E-government in Jordan

Hiba Mohammad  
*Computer Information System Department, University of Jordan*  
*Al-Jubeiha, 11942, Amman, Jordan*  
E-mail: h.khadrawi@ju.edu.jo

Tamara Almarabeh  
*Computer Information System Department, University of Jordan*  
*Al-Jubeiha, 11942, Amman, Jordan*  
E-mail: tmarabeh@yahoo.com

Amer Abu Ali  
*Philadelphia University, Jerash, Jordan*  
E-mail: drabuali@yahoo.com  
Tel: +962-65355000, Ext: -22603

**Abstract**

E-governments facilitate the use of information systems in government strategic and operations. This paper reviews the e-government concepts in information society and specially focuses on the government project in Jordan, views some of strategic and technical challenges and risk factors affected the development of electronic government and give some suggestions to overwhelm consequences of these difficulties. Where some of these factors must be identified correctly and as a result should be looked at the risk factors as they are control the success or failure of the project of the e-government.

**Keywords:** Citizen, stakeholder, MOICT, ICT, risk.

1. **Introduction**

E-Government has become a reality and a natural extension of the technological revolution that has accompanied the knowledge society. The E-government added new concepts in the science of public administration such as: transparency, accountability, citizen participation in the evaluation of government performance, and changed the political practices which transitioned to e-democracy and e-governance.

E-government, which means "Government initiatives helping local authorities provide planning services online and accessible via the internet and email, for example, the Planning Portal website" [1], depends on diverse expectations exist within its strategies, like achieving financial cost/benefits, restructuring administrations, delivering services to citizens, or a remedy for previous policy failures.

World Bank website provided another definition of e-government as:"...the use by government agencies of information technologies... that have the ability to transform relations with citizens, businesses, and other arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The
resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions..." (The World Bank Group, 2009).

E-government is "a way for governments to use the most innovative information and communication technologies, particularly web-based Internet applications, to provide citizens and businesses with more convenient access to government information and services, to improve the quality of the services and to provide greater opportunities to participate in democratic institutions and processes.

E-government presents a tremendous impetus to move forward in the 21st century with higher quality, cost-effective, government services and a better relationship between citizens and government." (Zhiyuan, 2002).

In Jordan, E-Government Program is a national initiative of his Majesty King Abdullah II, as the program seeks to achieve greater efficiency in government performance by raising the level of service delivery to clients and investors from all segments of society easily, quickly, accurately and efficiently, to become a new type of performance of government employees and government transactions.

To achieve this vision, been assigned to the Ministry of Communications and Information Technology (MOICT) to build and support the preparation of e-government strategy and its implementation in coordination with the various stakeholders. Within the scope of the work of e-government within the framework of a plan, MOICT decided the need for a random survey of government officials to see how their understanding and awareness of this program, so to plan for the channels of communication and information statement to be delivered to different segments of the staff based on the results of these meetings and analysis of the basic concepts that must be entrenched in the minds of government officials at various levels. From the words that have been replicated by a number of attendees noted there is awareness among the common good of all segments of the staff at the vision of the future of e-government and a belief in the need to implement the program and work towards its success.

This paper reviews and summarizes the development of e-government especially Jordan E-government Program, highlighting risk factors and strategy practices that have affected and will affect the country transformation.

2. Goals of E-government Program
The overall objectives and priorities in lunching e-government are listed below:-

1. Increase the effectiveness and efficiencies of the internal operations in the governmental sectors by:-
   a. Reduce the time spent in the actions within each department
   b. Learning from experience of the best practices in the performance of work.
   c. Accuracy in the completion of various functions
2. Reduce costs of the government by
   a. The improvement and development of business processes.
   b. Facilitating the flow of business and entry into high transparency and easy.
   c. Reduce duplicate processes and information within the chain business seminars.
   d. To promote integration and the exchange of data.
3. Raise the level of customer satisfaction with the services provided to them, through:
   a. Facilitate the use of government services.
   b. Reduce the time it takes to get the recipient to the service need.
   c. To provide accurate data in a timely manner as required.
4. Support economic development programs, through:
   a. Facilitate the transactions between sectors of government and business sectors.
   b. Reduce the costs of coordination and follow-up continuing.
   c. Increase job opportunities
d. Increasing returns to profitability with the dealings of government business sectors.

e. Encourage the building of infrastructure and the dissemination of technical information for high efficiency.

f. The opening of new investment opportunities primarily in the information.

g. Achieve a high degree of integration between government projects and the private sectors in the national economy.

These goals ranked by different governments in different orders, but all of these goals are achieved results of efforts to shift to e-government.

