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Review

A REVIEW OF THE FACTORS AFFECTING THE SUCCESS /FAILURE OF E-GOVERNMENT PROJECTS

Mohammed A. Al-Sharafi*

Yarmouk University, Faculty of Information Technology and Computer Science.

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Abstract

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It is becoming increasingly difficult to ignore the important role of e-government. A lot of countries have the desire to implement e-government project. But the fate of most projects is the failure. There are many factors have an impact on the success or failure of e-government project. In this paper, these factors will be listed and classified into Organization, Technical, Social and Governing factors. In addition, they will be discussed. At the end of this paper, many recommendations have been listed and explained that may help in the success of e-government projects.

* Corresponding author: Mohammed A. Al-Sharafi

E-mail address: ma_shrafi@yahoo.com

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Introduction

The past decade, governments at all levels have released the projects of Electronic Government (E-government). The objective of these projects is to offer an electronic service to the citizen, business, or other arm of government based on the type of the service.

E-government defined as a use of information technology (IT), such as internet, wide area network, and mobile technology to provide the public with convince access to the information and services [1]. Another definition of E-government as a network of computer system through these computer systems, citizen, business and other arm of government can access to many services and transaction online or through other electronic means [2].

The governments around the world use the E-government to achieve greater efficiency in the performance of government through raising the performance of services for investors and beneficiaries for all society efficiently, easily, and accurately.

E-government will make the activities of government more transparent by decreasing the corruption since each one will be dealt as others, no one will be recommended upon others. Furthermore, E-government will provide the information and service to anyone who need it in easy and faster way. Another benefit of E-government is the cost reduction and revenue growth. In addition, the E-government has many advantages such as, it can use criteria for measuring the service quality and the administrative efficiency, achieve a particular policy, and it will help in building the trust between the citizens and their governments. [3]

According to Fang, Z. [4], the progress of country's E-government can be measured by divide it into five categories as follows:

- Emerging web presence: the government has one or a few websites that offer static information to the users.
- Enhanced web presence: the number of websites increased and the type of information become a dynamic.
- Interactive web presence: in this category, there is exchange for information between the users and the government through downloading a forms and submit these forms online.
- Transactional web presence: in this category, the users can access to the services and prioritize them based on their needs.
- Fully integrated web presence: The complete integration of all online government services through a one-stop-shop portal.

The old fashioned model of ICT in government has been changed to the new model of ICT which has been extracted from the old fashioned model of ICT in government (Fig. 1). The new model is one of ICT transforming and supporting the outside work of governance by processing and communicating information and data. As shown in figure [3].

The e-government has been reflected between four relationships[3]:

- 1. Government-to-Citizen (G2C)** Provide information and services to the citizen through online or any other electronic media.
- 2. Government-to-Business (G2B)** Offer information and services to the business and industries.
- 3. Government-to-Government (G2G)**
Exchange the information and services between the agencies in the government.
- 4. Government-to-Nonprofit (G2N)** The government provides information and communication to non-profit organization.

