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**Author(s):** Mousavi, Seyed A.Amin; Jahankahni, Hamid; Pimenidis, Elias.

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## IMPLEMENTING ELECTRONIC GOVERNMENT IN IRAN

Seyed A.Amin Mousavi, Hamid Jahankahni, Elias Pimenidis  
*Innovative Informative Research Group, School of Computing and Technology*  
[s.mousav, hamid.jahankhani, e.pimenidis}@uel.ac.uk](mailto:s.mousav, hamid.jahankhani, e.pimenidis}@uel.ac.uk)

**Abstract:** Considering the importance of utilizing the information, and communication technologies, the progress toward implementation of electronic government in Iran has received the attention of the policy makers and authorities. To implement e-government in Iran, a number of major projects have been initiated such as memorandum of understanding between Judiciary and Ministry of ICT, E-Judgment infrastructure and connecting Regional Courts at country-wide to secure Network. For successful implementation of electronic government different factors must be brought into consideration. This paper aims to review different approach toward electronic government and its implementation and highlight factors influencing electronic readiness in Iranian society and based on these factors and their weights, e-government readiness in Iran is discussed. Also discussion on ICT National Agenda is followed by important technical issues of information and communication technologies and social structures around them.

### 1. Introduction

The rapid expansion of the use of Internet in the Iranian society during the past decade led the Government of Iran to take several steps towards building an e-society. This rapid growth also poses numerous unseen challenges in the legal framework / system due to the intangible, non-territorial and decentralised nature of the Internet. In 2002, the SCICT (supreme council of ICT) was set up for supervising and managing Iran's National ICT Agenda. In 2005, a five-year long project started for developing e-Enabled national services, such as e-commerce, e-learning, e-health and e-government. For the e-government part, three major projects have been initiated:

- Memorandum of understanding between Judiciary and Ministry of ICT
- E-Judgment infrastructure
- Connecting Regional Courts at country-wide to secure Network

Electronic government aims at transforming government in its interaction with itself, businesses and citizens by making it more accessible, effective, efficient and accountable. Identifying the main elements of this transformation has a great effect on the result of any e-government projects.

Proper telecommunications and legal infrastructures, supported by the political

will for reform, are essential for the success of any e-government project

E-government strategies in developing countries should first target the improvement of their operations and processes and also the level of a government's ability to cooperate.

According to the World Bank and the Iranian First National MDG Report, there were only 48 Internet users per 1000 people in 2002. This was a considerable improvement compared to the number of Internet users (16 in 1000 people) in 2001. However, the Internet is mostly used for entertainment purposes and the Iranian society needs to be trained to use e-services.

A report titled "A 2006 progress of e-government and administrative reform in Iran" shows that over 70 per cent of intra- and inter-city trips made by citizens are for the purpose of obtaining information, not services. Therefore, developing a remote delivery model for government services will reduce expenses and save time and energy to a great extent for Iranian citizens.

To get a clear picture of the current status of information and communications technology in Iran one needs to access the level of government e-readiness in Iran. The national approach on ICT in Iran considers ICT as an

enabler for national development and an avenue for promoting local ICT industry. This paper aims to review and highlight factors influencing electronic readiness in Iranian society and based on these factors e-government readiness in Iran is discussed.

## 2. Different approaches

Electronic government as a theoretical construct is not properly defined. It can be considered as anything from the publication of government information online to any use of information and communication technology by the government. At least four different approaches to understanding e-government are presented in the literature (Gil-García 2002, Wimmwer 2002 and Zhou 2004).

Lanvin (2002) provides a visionary definition of the main characteristics and elements of e-government. According to this, e-government can be defined as the use of information and communication technology to transform government by making it more accessible, effective, efficient and accountable. This implementation includes range of activities from providing greater access to government information and promoting civic engagement to providing development opportunities. Citizens, businesses and government agencies are benefiting from electronic government practice. Whitson et al (2001) have defined e-government as implementing cost-effective models for citizens, industry, federal employees, and other stakeholders to conduct business transactions online.