3. Literature Review of E-government

Electronic government has been widely discussed by several researches, some of them concern with e-government concepts, architectures, strategies, implementation, services…etc in developing and developed countries. Below is a review of the most important reaches and its findings:

**Michael Blakemore and Roderic Dutton (2003), e-Government, e-Society and Jordan: Strategy, theory, practice, and assessment ((Blakemore, Dutton), 2003)**. The researchers analyzed the strategy statements of e-government project implementations in several countries including: Brazil, Cambodia, Canada, Denmark, Dubai, Estonia, European Union, Ghana, Hong Kong, Hungary, Budapest, India, Ireland, Israel, Jordan, Pakistan, Russia, Singapore, South Africa, South Korea, Thailand, U.K., and U.S, and summarized the expectations of these nations from implementing an e-government project to be: Government to Citizen (G2C), Government to Government (G2G), Government to Business (G2B). An integrated society, where long distances and borders are not a problem anymore in it, in the contrary, saving time and fast services will be the new trend.

**Richard Heeks (2002), Information Systems and Developing Countries: Failure, Success and Local Information Society (Heeks, 2002).**

This research paper categories the nature of e-government as per the model.

![Figure 1: e-government categories](image)

The mentioned figure is a demonstration of the e-government and its possible relationships with other parties like citizens and businesses, or in other words the formation of relationships between e-government and different stakeholders in the economy or society.

**Sami Atallah (April 2001), E-Government: Consideration For Arab States, United Nations Development Program research (Atallah, 2001).** This paper presented how UNDP has been supporting several e-government initiatives in the Arab world. The researcher suggested 4 stages in the launching the e-government as will as presenting suggested actions that will advance e-government through the stages as illustrated in the following table:
Table 1: E-government advancement plan

<table>
<thead>
<tr>
<th>Stages</th>
<th>Actions to Advance E-government and IT for Development</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stage 1: Posting information</strong></td>
<td>• Enhance the telecommunications infrastructure and increase the number of landlines and mobiles. Can be facilitated by the liberalization of the telecommunication sector</td>
</tr>
<tr>
<td>General information and application forms can be provided online via the websites that can be printed out. One way communication system.</td>
<td>• Reduce the costs of telecommunications</td>
</tr>
<tr>
<td></td>
<td>• Encourage or subsidize the costs of PCs with the Cooperation of the private sector or any other sector.</td>
</tr>
<tr>
<td></td>
<td>• Increase the Competition in Internet service provision and low rate for internet connections</td>
</tr>
<tr>
<td></td>
<td>• Invest in advanced access infrastructure like Cable and other broadband systems, wireless, fiber optics, Wimax and satellites.</td>
</tr>
<tr>
<td></td>
<td>• Ensure universal access by improving access in Public institutions –libraries, centers, public telephone offices, and post offices – and encouraging the private sector to do so.</td>
</tr>
<tr>
<td><strong>Stage 2: Two way communications</strong></td>
<td>• Make data available – a public asset – starting with the Freedom of Information Act</td>
</tr>
<tr>
<td>Websites allow informational queries and forms to be completed on-line two-way communication system</td>
<td>• Integrate the internet into the classroom</td>
</tr>
<tr>
<td></td>
<td>• Fund training for educators on how best to use Internet technologies</td>
</tr>
<tr>
<td><strong>Stage 3: Exchange of value</strong></td>
<td>• Reform the public sector since websites now.</td>
</tr>
<tr>
<td>Websites allow an exchange of value to take place as government agencies interact directly with clients on-line, including recording and storing sensitive information</td>
<td>• Challenge working practices &amp; processes.</td>
</tr>
<tr>
<td></td>
<td>• Ensure financial security.</td>
</tr>
<tr>
<td></td>
<td>• Encourage the banking sector to develop new</td>
</tr>
<tr>
<td></td>
<td>• Financial products.</td>
</tr>
<tr>
<td><strong>Stage 4: Integrated service and exchange</strong> Portal that integrates ranges of government services based on needs and queries, not depending on agencies or departments.</td>
<td>• Enhance the delivery &amp; distribution system</td>
</tr>
<tr>
<td></td>
<td>• Build security and trust on open networks by encryption and authentication</td>
</tr>
</tbody>
</table>


The both researchers presented a general framework model for E-government Readiness Assessment and recommended factors represent the basic components to be assessed prior launching the "e-initiative" to be sure the implementation is in the correct way. These factors were: Organizational Readiness, Governance and leadership Readiness, Customer Readiness, Competency Readiness, Technology Readiness, and Legal Readiness.