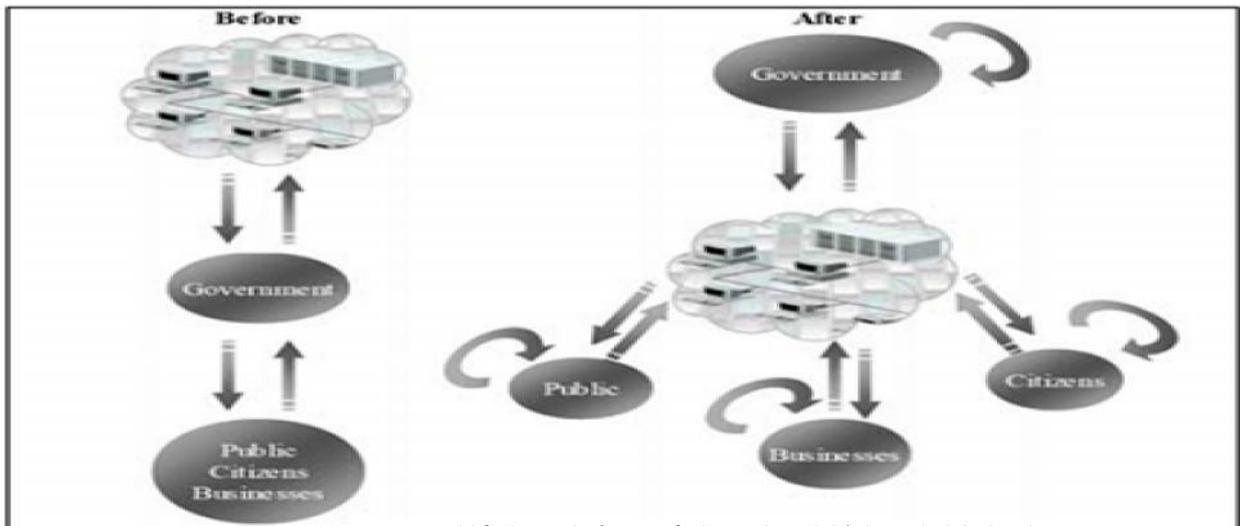


Fig. 1. old fashioned v's new fashioned model,(Almarabeh&AbuAli (2010). [3])

Most of E-government projects don't success, only 15% of E-government projects which designed and implemented in developing countries are successfully projects. While 50 % of the projects are partially successfully and 35% are fully failure [5].

In order to achieve E-government projects the desired objectives as well as providing the high quality service, many success factors must be taking into account. Besides that, there are many failure factors which we have to be aware of them. These factors will be discussed in this next section.

Literature review

There is a large volume of published studies describing the factors that can effect on the success or failure of an information system such as Supramaniam & Kuppusamy (2011). E-government project is one of information system projects. In this section, the factors will be divided into four categories: organization, technical, Social, and governing.

1.0 Organization Factors

1.1 Staff Skills

The first factor of organization factors is the staff skills. The staff must be trained very well if we want the e-government project to be succeed. The

lack of training and the qualified staff will make the moving to a new trend like e-government is so difficult [2,3].

Training staff will not be the only thing can be achieved. In addition, the human resources must be managed and restructured with take into account the e-government goals. Training the staff and motivate them is a critical for e-government success [3,7]. Within achieving e-government projects, there is a factor that we have to pay attention to it which is the high turnover of the employees from public sector to private sector since they will get a high salary from private sector more than public sector [3].

1.2 Education and Marketing:

Another factor that can effect on the success of e-government is awareness and marketing for

e-government project. The citizen must know about the services.

It will not be useful if people do not know about the services and how they can use it.

The idea of e-government and the benefits of it must be advertised to the citizens to explain the benefits that they will get when they use e-government system. The government itself should play the main role to achieve this task. The authors Mitrovic,Z. [8] approved that the awareness of services that offered by e-government project play a big role to make the citizens accept the new adaption of government services.

As a result of e-government projects, the transparency will be increased. Most of the citizens don't understand how government decisions are made. This lack of transparency will make the public are not involved in participation in government.

Furthermore, a lack of transparency can conceal official graft or favoritism. Better information management can be a helpful to make a framework and policy which in turn make sense of available data. These frameworks and policies can be used to derive a quick analysis enough to react to social and economic developments [2,3].In addition, when the staffs are trained very well, the information management will be better than before.

1.3 Change Resistance

Another factor that must be managed is a change resistance. The resistance may be from citizens or event from employees. The organization can overcome this resistance through training for an employee and awareness for citizens [9]. In the other hand, many researches have been conducted that are related to acceptance technology. The authors Suki,N. & Ramayah, T. [11] found that interpersonal influence, usefulness, external influence, ease of use, facilitating conditions, compatibility, and attitude are very important determinants of user acceptance of the e-Government services.

