Sindhological Studies, ISSN: 1032-6759, 2017 (3): 122-128

Presenting a framework for analysis of electronic readiness in Iran (Case Study: Bank Maskan)

Bakhtiar salehi

M.A. in Information Technology Management from Islamic Azad University, Science and Research Branch, Tehran

Abstract: This study is conducted to investigate the role of various factors in examining e-readiness. The study is applied conducted using descriptive-survey method. The population included academic experts and officials, experts, staff and customers of Maskan Bank. Thus, some university professors were randomly selected as distribution sites for questionnaires considering access to them and other central departments related to the issue at Maskan Bank. These departments included Research Bureau, the Office of Statistics and Information, modern Services Office, Information Technology Bureau, System and Computer Data Protection Center, management office of Kurdistan branches, independent central branch of Tehran, 3 branches in Sanandaj, 3 branches in Saqez, and Baneh Branch. For sampling, we used random sampling with 250 subjects, of whom 211 valid questionnaires were collected. Validity of the questionnaire was confirmed by two experts working in public libraries and by making some modifications accordingly. After distribution of 25 questionnaires as pilot, Cronbach's alpha coefficient was calculated that indicated the reliability of the research. In the next step, the data collected was analyzed using regression and the results were presented.
Keywords: E-readiness, rules and regulations, technical and communication infrastructure, culture and education infrastructure

INTRODUCTION

Due to rapid technological advances, societies have become knowledge-based societies. Development of Information and Communication Technologies (ICT) enables enterprises and organizations to carry out their business activities and transactions fast and with flexibility.

In the twenty-first century, ICT will progress and development more rapidly. The advances in ICT in the late twentieth century have led to the formation of e-commerce. E-commerce has created a great revolution in trade and business practices. E-commerce, at a broader sense e-business, changes people's lives too. Developed countries have begun e-commerce several years ago and experienced its problems gradually, so they have provided the technological and legal infrastructure, human resources, and material necessary to expand them. They are at the stage of fundamental and complete change in business and lifestyle, in which they will use a wide range of ICT.

In addition to the developed countries, developing countries are planning and making efforts to build infrastructure and platforms for e-commerce. In Iran, there have been some sporadic efforts, but these efforts have not been effective because on the one hand, they lack the necessary integration, and on the other, they are not fast enough (Deputy Director of Planning and Economic Affairs-Commercial Office, 2005).

Electronic readiness in different communities and countries includes various criteria and conditions specific to each environment, of which one can note state of education, habits and specific culture of environments, and political, social, economic and technological conditions of society.

This study has tried to examine certain circumstances of society of Iran to accept and use electronic services provided by different agencies and departments, and provide a framework for this proposal.

Factors that have accelerated e-commerce

Increased demand for e-commerce has been affected by three major factors:

A) Economic efficiency

B) Increasing interactions with customers

C) The convergence of digital technology (Deputy Director of Planning and Economic Affairs-Commercial Office, 2005)

Electronic services

The capabilities of the Internet have brought about the opportunity for the service sector to provide some of the services such as airplane ticket sales; insurance, financial counseling,

Health, legal, educational, and software services, as well as software maintenance and support around the world via the internet. The service sector makes up about 20 percent of total world trade in the last 15 years, such as trade of goods that has had a rapid rate of growth (8.5%).

Services, where scientific information and technology have a significant role- such as communication, computer, financial and insurance services, and copyright- are considered effective factors in increase of the share of GDP in most OECD countries. For example, In Canada, the value added of telecommunication services from 1998 to 1999 shows 19 percent increase, and the share of this part of services in GDP has reached 2.5% out of 1.9% in 1990. In the Republic of Korea, the share information technology (IT) (generally, 20% of services that were IT-based) in GDP has increased from 8.6% from 1997 to 2000 (Monetary and Banking Research Institute, 2005).

Electronic government

One of the tasks of the governments in state-market economic system in addition to economic performance is creation of favorable environment for private sector participation in economic activities. Development of automation in various organizations affiliated to the government without a targeted and integrated strategy- although in the short-term- may increase productivity, efficiency, reduce overhead costs and thus increase profits. However, in long run, this situation leads to disharmony and disruption of units affiliated to the government as well as in relations between the public and private units (Monetary and Banking Research Institute, 2005).

