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Case Report

Studying the factors affecting IT-based management in the organization

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ABSTRACT

One of the main reasons of distinguishing organizations from each other is the information technology utilization degree in organizational activities. Information technologies include new managerial tools that help organizations to achieve their business objectives. The aim of this study is to investigate the factors affectingIT in the organization.In this paper, reviewing the existing scientific comments and research conducted previously, this issue has been discussed and Based on the findings obtained from previous studies about the most important factors that play a role in the IT-base management, the factors such asorganizational resources, organizational knowledge, processes and management structure, values and goals of the organization and so on, can be noted that all of them affect the adoption and application of technology-based management in the organization.

Key words: management, information technology, organization

INTRODUCTION

It can be claimed thatno technology like information technology have not been ableto create communication among different scientific fields in the history of the emergence of different technologies. Information technology as a link,appliesall of the modern sciences to provide required information for professionals, industries, organizations and finally all the people in different parts of society in the shortest time and the best possible way. So that, today, the information technology passes the world's borders and brings nations together in a global society (Poorkiani and Farahbakhsh, 2012). Paul Saettlerstated that technology is the art and practical skills touse scientific knowledge. James Finnknows technology including processes, systems, management, human control mechanisms and the wayof dealing with problems, feasibility oftechnical solutions and economic values in addition to the machinery(Ebrahimi, 2013). In a definition which seems to be more comprehensive than the others, the technology is the systematic application of behavioral and physical science concepts and other sciences to solve problems (Rezaei, 2007). In other words, ICT technologies are set oftechnologies whichfacilitate the communication and information dissemination process by the electronic tools in today's world (Anonymous, 2003). The twenty-first centuryis the world ofdomination of modern information technology and the history swiftness in terms of the scientific, economic, cultural and politicalspeedy changes and plurality. In other words, nowadays the information technology has been widespread and changed the world (Mazraei Joshari Jvshry, 2009). In this era, theorganizational information technologyand information-based technologies is considered as a basic requirement of any organization (Almmry et al., 2015).

With the advent of new technologies in the field of information, a lot of information problems have beensolvedand the ways for achieving the latest news and information in the shortest time have been facilitated in the organization. In this aggressive perspective, organizations must continuously maintain market competitiveness, increase productivity, workforce changing, creating global business environment, and development of electronic trade to reconfigure and adjust them. Studies have shown that one of the most important reasons for organizations to differentiate from each other is the degree of using IT by them in the organizational activities (Tsiknakis &Kouroubali , 2009).

In other words, organizations that have used information technology in the widely and optimized manner, has sustainable competitive advantage and are more distinguished than the other organizations in the stakeholders' point of view. Based on research that was conducted between 1980 and 1995 among 100 companies, these organizations have spent too much money in order to change (Barzeh Kar et al., 2013). It is believed that information technology can enhance organizational capabilities (Benamati & Lederer, 2008). In such an era, in order to survive, organization needs people who show an appropriate response to environmental challenges and do not afraid to share knowledge and information and advocate their personal and team beliefs (Soltanian Bojnoord, 2015). On the other hand, the development and propagation of information and communication technology in the last decade leads to increase the competitiveness of organizations, and access to information technology has become the main factor of survival in this competitive environment.The experts talk about more fundamental changes that can transform the present era as the most important transition period in human history (Rahmanseresht and Kazemi, 2010). Some estimates show that from the beginning of 1980, about half of the total investment made in the organizations has been in the field of information technology. Therefore, information technology is known as the powerful factor for social and economic changes. Changes towards technology development together with the changes in the global economy lead to a structural shift and fundamental impact in the countries' economy. The fundamental changes, to a large extent, have resulted in the production on the path of technology development, by reducing transaction costs, and in other words, have led to a new economy (Alidoosti, 2006). The importance of this issue prompted the Europe Union define the ambitious goal of "creating competition in the world, based on knowledge-based society." in Lisbon in March 2000.Studies show that even small and medium-sized companies could benefit from information technology and e-commerce, but to take advantage of these benefits and success in using these technologies need to meet certain conditions (Seyal et al., 2004). In other words, success in the application of information technology is contingent and is a function of the conditions of using information technology. That is why a lot of research has been conducted regarding factors affecting the application of information technology in organizations. The results of this study indicate that the factors affecting the application of technology, depends to the context in which it is used; For this reason, previous research results cannot be reliably used in new fields; also, numerous factors can be considered in the application of information technology (Rahmanseresht & Kazemi, 2010).Studies and documents show that many factors affect dependently and independently the organization's performance, and it can besaid that information technology is one of the important factor that has a dramatic effect on this issue and could have an important role in evaluating the performance (Brown and Lockett, 2004), reduction of administrative bureaucracy, process redesign, affecting the transformation of public institutions (Anderson & Reeb, 2004), organization financial performance, the performance of commercial firms and equity, andaffecting sales dimensions, cost reduction and return on assets (Zhu, 2004). Using information technology as the main reason to support management decision-making process is possible through the provision of information. The extensive research that was

started in 1980, has studied Information technology as a powerful competitive tool in the organizations. The value of information technology as a competitive factor in order to increase productivity, improve profitability, customer orientation and marketing is visible for all but it isnot only referred as a solution to overcome business problems and supporter of business operations of the organizations, but also its impact onproviding services and customer needs, constantly improve the quality, competitiveness, product improvement, effectiveness, communications, reduce costs, reduce the time of order, and decision-making is clearto all (Rahmanseresht and Kazemi, 2010).

