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Market Orientation Toward Learning Orientation, Competitive Advantage and Providing a Model to Evaluation of Organizations Readiness to Adoption of Information Systems

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ABSTRACT

Nowadays, business and information technology are inseparable and separation of these two categories in Organizations seem impossible. Information systems as one of the new tools of management will contribute Organizations to improve their business. The aim of this paper is to providing a model to evaluation of Organizations Readiness to adoption of information systems. This study, Collected Expert Views of two organizations and investigated various indicators of each component based on a model. By using this model can be determine level of readiness in an organization to implement Management information system and presented policies and strategies to Reduction of weaknesses.

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INTRODUCTION

Nowadays, with aid of the information technology, data have been useful and efficient. Studies show that information technology will increase the organization's ability and accelerated in administrative procedures and increase Staffing and managing efficiency, also improve the rate and quality of decision-making with increase the control on their management information systems. But the essential. Of any organization is choosing the most appropriate system according to their conditions.

This article conducted in order to provide and implement a model based on questionnaire results and offer some suggestions based on investigation

1. Definition of Information System:

Information system is a combination of hardware, software, infrastructure and trained personnel organized to facilitate planning, control, coordination, and decision making, that consists of a designed system to produce, collect, organization, storage, retrieval and promote of information in an institution, organization, or any other area of community.

2. Definition of Management Information System:

An organized approach to the study of the information needs of an organization's management at every level in making operational, tactical, and strategic decisions. Its objective is to design and implement procedures, processes, and routines that provide suitably detailed reports in an accurate, consistent, and timely manner.

In a management information system, modern, computerized systems continuously gather relevant data, both from inside and outside an organization. This data is then processed, integrated, and stored in a centralized database (or data warehouse) where it is constantly updated and made available to all who have the authority to access it, in a form that suits their purpose.

In fact, these kind of Information systems processes the information generated by the Transaction processing systems (TPS) and means that in the new form and reports that to the manager. (Fig. 1)

3. Concept of Management Information System:

The concept of the MIS has evolved over a period of time comprising many different facets of the organizational function. MIS is a necessity of all the organizations.

The initial concept of MIS was to process data from the organization and present it in the form of reports at regular intervals. The system was largely capable of handling the data from collection to processing. g. It was more impersonal, requiring each individual to pick and choose the processed data and use it for his requirements. This concept was further

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modified when a distinction was made between data and information. The information is a product of an analysis of data. This concept is similar to a raw material and the finished product. What are needed are information and not a mass of data. However, the data can be analyzed in a number of ways, producing different shades and specifications of the information as a product. It was, therefore, demanded that the system concept be an individual- oriented, as each individual may have a different orientation. Towards the information. This concept was further modified, that the system should present information in such a form and format that it creates an impact on its user, provoking a decision or an investigation. It was later realized then even though such an impact was a welcome modification, some sort of selective approach was necessary in the analysis and reporting. Hence, the concept of exception reporting was imbibed in MIS. The norm for an exception. [1]

4. The Physical Components of Management Information Systems:

Important factors of a management information system:

Hardware: technical equipment, Processing hardware, storage and retrieval of information.

Software: system software and application software.

Database: no redundancy, data transparency, on time updating, setting standards and Database access policies.

Human Resources: programmer, administrator of information systems, IT advisors. (Fig. 2)

5. The Importance of Feasibility:

Each project before implement must be evaluated in various aspects, Such as: financial, time, Human Resources, technical and ... Etc.

The aim of this article is to ensuring of organizational capabilities to achieve the desired results. The explored project of this study is the implementation of Management information systems in organizations. The implementation of these systems needing further capital, time and other resources, so take the decision about it, is more important. In fact importance of Management information systems due to the inherent characteristics of the Systems that are mentioned below:

- Cost and duration of the project
- High portion of hidden costs
- High risk appetite
- Change Management
- Infrastructure

So correct understanding of readiness, for the correct orientation and compile appropriate strategy is very important and introduced as a key factor for success in implementation of this systems. it is essential that organizations already have assessment and feasibility to implement system based on the available facts and comply with the capabilities and limitations of the organization.[2]

Evaluation of E-readiness in organizations for acceptance and utilization of the systems, is one of the initial steps for establishing management information systems, to avoid wasting financial and human resources.

According to the mentioned reasons, we intend to appropriate evaluation model to determine the organizations preparedness in adoption with information systems.

6. Academic Records:

6.1 CSPP Model:

Model presenter: This model presemted by CSPP in 1998. CSPP is including executives of IT companies in America. [3]

6.2 APEC Model:

Model presenter: This model presented by APEC group -Asia-Pacific Economic Cooperation- in 2000. [4, 5]

6.3 ITU Model:

Model presenter: This model presented by International Telecommunication Union-ITU.

7. Data Collection Method:

To collect data, prepared a Web-based questionnaire. Variables in each indexes were asked in two form**.**

In the first form individuals, about each question will give a point about their organization according to their knowledge and experience. Considering that the entered number must be numeric between 0 - 100.