Some of the obstacles to e-services

Political obstacles

In general, political obstacles can be stated as one of the common problems of Third World countries. Usually, modern ICT will deter many abusive practices. Electronic transmission system is one of the modern systems based on ICT, in which information is more complete and accessible than the traditional one. Since the range of performance of the individuals in e-commerce is quite clear, through the internet, achieving the variety of economic activities of individuals and groups will be simply possible. Thus, it will limit all kinds of abuse by individuals, groups, and managers in obtaining a variety of facilities, loans and other monetary and financial affairs. It is natural that the interests of some individuals and groups would be in danger. Therefore, it disrupts the development of electronic banking [for example] (Monetary and Banking Research Institute, 2005).

Resistance to change

Environmental changes in technological, economic, political, cultural and social dimensions happen quickly. In other words, the institutional environment is a dynamic environment. Every organization must keep pace with changes in the environment for its survival and even evolve. Making changes in organizations is not an easy task and often faces a major obstacle called resistance to change. One of the reasons for resistance to change is the habit of individuals. People are accustomed to doing a job in a particular way; people usually act in a constant manner on a variety of issues, and tend to respond to issues in the ways they are accustomed to. Change makes that unable to act habitually, so they take up positions against it (Monetary and Banking Research Institute, 2005).

Traditional information and communication systems in and public and private organizations and institutions in Iran

One of the reasons for the lack of development of banking ICT in developing countries is employing methods of traditional systems by enterprises and organizations in those countries. Despite living in the age of information technology, still the need to improve and change the style is not important to these organizations and institutions in these countries. Thus, fundamental changes in the business and economy depend on complete transformation of all organizations and business centers, bank and industrial, both large and small, on a basic framework. Otherwise, one cannot achieve sustainable development (Monetary and Banking Research Institute, 2005).

Table 1: Evaluation of various factors of e-readiness in related research

Technical and communicational infrastructure	L Navavi and Ismail (1999) / Studying the Factors Affecting the Adoption of e-commerce SMEs in Egypt Alomari and AlOmari (2006) / development of framework of e-government readiness
Cultural infrastructure	Economist Intelligent Unit e-readiness model Pearson and Robinson (2004) / e-readiness assessment of environmental factors
Organizational infrastructure	Sappho et al. (2007) / factors affecting accepting e-commerce to determine the relationship between perceived strategic value of e-commerce and technology adoption in small and medium businesses in Ghana Gordon and Pearson (2004) / Factors affecting technology adoption in small and medium businesses
Rules and Regulations	Sanei and Salehinia (2008) / identifying and ranking the barriers to adoption and development of electronic banking Levine and Kim (2004) / effect of institutional factors on the compliance of the company Thompson and Strickland (2001) / e-readiness assessment of environmental factors

Research on e-readiness

Definitions of e-readiness

A community with e-readiness is a society that has the necessary physical infrastructure (high bandwidth, reliability and affordable prices), information technologies integrated in all activities (e-commerce, local ICT), groups of the population (number of organizations connected to the network, the use of ICT in daily life, teaching ICT in schools), e-government, intense competition in telecommunications, independent regulations and commitment to universal access, and no restrictions in trade or foreign investment [Harvard International Development Center, 2000]

A country has e-readiness that has free trade, industry self-regulations, ease of export and compliance with standards and international agreements (APEC, 2000)

An e-ready community has a market that has gone through three phases of progress: pre-trade phase (limited access to a leading community), trade phase (access is sold to customers), competitive phase (market has multiple major competitors). In the third stage, the market has several competitor actors and the negotiations among actors should be transparent, effective, rapid, and major players of public and private sectors should be present in the competition (Center for International Development & Conflict Management (CIDCM))

Table 2: A summary of models offered on e-readiness

Researcher / Provider	Model	Evaluation criteria
Center for International Development Group (CSPP), 1998	CSPP Readiness	Infrastructure, access, applications and services, economy, enablers
International Development Center Harvard, 2000	CID[1] (Readiness for Intern Development	Access, speed and quality of network access, use ICT in schools, workplaces, government and daily life, policy and information and communication technology and organizational diversity
E-Commerce Steering Group in Organization for Asia-Pacific Economic Cooperation (APEC), 2000	APEC –Com Readiness	The basic technology and infrastructure (price, access, competitive market, industry standards Foreign investment) Access to network services (bandwidth, variety of industries, export control laws, credit card), Internet use (use in business, government, houses) Encouraging and facilitating (promoting industry standards) skills and human resource (training ICT workforce) The status of the digital economy (taxes and tariffs on industry self-regulation, government regulations, consumer confidence)

