The Future Vision for the Design of E-government in Egypt

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Abstract

A new practical technology and implementation for e-commerce is E-government. This is paper presented focused on the meaning of e-government, its benefits, strategies, trials of other countries and challenges and how it can success. Surveying these critical topics stated that it is time for Egypt to move towards e-government.

1. Introduction

Electronic government, or, in short e-government, can contribute significantly to strengthening the efficiency, productivity, and transparency of government institutions. However, the potentials of the new information and communication technologies (ICT) are not always so easy to translate into practice. Rapid successes can be achieved above all in cases where a solid institutional base is already in place and good expert and infrastructural resources are available – a set of conditions not given in many developing countries.

The aim of e-government is to open up new internal and external communications channels, to simplify administrative procedures, to improve the accessibility of public actors and services, and to enhance access to information. This often also means that these new technologies are vehicles of democratic, customer-oriented, and decentralized models of political decision-making and public administration. If these models are to be translated into practice, reforms must be embedded in an overall concept that takes account of both customer and target-group demand and the challenges posed by internal administrative cooperation and networking.

In the foreseeable future it will be mainly industrialized and advanced developing countries that are in a position to draft and implement comprehensive strategies of this kind. But potential uses are also opening up for poorer countries.

The obstacles to modernization of government institutions must often be sought less in financial or infrastructural bottlenecks than in blockades in the political sphere.

1.1. What is e-Government ?[1]

We can refer to e-government s " electronic management of the state", namely the utilization of information and communication technologies (ICT), including internet technologies, in the work of state bodies[1].

E-government is defined as 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.

1.2. The objectives of e-government

E-government has some respectable objectives such as:

- Bridge the digital divide

- Increase the overall performance of state bodies.

- Recognize the interaction of the state and its citizens using ICT.

- Offer services to citizens and the private sector in an integrated manner.

1.3. E-government Benefits [2]

E-government presents some valuable benefits such as:

- E-government can consistently improve the quality of life for citizens and can create a sharp reduction of costs and time.

- E-government will eventually transform the processes and structures of government to create a public administration less hierarchical, empowering civil servants to serve citizens better and to be more responsive to their needs.

- E-government must be given serious consideration also in the developing countries not only for its potential for stronger institutional capacity building, for better service delivery to citizens and business (thus increasing local social and economic development), for reducing corruption

Table 2.1: E-Government Benefits

Public sector transaction with	Examples	Benefits
Citizens	Information Culture Health Education Benefits transactions Taxation	Wider choice of channels, convenience, lower transaction costs, more personal service, greater awareness of services and policies, greater democratic participation and openness
Business	Support programmes Advice and guidance Regulation Taxation	Quicker, faster interactions, reducing transaction costs and the regulatory burden
Suppliers	e-procurement	Reduced transaction costs, better inventory management, shared data environments
Other public sector bodies	Communication between departments and agencies and between central and local government Policy making	Greater accuracy and efficiency, reduced transaction costs. Better use of the knowledge base. More nimble, flexible working arrangements

1.4. The components of e-government

1- The interaction between the government and :

- The citizen to provide quick and easy access to state services and simplicity of use.
- Te private sector to reduce expenses of state bodies.
- State bodies to reduce expenses, improve the quality of services and obtain accurate data in timely manner.

2- Focus on improvement of the internal efficiency of state bodies :

That ensures rationale use of modern technologies and reduces costs and improves operation of state bodies.

1.5. Types of e-government partnership:

Types of e-government can be classified into 5 categories :

1) Government – to – Citizen (G2C) & Citizen – to – Government (C2G) :
Provide the momentum public services online through the electronic service delivery for exchange information and communications.

2) Government – to – Business (G2B) & Business – to –Government (B2G):
Carry out government procurement tenders through electronic means for exchange of information and commodities.

3) Government – to – Employee (G2E) :

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Make e-career applications and processing system paperless in E-office.

4) Government – to – Government (G2G):
Provide the government's departments cooperation and communication online base on databases of government.

5) Government – to – Nonprofit (G2N) & Nonprofit – to – Government (N2G):
Provide exchange information and communication between government and nonprofit organizations.