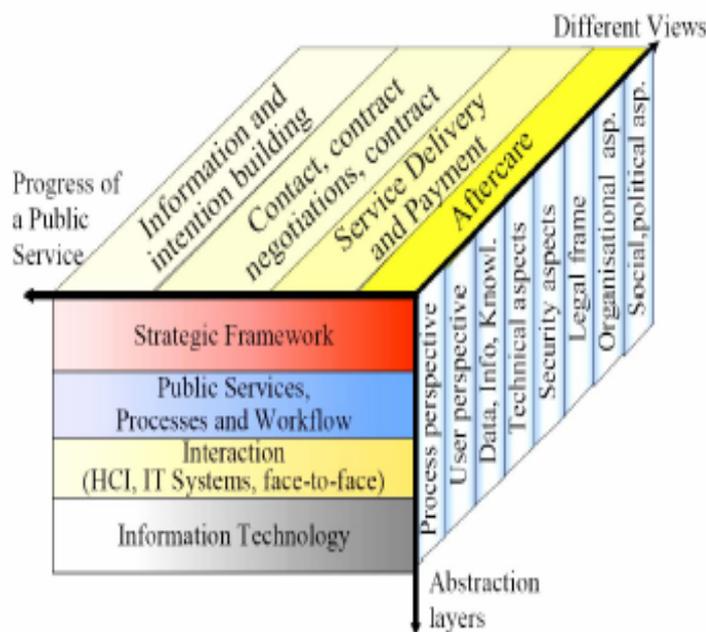


Figure 1 E-Government in public service development (Wimmer 2001)

A second approach, originally presented by Wimmer (2001), explains different views on e-government in the progress of a public service development.

‘Different Views’ described as Cultural, societal and political view, Legal view, Process view, organizational view, user view knowledge view, security and privacy view and Technical view. This approach clarifies

the concept of e-government by including progress of a publication service, abstraction layer and different views of stakeholders.

A third view is to identify the different applications of e-government as a way to explain this concept (García, 2005). These applications include facilitating e-knowledge, e-service and e-governance (Zhou, 2004).

A fourth approach defines e-government by the help of different stages which appear in developing e-government, (Karen, 2001). These stages are cataloguing, transaction, vertical integration, and horizontal integration. This approach suggests that e-government is an evolutionary phenomenon and therefore e-government initiatives should be accordingly derived and implemented in each stage.

In any of the above approaches, e-government is about transforming government in its interaction with itself, businesses and citizens. Identifying the main elements of this transformation has great effect on the result of any electronic government projects. E-government can improve efficiency, effectiveness and accountability of government by use of information and communication technology. After political will for reform, one of the important elements is availability of proper infrastructure including telecommunication infrastructure as well as legal infrastructure. Another element is changing and improving the process in which the government interacts with the governed. In other words automation of existing processes which are not reviewed properly will lead us to inefficiencies and waste of resources. Another important issue is civic participation. There are number of barriers which keep citizens away from participating with electronic government. Identifying these barriers plays a major role in successful electronic government practice. There are number of researches (Sahraoui 2005) and Irani 2005) which indicate that in implementation of e-government there is no "one size fit all". The reasons vary from differences in ICT infrastructures to different styles of governing and cultural behaviour of citizens. Because of this complexity of e-government there is high rate of failure in electronic government projects. Heeks (2003) Estimates that 85% of electronic government projects are failing. Providing comprehensive framework can lead us to successful experience of electronic

government implementation. In order to provide comprehensive framework for implementation of electronic government, range of issues must be addressed. Our primary aim is to identify these effective factors which play major role in successful implementation of electronic government.

### 3. E-readiness

E-readiness is the level of awareness relating to the ability of using Internet technology for economic purposes through the rapid adoption of e-business (Jutla, 2001). In more accurate expression E-readiness is the "state of play" of a country's information and communications technology Infrastructure and the ability of its consumers, businesses and Governments to use ICT to their benefit, (Janet, 2005). Research (Bertucci, 2005) shows that there are a number of factors which affect e-readiness in a country. These factors include Demography, rural and urban population, ICT infrastructure, environmental issues such as political and legal issues etc. For obtaining competitive advantage from electronic readiness, well defined strategy and plan is required. Research (Jutla, 2002) shows that governments have an important role in setting motives and goals for national e-readiness. have identified number of dimensions of promoting e-readiness environment such as Knowledge and innovation, Infrastructure and access, communications and information, Regulatory, trust, and financial infrastructure, Skills distribution network, e-Government leadership and Access to content.

According to "The Economist" (2006) there are six main categories and criteria effecting electronic readiness of a society. Following table shows these categories and their relative weight in e-readiness. These factors and their weights in overall score for electronic government are identified and

measured by “The Economist Intelligence Unit 2006”.

