

## **A Survey of Electronic Government Condition in Iran and Students' Knowledge about it**

Alireza Soleimani,

Department of Electrical and Computer Engineering, Meshkin Shahr Branch, Islamic Azad University, Meshkin Shahr, Iran  
Alireza.Soleimani@yahoo.com

Javad Asadi

Department of Electrical and Computer Engineering, Germei Branch, Islamic Azad University, Germei, Iran  
j.asadi@qiau.ac.ir

**ABSTRACT** — In the current world, solving the major problems of cities traditionally and without electronic services is not possible. By presenting electronic services, these problems can be solved. Thus, evaluation of condition of state portals presenting services and familiarity of various classes of people with electronic government is of great importance. One of the most effective classes of people is students and the familiarity of this class with electronic government is investigated. Of 110 students, some questions are given and the results are evaluated and analyzed. The results show that the familiarity of in various groups of students is considered.

### **Introduction**

Now, we live in the period in which it is called ICT era. The influence of ICT on various aspects of human life has caused that communication method is changed completely. Today, communities are turned into scientific communities and citizens are turned into users of information network. Now, people are aware of their rights and attempt to develop their abilities in taking conscious decisions in effective aspects of their life. The idea of electronic governments is taken into attention in most areas including developed and even developing countries and they take effective steps to achieve this long-term goal. Today, people expect that all state services are given to them with minimum cost, speed and time. This is of great importance that the government is able to present the best services at the lowest time and with the best efficiency to various classes of people. The systems and tools giving services and information to citizens in state offices of Iran are old and working in state systems is slow. They are not successful in attracting the satisfaction of citizens. On the other hand, considerable investment is made in design and new systems in state sector but based on the goals for electronic government, countries can be successful in good implementation of electronic government that internal systems of state sector, data and information and managerial tools are consistent with each other. The higher the resources and services of governments via network to citizens, the need to a mutual system of services is revealed mostly. This mutual system besides obliging citizens to use network to receive services from government causes that skills and culture of information community are improved. This study has a brief review of initial definitions and concepts of electronic government. Then, the condition of electronic government is evaluated and is compared with other countries in the world. The next sections consider the condition of electronic government and familiarity of students with electronic government, trust and application from electronic services by some questionnaires and the results of this evaluation are analyzed. According to source 6, Brown University of America has published some reports as evaluation of electronic world indices in the world since 2001 and it is turned into a reference for various researchers and academic resources. According to the latest studies of researchers of Brown University of US, Iran achieved rank 95 in terms of electronic government indices among 198 countries in 2007. The report is published in the site. According to the studies of researchers of Brown University published in S.L 2007, Asian countries achieved three first ranks of electronic governments in the world and they were pioneers in this regard. Southern Korea achieved rank 86 in 2005 and dedicated rank first in 2006. Taiwan, Singapore, Canada are in second to fifth ranks. Based on the latest statistics published in economist information unit in digital preparation, Iran is in the last rank among 69 countries in the world in terms of digital preparation. The international telecommunication unions, world trade organization, ICT World Bank of European Union and UNESCO have some indices about ranking countries as similar to economist indices. Although there is no formal reference to evaluate electronic government in Iran, some reports and case studies show the followings [6]: To evaluate electronic government in Iran, at first the internet site of ministries and great organizations as managed directly by president are identified including 20 ministries and five great organizations and they are defined in five levels. In next stage, for each of main services of government, the experts of each ministry are asked to identify the levels and evaluate the organization. These evaluations are evaluated for four main tasks of electronic government.

After data collection and their analysis, the following results are achieved:

- 1- Some of the websites are designed weakly as they don't even include the name of organization in HOME PAGE.
- 2- According to the statistics in the websites of these institutes, the number of visitors of these state sites is very low.

3- Most of existing state sites don't have any relationship with dependent organizations.

4- The existing web sites don't follow any special standard and their users are obliged to download different Persian fonts to use these sites [6].

### **Study motivation**

The investigations on administrative actions show that administrative bureaucracy imposes high costs to government. In addition, administrative corruption and management of processes have increased the problems of government. On the other hand, citizens are obliged with heavy administrative bureaucracy and they lose much time. The mentioned items have inefficient direct effect of administrative structure and indirect effects are traffic, increased volume of intra-city trips, pollution of metropolises and etc.