2. E-government Development

Similar to the dramatic changes in e-commerce and e-trading, the e-government revolution offers the potential to reshape the public sector and remake the relationship between citizens and government. The wide variability in the extent to which web government is taking hold creates an opportunity to study how the e-government revolution affects public sector performance and

Fully integrated web presence: The complete integration of all online government services

The government can begin with developing an e-government strategy which would set out plans of how government can deliver the targets set for it in the context of the national strategic framework. To examine this process and how e-government plans and strategies is success, we may need to make more understand the take-up of the strategy across the authority as a whole. An example of E-government of New Zealand is showed as follows: [URL 1]

democratic responsiveness. In the UN/ASPA global survey (2000), five categories of measuring a global survey, five categories of measuring a country's e-government progress have been identified. A country's e-government progress should be identified as follows:

Emerging web presence: A country may have a single or a few official national government websites that offer static information to the user and serve as public affairs tools.

Enhanced web presence: The number of government WebPages increases as information becomes more dynamic with users having more options for accessing information.

Interactive web presence: A more formal exchange between user and a government service provider takes place, i.e. forms can be downloaded; applications submitted online.

Transactional web presence: Users easily access services prioritized by their needs; conduct formal transactions online, like paying taxes; registration fees.

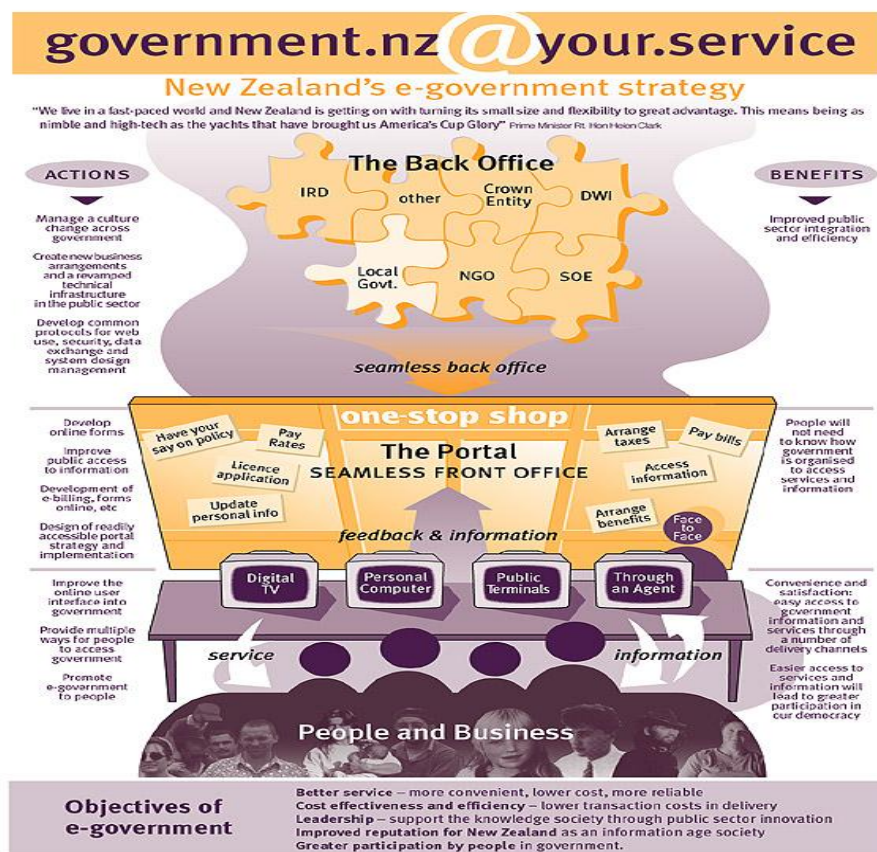through a one-stop-shop portal. (UN/ASPA, 2000)

Figure (3.1) E-government Scheme of New Zealand in 2001

The following *features characterize* countries that are successfully implementing e-government projects all over the world. E-Government should be implemented with:

1. **Comprehensive**. To the greatest extent possible, citizens should be able to do everything they have to do or want to do with their government through one e-government portal.

2. **Integrated**. All e-government applications should be integrated with each other, so citizens can avoid the need to provide the same data over and over and governments can save time and money by not needing to re-enter data.

3. **Ubiquitous**. Access to a jurisdiction's e-government portal and its connected sites and applications should be available to users/citizens from any Internet-capable connection, Internet appliances.