E-Commerce Steering Group in Organization for Asia-Pacific Economic Cooperation (APEC), 2000	APEC –Commerce Readiness	The basic technology and infrastructure (price, access, competitive market, industry standards Foreign investment) Access to network services (bandwidth, variety of industries, export control laws, credit card), Internet use (use in business, government, houses) Encouraging and facilitating (promoting industry standards) skills and human resource (training ICT workforce) The status of the digital economy (taxes and tariffs on industry self-regulation, government regulations, consumer confidence)
Mc Connell Institute in collaboration with Global Alliance for ICT Services (wista), 2000	entitled: Business risk-mail: Seizing the opportunity of e-readiness	Communications (infrastructure, access, price), Electronic leadership (policies and government regulations), information security (privacy and digital signature), Human capital (education, information technology, a skilled workforce), The status of the digital economy (taxes, tariffs, and so on)
CIDCM ، Center for International Development and Conflict Management, University of Maryland CIDCM, 2000	CIDCM	Background and history of the structural situation (economic, educational levels, existing infrastructure), the structure of political culture (Policy) cultural software (religion, etc.)
Heeks, 2002	Heeks	Data systems infrastructure, legal infrastructure, institutional infrastructure, human infrastructure, technical infrastructure and leadership, and strategic thinking
MOSAICMC Connell Group CIDCM, 2000 CIDCM MOSAIC group 1997 to 2001 MOSAIC 1997 to 200	MOSAIC	Inclusiveness (per capita use of the Internet), geographic distribution, Sectorial absorption (Using the Internet in the university sector, commercial, health And public), communication infrastructure, organizational infrastructure, complexity Application
E-readiness e-search team MIT, 2003	MIT's model as a tool for evaluation of e-readiness	Access: including infrastructure (e.g. wireless penetration rate), services (Such as the price of telephone, postal services, etc.), the ability to include social aspects (Rate of literacy or poverty), economic (the number of credit card accounts) Laws and regulations, policies (free trade) - opportunities, including applications, such as electronic banking, business to business services more thing, business-to-customer service, business administration, customer to customer marketing, information Search
Economist Intelligent Unit, 2000	Ranking e-readiness of the Economist Intelligence Unit (EIU)	Technology and communication infrastructure, business environment, coordination of consumer and business, cultural and social infrastructure, executives regulatory environment, support of e-services
Harvard University	Network readiness of Harvard University	The main variables include four categories: access, politics, networking society and network economy, each of which have been explained with more detailed variables

Suggested variables for inclusion in the conceptual model of the research

Technical and communication infrastructure of Iran

Technologies that enable banks, employees, and customers to send and receive financial and banking information include all the hardware and software, such as telephone lines, satellite, Internet, Society for Worldwide Interbank Financial Telecommunication, Swift, internal acceleration network, etc. (Asadzadeh et al., 2011).

Infrastructure of rules and regulations

The level of awareness and motivation of individuals in a society about the technologies and functions of various electronic banking systems for receiving banking services through communication technologies and the level of attention of educational institutions and textbooks to promotion of the use of electronic services (Deputy Director of Planning and Economic Affairs-Commercial Office, 2005).

Rules and regulations of the country

The existence of clear and transparent rules in the field of electronic banking, such as the legality of electronic transactions, electronic signature, e-payment etc. to create a reliable context for use of electronic services and dealing with networks and banking crimes (Alomri and Alomari, 2000; Kimasi, 2--8)

Organizational readiness and support of senior management

The existence of necessary changes and preparation in management, systems, processes, human resources, and the size of the organization for the provision and use of communication technologies in the field of electronic services (Rashid and Karim, 2001; Kimiasi, 2008)

Hypotheses

Hypothesis 1: communications infrastructure has a significant and positive impact on e-readiness.
Hypothesis 2: cultural and educational readiness of the community has a significant and positive impact on e-readiness.
Hypothesis 3: legal readiness has a significant and positive impact on e-readiness.
Hypothesis 4: organizational readiness has a significant and positive impact on e-readiness.

Table 3: Reliability coefficients of the scale used

Row	Spectrum	Number of items	Standardized alpha coefficient
1	Technical and communication infrastructure of the country	6	0.769
2	Cultural and educational infrastructure of society	5	0.727
3	Readiness of laws and regulations of the country	3	0.851
4	Organizational readiness and support from senior management	11	0.789
5	Decision to offer and extend the electronic banking services	7	0.830
6	Saving costs	6	0.887
7	Market size	4	0.832
8	Market Structure	4	0.832
9	Innovation in the value and type of delivery of services	6	0.874
10	Profitability	3	0.812
11	The entire questionnaire	55	0.786

METHODOLOGY

The present study is applied as it pursues a specific objective in a particular field. In addition, the study has used library method in form of reviewing literature for data collection, and to determine the variables and the final model, the study has used field method by interview and questionnaire. The population includes academic experts and officials, experts, employees, and customers of Maskan Bank.