Category	Weight
Connectivity and technology infrastructure	25 %
Business environment	20 %
Consumer and business adoption	20 %
Legal and policy environment	15 %
Social and cultural environment	15 %
Supporting e-services	5 %

Table 1 E-readiness ranking factors (The Economist 2006)

Connectivity and technology infrastructure includes Internet affordability, Narrowband and Broadband penetration; telephone and mobile penetration; Internet penetration; number of PC; WiFi hotspot penetration; security of telecommunication infrastructure. Business environment is influenced by strength of the economy, political stability, the regulatory environment, taxation, competition policy, the labour market, the quality of infrastructure, and openness to trade and investment. The resulting business environment rankings measure the expected attractiveness of the general business environment. Consumer and business adoption include a number of criteria such as

Government spending on information and communications technology as a proportion of GDP; level of e-business and e-commerce development; quality of logistics and delivery systems; availability of corporate finance. The IBM Institute for Electronic Government supports the same factors as requirements for measuring electronic government readiness in different countries (Caldow, 2005).

The ranking by “Economist Intelligent Unit” evaluates the political, technological, economic and social assets of 68 countries. In this survey Iran is ranked 65 out of 68 and is the last country amongst those of the Middle East, (The Economist, 2006).

**Economist Intelligence Unit e-readiness rankings, 2006**

**Middle East and Africa**

2006 rank in region	2005 rank in region	Country	Overall ranking (of 68)	e-readiness score (of 10)
1	1	Israel	22	7.59
2	–	UAE*	30	6.32
3	2	S. Africa	35	5.74
4	3	Turkey	45	4.77
5	4	S. Arabia	46	4.67
6	–	Jordan*	54	4.22
7	5	Egypt	55	4.14
8	6	Nigeria	60	3.69
9	7	Algeria	63	3.32
10	8	Iran	65	3.15

\* New to the rankings in 2006.  
Source: Economist Intelligence Unit, 2006.

Figure 2 E-readiness Rankings – Middle East and Africa (The Economist 2006)

	Connectivity & technology infrastructure	Business environment	Consumer & business adoption	Legal policy environment	Social cultural environment	Supporting e-services	Overall score
Criteria Iran (of 10)	2.70	4.66	2.05	2.49	4.00	3.25	3.15
Category weight (of 1)	2.5	2	2	1.5	1.5	0.5	---
Ranking (of 68)	--	--	--	--	--	--	65

Table 2 Calculating e-readiness in Iran source (Caldow, 2005)

Considering each of the six major categories and the corresponding weight of each category in Iran gives us the degree of electronic readiness in Iran.

### 3.1. E-government readiness

According to the World Bank and the Iranian First National MDG Report, there were only 48 Internet users per 1000 people in 2002. Although it is a good increase compared to the number of Internet users (16 in 1000 people) in 2001, however, the Internet mostly used for entertainment, therefore, the society needs to be trained to use the e-services. (Ashrafologhalaee, 2006)

Some of the problems that hinder the widespread use of IT in the Iranian government include:

- IT illiteracy among the majority of the people and government employees.
- Lack of well-thought-of and clear coordinated, citizen-centred e-government strategies
- Strong inertia opposing re-engineering of the procedures, due to lack of IT knowledge
- Digital divide - which means a gap exist between those households that have access to the Internet and online services and those that do not. E-government services are ineffective when people lack necessary computers and Internet connections to use online information and services.

A report titled “A 2006 progress of e-government and administrative reform in Iran” has found that over 70 per cent of intra- and inter-city trips made by citizens are for the purpose of obtaining information, not services (Ashrafologhalaee 2006). Therefore, developing a remote delivery model for government services will cut many kinds of expenses and save time and energy to a great extent. According to UN Global E-government Readiness Report 2005, Iran made some of remarkable achievements in the Web measure in the last few years. The achievement is credited to the improvement in ministerial presence. It is now possible to access the ministry of Education which is a positive step towards the implementation of eGovernment in Iran. Like other Iranian sites, it is mostly static and provides plenty of useful information. The side of Education ministry of Iran also provide the facility by providing questions and answers, opinions and suggestions for taking steps towards the implementation and promote participation and inclusion. The focus on participation was also visible on the new Ministry of Labour and Social Affairs site. The site for Ministry of Finance now can be found with his own URL address. At the present the Iranian President’s Website are also under construction but provides some useful information too. The beauty of this side is that it makes possible to contact Mr. President via email.