4. **Transparent/Easy to Use**. E-government sites should be designed and operated so that the most novice of computer users can readily find the information they need, provide the information requested by the government

agencies with which they are dealing, and otherwise perform all e-government transactions.

5. **Accessible**. The design and operation of e-government systems should, from the ground up, take into account the special needs of the disabled, and make it possible for them to use these systems as easily as the non-disabled.

6. **Secure**. E-government systems need to protect the confidentiality of data provided by citizens, the records created and stored by government, and the content and existence of citizen-government transactions performed over the Internet.

7. **Private**. Data about citizen-government transactions, and the content of those transactions, needs to be fiercely protected by the government.

8. **Re-engineered**. It is not enough to replicate electronically the administrative processes and procedures currently in place. It is necessary to thoroughly re-evaluate the overall mission of the jurisdiction and then design a digital structure that creates a government-citizen

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interface that simplifies and streamlines each transaction individually and the entire process of government administration generally.

9. **Interoperable**. An excellent e-government site is one that provides appropriate and up-to-date links to other e-government sites, at its own and other levels in the government hierarchy. All e-government sites need to work together seamlessly.

10. **Be Developed to E-governance Systems**. Developed from e-government, E-governance systems can just as easily implement democratic process, e-making of or policy, building up e-community. E-government serves not only as a means of administration, but also as a primary tool of collective and democratic decision-making, and participation for society.

2.1. Stages of development of Electronic government

Currently, there are four stages in the development of an Electronic Government.

In the first stage (**Information**), a state web-portal is created in order to advertise state services and to publish general information such as business hours, lists of contact persons and phone numbers. Use of ICT in state bodies is limited; e-mail communication is common.

In the second stage (**Interaction**), interaction of the government with citizens and businesses grows. State bodies are able to provide broad and dynamic information to citizens using database search and e-mail communication capabilities. State bodies start to introduce various interactive services that enable citizens to access government websites and fill out various online forms. At this stage, it is necessary to address the issue of the legal status of electronic documents because documents available online may have a different legal status than those available on paper. State bodies start to use local networks, corporate networks and the Internet to access and exchange information.

In the third stage (**Transaction**), state bodies conduct online transactions, and financial and legal services are offered. Infrastructure, security, and the capacity to interface with old information systems to ensure independent use of services by citizens are important considerations. This stage requires that the security standards of the electronic government

infrastructure be improved, an objective generally achieved through the use of electronic signatures and certificates, as well as with smart cards. Additionally, it is important to establish partnerships with the private sector in order to introduce the infrastructure and to manage it with the help of business processes. The physical identification of a person, for example, can be guaranteed by issuing person identification certificates. Electronic procurement is also introduced. State bodies use local and corporate networks, as well as the Internet, in order to access and exchange information.

In the fourth stage (**Transformation**), a dynamic transition takes place in which new technologies allow the use of information on an interdepartmental level in order to provide new types of services. It is important to introduce web portals that allow citizens to switch from one service to another without having to identify themselves repeatedly. State bodies coordinate their activities to ensure that state databases become interactive and are interrelated with one another. At this stage, management culture and responsibility within state bodies should have changed considerably. Information and services can be grouped by theme. This phase marks the completion of the transition process from a traditional to an electronic government.
Such a transformation will lead to careful reassessment of the roles and structures of state bodies. Citizens can personalize access to web portals and use the services of their favorite commercial and public websites, in addition to the services of the state. The people would be better informed and more willing to actively participate in government processes thanks to easier interaction with state bodies and access to public information and official documents. The result will be the creation of information communities and the establishment of models of governance where citizens are more widely involved in the decision-making process.

2.2. Critical Success Factors for e-Government
Critical Success Factors: Why E-Government Projects Succeed?[3]
The table lists and explains some of the main factors that help support success of e-government in developing/transitional countries. Cases in which these factors have been identified are cited in the right-hand column[2].

