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Providing a Framework For The Adoption of Cloud Computing Technology

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Abstract

Today, cloud computing technology is expanding and improving, and more services are added to this technology day by day. The aim of the present research is to provide a framework for the absorption of cloud computing based technology. The current research is a developmental-applicative goal and in terms of the research method, it is an exploratory mixed method. The statistical samples of the research were selected from managers, experts and professors in the field of technology management of Tehran universities for in-depth interviews. In this research, the researcher collected the required data by conducting in-depth and semi-structured interviews with 15 members of the community. After conducting a comprehensive analysis of the data, a total of 19 main components (macro category) and 77 sub-components (sub-category) and according to the paradigm model of foundation data theory by following a systematic approach in the form of causal conditions, the main phenomenon central), strategies, background conditions, intervening (intermediary) conditions, and consequences were presented and summarized by the researcher, and all the resulting macro categories were presented and summarized in the form of the table below. The findings of the research showed that "technology absorption" as a central category based on the causal conditions "organizational structure, attention to transparency, behavioral factors, intellectual property, innovation cycle and empowerment" and through response strategies, information transfer, Technology leadership, information security management and target selection are achieved by considering (as a model field) and lead to the realization of the consequences of organizational productivity, improvement of service quality and client satisfaction.

Keywords: Absorption of Technology, Cloud Computing, Bank.

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Introduction

The capacity to develop innovations that affect both domestic and international markets is critical to strengthening competitiveness in the face of increasingly globalized competition. Higher-impact innovations typically require a set of fundamental and complex knowledge that can only partially be found within the firm. Due to the increasing volume and complexity of potentially useful knowledge, the task of absorbing it is less simple. Adapting to this reality requires a change in routines to increase internal capacities, which also makes it possible to improve the conditions for recognizing opportunities outside the company. The learning process that firms engage in in order to adapt to those conditions can be seen as expanding their absorptive capacities. Cohen and Levinthal (1990) define absorptive capacity as the firm's ability to recognize the value of external information, absorb it, and then use it for business purposes. Essentially, this skill can include knowledge acquired in formal R&D departments, in the company's manufacturing environment, or simply from the people who are part of it.

Cloud computing is one of the newest and most challenging emerging technologies, due to the fact that it has many diverse advantages such as: the availability of computing resources and software services when needed. With significant advances in information technology infrastructures, the emergence of this technology has had a greater impact on the business world. It is also the newest emerging paradigm in distributed computing that provides hardware infrastructure, platforms, and applications as a service. The current research aims to provide a framework for the adoption of cloud computing technology.

Theoretical foundations and research background

In today's turbulent world, where environmental changes are growing more and more and technology and knowledge changes are increasing its momentum, the sustainability of organizations is only with continuous innovations. An important issue in the field of foreign direct investment is the absorption of technology and knowledge that foreign companies bring to host countries. Implementing joint projects and concluding various transnational contracts is one of the appropriate solutions for technical and managerial empowerment of domestic companies, and this solution is especially important for developing and less developed countries. But more benefit from this process requires the provision of the necessary conditions by the host country (government) in general and by the production companies in particular. One of these requirements refers to the existence of a level of capabilities in economic enterprises, which is referred to as absorption capacity (Liu and Khing, 2017).

Haq Rusta (2015) in a research on "the effect of technology adoption on the performance of Ektisadnovin bank employees". The purpose of this research is the risk-taking of banks in accepting technology and its impact on the performance of bank employees. In inferential statistics, indicators are first determined according to the desired dimensions, after checking the reliability and validity of the questionnaire, the normality of the data was checked using the Kolmogorov Smirnov test, then using the Student's t test, Pearson's coefficient, and the model Structural equations and SPSS and Lisrel software were used to check the assumptions. Side effects have a positive effect on technology acceptance, side effects have a positive effect on

entrepreneurial leadership, absorptive capabilities have a positive effect on technology acceptance, resource readiness has a positive effect on absorptive capabilities. Entrepreneurial leadership has a positive effect on attraction capabilities. Adoption of technology has a positive effect on performance (organizational performance, employee performance).

