with the strategies of other levels and the strategy of corporate-level (Elmi, 2007).

In today's dynamic economy, IT is a vital tool for companies in achieving a sustainable competitive advantage (Duhan, 2003). The volume of investments in this area has had a considerable increase in the last decade. But since the majority of investments in information technology are not aligned with business strategies and interests, they have led to the conflict and reduction of efficiency and effectiveness (Biriaei, 2008). In fact, in recent years, the field of information technology has grown partly and less attention has been paid to its enabling role in business. This attitude has made the alignment of IT and business as one of the main concerns of senior managers and despite the fact that managers considered the issue of alignment during the last 20 years, this goal is still far from being achieved (Manian, 2009). The concept of organizational structure was first introduced in 1987 by Zachman. The term organizational structure is composed of two parts, namely, and the structure and the organization. In general, it can be said that the structure, is the explanation of a holistic and rational look to investigate a complex system (Majidi, 2004), and the organization, is a set of continuous work processes and related to individuals, departments, information and technology (Fat'holahi, 2004). Combining these two concepts, we are faced with the concept of organizational structure. Organizational structure is a strategic information asset which describes the purpose of organization, information and technology to achieve this goal. It also explains the use of the new technology to respond to changes in the objectives of organizations. Indeed, the organizational structure is a framework for the development and management of information technology resources for achieving organizational goals. To evaluate the organizational structure project, the frameworks for the evaluation of maturity of enterprise architecture are used. Lack of alignment, in addition to belittling the strategic role of information technology in organizations (Mousavi & Rahrovani, 2006), will be followed by great damages such as: reducing the effectiveness of information systems, lack of information integration, lack of timely support of IT for business processes, lack of timely support of IT for organizational decisions, etc. Such costs and the consequent economic pressures necessitate the support of IT and the use of an approach for the integration of business and information technology.

**Information Technology**

Today, in most parts of the world, people have easy access to technology. The increasing development of industry and technology has turned today's economy to post-industrial economy and beyond it, i.e. cyberspace economy (Helsdingen, 2013). An economy which has relied on the technology and its tools, thought and brain, instead of manpower; and this is the superior mind which discovers new ways for humans through presenting new questions and ideas and leads them to the main path from among the many crowded ways. Of course, it goes without saying that in case of lack of knowledge, sometimes technology may lead to the wrong roads and cause inefficiencies which is debatable by itself (Pablos, 2003). Today, information is known as a strategic resource along with other organizational resources (financial resources, human resources, equipment and technology). (Mohammadi, 2007). Thus, technologies related to the provision and use of information have gained a strategic importance for organizations. The information and communication technology (ICT) enhances human abilities; however such developments do not often improve human life in various aspects on their own. Special mechanisms and strategic master plans are required in order to achieve the significant goal of using ICT. The most important program which is necessary for achieving these goals is the IT master plan or comprehensive plan. Adapting IT planning in organizations with their main objectives is one of the challenges raised in organizations that seeks to increase their efficiency. The purpose of the strategic IT planning is to align the applications of information technology with business strategies of the organization (Pike, 2005). George L. Parsons proposed 6 public relations strategy which provide a broad management framework to guide the use of information technology in the company. Each of 6 different strategies plan an approach by which the company can create policies and information technology goals, evaluate projects, allocate resources, and determine the performance standards. The extent to which companies have consciously chosen each of the 6 strategies is variable. Some companies

do not have any specific strategy (Abeysekera & Guthrie, 2004). In these companies which use a sampling strategy, IT applications often fail to meet the needs of the company and they have an ineffective performance due to the fact that senior managers, users and IS internal department do not share a common framework for activities. Parson's 6 strategies are: centrally planned- leading edge - free market - monopoly - scarce resource - necessary evil. It can be said that each organizational structure has its own characteristics; our approach must be adapted with these characteristics. As noted, in the postindustrial and virtual era, the trading process and policies of organizations and their performance is effected by the new technology and science; however, managements and structures can benefit from effective dynamism and growth which follow their own principles (Elmkhah, 2011).

The experiences in using information technologies and systems in Iran show that these organizations have passed the early phases of using the information technology and they are entering secondary phases. In other words, they require a strategic planning for the design and deployment of information technologies and systems in order to use the benefits of information technology in the public and private sectors. For this reason, they need to be more familiar with the various aspects of such planning (Dulewicz & Higgs, 2012).