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Factor	Explanation	Examples
External pressure	Drive for reform from outside government, e.g. from civil society	Brazil eProcurement Douala Port
Internal political desire	Drive from key government officials for reform and for achievement of e-government goals	Trust Automation Brazil eProcurement Douala Port Mexico eProcurement
Overall vision and strategy	Overall vision and master plan for good governance and for e-government, identifying 'where we want to get to', seeing IT as the means not the end, and integrating IT with broader reform objectives	Cameroon Tax
Effective project management	Including clear responsibilities, good planning and consideration of risk, good monitoring and control, good organisation of resources, and well-managed partnerships between public agencies, and public-private	Pensions System Citizen Centre
Effective change management	Including leadership with a project champion, use of incentives to create commitment to and ownership of e-gov project, and stakeholder involvement to build support and minimise resistance	Supporting Democracy Birth Registration FRIENDS Centres Pensions System
Effective design	An incremental/piloting approach with feasible objectives and quick, scalable outcomes; participatory involvement of all stakeholders, leading to designs that meet real user needs and match real user contexts	Social Investment Fund Balochistan MIS Douala Port Mexico eProcurement Birth Registration FRIENDS Centres Pensions System
Requisite competencies	Presence of the necessary skills and knowledge, especially within government itself; need both management and IT skills and knowledge	Supporting Democracy Trust Automation Citizen Centre
Adequate technological infrastructure	For example, encouraged through appropriate telecoms policies	

Critical Failure Factors: Why E-Government Projects Fail?

The table lists and explains some of the main factors underlie failure of e-government in developing/transitional countries. Cases in which these factors have been identified are cited in the right-hand column.

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Factor	Explanation	Examples
Lack of internal drivers	Pressures only from IT vendors, with no internal ownership (or understanding of e-gov)	
Lack of vision and strategy	Lack of any long-term view, lack of guidance, and lack of link between ends and means; may be caused by ever-shifting senior staff and/or ever-changing policy and political environment	National Databank Universities MIS
Poor project management	Dispersed responsibilities due to multiple ownership of project; absence or weakness of controls; ineffective procurement	Social Investment Fund
Poor change management	Lack of support from senior officials (causing lack of resource allocation, and negative message to other groups); lack of stakeholder involvement (causing lack of ownership)	Warana Kiosks Natural Resource IS Durban Council Universities MIS
Dominance of politics and self-interest	Focus of key players on personal needs and goals, often related to 'playing politics', with symptoms like infighting, resistance where loss of power is feared, 'me too' copying of e-gov solutions for image purposes, obsession with electoral impacts and short-term kudos, and corruption	Social Investment Fund Douala Port Beira City Citizen Centre Uganda Voters National Databank
Poor/unrealistic design	Caused particularly by lack of inputs from key local stakeholders, leading to designs that are over-technical, over-ambitious, or mismatched to local environment (culture, values) and needs; occurs particularly where foreign donors, firms and consultants are involved. Other design problems: lack of piloting, lack of fit to organizational structure	Warana Kiosks Golaganang
Lack of requisite competencies	Lack of IT knowledge and skills among developers, officials and users/operators; lack of local knowledge among developers	Durban Council
Inadequate technological infrastructure	Lack of sufficient computers or networks	Cameroon Tax Foreign Affairs Ministry
Technological incompatibilities	Inability of computerized systems to interchange data	