Like in any country, e-Government in Jordan will require continued investments in services and technologies whose benefits are not always immediately apparent (Ministry of Information and Communications Technology). The following table provides a benchmark of benefits as measured by other countries (OECD report).
Table 2: Benchmark of benefits as measured by other countries.

<table>
<thead>
<tr>
<th>Project</th>
<th>Activity</th>
<th>Financial benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centreline, Australia</td>
<td>Information service for citizens, stared 2001</td>
<td>Break even over 2 years, AUD 8.9 million benefit after 4 years</td>
</tr>
<tr>
<td>District of Columbia, Business resource Center</td>
<td>Business resource Center. Rationalization of services.</td>
<td>Saves USD 1.8 million per year</td>
</tr>
<tr>
<td>Information Network of Kansas</td>
<td>Information Network of Kansas</td>
<td>9 years after creation, revenue of 7 million USD per year</td>
</tr>
<tr>
<td>Iowa Single contact repository</td>
<td>Delivers information to Public. Cost USD 277 000.</td>
<td>Saves USD 264 000 per year</td>
</tr>
<tr>
<td>Australia e-Tax</td>
<td>Tax returns can be filled on line</td>
<td>AUD 15.5 million in accrued benefits over 5-year period</td>
</tr>
<tr>
<td>Singapore e-Tax</td>
<td>Tax returns can be filled on line or over the phone</td>
<td>Saves SGD 20 million per year</td>
</tr>
<tr>
<td>Colorado Secretary of State Business Center</td>
<td>Provides Business information and allows online document filling</td>
<td>Saves USD 2 million per year</td>
</tr>
<tr>
<td>eMaryland Marketplace</td>
<td>Procurement project</td>
<td>Saves USD 100 per purchase</td>
</tr>
<tr>
<td>OGC, UK: e-tendering</td>
<td>Allows tendering to take place online</td>
<td>GBP 13 million savings over 4 years; reduces costs to suppliers by GBP 37 million</td>
</tr>
<tr>
<td>ServiceArizona</td>
<td>Allows citizens to register vehicles online; processing is about USD 4 less than counter transaction</td>
<td>Saves more than USD 1 million per year</td>
</tr>
<tr>
<td>The Dolphin project, Ohio</td>
<td>Automation of Bureau of Worker's compensation scheme; cost USD 15 million</td>
<td>Saves over USD 120 million per year</td>
</tr>
</tbody>
</table>

4. Facts about Jordan

- Jordan Country Area (Size): 89,342 sq km and the population density are round 66 persons per sq km distributed according to governorates of the kingdom as in Table 3.

Table 3: Estimated Population of the Kingdom, Area (sq km) and Population Density by Governorate, at End-year 2008

<table>
<thead>
<tr>
<th>Population Density</th>
<th>Area</th>
<th>Governorate Population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>(Km²)</td>
</tr>
<tr>
<td>298.9</td>
<td>8.54</td>
<td>7579</td>
</tr>
<tr>
<td>350.2</td>
<td>1.26</td>
<td>1119</td>
</tr>
<tr>
<td>183.1</td>
<td>5.36</td>
<td>4761</td>
</tr>
<tr>
<td>155.6</td>
<td>1.06</td>
<td>940</td>
</tr>
<tr>
<td>662.4</td>
<td>1.77</td>
<td>1572</td>
</tr>
<tr>
<td>10.4</td>
<td>29.90</td>
<td>26541</td>
</tr>
<tr>
<td>428.0</td>
<td>0.46</td>
<td>410</td>
</tr>
<tr>
<td>320.2</td>
<td>0.47</td>
<td>420</td>
</tr>
<tr>
<td>65.3</td>
<td>3.94</td>
<td>3495</td>
</tr>
<tr>
<td>37.1</td>
<td>2.49</td>
<td>2209</td>
</tr>
<tr>
<td>3.4</td>
<td>36.98</td>
<td>32832</td>
</tr>
<tr>
<td>18.5</td>
<td>7.77</td>
<td>6900</td>
</tr>
<tr>
<td>65.9</td>
<td>100.00</td>
<td>88778</td>
</tr>
</tbody>
</table>

- Department of Statistics carried out a survey the use of information technology in the home in May 2008 which carried out for the second time [10]. The survey covered 3340 families distributed to all governorates of the kingdom, was the proportion of response in the survey about 94% or 3145 families. The survey covered a sample of households amounted to about 3340 family to ensure representation at the level of the kingdom: the urban, rural areas and regions. The main results were:
• A marked increase in the availability of mobile phones in households (from 86% in 2007 to 94% in 2008), and this due to the cheaper mobile charges because of competition between major mobile service providers: Zein, Mobilecom, Express, and Umnia. On the other hand, there is a significant decline in the availability of fixed-line (from 42% to 31%).