Research method

In terms of the developmental-applicative goal, and in terms of the research method, it is an exploratory mixed method. According to this method, the researcher is trying to determine an uncertain situation that has no tools to measure and no framework to guide in this research. Qualitative data is given more importance and weight, that's why qualitative data is collected first. And by using this initial identification, it is possible to formulate hypotheses about the occurrence of the studied phenomenon, after that, in the next step, the researcher can test the hypotheses through the collection of quantitative data. The implementation method is sequential, starting with the collection of qualitative data and analysis in phase one, then the collection of quantitative data and analysis in phase two is based on phase one. In general, researchers who use mixed methods use quantitative and qualitative data to answer a question or a set of questions. A researcher-made questionnaire is used to measure the variables of the model. This questionnaire is formulated and designed based on the conceptual model extracted from the qualitative data.

In this research, using Spss 16 and Lisrel 8.5 software, various methods of descriptive and inferential statistics have been used to analyze data and test hypotheses.

Results

"What is the optimal framework for absorbing cloud computing-based technology?"

To answer the main question of the research, the researcher must first identify the adoption of cloud computing based technology from the point of view of the interviewees as well as all the conditions and factors affecting this issue. The final results of three coding techniques in 6 important dimensions of the school's social responsibility model in six dimensions of causal conditions, main phenomena, contextual conditions, intervening factors, strategies and consequences of implementing strategies based on Strauss and Corbin (1998) It was closed. In this direction and after conducting a comprehensive analysis of the data, a total of 19 main components (macro category) and 77 sub-components (sub-category) and according to the paradigm model of foundation data theory by following a systematic approach in the form of causal conditions , the main (central) phenomenon, strategies, background conditions, intervening (intermediate) conditions, and consequences were presented and summarized by the researcher in the form of the following table.

Recruiting capacity is affected by both internal and external factors. Internal factors include the previous knowledge base, the capacity to recruit people, the level of education and academic qualifications of employees, the diversity of their fields, the specific role of goalkeepers, organizational structures, and the level of communication. Cross-functional, organizational culture, bank size, organizational inertia, investment in research and development and human

resource management. External factors are a combination of the external knowledge environment and the bank's position in scientific networks. Yang et al. (2017) found that banks cannot achieve success from integrating and using foreign knowledge unless they have a high level of absorptive capacity. Transfers (in technology transfer, for example) occur, are studied and find a convincing relationship between absorptive capacity and factors such as penetration channels for foreign technology, organizational interaction mechanisms, and research and development resources. In addition to the relationship between absorptive capacity and R&D, the currently available developing literature expands the concept to include, among other things, employees' skills and motivation (Minbava and Michailova), prior knowledge (Lin et al.), knowledge communication is the similarity between organizational structure and joint research communities. Exploratory learning is a fundamental aspect of any organization's capacity for diversity and adaptation (McGrath). Van den Bosch and his colleagues have identified three characteristics in knowledge absorption: productivity, scope and degree of flexibility. Efficiency in knowledge absorption refers to how specific banks integrate and exploit knowledge from the perspective of cost and economies of scale, and scope refers to the breadth of bank knowledge that it draws. Flexibility refers to the extent to which a bank can access additional and reconfigure existing component knowledge. Van den Bosch and colleagues argue that the characteristics of flexibility and scope seen in knowledge absorption are strongly related to organizational knowledge structures that are exploratory in nature, while productivity, which is more closely related to adaptation, leads to exploitation.

Conclusion

In the age of electronic information and communication, every organization of any size is facing rapid changes and developments and must plan and manage its activities in such a way that it can succeed and survive in a turbulent environment and a highly competitive market. According to the concept of strategic planning, this requires the use of this type of planning. Because, on the one hand, it is forward-looking and organizes appropriate actions by predicting future developments. On the other hand, it tends to the environment and has a close relationship with it, and in this sense, it can quickly learn about the changes in the environment and show an appropriate and quick reaction. In recent decades, the technological developments in the world that follow the exponential growth pattern have been very fast. It was there that a deep gap emerged between developed and developing countries. In order to reduce the technological gap, it requires more than importing technology, learning how to produce more efficiently. What can be important is the power and capacity to absorb technology; Because the huge gap between the imported technology and the existing technology level in the society, the possibility of internalizing it faces problems. Recent research on newly industrialized countries considers the importance of technological changes as well as local technological capabilities in the industrial success of such countries.

Based on this, "absorbing technology" as a central category based on the causal conditions "organizational structure, attention to transparency, behavioral factors, intellectual property,

innovation cycle and empowerment" and through response strategies, information transfer, technology leadership, Information security management and targeting is achieved by considering (as a model field) and leads to the realization of the consequences of organizational productivity, improvement of service quality and client satisfaction.

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