Finally this model summarises the reasons behind success and failure of e-government projects. Left-pointing items encourage failure; right-pointing items encourage success. The factors are explained in more detail in the tables below. Fig (3.3) [URL 2]
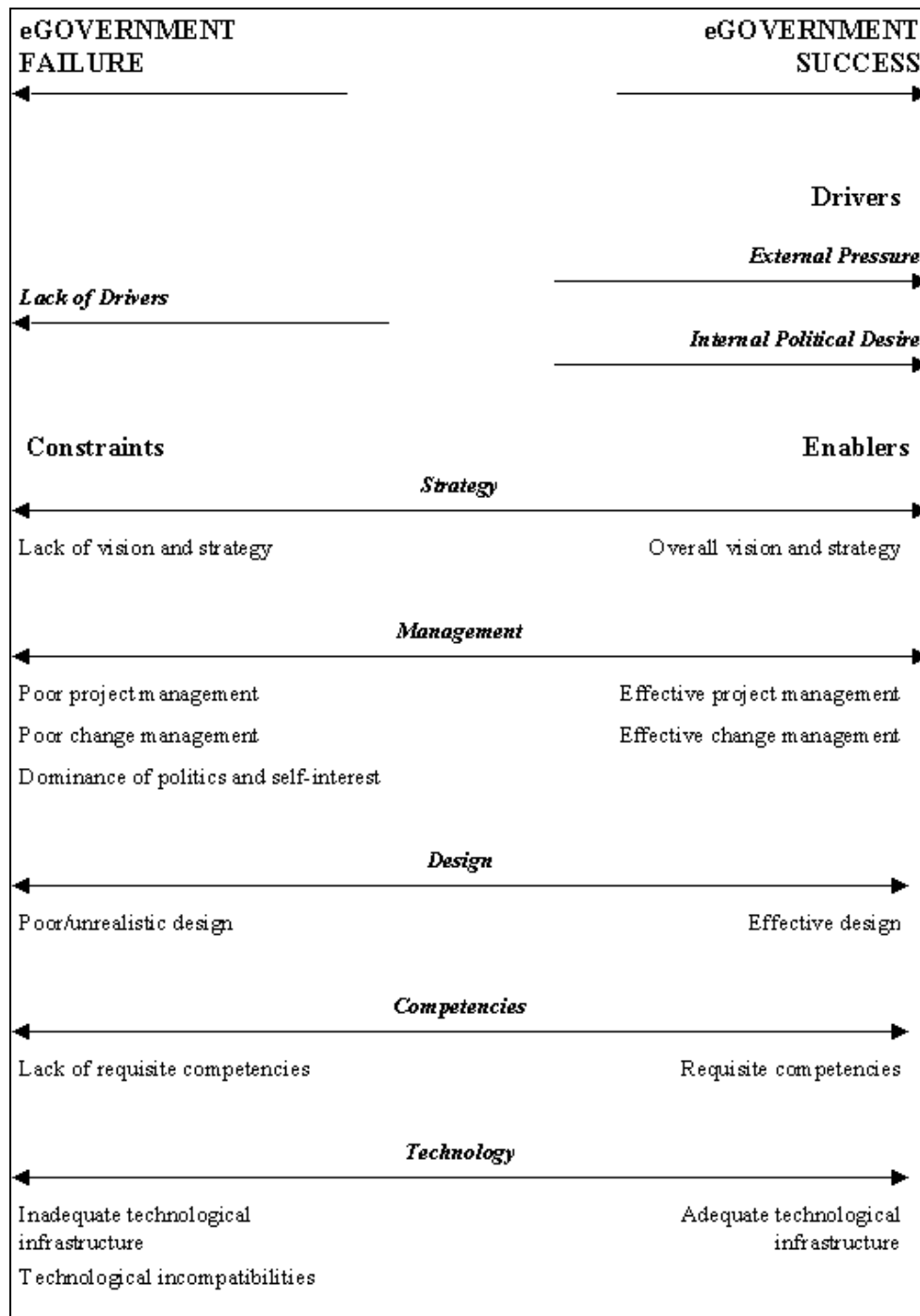
Fig (3.3) Critical success and failure model

2.3. Electronic government in other countries [1]

The governments of many countries seek to improve their operating mode. Developed countries are struggling to reduce expenses and increase efficiency while developing countries are striving to offer new services to citizens and to decrease bureaucracy and associated costs. Every country is working on creating the infrastructure and conditions needed for the development of a favorable business environment, a key factor for success in the modern world. Many governments around the world are confident that a reliable technological infrastructure plays an important role in offering a full range of services to citizens, in creating favorable conditions for the development of businesses, and in attracting foreign investments. Technological infrastructure also plays an important role in strengthening

education, increasing the efficiency of the state apparatus, and in decreasing state expenses.

In the last few years, nearly all developed countries and many developing countries have started to form national programs on creating electronic government. Some have even started to implement such programs.

The citizen defines the social and economic focus of the programs and strategies of western countries.

Legal environment development, personnel training, the improvement of ICT infrastructure, and the establishment of electronic government are among the priorities of these programs.

In the western programs, an emphasis is placed on the development of the human factor, including building trust towards ICT, support of small businesses and monitoring.

A distinctive feature of many western programs and their strategy of implementation is the integration rather than the fragmentation of online technologies (electronic commerce, electronic government, and electronic business) to ensure the transition to a digital economy and an information society.

Table 3.3 : comparison between some countries in E-gov completion

Strategic aim	Country	Date of completion
Creation of complete electronic government	USA	2003
	Canada	2004
	Ireland	2003
	Great Britain	2003
	Estonia	2005
Creation of partial electronic government	Finland	2002
	France	2002
	Japan	2003
	Netherlands	2002
	Singapore	2002

In order to evaluate the development of electronic government, it is useful to examine other countries' experience with the implementation of an electronic government.