**IT strategy**

Examining the views of strategic management experts shows that each of them look at the strategic management from one of the scientific, quantitative, or process approaches. Some explain the framework of strategic management based on the limited decision making model which is considered as a scientific approach. In most models of strategic management, examining the internal and external environment conditions (contingency approach), and the interaction between organizational elements in order to comply with the environment (systemic approach) have been taken into consideration. It should also be noted that in today's dynamic world, the effective application of information technology is one of the requirements of organizations success. In this regard, it is required to develop an information technology strategic plan (David & Hanger, 2004). The strategic attitude towards advanced information technology refers to understanding the strategic benefits of this tool and the ability of the new science to make major changes in institutions and organizations, since the structure of the information technology effects on all the communicative structures and objectives of organizations (Wolstenholme, 2010). It should be noted that any strategy, in addition to responding to environmental conditions, should be aligned with the strategies of other levels and the strategy of corporate-level. Every organization has a competitive strategy. This strategy may be obviously formed through the planning process and be created, gradually and implicitly, by the activities of the various executive sectors in a company. IT strategic planning is the process of identifying a portfolio of computer-based applications that will assist an organization in executing its business plans and consequently realizing its business goals. As mentioned, the alignment between IT and business is essential for achieving organizational goals. Duffy formulates this alignment as follows: "the process and goal of achieving competitive advantage through developing and sustaining a symbiotic relationship between business and IT" (Helsdingen, 2013).

**The strategic alignment between IT and organization**

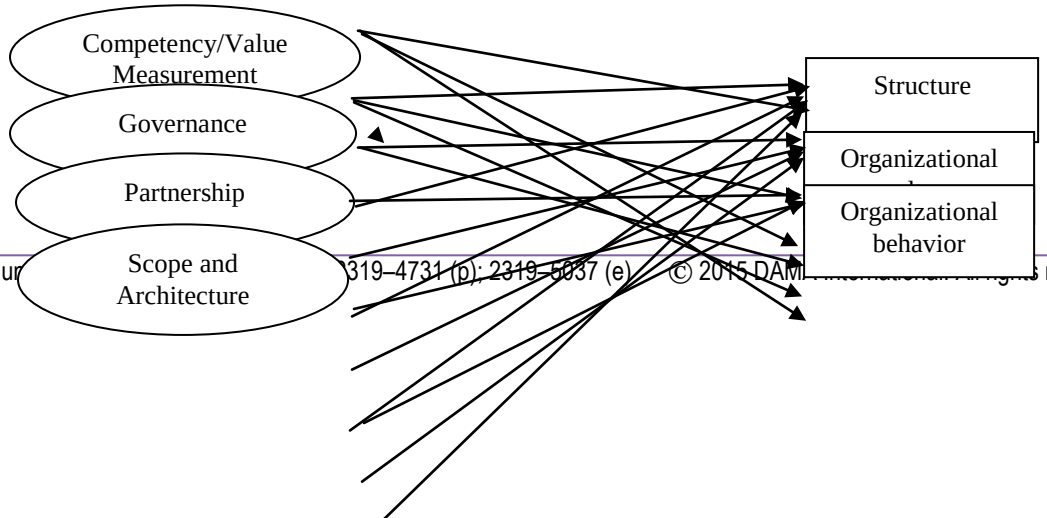
There are numerous terms and definitions to describe the strategic alignment between business and IT. Strategic alignment, symmetry and ... (Jam Parzami, 2008); however, all of them focus on the integration and alignment between IT applications and objectives of organizations (Gutierrez, 2008). In this area, not only should the information technology programs reflect the objectives, mission and strategies of business, but also the business programs should be a reference to IT program, IT applications, and its specific technologies. Many models and frameworks have been developed to explain the nature of strategic alignment, each of them presenting factors and dimensions for IT alignment (Jones et al, 2015,). One of the strategies for optimal management of IT in large organizations and the creation of IT-business alignment is the implementation of enterprise architecture project (Biriaei, 2008). In the well-known Clinger-Cohen Act (CCA), the main purpose of enterprise architecture implementation in US federal agencies and bureaus is stated as achieving the organization's strategic goals and information resources management objectives simultaneously. The strategic alignment requires tools. One of these tools is an enterprise architecture (Pablos, 2003). Enterprise architecture offers an integrated and comprehensive definition of key elements in the organization and the relationship among them. In other words, enterprise architecture displays a systematic picture of the organization, business processes, data, and IT which is considered as an infrastructure for the strategic alignment. In fact, the enterprise architecture is a tool for the integration of information systems, linking the business strategy with business processes, linking business objectives and missions with IT objectives and missions, integration of inter-organizational and outer-

organizational systems, and finally, the optimization of business processes. Generally, the benefits of implementing an enterprise architecture for today's organizations are divided into two major categories: a) business-related benefits and b) IT-related benefits. Development and promotion of architecture throughout its life cycle is evaluated by the maturity model. Promotion of organization to higher levels of architecture maturity leads to greater alignment of organization's IT strategy and its business strategy.

