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# **Transition to E-Government: A Plan for Iran**

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## **Abstract**

E-Government is the use of technology to enhance the access to, and delivery of, government services to benefit citizens, businesses, employees, and other agencies. It involves access to government information and services 24 hours a day, 7 days a week, in a way that is focused on the needs of citizens and businesses. Electronic government relies heavily on government agencies use of the Internet to deliver information and services easily, quickly, efficiently, and inexpensively.

In this paper we present definition and benefits of E-Government and then introduce major E-Government applications that are: Government to Citizen (G2C), Government to Business (G2B), Government to Employee (G2E), and Government to Government (G2G). Then we will

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discuss the status of E-Government in Iran and finally will present a five phased plan for implementing E-Government in Iran. The plan starts with the implementation of an E-Government portal, a one door web-based gateway to all government web sites and is followed by on-line presence, interaction and transactions of all government agencies and ends with the development of virtual government organizations that only exist in cyberspace and their main focus is on the service people and business need rather than government agencies which deliver such services. We then propose some recommendations for successful implementation of E-Government in the country.

### **Key Words**

E-Government, Information Technology (IT), Government to Citizen (G2C), Government to Business (G2B), Government to Government (G2G), and Government to Employee (G2E).

### **Introduction**

E-Government refers to the use by government agencies of information technologies especially the Internet to deliver information and services to citizens, businesses, and other government agencies. Traditionally, the interaction between a citizen or business and a government agency took place in a government office. With emerging information and communication technologies it is possible to locate service centers closer to the clients. Citizens may receive government information and services in an unattended Internet kiosk or room that is located in a government agency or close to them, or through a

laptop or personal computer in the home or office.

In an E-Government, if properly implemented, citizens can log onto one Internet site, easily find the governmental information and services they are looking for, and use that site to conduct an online transaction, businesses fill out an electronic form for environmental regulatory compliance requirements, and government officials make all purchases and payments electronically.

Among the potential benefits of E-Government are savings in money and time for the government, citizens and businesses. Moreover, users of governmental information services will benefit by greater 24 hours a day, 7 days a week access to higher quality services. Most importantly, the relationship between government and citizens can evolve from its traditional hierarchical one to a more reciprocal one where citizens are genuine stakeholders in their government. Although the use of these technologies is rapidly growing in the economic and production systems of the world, they are not available 'off the shelf'. They have to be understood, absorbed, and mastered.

### **What is E-Government?**

Electronic government has been defined as providing information and services by government agencies via the Internet to citizens, business, employees, or other government entities. It focuses on the needs of our citizens and businesses.

E-Government can serve a variety of different objectives: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, and more efficient government management. Electronic government relies heavily on the agency use of the Internet and other emerging technologies to receive and deliver information and services easily, quickly, efficiently, and inexpensively. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and cost reductions.<sup>(1)</sup>

E-Government is also defined as the application of IT to the processes of government functioning to bring about: simple, moral, accountable, responsive and transparent governance.<sup>(6)</sup> Another indirect impact is that by moving toward E-governance, a government can greatly stimulate adoption of IT by business and industry. Business process can also get speeded up since governmental procedures would no longer have a drag effect on the velocity of business, which is seen as a significant factor in the competitiveness of countries.<sup>(10)</sup>

By virtue of E-Government, people will be able to gain access all governmental information and services through one web site (portal) on the Internet, regardless of physical location or the time of day. The far-reaching implications of increasing use of IT in the government context not only include remote access by the public to government information and services in a variety of

ways, but also encourage cooperation among government agencies to integrate public services. Information would also be gathered much more easily without duplication of efforts and many routine and repetitive tasks could be simplified or totally eliminated.<sup>(10)</sup>