Results indicate that the important determinants of user acceptance of the e-Government services are perceived, self-efficacy, subjective norms, perceived behavioral control, and intention to use e-Government services/system. Finally, implications and recommendations of these finding are discussed

2.0 Technical Factors

2.1 Infrastructure

Any country tries to implement e-government projects need to develop a basic infrastructure to make it support a new information communication technology. A lot of developing countries face this challenge even if they have the possessing the will. So, infrastructure development is a critical success factor for e-government project [3,12,13].

The need of appropriate infrastructure means that weak infrastructure such as, technology being used, skilled people and communication systems, will be the first obstacle in employing the E-government project [5]. That means, we have to drop the existing devices or upgrade them to Commensurate with new infrastructure .In addition, we have to fire the current employees and bring a qualified employees or train the existing employees and use them to operate the new e-government system. Suitable and up-to-date infrastructure is necessary for the development of E-Government so that the technologies can be applied and used positively [7]. But other researches overcome on the lack of infrastructure by delivering the services through center citizens are designed for this mission such as kiosks [9]. Adequate technological infrastructure must take into account which includes computerization system, telecom policies, ICT policies etc [10]. Using an off-the-shelf solution from manufacturing country for a developing country will produce a large design-reality.

2.2 Availability and Accessibility

The offered services must be available 24/7. In addition, the government must serve all members of society through making the services accessible to

them. According to Alomari, M., Sandhu, K. & Woods, P. [14]

Accessibility is defined as “the degree to which web information is accessible to all human beings and automatic tools” So; the online services will be designed with appropriate interfaces to suit all citizens such as blind and handicapped [3]. In addition, e-government system must support variety of languages especially when the country has many local languages [15].

According to Alomari, M., Sandhu, K. & Woods, P. [14], many website characteristics have been assumed to make the website accessible such as “The more user-friendly the search structure of the website is than the search procedure through the offline channel, the higher is the possibility of consumers’ information search through the internet”, and” The better is the design of the website than the artistic facet of an offline channel’s store display, the higher is the possibility of consumers’ information search through the internet” .

2.3 Computer-Self Efficacy

The technology acceptance model (TAM) suggests that perceived ease of use (PEOU) and perceived usefulness (PU) determine the attitude on the way to adoption of ICT [16]. If the citizens do not have the ability to use the technology to access useful information and services, the e-government project will fail. That is will lead to make the acceptance of the system not easy.

3.0 Social Factors

3.1 Trust

According to Alomari, M., Sandhu, K. & Woods, P. [14] "trust considered as prerequisite of e-government implementation" and consider “a central defining aspect of many economic and social interactions. To guaranty that e-government will be succeed, between government and citizens, agencies, across governments, within agencies, and with businesses trust must be built [3].

According to Alomari, M., Sandhu, K. & Woods, P. [14], trustworthiness can be perceived when three characteristics available: ability, Kindness, and integrity. Ability means to what extent a trustee can process “that group of skills, competencies and characteristics that enable a party to have influence within some specific domain”. Kindness means to what extent a trustee is believed “to want to do good to the trustor”. Integrity means to what extent a trustee adheres “to a set of principles that the trustor finds acceptable”.

The author Colesca, S. [17] found that there are factors affect positively on trust and also other factors affect negatively on the trust. The positive factors which directly enhanced the trust in e-government are :higher perception of technological and organizational trustworthiness, the quality and usefulness of e government services, the Internet experience and propensity to trust, the negative factors which have a negative influence over trust are: age and privacy concerns. Another research for Teo, T., SRIVASTAVA, S.& JIANG, L. [18] propose that quality insights of citizens toward a specific e-government Web site are affected by their trust in e-government Web sites. In their study, they found that, there are a set of key success factors play an important role in determining the level of trust. These keys are: information quality, system quality, and service quality perceptions.