Governments have used new approach in different areas of the world and they are used to eliminate this bureaucracy and it is electronic government. By IT approach, electronic government attempts to eliminate bureaucracy and reduce time and energy dissipation. Iran is not an exception in moving to the new world and we should achieve this goal. Thus, the evaluation of condition of electronic government is necessary. Indeed, electronic government needs norms besides technical aspects as there is no norm to use it, people don't use it. As students are the most effective classes of each community, they can have great impact on various classes of people from scientific, cultural and social aspects. Thus, evaluation of familiarity with electronic government is effective. The results of these investigations are important and can be used for future planning and road map of electronic government. The results of this study can be effective and important.

### **The concepts, definition and pre-requirements of electronic government**

Electronic government is presenting state services to citizens without considering place and time. Indeed, to receive state services, the citizen is not encountered with any limitation and all common services in offices are received online. To move toward electronic government, some requirements are necessary and governments should provide these regulations. These requirements include software, hardware, financial fields. The following items are regarding electronic government.

### **The concept of electronic government**

Before using electronic government, its concept should be perceived and a true definition is presented that people in society can have great vision of what electronic government presents to them. There are various definitions of electronic government and some of them include as follows:

Electronic government is a virtual organization presenting state services simultaneously to citizens. By new technologies, governments provide required facilities for suitable access to state services and information and quality is improved and participation of people is also increased.

Electronic government is a re-definition of government connecting state, people and commercial sector without any paper [1].

In developed countries, governments combine information and communication technologies for suitable access of citizen, jobs and other state agencies to state services. The services provided by ICT are called electronic governments. Although, various definitions of electronic government are presented, as an acceptable definition we can say: Electronic government is using IT in doing all administrative affairs and service providing to citizens as mechanized method.

### **The evaluation of condition of electronic government in the countries in the world**

To start presenting electronic services in various countries, there is no definite method and each of countries presents services to citizens as electronically based on hardware, software and technological progress. Presenting electronic services and its progress are different based on investment and planning of countries. The progress level is also different. There are some countries making much investment in electronic government more than one decade and some of them don't think about this issue.

### **The criteria of evaluation of progress of electronic government from the view of United Nations:**

Since 2003, UN has evaluated the countries in the world in terms of electronic government progress and its results have been published in some reports. These reports were published in 2003, 2004, 2005, 2008, 2012 and 2014. In these reports, 192 countries were evaluated in the world and ranking of countries were based on world, continent and regional ranks. In this report, the countries in the world are divided based on continent aspects into Europe, Asia, Africa, America and Oceania (Based on Geographical division). Among these continents, Asia is divided into the regions and rankings are presented based on these regions. To evaluate the rank of various countries, three different indices are applied and the indices are evaluated as follows:

- ✓ The communication infrastructures index in various countries from the view of UN
- ✓ Human capital index in various countries from the view of UN
- ✓ Portals evaluation index from the view of UN

Based on the topic of paper, in next section, some explanations are presented regarding portals evaluation indices from the view of UN and two other cases are not explained.

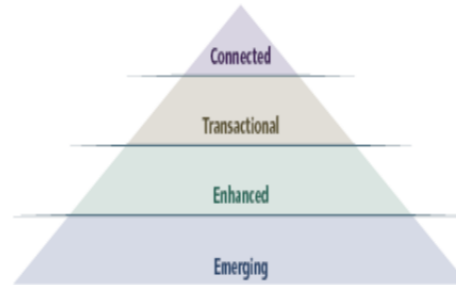
### **Portals evaluation indices from the view of UN**

In this phase, internet sites of various countries are evaluated based on stages of evolution of electronic government portals. The evolution stages of electronic government portals in this report are based on a four-level model showing the presence of a member state in web field. For example, the higher the level of this country in these stages, the better its ranking. These reports attempt to achieve information from national portal or portal of state organizations of each country and if these portals don't exist in the

country, other sites are applied. In order to be consistent with the data, it is attempted to use the portals in all countries as health organization portal, labor organization, social welfare, educational organizations and etc.

#### **The evolution stages of electronic government portals from the view of UN**

As shown in Figure 1, the evolution of electronic government portals includes four levels. Each level of lower layers is the requirement for higher levels and layers.



**Figure 1-** The evolution stages of electronic government portals from the view of UN in countries around the world

Each of above layers is explained later. Each of portals is classified based on the stages of conditions.

#### **Emerging**

In this level, state sites provide information about public policies of government, rules, regulations, documents and different state services. They have some links to ministries, organizations and other units of government. Citizens can achieve information about which events are occurred in state and ministries and can use some links to achieve archive information.

#### **Enhanced**

At this level, state sites present one-way advanced electronic communication or a simple two-way communication between government and citizen including downloading forms for state applications and services. These sites have audio-video ability and are multi-linguistic. Some limited services enable the citizen to register the request for non-electronic forms or personal information sending to their houses.