One of the advantages of implementing E-Government is that citizens enjoy a fast and convenient service. The other advantage is that the government not only becomes more integrated into the community itself, but also can focus its resources where they are most needed. Moreover, a culture of self-service enables citizens to 'help themselves' wherever possible, saving time and money for all concerned.<sup>(5)</sup> It is important that the government provides a common set of standards so that all government information and services are equally and easily accessible to public. This will involve a number of management, legislative and infrastructure decisions. E-Government is a technology enabled, sector-wide, cultural, organizational and business transformation program; it is not a massive IT project, although it is a critical component of any such transformation and plays a crucial role.<sup>(4)</sup> Therefore, E-Government can be defined as the sum of all electronic communication between government, enterprises and citizens.<sup>(9)</sup>

### **Benefits of E-Government**

As is true all over the world, government specially in developing nations spend too much, deliver too little, and is not

sufficiently responsive or accountable. Good governance reforms aim to address these shortcomings. Yet progress, after many years of effort in implementing such reforms, has been much more limited than expected. E-Governance offers a new way forward, helping improve government processes, connect citizens, and build interactions with and within a civil society.<sup>(8)</sup>

Major benefits of E-Government include: faster delivery of services to citizens, generally improved service delivery, more accurate delivery of services to citizens, more convenient delivery of services to citizens, ability to cope with more enquiries, less duplication between departments, more personalized/tailored approach to service delivery, more accurate records, fewer errors, an improved image for government service and better and more equal relationship with the citizen.<sup>(4)</sup> E-Government, if implemented properly, brings efficiency gains (which means governance that is cheaper, does more and is quicker) as well as effectiveness gains (that is governance that works better and is innovative).

### **E-Government Applications**

Analogous to E-Commerce, which allows businesses to transact with each other more efficiently (B2B) and brings customers closer to businesses (B2C), E-Government aims to make the interaction between government and citizens, government and business enterprises, government and employee and inter-agency

relationships more friendly, convenient, transparent, and inexpensive. E-government applications can be divided into four groups: Government to Citizen (G2C), Government to Business (G2B), Government to Employee (G2E), and Government to Government (G2G).

### **Government to Citizen (G2C)**

Government to Citizen (G2C) and vice versa perhaps is the most important and most widespread type of E-Government application. E-Government should always connect the citizen to the government. Government to Citizen (G2C) applications range from providing people with appropriate information, forms available to download, and online ordering of publications, to provision of benefits such as social security, renewal of car registration and driving license, on-line payment of bills (such as telephone, water, electricity, traffic tickets, etc), and registration for government facilities. Truly integrated and advanced G2C will bring about dramatic changes in people's life. These will include ease in locating services, convenience of continuous access to government information and services, and single touch-point for government services so that a change of address or submission of data need to be completed only once for the entire government to receive it.<sup>(3)</sup>

It should be noted that single touch-point for government services involves a central database and so it raises serious

concerns about privacy issues. These are problems everywhere around the world, and citizens are facing erosion of privacy due to the incursion of government databases. Different agencies have a need for certain information about the citizens with whom they interact, and such easy interchange of such data will create long range privacy problems. It becomes far too easy for a government employee to collect information on a specific person if the data are all accessible through one common database. This is fine if the person actually turns out to be a criminal, but ordinary citizens are also very much at risk through such actions. So it may be necessary to sacrifice efficiency in order to retain a certain level of privacy.

### **Government to Business (G2B)**

Government to Business and vice versa was the first type of E-Government transaction developed. In this type of application the government meets the specific needs of the business community via the Internet. However, these services are multi-faceted. Businesses are suppliers to, partners of, customers of and occasionally competitors with, government. Government transactions with businesses both enable and regulate a range of activities from business registration and licensing, e-procurement (on-line purchases of goods and services), and Electronic Bidding System (EBS) to taxation. Although access to online services may be more pervasive in the business world than in the public at



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large, online implementations can not assume that all businesses have ready access to online services. Government to Business commerce holds perhaps the greatest promise for realizing new efficiencies and economies through E-Government.<sup>(3)</sup>

### **Government to Employee (G2E)**

Government to Employee (G2E) services are designed to provide information to public sector employees using a government's intranet or private network to access human resource information such as personnel benefits and retirement, news releases, and other employee-related information and applications. G2E is a highly effective way to provide E-Learning, and to promote knowledge management.<sup>(3)</sup> Due to the nature of these applications, G2E sample applications are not available on the Internet. This type of application is normally accessed via a government's intranet or private network.