• Clear rise in the proportion of households with internet ADSL line at about 29 percentage points from the last year, and was the most frequently used means to connect to the internet compared to the previous year was prepaid cards.

• More than half of households do not have personal computers due to lack of financial capacity and this percentage decreased from the previous year by about 9 percentage points, with about two-fifths of families do not have personal computers because of the unnecessary need for a computer, up from the previous year by about two percentage points.

• About two-thirds of families wishing to access the e-government services and less than one third of individuals who age 15 years and over have the knowledge of what e-government can provide services.

• Rise in the proportion of families who want to use SMS messages through mobile phone to take advantage of e-government services over the previous year (31% in 2008 compared to 25% in 2007).

• One of the key indicators and important in the the subject of e-government is knowledge of the willingness of households in a Jordanian community to take advantage of this service. And with an overview of the proportion of families wishing to obtain the services of e-government amounted to about 63% with a slight variation between families at urban and rural areas, with the proportion of families in the territory of the north is the highest for the rest of the regions, and the highest population density according to table3.

Figure 2: Proportion of families wishing to obtain the services of e-government

5. Risk Factors and Risk Mitigation Matrix
The successful of the E-government concepts depends on the ability of the government present the electronic services, hesitate that by supplying the crisis infrastructure through updating the country sectors and supporting it by new technology in communication and information to help in supporting the electronic services. Dissemination of information and experienced in electronic services, and help
the managers in the government sectors in applying the E-government concepts. Define the advantage of transferring into digital gatherer.

External and Internal Barriers to E-government Implementation

The goal of e-government implementation is increasing the effectiveness, efficiency, and information quality, improved interaction mechanism, and to achieve better governance tools (2009). The users need to view the public services if this view is adapted there are suffering of internal and external challenges to e-government implementation which affect of businesses and citizens to use electronic services (Lau, Edwin).

The internal challenges are coming when the overall frameworks are put in place. These challenges are involved ensuring better understanding to a common vision to e-government and providing leadership at many levels to translate vision into actions where the leaders should learn how to put the right administrative mechanism to support agencies in the e-government implementation. The agencies cannot operate in isolation so there is need for cooperation to ensure interoperability, avoid duplicate services to ensure that the government officials have tools to do their mission, to monitor and evaluate success.

Government face external challenges in development of e-government while there is rapid in technological changes so that try to choose a standard software, and the other challenges in people who do not have PCs or have access to the internet, and people who use the online services need a guarantee of privacy and security where the information provided will not be misused. The success of e-government process dependent on legal framework for their operations for example the legal recognition of the digital signatures for submission of electronic forms.

Many e-government projects will be multi-year budget horizon and required commitment to spend resources over long period, the difficulty in estimating cost and potential benefits makes developing project funds hard.

Risk is an identifiable, potential issue that may negatively impact the result of an e-Government initiative or project, and for which the stakeholder can exercise some measure of control. Risk management with respect to activities of the e-Government Program., and other matters over which it has some ability to mitigate, is the responsibility of the Program.

The primary risks in implementing the e-government strategy, and the mitigation plan for each risk of them listed as followed (Lau, Edwin).

5.1. Budgetary Barriers

The government program operates within vertical funding structures, the cost of e-government is too high for the government of Jordan (GOJ) and long term funding and collaboration among agencies must be taken into account. This problem may be solved by:-

1. Develop pilot projects that can be scaled later based on demand.
2. Encourage use of innovative commercial arrangements attractive to private sector for investment in e-Government.
3. Encourage strategic partnerships with specialized international vendors to invest in e-Government
4. Realistic, well sequenced phases for e-government rollout.

5.2. Common Technical Frameworks and Infrastructure

Barriers arise from the inability of agencies to communicate with each other and Conflicting decisions among government departments. Government can help by providing common rules and standards. This problem may be solved by:-

Use of inter-agency working groups with clear authority to supervise and enforce e-Government policies and standards.
5.3. Digital Divide

Resources within GOJ do not have the skills to implement e-Government Strategy. This problem may be solved by:

1. Support government entities for IT training and other necessary skills.
2. Recruit staff with relevant skills.
3. Incentives for government entities to invest in developing ICT expertise internally.
4. Outsourcing certain functions when business case supports it.
5. Create links with local universities to give on-the-job-training to students.
6. Promote retention of skilled professionals in cooperation with other programs.

5.4. Privacy and Security Concerns

Government has responsibility to provide roles in the development of public polices and share a role with business, organization and individuals for ensuring secure use of the system. This problem may be solved by increase awareness among stakeholders, raise accountability and enhance change management.