There are many way to build trust between the e-government project and its citizens by: **first**, Map key internal and external partners and build a strategy to keep open lines of communications. **Second**, start with short-term projects that produce early results. This helps build trust and could help point to areas for larger scale ventures. Finally, strong leadership can help build confidence in e-government project [3].

3.2 User's Satisfaction

In addition to trust, the e-government projects must satisfy the users' satisfaction (citizens and business).

Some authors consider user satisfaction one of the most important factors to consider any system successful. According to Floropoulos, J., Spathis, C., Halvatzis, D. & Tsipouridou, M. [19] user satisfaction is "the sum of one's feelings and attitudes toward a variety of factors affecting the situation". Furthermore, according to Floropoulos, J., Spathis, C., Halvatzis, D. & Tsipouridou, M. [19] accessibility is one of the elements required to design efficient and effective websites.

3.3 Attitudes and Beliefs

Another factor is the Attitudes and Beliefs. If the citizens have a negative attitude against using the services offered by e-government, it will represent one of the main barriers for e-government adoption [14]. Many people may have a negative attitude towards electronic services and they would prefer to stay with traditional methods. I think it is related to the resistance of change that we discussed before. The responsible of e-government can overcome of this limitation by doing some advertisement, training and seminars. The altitude is not related to citizen only, it also related to the internal policies desire which must be available to make the e-government meet the goals that it built for.

3.4 Privacy

The government must guaranty that the personal information will not be misuse in any way. Governments must be responsible of protection the enormous amounts of personal information they hold. Governments collect data on their citizens every day during doing the transactions. Protecting the privacy of citizens' personal information stored on these databases while making effective use of the information contained in them is a vitally important issue [3].

The privacy can be improved through educate and train government staff about how is the importance of privacy, applications must be designed to integrate privacy protections. Following "fair information practices" to minimize the collection of personal information, and finally limit the access to personal information unless it is necessary to achieve the task.

3.5 Security

Security must be addressed although it will cost so much. Security must be addressed in the design phase. Information security management within any organization involves "some form of managing potential risk, vulnerabilities, and threats that face an information system [22].

Trust is an extremely important part of E-government projects. Without trust, citizens who may already be suspicious of using technology may avoid use of online services that ask for detailed personal information. From this point came the importance of security. When the citizens know that their personal information are secured and no one can access to them unless they have access grant, the trust will increase which will reflect on using e-government system.

Security can be improved through following some step such as: a senior official can be designated. He will be responsible for computer security, Keep assess your system from a while to another, run continuing training to employees on computer security. The authors Seo, D., Yi, W. & Lee, K. [20] propose another technique to increase the security. They propose the information security activities model. The outcome of their study will help in securing reliability and activating the use of e-government service

3.6 Digital Divide

The gap between individuals who have access to the Internet and those who do not; is called the digital divide. Those without access cannot study crucial computer skills, cannot access information that can

offer profitable opportunities, and cannot share in the benefits of E-government.

3.7 E-Literacy

E-Literacy focus on the group of people who are can't use information and communication technologies because they are not computer literate [3]. In the recent years, with the internet and digital revolution, the people have been divided into two parts: into the "information rich" and the "information poor. So, the e-government must solve the problem by make the access to government and its services equally between its citizens or by increasing the barriers to participation [3].

4.0 Governing Factors

4.1 Leadership

According to .Luk,S. [21], the leadership has four major of theories. These theories classified based on the variable type that they emphasize. These theories are: trait, behavioral, contingency, and integrative. The same authors have been mentioned that the strong leadership will make the process of e-government implementation achieved quickly.

According to Luk,S. [21], they claim that to improve the quality of service significantly, the leader of agencies has to work together across traditional boundaries. Another research for AL-Kaabi,R.[2] proposes that the leadership is one of the critical success factors of e-government projects. The leader can play an important role through solve the problem that may face the employees during the design of project or even after the project installed to the environment. The leaders can minimize risks, motivate the employee, solve problem and so on.