In the second form, Given that each question is important to determine the rated of organizations readiness, Individuals based on the importance of questions will give a point to each question between 1 of 5.

Important point of this questionnaire is, pick all indexes to answer questions is not required, in other words, individuals can choose desired choice from ten proposed indicators, but by choosing each indexe should be answered to all questions.

Individuals can propose new variable and indexes to this questionnaire. In next step the proposed variables, were added to the questionnaire and wll ask again as a new questionnaire. Concerned organization will be evaluated accordance to new questionnaire. Questionnaires arranging and processing is performed based on the Delphi Method. [6]

Individuals before answer must be filled the form related to their age, educational level, status and professional activities

8. Definition of Evaluation Indices:

In this section has been expressed assessment Indicators needed for each area of organizations

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readiness in the adoption of information systems. Indicators covered and defines clear status of Information technology in organization.

- Hardware
- Software
- Network
- Security
- Databases and Information Systems
- Processes and Systems
- Management
- Human Resources
- Legal and Financial
- Customers, suppliers and partners

E-Readiness Assessment Checklist to Information Systems Adopting:

Hardware:

- Organization has ability to establish and support any hardware.
- Using updated technology in Organization.
- Is there enough hardware (computer, printer, Scanner ...) in organization?

Software:

- Organizations personnel are satisfied with the provided software.
- The use of software in organizations is desirable.
- Organization has ability to implement, support, production and develop of software.
- The software simultaneously with changing processes in organizations is desirable.
- Software are integrated?

Network:

- Majority of the organization are connected to a computer network.
- Intranet broadband is sufficient.
- Internet speed is satisfactory.
- There are a sufficient number of computers connected to the Internet.
- The extensibility of the network is desirable.
- Staff are able to store their important data on the server.
- staff Satisfaction of backup and recovery.
- Anytime LAN is ready to use.

Security:

- Hardware infrastructure and information security is used in organizations.
- Security mechanisms, such as privacy, access control, and ... is used.
- Is there physical security (access control to the server room, lack of access to switches, etc.).
- Is there stay up to date knowledge in security.
- Staff are satisfied of security in organization.

Databases and Information Systems:

- Data recorded in the databases are clear
- Database updates are done on time.
- Is there appropriate support and security and intelligence compatibility in organization?
- Is there opportunity to share information with other companies?
- Access speed to information systems is desirable.

Procedures and systems:

- Procedures have been reengineered before using information technology in organization**.**
- Integration Observance
- Performance and decision making in organizations has increased with using information technology.
- Processes purposefully will be improve and optimize.
- Using specialized software for each process**.**
- The knowledge management system is used.

Management:

- Is there understanding of change management.
- Had been used to change manage.
- Managers have the ability to problem solving.
- Managers will support the use of information technology in organization.
- Managers has ability in risk management.
- The results are required and accuracy.

Human resource:

- Necessary training of IT will be done for staff**.**
- Sufficient number of IT highly skilled person is used.
- As needed, IT consultants are used in organizations.
- Personnel as required has knowledge of business processes,
- Is there spirit of teamwork and collaborative activities in organization?
- Staff knows about the impact of information technology to increase productivity and efficiency.

Legal and Financial:

- Law relating to information technology (copyright, intellectual property, etc.) will be respected in organization.
- Financial support for the development of information technology is desirable.
- Foreign investment is desirable.
- Reduce costs and increase profits is palpable by using information technology in organizations.
- Growth rate in GDP (gross domestic product) is desirable.

Customers, suppliers and partners:

- Customer care is desirable.
- Security of customer information will be respected.
- The timely and accurate information to customers is improving.
- The rate of E-customer is higher than other customers.
- E-communication with suppliers is desirable.
- E-communication with partners is desirable.
- E-communication with other organizations (governor, mayor, etc.) is desirable**.**

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9. Methodology and Readiness Assessment Model:

Presented Model has two dimensions. in the first dimension, the statistical population according to described method should be complete the questionnaire.in the second dimension, requested the experts to give a point between 1 and 100 to each of indicators and then accordance to listed below data, collected will be processed.

In the first step, for each indicator per person in the first responders to the questionnaire, obtained an average numerically. This average number calculated according to responses to the score and the important of question.

In the second step, given a point from 1 to 4 for each of the 4 cases of individual, then obtained the importance of each expert according to score.

In the third step according to to the importance of individuals and the given scores on indicators achieved an average for each of these items.

In the fourth step, the importance of individuals are calculated according to the final score in the third step and scores in the second step.

In next step the final scores of each index is calculated. Based on the average number of each index in the first stage and obtained significance for individuals in the fourth stage,

In the last step total score is determined according to the final score of each index in the third stage and the final Scores of each index in the previous step.

10. Evaluation of Readiness for Adopting to Information Systems in Telecommunication Department and Payamnour University of Fahraj:

In order to test and validate of proposed model, Telecommunication Department and Payam Noor University of Fahraj was investigated, and after data collected from 60 persons of each organization and applying this model on the data, obtained correct and complete perception regarding to evaluation indices. So can identify the strengths and weaknesses of each indexes in these organizations and perform the necessary programs.