### **Government to Government (G2G)**

As government organizations usually rely on other government agencies to deliver services, electronic interactions between them are of great importance. This type of application is normally accessed via a government's intranet or private network. Government to government (G2G) services may utilize some of the components of G2C and G2B services but generally require more direct access to databases and applications. Putting the

whole process of preparing annual budget or five-year plan on-line is a good example of G2G application. Like G2E, due to the nature of these applications, G2G sample applications are not available on the Internet.<sup>(3)</sup>

### **E- Government in Iran**

In order to find the status of E-Government in Iran we have first identified the web site addresses of ministries and top organizations (organizations whose directors are appointed by the president). This includes twenty ministries and five top organizations that work directly under the Iranian president's supervision. Other government organizations are affiliated to one of these 25 government agencies and so we did not look for a complete list of such organizations since, if properly designed, the web site of ministries and top organizations should contain the addresses of all of their subordinate and related organizations. Since the executive power is, for the most part, centralized in federal government in Iran, although mandates, budgets, and priorities for the three levels of government (i.e. local, state, and federal) are different we didn't differentiate between these three layers of government in this research. Also due to time limitation we excluded non-executive organizations such as judiciary branch, legislative branch, supreme councils, that are behind government agencies in terms of using the internet for their services, from our survey.

Since no formal list of government web sites was available we used the information that was available on the existing public and private web sites (see Appendix) to find the address of government ministries and top organizations web addresses. We then presented the composed list of government web sites to some experts and government authorities in the Presidential Office, Management and Planning Organization and PTT Ministry and made some additions and modifications based on the input we received from them. The final list of the main government agencies web addresses is presented in Table 1. Although a formal list of the Iranian government agencies web sites does not currently exist on or off-line, based on the information we received from informative experts and government authorities the composed list covers most, if not all, of the existing top government agencies web sites.

In order to evaluate the existing government web sites we defined five levels for each of the main government services (G2B, G2C, G2G and G2E) starting from level 0 that means "non-existent" to level 4 that is "Acceptable Service Delivery" as explained in Table 2 to evaluate the quality of the service provided by each government web sites.

We then visited all of the existing web sites on the list carefully and evaluated the level of each E-Government services offered on these sites based on the above-mentioned grading schema. As explained before, G2E and G2G services, due to their

Table 1- Top Government Agencies Web Addresses

Row	Organizations	Web Site
1	President's Office	www.president.ir *
2	Crusade of Agriculture	www.jahad.net
3	Commerce	www.iranministryofcommerce.com
4	Cooperative	www.icm.gov.ir
5	Science, Research, & Technology	www.mche.or.ir
6	Defense	Not Found
7	Economy and Finance	www.economicaffairs.ir
8	Education	www.iraneducation.org
9	Energy	www.moe.or.ir
10	Foreign Affairs	www.mfa.gov.ir
11	Health and Medical Education	www.mohem.gov.ir **
12	Housing and Urban Development	Not Found
13	Industries and Mines	www.mmm.gov.ir, www.iranindustry.org
14	Information (Intelligence)	Not Found
15	Interior	Not Found
16	Islamic Guidance and Culture	www.farhang.gov.ir
17	Justice	Not Found
18	Labor and Social Affairs	Not Found
19	Oil	www.nioc.org
20	Post, Telephones & Telegraphs	www.ptt.gov.ir **
21	Roads and Transport	Not Found
22	Management & Planning Organization	www.pbo.or.ir **
23	Physical Education Organization	Not Found
24	Environment Protection Organization	www.ir-doe.org
25	Atomic Energy Organization	Not Found

\* Access to the site is very slow.

\*\* Site was not retrieved.