The following table indicates rankings for central Asia.  
electronic government readiness in south and

		<i>Index</i>	<i>Rank in</i>		<i>Rank change</i>
		2005	2005	2004	
1	Kazakhstan	0.4813	65	69	4
2	Kyrgyzstan	0.4417	76	66	-10
3	Maldives	0.4321	77	78	1
4	Uzbekistan	0.4114	79	81	2
5	India	0.4001	87	86	-1
6	Sri Lanka	0.3950	94	96	2
7	Iran (Islamic Republic of)	0.3813	98	115	17
8	Tajikistan	0.3346	117	..	..
9	Nepal	0.3021	126	132	6
10	Bhutan	0.2941	130	165	35
11	Pakistan	0.2836	136	122	-14
12	Bangladesh	0.1762	162	159	-3
13	Afghanistan	0.1490	168	171	3
	Average	0.3448			

Figure 3 E-government readiness rankings: South and Central Asia.

Source: (Bertucci, 2005)

The UN Global E-government Survey 2005, ranks the 191 Member States of the UN according to a quantitative composite index of e-readiness based on Website assessment, Telecommunication infrastructure and Human resource endowment.

As shown in the above table Iran electronic government has ranked 98 out of 191 nations.

#### 4. The National agenda for ICT (TAKFA)

In 2002, the SCICT (supreme council of ICT) was set up for supervising and managing Iran's National ICT Agenda. In 2005, a five-year long project started for developing e-Enabled national services, such as e-commerce, e-learning, e-health and e-government. For the e-government part, three major projects have been initiated:

- Memorandum of understanding between Judiciary and Ministry of ICT
- E-Judgment infrastructure

- Connecting Regional Courts at country-wide to secure Network, (Jahangard, 2004).

SCICT (supreme council of ICT) was responsible for supervising and managing Iran's National ICT Agenda in the country. The structure and sectors of TAKFA are illustrated in Figure below.

Objectives of the National ICT agenda are:

- Creating infrastructure of Iran's information and communication technology (Network, law and security);
- Compilation and application of comprehensive system of information and communication technology;
- Developing of productive and beneficial employment;
- Promoting average level of individual and institutional skills in ICT
- Implementing of flagship projects;
- enhance in the financial and economic capabilities;

- backing-up private sector's participation in ICT market;
- Underpinning for entry into the global marketplace of ICT, (Jahangard 2004)

Success or failure of TAKFA is on the debate. However, looking at the current situation in Iran and the country's international position in ICT may help us to have a better vision of the current situation of ICT in Iran (Kousha,2004).

#### 4.1 Technical and social structure

In this section we look at summary of Technical characteristics of ICT in Iran followed by some social factors which influence implementation of electronic government. The summary of the technical characteristics are as follow:

- Telephone subscribers: 17.4 M Lines= =26%
- Internet Users: 6.5 M
- Mobile subscribers: 4.6 M Lines= =6.9%
- Number of PCs: 6 M
- Fibre-Optic Network: 30,000Km Operational
- Rural ICT Services: 43,000 Villages
- Number of high speed Ports, 250,000
- Number of ISPs: 653 Local ISPs, 31 National ICPs and 11 Private Access Network providers and 3 IDCs
- National Data Network: High speed ports covering 514 major cities
- Total International Internet Gateway bandwidth: 800 Mbps, (Jahangard, 2004)