5.5. Rapid Technology Change

The governments face difficulties in anticipate future policy impact in details as a result of fast moving technological change. This problem may be solved by:

2. Involvement all stockholder in processes.
3. Looking in international cooperation.
4. Re-align e-Government Strategy with political priorities and changes.

5.6. Citizen Expectation and Seamless Services

Governments are providing electronic services but they often do not know what kind of services citizens want and many people would hard t pressed. This problem may be solved by increase awareness of e-Government Strategy among stakeholders and manage expectations.

These challenges need a common understanding and sense of mission hared across over all levels of government, establishing overall frameworks with government leadership and coordination and collaborating with public private partnership and some of these risks are so impact (table 4).

Table 4: E-Government Risks

<table>
<thead>
<tr>
<th>Risk</th>
<th>Probability</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of e-Government is too high for the GOJ</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Conflicting decisions among government departments</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Resources within GOJ do not have the skills to implement e-Gov Strategy</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Resistance to change</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Speed of change does not satisfy political agenda</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Expectations are overly high</td>
<td>High</td>
<td>Medium</td>
</tr>
</tbody>
</table>

Risks included in the project level are explained with mitigation action plan in table5, where, this table suggests some real problems, but it's the Jordanian government role to design some practical action plans to face these risks and solve it before jumping into a new strategy that will only lead to more investment in an ambitious project only to discover later that some certain obstacles are unhandled or missed.
Table 5: Program Management Risks

<table>
<thead>
<tr>
<th>Risk</th>
<th>Probability</th>
<th>Impact</th>
<th>Mitigation / Contingency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional management tools are needed for Program Management</td>
<td>Medium</td>
<td>High</td>
<td>Ensure proper planning for program management initiatives within the Program roadmap</td>
</tr>
<tr>
<td>Absence of local suppliers of certain high-end applications</td>
<td>Medium</td>
<td>Medium</td>
<td>Encourage investment by local suppliers in applications by giving priority to qualified local suppliers Use international suppliers (with local partners when possible)</td>
</tr>
<tr>
<td>External constraints, delay timeframe for introduction of services</td>
<td>Medium</td>
<td>High</td>
<td>Continuous planning and roadmap revisiting</td>
</tr>
<tr>
<td>Miss-alignment with other governmental entities (NITC, Gov Performance Unit, PSD)</td>
<td>High</td>
<td>High</td>
<td>Invest in good coordination with key stakeholders and initiative owners</td>
</tr>
</tbody>
</table>


"The Jordan Digital Strategy goal for government is to deliver government information, services, and processes, using information and communication technologies (ICT) to transform the way government engage with people and businesses " (a strategy of e-Government, 2006).

Establishing a definition of E-Government for the organization is the first step in developing strategy. This definition can be different for different organizations based on the organization values, goals, and culture. But it is important to understand that e-government is more than website, email, or processing electronic transaction via internet. Once e-government is defined correctly, government can move to the next step which is developing e-government strategy.

The MOICT presented a strategy for development and implementation of electronic government “E-Government” in Jordan for the period between mid of 2006 and end of 2009, as the gap between the government agenda and the actual results from implementing the e-government project, forced the government officials to postpone some of the implementation stages for further assessment. The Strategy reaffirms E-government to the goal of delivering high-quality customer-centric and performance-driven services to E-government customers.

The new aims summarized below as:

- Send high-quality services to clients, businesses and organizations; which will need their awareness and improving the communication skills to involve in those services, and make them succeed.
- Develop government performance and efficiency; for no doubt, implementing such a project will save time, hassle, money, and will make transactions easier and clearer, these factors support the government efficiency, and effectiveness.
- Enhance Jordan’s competitiveness; and ensure public sector transparency and accountability.
- Reduce cost and increase ease of interacting with government.
- Promote development of Jordan’s ICT sector, which is essential and most important issue in achieving good e-services.
- Build up skills in the public sector.
- Improve e-commerce activities, and develop information security. This is a very far stage, which will need many stages to be built before stepping to the e-commerce activities. But in general the security issue must be always in consideration in all the development stages. As it is the main factor that builds up the trust.
7. Conclusion
E-government literature is growing up, but in the same time, only little of it is practical, more practical study and investigations on the developing of the e-government program and implementing it in a successful way, more awareness and education in the field of electronic government and the statement of benefits and privileges to the use of e-government for members of Jordanian society, will be required in the future. Risk factors in developing e-government in Jordan should be identified correctly and as a result should be looked at it as they are influencing the success or failure of the project of the electronic government.

References