The successful implementation and use of IT systems in the organization are influenced by various factorsand understanding these factors in utilizing information technology leads to increase accuracy and accelerate the utilization of this technology (Holt et al., 2007). Today, organizationslive within very dynamic and active environment and they are influenced by the internaland external factors that affect their performance (Kijsanayotin et al., 2009). Implementation of information technology in the organization's management system, often requires changes in work tasks and processes simultaneously or before applying the new technology and it seems that the lack of utilization and adaptation of information technology to the users' needs,is mostly as the main reason to failure that is expressed in many projects (Barzehkar et al., 2013).

Today, technology is replacing repetitive jobs. These tools cause drastic changes in the types of skills required for individuals and members of organizations. Obviously, to face such a challenge, the staff should be empowered; it means that they need to grow in any aspectand it is also requiredthat all relevant organizational factors affecting implementation of the information technology, interact together in order to representthementioned systems.

The present article reviews some theories and results of previous research to examine the factors affecting IT-based management in the organization.

Theoretical literature and research background

Evanisco and Cimberlihave proposed three dimensions of effective use of technology in an organization as follows:organizational characteristics, organizational leadership qualities. Flasher and TorrentUZaki have explained characteristics of the factors affecting the deployment of information technology in the form of a concept consistingthree models and has called it as the OTE model: organizational, technological, and environmentalfactors. Dewett & Jones (2001) also define factors influencing the utilization of IT-based management in the organization including structure, size, culture, and intra-organizational relationships (quoted by Rahmanseresht and Kazemi, 2010).

Other expert (Kashyapa & Sanjeev, 2004, quoted by Rahmanseresht and Kazemi, 2010) classify factors affecting the performance and management of information technology systems as follows: 1) all aspects related to IT system such as tools and software programs; 2) organizational: all organizational factors that influence information technology processing; 3) personal: the personal life of each person, his colleagues, concerns, and what occurs in his workplace(quotedby Rahmanseresht and Kazemi, 2010).

Tuunainen points out that the presence of adequate standards for the use of information technology as one of the external factors is the most effective factor in IT-based management in organizations (quoted byRahmanseresht&Kazemi, 2010).

Turban et al (2002) also believe that two main factors affecting utilization of IT-based management are security, and infrastructure. In general, a number of studies conducted in the context of factors affecting IT-based management, have studied some of the applications of this technology. Other studies have dedicated special attention to these factors in the subject, organizational, or environmental domain. Technological innovation is as a meansto create changes in organizations, and a process which involves creating, developing and implementing new ideas and behavior. Rogers introduces five dimensions of factors affecting

adoption of such innovations in the organization as follows: user attributes, tasks characteristics and required operations, the features related to innovation, organizational, technological and environmental characteristics (OTE) (quoted by Rahmanseresht and Kazemi, 2010).

Al-Mamary et al. (2015) and Al-Mamary et al (2014) also admitted that leadership and management styles can playa role in the IT-based management, so that the democracy-basedleadership styles have a positive and significant role in the IT-based management.

Ziemba & Kolasa (2015) in their study about the factors affecting the IT-based management have achieved these results: 1) top management support; (2) organizational processes; (3) project planning in the organization.

Also Walczuch et al (2000) believe that clear and concise standards, rules and supportive regulationsprovidethe perfect context for effective information technology management. In general, it can be said that as long as the underlying IT infrastructure in an organization does not properly placed in an organization, it will not be possible to achieve IT-based management effectively.

Leverick (1997)attributed the huge investments in the IT-based management in a number of different factorsInclude the pressures of internal and external environment for using information technology or the inherent attractiveness of the technology.

Chan and Swatman stated that organizational readiness and ability to experience the technology is among the factors affectingthe use of IT-based management (Chan and Swatman, 2000).

Glazer (1997) believes that IT-based management system is not a miracle, but what causesits usefulness, isits usage rate. As a result, knowledge and experience of using itare two factors influencing the utilization of technology.

But some studies also show that the longer the history of the organization is, the less the desire to use IT-based management andto put it simply, there is an inverse relationship between the history of the organizations and their willingness to effective use of IT-based management.According to a report published by the Department of e-commerce policymaking, most of the small organizations have limited financial resources and they are unable to commitexpensive and irreparable mistakes. MacGregor and Vrazalic know high cost of using information technology and the difficulty of measuring its return on investment as the factors affecting the limitation of technology-based management (MacGregor and Vrazalic, 2005).