Table 2- Grading Schema for Evaluating E-Government Services

Levels	Description
0	No information and no service delivery
1	Poor information and no service delivery
2	Acceptable information and no service delivery
3	Acceptable information and Poor service delivery
4	Acceptable information and service delivery

nature, are not usually available to public and so we could not investigate their status in different government agencies by visiting their web sites. However, our interview with government authorities and field experts showed that none of these two applications are available in government organizations and so all of the government agencies stand in level 0 in terms of providing G2E and G2G services. The status of each of the four major E-Government services in different government agencies are depicted in Table 3.

As Table 3, clearly shows, aside from some limited level 1 G2G service that is available through president's office to other government agencies, no G2B, G2G or G2E service, is currently available on the existing government agencies web sites. In terms of Government to Citizens (G2C) services, 40% of the agencies did not have a web address (level 0), 32% had a web site which offers very limited information to people (level 1), and only

Table 3- Status of E-Government Services in Iran

Row	Organization	E-Government Applications			
		G2C	G2B	G2G	G2E
1	President's Office	1	0	1	0
2	Crusade of Agriculture Ministry	2	0	0	0
3	Commerce Ministry	2	0	0	0
4	Cooperative Ministry	2	0	0	0
5	Science, Research & Technology Ministry	2	0	0	0
6	Defense	0	0	0	0
7	Economy and Finance Ministry	1	0	0	0
8	Education Ministry	1	0	0	0
9	Energy Ministry	2	0	0	0
10	Foreign Affairs Ministry	1	0	0	0
11	Health and Medical Education Ministry	0	0	0	0
12	Housing and Urban Development Ministry	1	0	0	0
13	Industries and Mines Ministry	2	0	0	0
14	Information (Intelligence) Ministry	0	0	0	0
15	Interior Ministry	0	0	0	0
16	Islamic Guidance and Culture Ministry	1	0	0	0
17	Justice Ministry	0	0	0	0
18	Labor and Social Affairs Ministry	0	0	0	0
19	Oil Ministry	1	0	0	0
20	Post, Telegraph & Telephones Ministry	0	0	0	0
21	Roads and Transport Ministry	2	0	0	0
22	Management & Planning Organization	0	0	0	0
23	Physical Education Organization	0	0	0	0
24	Environment Protection Organization	1	0	0	0
25	Atomic Energy Organization	0	0	0	0

28% (7 government agencies) offer rather acceptable information on their web sites (level 2). No level 3 and level 4 services were found on the existing sites, which means that no government service is currently offered on any of the existing government web sites.

Some of the existing web sites are so poor designed that they even did not carry the name of the organization on their home page and some others had a link to the older version of their web site! The number of visitors on some government sites, according to the statistic on their home page, was drastically low. For example only 1812 visitors had visited one of the most important ministry's web site by the time we visited their site. There are some organizations that have a level 2 web site whereas the ministry that they belong to does not even have a level 1 web site.

One of the most important web sites was retrieved after 5 minutes using a 2 mbps link to the Internet and had very limited useful information for citizens. Most of the existing government sites did not have a link to their own affiliated organizations and some of them had links only to some of their subordinate organizations. No standard was followed on the existing web sites and so users have to download different Persian fonts to see different government sites. Some of the existing government web sites domain name ends with .ir whereas some others end with .net, .org, and some with .com! No consistency in terms of look and feel or content exists among the existing web sites.

In spite of the fact that the Iranian government owns and manages most of businesses and industries in the country, it has lagged seriously behind the private sector even small companies in the use of the Internet for its services. The public sector has not placed the same priority on this technology to date because it hasn't had to. But that has to be changed because people and businesses need to receive enhanced, easy-to-use online services from their government.

Many governments in developed and even in developing countries have committed themselves to establish E-Government in a pre-specified time frame in order to provide their citizens and businesses with on-line services. This is a very challenging task that needs more than just sophisticated information technology. At the heart of this program is not only the need for more equipment, including most up-to-date information technology, but also the need for cultural change. Government organizations must learn to share their information and work together to provide citizens and businesses with easier access to their services.