The alignment of IT strategy and business strategy in the organization refers to the alignment of IT plan and business plan (Luftman, 2012). In order to achieve IT/business strategies alignment, IT and business plans should examine the limitations of business and IT environment. Alignment achievement is a dynamic evolutionary process; achieving alignment in the organization requires maximizing the alignment amplifiers and minimizing the barriers to alignment (William, 2013). Strategic alignment is a very broad subject. But the question that arises is how organizations can achieve this alignment. Companies can reach stable competitive advantages through the internal alignment of IT with the resources and infrastructures. IT/business alignment models usually consists of multiple variables which measure the organization's internal and external alignment level. Henderson and Venkatraman model considers the cross-domain relationships in the internal and external alignment. Haes and Van Grimbergen studies on the relationship between IT-business alignment, IT supervision actions, structures, processes and relational mechanisms indicate that more mature supervisory processes and structures lead to greater alignment between IT and the internal structure of business in the organization. Luftman conducted a detailed study on this issue and found that different levels of alignment between these two strategic subjects are measurable based on a several levels. These levels include: communications, competency/value measurement, governance, partnership, scope and architecture, skills (Pike, 2005).

Usually, the business departments of organizations have little knowledge about IT and its values and capabilities. Given the current dynamic environment in organizations, sharing the knowledge across the organization is one of the most important factors. In many cases, the IT department uses the terms to express its value to the business department which are not comprehensible (David & Hanger, 2004). Standards of IT department are different from those of business department in the organization. In other words, IT terms and expressions should be offered in an understandable format for the business department. Moreover, the process of allocation of IT resources and the decision-making power of IT department are among the important factors for the strategic alignment. IT managers must get involved in the strategic planning of business and have the necessary authority in the area of IT in organizations. However, these decision makings should be based on business priorities. IT department should have a decisive role in the formulation of business strategies. In order to achieve the business alignment maturity, trust and honesty in the partnership of other factors such as the partnership of other departments in the formulation of business strategies, ensuring the availability of individuals who support the IT activities in the organization, and sharing of risks and rewards of IT activities are vital. The partnership should be such that IT can create changes in organization's business processes and strategies. The scope and architecture dimension is used to assess the maturity of IT and the strategic alignment in the organization. It examines that to what extent the organization performs the process and scope items (William, 2014). Skill standards include all matters related to human resources. Topics such as education, salary, performance feedback, employment opportunities, etc. are among the factors that shape the social and cultural environment in the organization. Another issue which is examined based on this criterion is whether or not the organization is ready to make changes with regard to the dynamic environment of the organization. In this paper, after reviewing the literature on organization and IT strategy, Luftman's alignment maturity assessment model (2000) along with the organization maturity assessment model are used. Based on analyzing the models and views, the research hypotheses and conceptual model can be presented as follows: the conceptual model of the alignment between IT strategy and strategies of organizational structure, culture and behavior is:



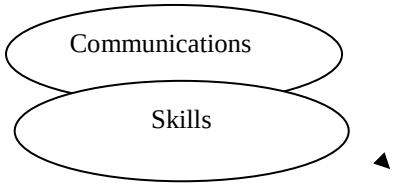



Figure 1. Integrated Model

According to the presented model in this study, the following hypotheses are proposed:

Hypothesis 1: There is a significant relationship with between communications and organizational structure.
Hypothesis 2: There is a significant relationship with between competence/value measurement and organizational structure.
Hypothesis 3: There is a significant relationship with between governance and organizational structure.
Hypothesis 4: There is a significant relationship with between partnership and organizational structure.
Hypothesis 5: There is a significant relationship with between scope and architecture and organizational structure.
Hypothesis 6: There is a significant relationship with between governance and organizational structure.
Hypothesis 7: There is a significant relationship with between communications and organizational culture.
Hypothesis 8: There is a significant relationship with between competence/value measurement and organizational culture.
Hypothesis 9: There is a significant relationship with between governance and organizational culture.
Hypothesis 10: There is a significant relationship with between partnership and organizational culture.
Hypothesis 11: There is a significant relationship with between scope and architecture and organizational culture.
Hypothesis 12: There is a significant relationship with between skills and organizational culture.
Hypothesis 13: There is a significant relationship with between communications and organizational behavior.
Hypothesis 14: There is a significant relationship with between competence/value measurement and organizational behavior.
Hypothesis 15: There is a significant relationship with between governance and organizational behavior.
Hypothesis 16: There is a significant relationship with between scope and architecture and organizational behavior.
Hypothesis 17: There is a significant relationship with between partnership and organizational behavior.
Hypothesis 18: There is a significant relationship with between skills and organizational behavior.