4.2 Law and Public Policy

The application of Information Technology and Communication (ICT) may meet legitimate or policy barriers. Legislatures must confirm that laws are keep up to date to identify electronic documents

and transactions since it is one of the critical success factors of e-government projects [13]. There are many ways can be used to keep the laws up to date by following these steps: ask with participants to evaluate how existing laws may obstruct the desired results, simplify laws and regulations to permit electronic filings with government agencies, and restructure processes by simplifying rules and procedures[3].

Recommendations

In the previous section, the most critical factors that impact on the success or failure of e-government projects have been discussed. In this section, some recommendations will be listed and discussed about how we can make the factors help us in designing e-government projects. Furthermore, many techniques and plans will be mentioned to help us in overcome of some limitation that might show during or even after e-government implementation.

Infrastructure Development

To overcome on the limitation that can be in infrastructure development especially for the developing country, many issues must be taken into account such as, the project that we want to develop must be compatible with the Infrastructure of telecommunication, public kiosks, schools, health center, and mobile centers can be used in case the density of telecommunication is low, the competition between the service providers must be open to accelerate the deployment of telecommunication Infrastructure. A new technology such as wireless can be brought to help in distribution of service and put the rules to organize this service. Framework can be established at the beginning to draw the road for the investment effort.

The trust factor can be one of the critical success factors if it has been built in right way. There are many ways that can help in building the trust such as: we can start with short-term e-government projects that produce early result, in addition, a

strong leadership can play a role in building the confidence in the projects.

The privacy can be improved through train the employees and educate them about how is the importance of privacy and how it can help in building a good relationship between e-government and citizens, applications must be designed to integrate privacy protections. Following <fair information practices> to minimize the collection of personal information, and finally limit the access to personal information unless it is necessary to achieve the task.

The E-Literacy factor can be a challenge for any country has the desire to implement e-government project especially for developing country. Besides, here are some techniques that can help to reduce the e-literacy impart by: make sure that the content of e-government system available in the local languages and the interfaces of that system are easy to use. The application of e-government has to support the picture or even speech in addition to written text. In e-government project must have a window to teach the people how to use the services. Finally, the e-government project should pay attention to different groups like immigrants, women, and elderly.

Any application of e-government project that we want to design must be designed according on our needs. In addition, the project must take into account the relevancy, affordability, and language compatibility. Implementing e-government project will help in encouraging the cooperation between the private sector and the government agencies in collection and utilization the data without misuses the personal information.

There are many ways that the government can increase the degree of acceptance of e-government project through the following steps: make the citizens partners in development and applied the projects of e-government. Increase the number of services that can be offered in e-government. The questionnaires can be done to evaluate the services

by the citizens. Expand on using the server from many of citizens to respond to the huge expected flow of citizen that they ask for the offered services.

Future Work

The factors that have been discussed are not related to specific country. They are studied in general. In future, we will study the e-government project in Yemen especially for application related to “Yemen Civil Service Modernization Project”. Questionnaire will be distributed over wide Yemen and it will involve the employees in Ministry of Civil Servant and the citizens who are benefiter of this service.

Conclusion

This review has given an account of the reasons of e-government failure. A lot of factors have been discussed and the role of each factor has been explained through this review.

Many of recommendations have been listed, many limitations can be overcome and that will lead to reduce the problems and challenges that will face the developers during e-government project implementation if we consider these recommendations

Table 1: Summarized by Author

	Governing Factors	Technical Factors	Social factors	Organizational Factors
1	Leadership	Infrastructure development	Trust	Staff skills
2	Law and Public Policy	Availability and Accessibility:	User's satisfaction	Education and marketing
3		Computer-self efficacy:	Attitudes and Beliefs	Change resistance
4			Privacy	
5			Security	
6			Digital Divide	
7			E-Literacy	

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