Some university professors were randomly selected as distribution sites for questionnaires considering access to them and other central departments related to the issue at Maskan Bank. These departments included Research Bureau, the Office of Statistics and Information, New Services Offices, Information Technology Bureau, System and Computer Data Protection Center, management of branches of Kurdistan, independent central branch

of Tehran, 3 branches in Sanandaj, 3 branches in Saqez, and Baneh Branch. For sampling, we used random sampling with 250 subjects, of whom 211 valid questionnaires were collected.

Validity of the questionnaire was confirmed by two experts working in public libraries and by making some modifications accordingly. After distribution of 25 questionnaires as pilot, Cronbach's alpha coefficient was calculated whose explanation for each variable is presented in the table below.

Table 4: The results of statistical analysis of variables

Coefficients [a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant coefficient)	-1.980	2.327		-.851	0.396
Technical and communication variable	0.284	0.084	0.207	3.376	0.001
Cultural and educational variable	0.325	0.090	0.199	3.613	0.000
Variable of rules and regulations	0.447	0.147	0.185	3.031	0.003
Organizational variable	0.317	0.050	0.367	6.370	0.000

a. Dependent Variable: decision

Coefficients [a]
Statistical analysis

Findings

Regression test results show that given that the statistics “sig” in the first hypothesis is 0.001 and less 0.05, the existence of a significant relationship between communication and technical infrastructure and e-readiness is confirmed. According to the standardized coefficient of this relationship (representing dependent variable changes relative to changes in the independent variable as one unit of standard deviation), which is 0.207 and positive, so the first hypothesis is confirmed.

Given that statistics “sig” in the second hypothesis is 0.000 and less 0.05, the existence of a significant relationship between cultural and educational infrastructure and e-readiness is confirmed. According to the standardized coefficient of this relationship (representing dependent variable changes relative to changes in the independent variable as one unit of standard deviation), its value is 0.199 and positive, so the second hypothesis is confirmed.

Given that statistics “sig” in the third hypothesis is 0.003 and less 0.05, the existence of a significant relationship between legal readiness infrastructure and e-readiness is confirmed. According to the standardized coefficient of this relationship (representing dependent variable changes relative to changes in the independent variable as one unit of standard deviation), its value 0.185 and positive, so the third hypothesis is confirmed.

Given that statistics “sig” in the fourth hypothesis is 0.000 and less 0.05, the existence of a significant relationship between organizational infrastructure and e-readiness is confirmed. According to the standardized coefficient of this relationship (representing dependent variable changes relative to changes in the independent variable as one unit of standard deviation), its value 0.367 and positive, so the fourth hypothesis is confirmed.

DISCUSSION AND CONCLUSION

The view of majority of respondents states the lack of communications and technological infrastructure required for e-readiness (perhaps caused by failure to inform them of the latest developments in this field in the country). Thus, we suggest that relevant institutions such as the Ministry of Information Technology, banks and communication corporations deal more with introducing and acculturation of education and use of these facilities.

Checking the quality of service of communication services such as internet and mobile telephone should be revised.

Given the extensive role and significant impact of cultural and educational status of society on e-readiness, we suggest that in their promotion and introduction campaigns, agencies and departments allocate a greater share to promotion and introduction of the benefits of e-services.

Given the view of majority of respondents denoting absence of appropriate laws or lack of knowledge of existing law, we suggest that relevant institutions such as the judiciary and public education, such as schools and universities try harder in promoting public awareness of the laws of the country more and adopt new procedures.

Moreover, it is necessary to speed up the revision of the laws and regulations and adopting the laws on new social and economic phenomena, such as new technologies, and to promote and educate these laws in relevant organizations and organizations.

Given that laws and regulations should be based on the performance of organizations, including banks, we recommend that the staff get a better command of laws and regulations through applied education related to their area of work.

Given the effect of organizational readiness on e-readiness, we suggest that more emphasis and support be placed on training, institutionalization, and promotion of use of electronic services in the curricula of schools and universities.

REFERENCES

Asadzadeh, A., Kiani, H. (2011). The impact of ICT on the profitability of banks in Iran, the first conference on electronic banking and payment systems

Department of Planning and Economic Affairs, Ministry of Commerce, (2005), electronic funds transfer and electronic banking.

Kimasi, M. (2008), providing a framework for the development of electronic banking in Iran, Ph.D. dissertation, Tehran University

Monetary and Banking Research Institute, (2005), e-banking services and the needs of its executive