#### **Transactional**

At this level, state sites establish two-way communication with citizens include request and receiving inputs based on the policies, plans and state rules. Electronic authentication of citizens' identity is required for successful exchange. State sites perform non-financial transactions as electronic voting, download and upload of forms, online tax or request for certificate and licenses. They manage financial transactions as when money is sent in a safe network for government.

#### **Connected**

At this level, state sites change communication methods of government with citizens. They are pioneer in requesting information and views from citizens by web 2.0 and other interaction tools. Electronic services and solutions are put uniformly in the offices and ministries. Information, data and knowledge are transferred from state organizations via collected applications. Governments are transferred from state-oriented method to citizen-oriented method as electronic services are performed with the target of citizens via events cycle and various groups to present ordered services. Governments provide the environment in which much power is given to citizen to be involved with government activities to have a voice in decision making.

This is the high level of online electronic government and the features include the followings:

Horizontal communication (between state agencies)

Vertical communication (local and central state agencies)

Infrastructural communication (issues regarding collaboration)

The communication between governments and citizens

Relationship between beneficiaries (state, private sectors, academic institutes, non-state organizations and civil society)

In addition, electronic participation and citizens' interaction are supported and citizens are encouraged for decision making by governments.

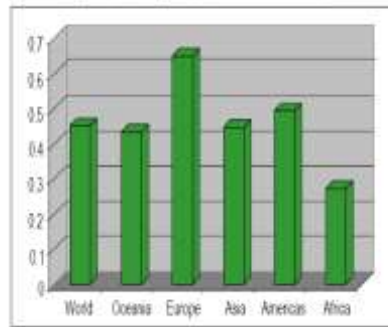
#### **Charts of evaluation of electronic government**

After the investigations based on criteria, condition charts are published for different states and some of the charts are as follows. In this section, charts of 2008, 2010 and 2014 are shown.

#### **Continent mean chart**

In this evaluation, progress index of countries of each continent is achieved separately. Chart 1 shows the growth mean of countries of each continent in electronic government. In this chart, world mean index is also shown. As shown in the chart, mean index of

European countries is above mean of countries in the world and the mean of Africa is lower than the mean of countries around the world. Thus, Europe continent has the highest index and Africa has the lowest index.



**Chart 1-** The mean progress of various continents in electronic government compared to world mean

**The index of electronic government preparation of ten first countries in the world**

Based on the results, ranking of all existing countries is published and in Table 1, only ranking of 10 first countries in the world is shown. This Table is designed for 2014. As shown, the highest rank is dedicated to South Korea and Australia and Singapore are in the next ranks. The important point in this Table is the presence of 3 Southeast Asia among 10 best countries in the world.

**Table 1-** The names and scores of 10 first countries in the world in terms of preparation for electronic government from the view of UN

Electronic government index	Country	No
0.9462	Southern Korea	1
0.9103	Australia	2
0.9076	Singapore	3
0.8937	France	4
0.8897	Netherland	5
0.8874	Japan	6
0.8748	US	7
0.8695	England	8
0.8644	New Zealand	9
0.8449	Finland	10

**Preparation of electronic government in Southern Asia**

Table 2 compares the countries of South of Asia in 2008, 2010. The rank of Islamic Republic of Iran has achieved from 108 to 102 in 2010 and 6-step progress is observed. In the report of 2010, it is emphasized that this region has values below world mean and most sites of this region are remained as the same as 2008 and no considerable change is observed in them. It is stated that Iran and Sri Lanka had great progress in 2010. However, rank 102 is not satisfactory. Iran rank in 2014 with 3-step descending has achieved rank 105.

**Table 2-** The condition of south Asian countries

Ranking electronic government development in the world	Index of electronic government development	Country
95 92	0.4491 0.4392	Maldives
101 111	0.4244 0.3995	Seri Lanka
108 102	0.4067 0.4234	Iran
113 119	0.3814 0.3567	India
131 146	0.3160 0.2755	Pakistan
134 152	0.3074 0.2598	Butan
142 134	0.2936 0.3028	Bangladesh
150 153	0.2725 0.2568	Nepal
167 168	0.2048 0.2098	Afghanistan
	0.3395 0.3248	Regional mean
	0.4514 0.4406	World mean

**Evaluation of portal of ministries of Iran based on criteria of UN**

This section evaluates portals of ministries of Iran based on UN criteria as presenting regarding the progress level of internet portals in countries to define the condition of state portals. These criteria have been explained already. As shown in Table 3, the portal of 18 ministries of Iran with portal of training evaluation organization and portal of police are evaluated and totally it is including 20 portals. In this study, the method is as by referring to the portal of one by one of ministries, the different parts are investigated based on mentioned criteria. In these studies, based on portals, the level of each of portal is shown.