## MATERIALS AND METHODS

### Research Methodology

Since the purpose of this research is to offer an integrated model of IT strategy in alignment with organizational strategies, it is an applied research in terms of purpose. Also, in terms of data collection method, it is a non-experimental research, and more specifically, a correlational research. To ensure the content validity, research indexes for the desired structures were designed based on previous studies and adapted to the current situation of systems in our country, while considering the views of experts and professors. The 5-point Likert scale (strongly disagree - strongly agree) was used for all the analytical questions in the questionnaire. The statistical population of the study consisted of 244 experts, middle managers and senior executives of Mellat Bank's subsidiaries throughout the city; this amount was obtained based on Cochran formula of sample size determination (95% confidence level and margin of error, 0.05). Data from the questionnaires were analyzed by SPSS software. Data obtained from the questions of the questionnaire were analyzed by Pearson's correlation in order to test the hypotheses; and, the relationships between the main variables were identified. As mentioned earlier, the questionnaire is the primary tool for the data collection. The questionnaire in this research consisted of two parts; in the first part, the demographic characteristics of responses were obtained; the second section consisted of 27 questions that measured the research variables. In the second part of the questionnaire, respondents were asked to show their level of agreement on each of the indexes through the 5-point Likert scale. Also, the content validity was used for assessing the validity of the measurement instrument (questionnaire) and Cronbach's alpha was used to estimate the reliability of the factors in the structural model. The confidence coefficient (0.90) obtained by this formula indicates the high reliability of the questionnaire.

**Data Analysis**

In this study, the data which were collected and classified through a questionnaire were analyzed at 95 percent confidence level using SPSS software. In all statistical analyses in this study which were performed using Pearson's correlation, the significance level was considered 0.05. Conclusions and statistical inferences of all the research hypotheses were based on the general rule of correlation coefficient. Accordingly, if the obtained significance level was smaller than or equal to 0.05, the null hypothesis is rejected and the research hypothesis stating that there is a relationship between two variables is confirmed.

**Table 1. Table of correlations among all variables**

| | | Structure | Culture | Behavior |
|---|---|---|---|---|
| Communications | Pearson correlation | 0.321 | 0.255 | **0.364** |
| | Sig (2-tailed) | 0.000 | 0.000 | **0.000** |
| Competency/Value Measurement | Pearson correlation | 0.255 | 0.449 | **0.578** |
| | Sig (2-tailed) | 0.000 | . | **0.000** |
| Governance | Pearson correlation | 0.364 | 0.593 | **0.340** |
| | Sig (2-tailed) | 0.000 | 0.000 | **.** |
| Partnership | Pearson correlation | 0.420 | 0.484 | **0.572** |
| | Sig (2-tailed) | 0.000 | 0.000 | **0.000** |
| Scope and Architecture | Pearson correlation | 0.320 | 0.491 | **0.466** |
| | Sig (2-tailed) | 0.000 | 0.000 | **0.000** |
| Skills | Pearson correlation | 0.420 | 0.484 | **0.320** |
| | Sig (2-tailed) | 0.000 | 0.000 | **0.000** |

The analysis of the correlation among the main factors of the study (organizational structure, culture, and behavior and IT strategies) showed that the highest correlation was observed between communications and organizational behavior, and also between governance and organizational culture.

**CONCLUSION**

In this paper, an integrated model of IT strategy in alignment with organizational structure, culture and behavior strategies is presented. It can be said that each organizational structure has its own characteristics; and our approach must be adapted with these characteristics. As noted, in the postindustrial and virtual era, the trading process and policies of organizations and their performance are effected by the new technology and science; however, managements and structures can benefit from effective dynamism and growth which follow their own principles. In general, it can be stated that a structure is the explanation of a holistic and rational approach for investigating a complex system. Thus, the organizational structure is a framework for the development and management of IT resources to achieve organizational goals and it has a bilateral relationship with the IT strategy. In other words, IT strategy is influenced by the organizational structure and culture and consequently, it can effect on it. Therefore, the alignment between these elements can effect on the dynamics of organizations. The results of analyzing the hypotheses indicated that there is a significant relationship between IT strategies and organizational structure, culture and behavior strategies. Also, through the analysis of the relationships between different variables of the study, the highest correlation was observed between communications and organizational behavior, and also between governance and organizational culture. In other words, much attention should be paid to communications in IT in order to achieve a higher alignment with the organizational behavior strategy. Moreover, in order to establish a higher alignment with the organizational culture strategy, much attention should be paid to the governance in IT. The results of this research were similar to the findings of Chen (2010) and Champs (2009). Thereupon, it is recommended that the commercial and noncommercial organizations consider factors such as IT governance and architecture in order to achieve alignment with the inter-organizational strategies.

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