Lack of awareness among top managers about the importance of E-Government and the invaluable benefits of it to people, businesses and government seem to be the first and most important reason for the poor status of E-Government in Iran. Non-existence of a responsible organization within government for planning and implementing E-Government in Iran, which is derived from the first problem, is the second reason for the



existing status. Management and Planning Organization (MPO) has recently started to compose a list of existing government agencies web sites, which is far from completion. Successful implementation of E-Government, more than everything else, needs awareness among top management of the country and a central executive authority to put the E-Government design and implementation plan together, get the required approvals and manage its implementation.

### **A Plan for Implementing E-Government in Iran**

In order to develop and implement E-Government in Iran the government should assign a cross-functional executive organization (and not a council who does not have executive authority) such as Management and Planning Organization (MPO) to plan and manage the development of E-Government in the country. Using Gartner and Dataquest's model with some adaptations to customize the model to cater with Iran's situation, in the following we propose a five-phased plan for implementing E-Government in Iran.

**Phase 1) Government portal:** As a first step towards E-Government, a government gateway should be developed and implemented on the Internet by MPO. This is a web portal that increases the accessibility of people to existing government web sites in a hierarchical manner and also enables people to search for a specific piece of information on the existing government

sites. The names of all ministries and top organizations and all of their affiliated and related organizations will be put on the portal directory regardless of whether they have a web site or not. There will be hyperlinks to all government-related organizations that have set up their web sites and the links will be updated frequently. Organizations that belong to other branches of the country such as parliament and judiciary branch might be added to the portal too. The government portal will be maintained by MPO and in the later stages of E-Government will act as a registration service for all E-Government services. The majority of the information and services on the portal should be free to the public, although some services may involve a convenience fee that can be used to fund the portal.<sup>(2)</sup>

**Phase 2) Presence:** The second phase of E-Government development is specifying a time frame for all government agencies who have not yet developed their web site to simply have presence on the Internet by putting up their own web site and providing one-way communication to people and business to supply them with required information. In the U.S. since the early 1990s, the federal, state and local governments have implemented more than 10,000 web sites to inform the public about government agencies.<sup>(12)</sup> In this phase all Iranian government organizations (ministries, organizations, and companies) will be presenting their information to people and business on the Internet. Even if an organization, due to certain reasons, does not

want to have a complete web site, it has to set a home page with its name, addresses and important telephone numbers on it.

**Phase 3) Interaction:** In the third phase of E-Government implementation a two-way communications between the government and the users will be established. In this phase government web sites provide more advanced services such as downloadable electronic forms and documents, interactive forms, and searchable databases that enable users to receive part of their services on-line, but still require visit to a government office to complete a transaction. For example, businesses can search for government bids and find the one that they are interested in and download the forms or fill them on-line and send the filled forms to the bidding organization and then follow the rest of the procedure off-line.<sup>(12)</sup>

**Phase 4- Transaction:** In the fourth stage of E-Government implementation people and businesses will be able to receive the entire service through the Internet by using on-line self-service applications such as tax filling, bill payment, procurement, and receiving permissions and licenses.<sup>(12)</sup> For Example, people will be able to pay their utility bills (such as telephone, electricity, etc.) on-line in this phase. This is the focus of most current E-Government initiatives, for example In U.S. Forrester Research estimates that total public sector transaction volumes now exceed \$2 trillion and predicts that by 2006 governments will collect 15% of fees and taxes online-totaling \$602 billion.<sup>(7)</sup>

**Phase 5) Transformation:** This stage of E-Government development is characterized by the development of "virtual agencies" that exist only in cyberspace, whose web site focus is topical (education, licensing, etc.) rather than rigidly organized by the government agency which delivers the service (agency-centric). In this phase government services are seamless which means citizens do not need to know which part of government is providing the service. Development of this ultimate E-Government is currently in the primary stage in the world and will accelerate in the coming years.<sup>(3)</sup>