The following diagram demonstrate the result of the implementation of mentioned model in Telecommunication Department and Payam Noor University of Fahraj**.**

11. Conclution:

Basically organizations used in different ways of information technology but without using a suitable system cannot be identify and improve the readiness of organizations. in this paper introduced an innovative model to measure the readiness of organization to adoption of information systems. in this model used some parameters such as hardware, Software, Networking, Security etc., and based on these indicators Provided a check list to assess the readiness of organizations. In the next step were collected the data associated with each indicators of the Telecommunication Department and Payam Noor University of Fahraj and after analysis and conclusions based on proposed model, identified current status of both organizations and if required quickly find a strategy.

As a general conclusion and on the basis of obtained information from the questionnaires, have a top management, effective planning, leadership and continuous monitoring and investment is essential to the successful implementation of information systems in an organization.

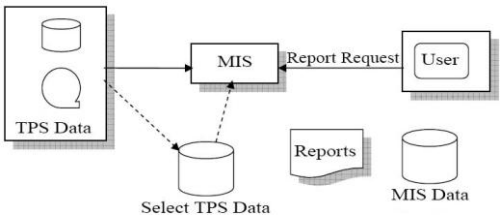

Fig. 1: MIS structure.

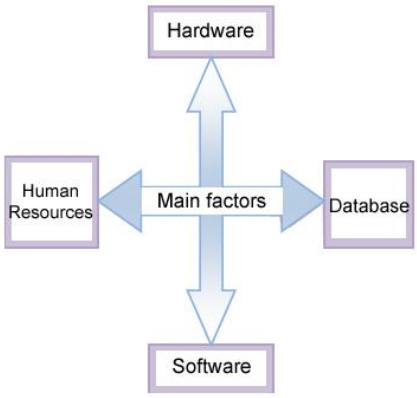

Fig. 2: The physical components of management information systems.

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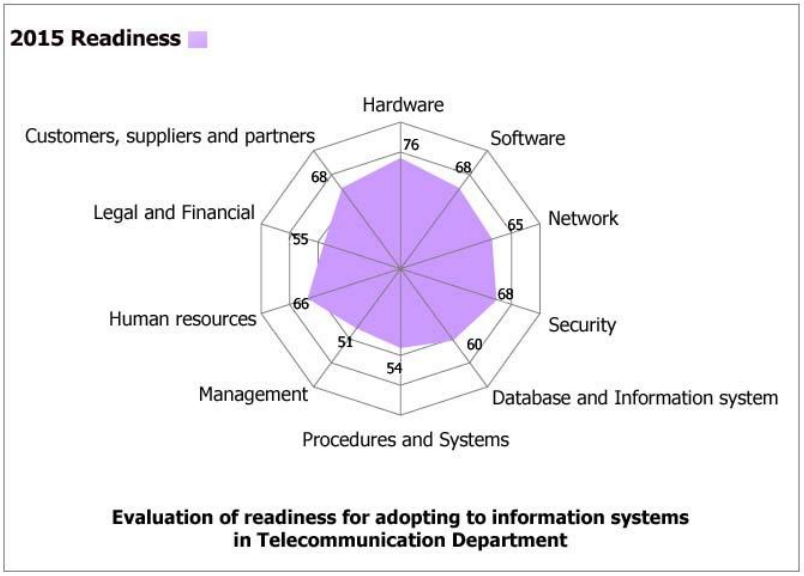

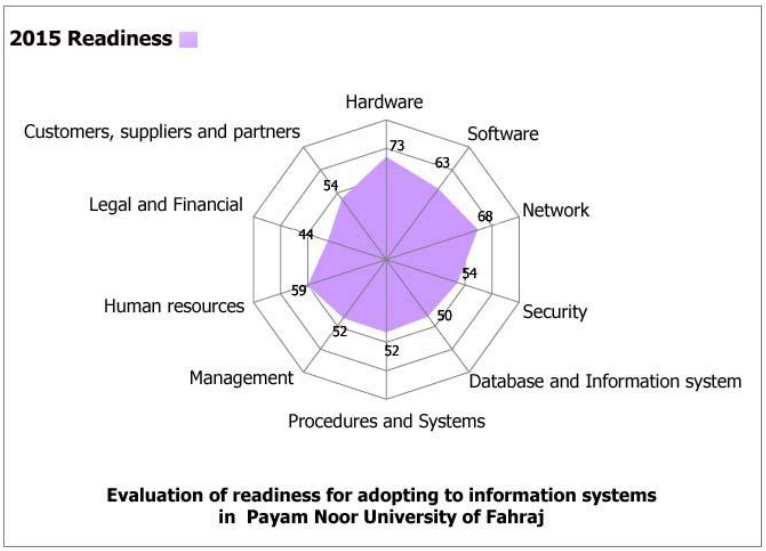

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