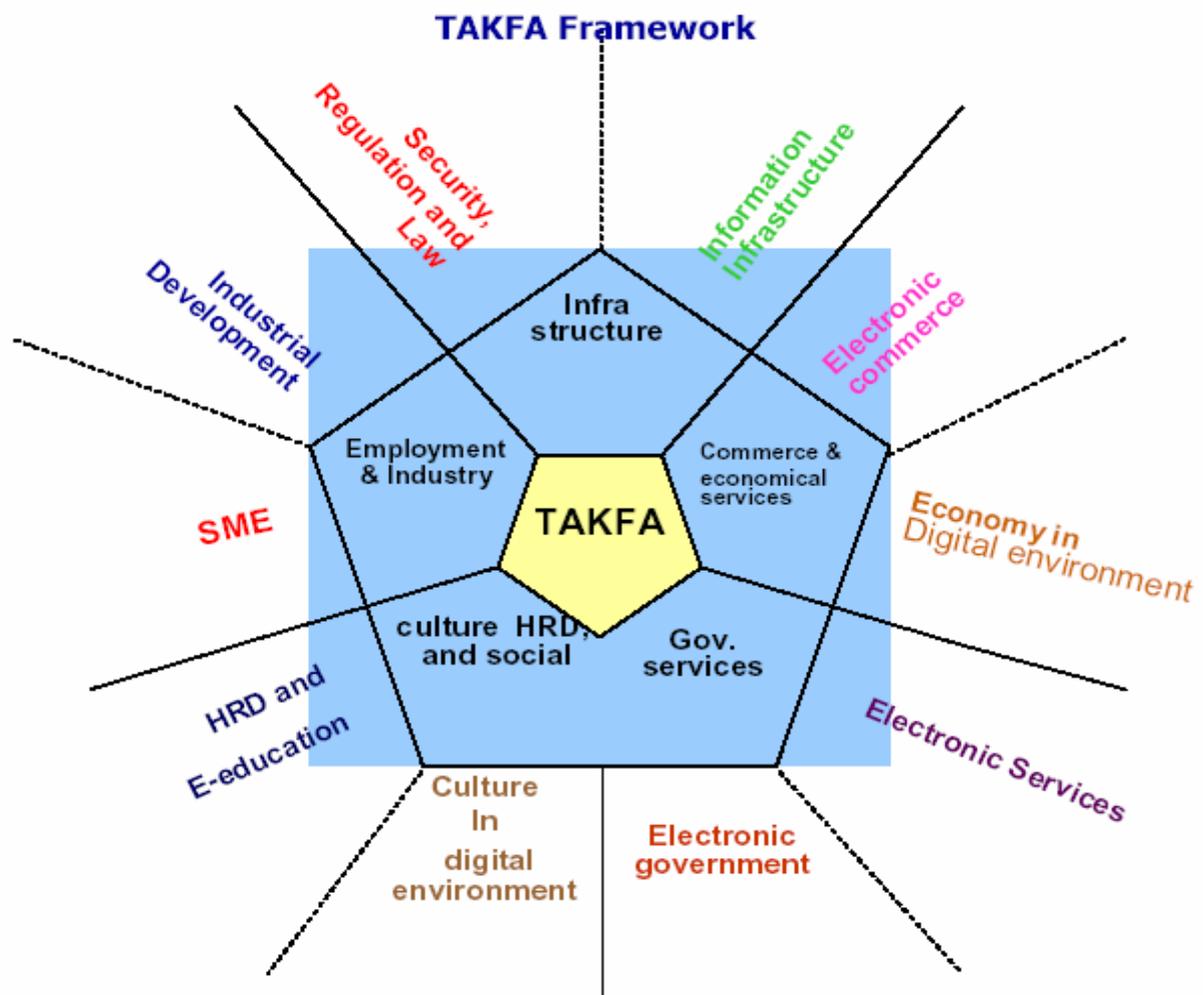


Figure 4 Structure of TAKFA (National ICT agenda), Source: (Jahangard, 2004)

The significance of cultural factors mustn't be undermined, since they play vital role in success or failure of an electronic government program.

#### 4.2 Policy discourse culture

Policy discourse, which refers to the way policy participant's frame, define and discuss issues in the formulation stage of policymaking. The process of policymaking in the country must be reviewed in order to provide workable and efficient framework. Policy discourse, we may provide clear assumption of the players, sectors, debates, and approaches involved in formulating e-government.

Currently there are three organizations for ICT development at the national level:

- I.T. Council of Excellence (formerly known as SCICT) is responsible for national level strategic decision making and ICT policies.
- Ministry of ICT is responsible for countrywide development of ICT.
- Iran Telecom Research Centre Catered supports research, knowledge creation and consultancy in ICT development, (Kousha, 2004).

Legal issues are a crucial aspect of e-government and the preparation of essential draft legislation for digital signatures, electronic contracts, data privacy is considered essential. The legislation also has to provide proper support for authorization and authentication. Any effort in implementing electronic government without proper legislation is ineffective. Potential investors will be concerned about host countries following a rule of law (Brown 2002). Another key consideration in developing an electronic government framework is the Digital Divide.

Digital divide simply means the difference between the people who have access and skills for using ICT facilities and people who

don't. Digital divide eliminates expected utilization of ICT facilities (Bertot, 2003).

Research by (Belanger & Carter 2006) analyses the effects of the digital divide on e-government usages and has identified demographic characteristics such as age, income and education. Mariscal (2005) has presented

Evidence that indicates that the digital divide is not narrowing with the deployment of telecommunications networks in a number of countries such as Mexico and Brazil. Despite a considerable increase in penetration of telecommunications in Mexico during the past decade there is no reduction in the Digital Divide due to inequalities in the distribution of IT deployment. On the other hand Brazil has been able to increase penetration with a higher degree of equality in comparison to Mexico. The penetration of IT deployment should be equally distributed in order to bridge the digital divide in developing countries.

## 5. Conclusions

Different approaches towards understanding electronic government and its implementation have been identified. The current situation of ICT in Iran from the technical and social view has been reviewed. Movement towards achieving a fully functional e-government can be enhanced by considering all influencing factors and avoiding one dimensional approach toward implementation of electronic government.

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