According to Rahmanseresht and Kazemi (2009) until the management of an organization (as the center of its strategic decisions) tend to have a set of Information Technology Management, the organization as a whole will not go towards using the technology.

Leverick (1997) in his study, proposes a detailed explanation of the factors affecting the IT-based management which including senior management support, support from the department of information technology in the organization and theunit authority in support of information technology.

Riqueleme believes that the lack of skilled personnel and lack of consumer access to the Internetare among the factors affecting IT-based management. Riqueleme also believes that the shortage of technical skills and knowledge among employees and IT professionals is by itself an important factor in using IT-based management (Riqueleme, 2002).

Stockdale and Standing also concluded that effective factors can be divided into four groups: 1) the resources and knowledge; 2) the level of staff skills in information technology; 3) security concerns; 4) Organizational Readiness (Stockdale and Standing, 2004).

Factors affecting the IT-based management

In a general conclusion, it can be said that the simple structure of technology system In use, skilled manpower, an effective strategic plan for using this technology, mental readiness of senior managers, appropriate context to at the national level for electronic business and most importantly, the organization financial resources, are among the factors affecting the IT-based management in the organizations. It should be noted that providing all these factors

in an organization isa very difficult task and requires planning and forecasting.

Hence, the summary of the factors affecting the IT-based management in organizationbased on the available scientific and research background will be as follows:

- Organizational position of Information Technology Director
- The personnel who arefamiliar with information technology
- Willingness and tendency to share information and knowledge across the organization and in other words, the organizational readiness
- The cost of using information technology in the organization
- The organizational financial power for supporting information technology
- The history of existence a comprehensive program of information technology in organizations
- Other organizational resources
- Organizational knowledge and knowledge management in the organization
- Strategic planning in the organization
- Organizational levels
- Management Structure and leadership style

Discussion and conclusion

Almost all the scholars and experts of management science have accepted in their scientific research and comments that IT is the essential pillar of organizational development in micro and macro levels. Therefore, organizations should include plans for effective IT-based management in their strategic plans. Development of IT-based management concept as a key, important and fundamental issue is one of the most essential steps that should be considered in the organizations and in the field of management. Accordingly, IT-based management in any organization depends on several factors that by recognizing them, the use of this technology will be accelerated. The aim of this study is to investigate the factors affecting the IT-based management in the organization, including organizational resources, knowledge, processes, management structure, values and goals affecting the use of information technology. Meade et al (2009) findings also have shown that these factors have an essential role in IT-based management.

Also by reviewing available scientific comments and past research, it can be said that the organizations resources is considered as one of the factors affecting the IT-based management within an organization. It seems that no matter how an organization is developed in terms of available resources such as financial and human resources, adequate funding for the deployment of new technologies, As well as organizational strategic planning, it will be more effective onmanagers" attitude towards implementing information technology more effectively. Moreover, the existence of organizational strategic plan helps managers tend more to use IT in the organization. Organizational knowledge organizations is also considered as a factor affectingIT-based management; In this way, it can be concluded that however,organizational knowledge is not a technology-driven concept, but using appropriate technology, in order to achieve knowledge management projects arises as a need.Hence, some organizations are always looking for knowledge management systemsin orderto implement the knowledge management projects. The danger threatens organizations in this way, is purchasing technology solutions, without a proper understanding of the capabilities and capacities of the organization and the potential points for knowledge technology products. An organization should define appropriate technology solution regarding three key elements of knowledge management namely people, process and content. Therefore, knowledge technology tools should seek to appropriately identify the organizational requirements. So, the more the organizational knowledge is properly used in an organization, managers tend more to use information technology; because, this technology will facilitate access to organizational knowledge and knowledge management. These findings are consistent with previous studies such as Armenakis (2007).

Also, the easier and shorter the organizational processes and communication are, and the organization has lower organizational levels orin

other words, we have a more horizontal organization, employees will communicate more easily with top executives and they will participate more effectively in decision-making; So, the employees of the organizations with the minimum amount of tasks division, more informal organizational processes and more organic structure, show more flexibility dealing with environmental and technological changes; at the same time,the management will also show more interest for using information technology. This finding is consistent with Tsiknakis & Kouroubali (2009).

Previous reviews of the scientific and research findings also showed that the management structure and leadership style that managers adopt, can dramatically affect the usage of new technologies such as IT which is consistent withthe findings of previous studies such as Marchewka et al. (2007) and Jimmieson and colleagues (2008), Al-Mamary et al. (2015) and Al-Mamary et al (2014).

Finally, to improve actions and successful implementation of information technology in organizations, further understanding of the various influencing factors such as social, human, organizational culture, facilitating the working relationships and enhancing communication and reducing bureaucracy, strategic planning of information technologyin the organization towardsits correct application,are particularly important. Also, the management approaches that managers adopt, structure and human resourcescan affect the IT utilization in the organization.On the other hand, the existence of a regular strategic plan for utilizing information technology is necessary for organizations and to an appropriate level can accelerate the application of this technology in the organization.

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