After the evaluations, the condition of portal of ministries is achieved as followings. Based on the facilities for users, these portals are scored and placed in different levels. The following Table, shows the general condition of each of portals.

**Table 3-** Condition of portal of ministries in terms of progress based on criteria of UN for portal

Level 4	Level 3	Level 2	Level 1	Portal of ministries
✗	✗	✗	✓	Portal of ministry of interior
✗	✗	✗	✓	Portal of ministry of education
✗	✗	✓		Portal of ministry of industry, mine and trade
✗	✗	✗	✓	Portal of ministry of justice
✗	✗	✗	✓	Portal of ministry of road and urbanization
✗	✗	✗	✓	Portal of ministry of economic affairs and asset
✗	✗	✗	✓	Portal of information technology and communication
✗	✗	✗	✓	Portal of ministry of defense and armed forces
✗	✗	✓		portal of ministry of culture and Islamic guidance
✗	✗	✗	✓	Portal of ministry of energy
✗	✗	✗	✓	Ministry of Health and Medical Education
✗	✗	✓		Portal of ministry of sciences, research and technology
✗	✗	✗	✓	Agriculture Jihad portal
✗	✗	✗	✗	Portal of ministry of information
✗	✗	✓		Portal of foreign affairs
✗	✗	✗	✓	Portal of ministry of oil
✗	✗	✗	✓	Portal of ministry of sport, youth
✗	✗	✓		Portal of ministry of cooperative, labor and social welfare
✗	✓			Portal of testing organization
✗	✗	✓		Portal of police

As shown in Table 3, most portals of ministries are not in a good condition in terms of presenting electronic services and most of them can provide initial criteria of UN for portals. The number of portals of each level is shown in Chart 2. As shown in the Chart, of 20 investigated portals, 13 portals are in level 1, six portals in level 2 and only one portal is in level 3. No measurement is taken at level 4 in Iran and we have no portal at this level.

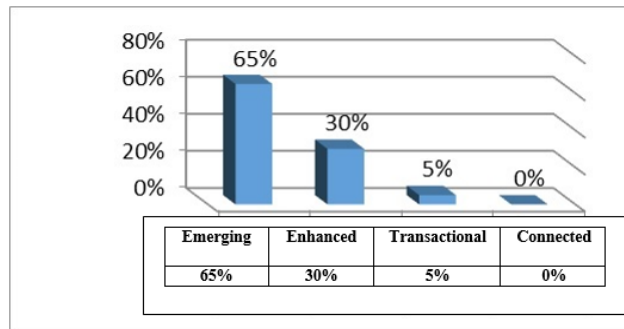


Chart 2- The percent of placement of portal of investigated organizations at different levels

**Evaluation of the condition of familiarity with electronic government among students**

Some evaluations are performed to evaluate the familiarity of people with electronic government and using electronic government in Iran. Based on the familiarity level with electronic government, a questionnaire is provided and 17 important questions are raised. These questionnaires are distributed as field study among 110 students from different levels, fields, gender and ages. The results of these questionnaires are evaluated and the results are shown in the Tables. The details of results are explained in brief.

**Evaluation results**

The results of this study are considered in the form of two Tables. First Table is based on the questions their response is very much, much, average, low and never. Table 2 shows the results of questions with similar items and interviewee selects one of the items based on the views.

**Table 4-Results of response of all respondents**

SD	Approval (number of respondents)						Questions of first part
	Mean	Never	Low	Average	Much	Very much	
18.91	79/77	0.9%	2%	19%	30%	47%	How much are you interested in using electronic government against administrative system?
15.68	64/77	3%	6%	42%	27%	22%	How much are you familiar with the services government presents via e-government to people?
25.16	85/23	3%	2%	11%	21%	64%	How much information confidentiality in site is important for you?
17.12	75/00	1%	9%	14%	42%	35%	How much well is access to government portal via cell phone, pda, and etc.?
21.28	77/95	0	4%	13%	52%	32%	How effective is the progress of state organization portals on e-government development?
22.81	81/59	0	1%	10%	51%	38%	How effective is the obligation of organizations to present services as electronic on development of electronic government?
24.88	86/14	0	5%	8%	25%	62%	How is increase of bandwidth effective on electronic government development?
22.01	83/64	1%	2%	11%	35%	52%	How effective is increase of awareness of people on electronic government development?
15.47	72/73	1%	8%	21%	39%	31%	How effective is obliging people to use electronic services on electronic government development?
18.96	77/73	0	7%	12%	44%	37%	How effective is great investment of government on electronic government development?
12.37	61/59	0	20%	35%	25%	21%	How satisfactory is Iran progress in terms of electronic government?