Demonstration projects are often the best way to educate and encourage the spread of an innovation such as E-Government. So it would seem appropriate that under supervision of MPO (or any other organization that is in charge of implementing E-Government) a number of government agencies take the lead as a group to show what could be accomplished with this innovation, in terms of both efficiency and effectiveness. The demonstration project would have to be done by agencies that already have the expertise and interest to make it succeed. Otherwise, a failure could set back the plan for years. For example, suppose the four or five of the most advanced government organizations were to set up a joint demonstration project for G2G. This is not easy, but it should be done before these organizations have gone too far with totally separate systems. This has happened with G2C for the Canadian

government agencies, which all went down separate paths, and it has been costly and time consuming to go back and start over again. But the citizens seeking information from the government can otherwise get totally lost among a fragmented set of different Web sites that have little in common and don't direct the citizens to the best sources of information. In this case, a portal is part of the answer.

It is important to realize that it is not necessary that all government agencies go through simple presence to reach to more advanced types to presence. A savvy government organization could skip to Interaction or even Transaction without going through the other phases. It is unlikely, however, that any organization will jump right to Transformation. Moreover, any government agency can have multiple sites each in different phases. For example, an affiliated organization of a ministry might be well into the transaction phase and accepting credit card payments over the Internet, while its another affiliated organization just has a web site that only gives office locations and hours.

The ultimate goal should be to provide the Iranian people and businesses with all government information and services online within a pre-specified time schedule. To do that, the government should promote the use of the Internet in all of its organizations and connect citizens and businesses to all government institutions through different means such as Freenets and Internet Kiosks.

Phases 1 to 3 and a part of phase 4 can be partly implemented with the existing infrastructure. However, in order to take advantage of full capabilities of E-Government, the government should enhance E-Readiness by preparing the required Legal, Institutional, Human, Technological, and Data Systems Infrastructure. For example, the legal status of the Internet is not clear in the country now and the number of Internet users in the country is very low. There is no formal report in Iran about the number of Internet users in the country. The number is 100,000 based on ITU'S 2001 report and is believed to be below 500,000 with the most optimistic estimates which is far below the access that is required for successful implementation of some E-Government applications.<sup>(1)</sup> For example, if access is low for government employees, then G2E cannot be implemented properly but if access was high among government employees it would have been a good place for a high priority demonstration project to demonstrate the advantages of E-Government. It should be noted that due to low level of Internet access in the country, E-Government services should supplement and not replace the traditional methods of serving people.

Although providing the infrastructures as explained above is very critical to the success of E-Government the commitment of top managers to the program and provision of financial and non-financial support, strategic planning and strong leadership for implementing E-Government in the country is more important

than infrastructures. This not only is required for successful implementation of E-Government but also provides the ground for accelerated growth of E-Commerce in the country since there is a huge amount of overlap between infrastructure requirements of E-Government and E-Commerce.

To implement E-Government successfully, the general internal priorities of the government must be set. Education about the benefits of E-Government, infrastructure development (internally within government agencies, and externally for business and the general population), and access improvement (internally and externally) will need the most attention for successful implementation.

Developing and following standards (form, content, database, hosting, etc.), enhancing security and privacy in the developed systems, making appropriate provisions for digital signature, and also adopting a coordinated approach to developing E-Government applications that allows systems to be compatible with one another and to ensue that limited resources would not be used to build systems that perform the same functions, are also among critical success factors in implementing E-Commerce.

### **Acknowledgement**

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## Appendix

Web sites used to find web addresses of government sites in alphabetical order:

- \* Abadan ([www.abadan.com](http://www.abadan.com))
- \* Afrane ([www.afranet.com](http://www.afranet.com))
- \* Iran Embassy in Canada ([www.salamiran.org](http://www.salamiran.org))
- \* Iran Index ([www.iranindex.com](http://www.iranindex.com))
- \* Iran Mania ([www.iranmania.com](http://www.iranmania.com))
- \* Iran Ministry of Commerce ([www.iranministryofcommerce.com](http://www.iranministryofcommerce.com))
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