Regarding the questions not in Table 4, the results are presented separately. In the question “Do you have computer or lap top”, 92 people answered yes, 18 people no. If we express the results as percentage, 83.63% had computer or laptop and 16.37% didn't have. Regarding the question “Do you have access to internet”, the responses show that 22 people or 20% of students don't have access to internet and 88 people or 80% have access to internet. In the question “In case of positive response to question 2, how have you access to internet”, four responses of ADSL, cellphone, dial up and other items are considered. For this question, the response is evaluated among 88 people or 80% having access to internet. 58 people, 65.90% of respondents have access to internet via ADSL, 22 students, 25% via cell phone and 2 students, 2.28% via dial up and the rest of people, 6 people, 6.82% via other items have access to internet. There are some assumptions about the place to have access to internet and the results are as follows. 61 people, 69.31% of respondents have access to internet at home, 13 people, 14.77% at work place, 4 people or 4.54% in University, 4 people or 4.54% in coffee net and 6 people or 6.81% in other places have access to internet. Regarding the question that it is better each office presents its own services along in the portal or all organizations by uniformity of portal present services in the form of a unified portal. The results are as followings as 73 people or 66.36% are interested that each organization in their portal can respond the client and 37 people or 33.64% are interested in collecting state services. In the question, “trust in application of portals” as the government proposes portal or the portal is searched via search engine or there is no difference, the results are as follows. Most respondents, 78.18% of them have trust in government and introduced portals by government are reliable and 4.54% prefer using search engines and 17.28% don't consider any difference between introduction of government and introduction of searching engines.

### **Survey results**

Based on the results of study, we can explain. These items show a road map to electronic government. As shown in the Tables, conclusion of each question is expressed. The results regarding the question “How much are you interested in using electronic government against administrative system” show that highest mean of this question is regarding post graduate students. This shows the increase of awareness of people in post-graduate level. The next rank of this question is regarding respondents with good financial condition and this is a significant result. By better financial condition and high communication media, electronic application of state services is increased. In this survey, there is the least tendency to use electronic government regarding people with poor financial condition and this response is significant. Regarding the question “How much are you familiar with the services of electronic government”, the results show that female respondents have less familiarity compared to the rest of respondents. This result is not good and educating future generations and awareness of family are performed via women. In this question, people with poor financial condition have highest awareness and the result of this question and previous question are considered together. The results of question “How much privacy of information in the site is important for you” and the students with poor financial condition have highest mean and MA students have the second mean. The technical field students have the least mean in this question. The response of students to the question “How much is the question “you have access to government portal via cell phone, pda, etc. good and MA students have the highest mean and approval among respondents and women have the lowest mean in responding this question. Conclusion of question “How is effective the progress of portals of state organizations on electronic government development” shows that the students of other fields (except technical, engineering and humanity) have the highest effect on electronic government development. In this question, the lowest mean is regarding people with weak financial condition. Regarding the question “How effective is the obligation of organizations to present electronic services on electronic government development”, highest mean is regarding students of other fields (except technical, engineering and humanity) and the lowest mean is dedicated to MA students. In the question “How is effective the increase of bandwidth on electronic government development”, MA students have dedicated highest impact to this question and highest mean was dedicated to them. The lowest approval is dedicated to the students of other fields (except technical, engineering and humanity). MA students in response to question “How effective is the increase of awareness of people on electronic government development” showed their approval and believed that awareness increase developed electronic government factor but among respondents, technical students had lowest mean in this question. In responding the question “How much is effective to oblige people using electronic services on electronic government development”. MA students believed in using force and obliging people to increase application of electronic government but humanity students had less belief in obliging. In response to the last question about the effect on development of electronic government, the question “how much is effective great government investment on electronic government development”, MA students have highest approval and students with poor financial condition have lowest approval with great investment of government. The last question “How satisfactory is Iran progress in terms of electronic government” had the significant results and MA students showed highest interest to use electronic government and had lowest satisfaction from existing condition of electronic government. The students with poor financial condition were satisfied from the present condition of electronic government and they were less interested in using electronic government.

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