USA
The level of infrastructure development in each country determines the potential effectiveness of an electronic government. It is certainly no surprise that the USA is the leading country in the implementation of an electronic government.

According to the research of the Momentum Research Group Company, 60% of Americans have used the services of government sites. Forrester Research Company forecasts that by 2006, there will be 14,000 governmental programs operating in the network, through which 15% of taxes, or $600 billion, will be collected.

In 2000, President Bill Clinton officially declared the launch of a new project, www.firstgov.gov. The site contains nearly 27 million pages as a result of combining 20,000 separate government web sites. www.firstgov.gov allows Americans to perform different operations online, ranging from social

security services to making reservations for camping in national parks. The total sum of the federal government's expenditures on information is approximately $43 billion per year. The sum does not include the expenditures of regional governments (states and counties).

While the e-government achievements of the US are significant, only $5.5 billion of the country's total expenditures are allocated to the electronic government. Electronic government is a relatively small component of information technologies as it applies to the work of the government. More specifically, electronic government is defined as state computer systems intended for interaction with the population of the country, US citizens, foreigners and tourists, and with non-government structures. Such structures may be businesses, public organizations, and regional and municipal authorities.

Estonia
Estonia is among the most committed of the former Soviet republics when it comes to developing its electronic government services. The Estonian Information Policy's top priority is to develop e-services for its citizens by

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integrating the decision-making process into Internet-based information systems.

The government is paying particular attention to the development of the ICT-related infrastructure and related services, as well as electronic commerce, including the introduction In order to implement laws and regulations on state information and digital signatures, a wide range of activities has been initiated and will be followed by the launch of a program on administering document circulation among state agencies. State databases are being modernized in Estonia to launch a search system using Internet technologies. The goal is to accelerate and simplify the process of obtaining data from numerous databases (Project X-road). Estonia's ICT spending is $US20 million, which is 1% of the state budget.

Russian Federation
The e-Russia program (2002-2010) has been approved and the Ministry of Communication is in charge of coordinating the program. Implementation of the program will allow the entire Russian population to access modern information resources and improve Russia's position in the high-tech market within ten years. The program will form the basis of the development of Russian society overall.

In order to implement this project by the year 2010, 76 billion rubles need to be spent. Half of this sum will be allocated from the federal budget, 30% from regional budgets and 20% from other sources not included in the budget. It is worth mentioning that the specific components of the e-Russia program remain general and vague. Additionally, the length of time of the program raises some doubts in terms of the validity and effectiveness of the allocated funding.

Nevertheless, the e-Russia program as a whole is a necessary and positive document designed to create a favorable basis for the development of the legal environment, personnel, technology, etc. These are requirements for the creation of a knowledge economy and information society.

In the context of electronic government, the e-Russia program has two basic goals: improving

of ID cards (identification card), digital signatures, electronic citizen projects, the TOM program ("Tdna Otsustan Mina-today", or "I am making decisions"), electronic tax management, and the creation of online state libraries, among other projects.

the efficiency of the state bodies, and transforming civil society. To increase effectiveness, it is necessary to pass and adopt appropriate laws and regulations, to introduce high technologies in the real sectors of the economy, to train personnel, to provide access to the Internet, and to modernize state apparatus. To establish a legal society today, it is necessary to provide a certain level of transparency of the state bodies and introduce information technologies in the mass media.

In order to solve the aforementioned issues, Russia should organize a single system of management and transfer of data between the state bodies (10 billion rubles have been allocated for this task; $US315,000 as of October, 2002). Openness of authority should be maintained (9 billion rubles), a single system of document circulation should be introduced (6 billion rubles), certain laws should be developed (1.25 billion rubles), etc. The indicated sums, which constitute a third of the program budget, will be allocated over nine years.

In comparison: In Japan, $US9 billion are invested annually for the development of electronic government, in the USA – $US5.5 billion, and in Great Britain – $US3.5 billion. Thus, the percentage allocated for information technology in Japan's GNP makes up 2.27%, in the USA – 4.38%, and in Russia – 0.61%.

For the gradual transition to electronic government, it is necessary to fulfill the following steps:
- Assess the current state of electronic government
- Develop a long-term concept, including expected results
- Formulate achievable strategic goals
- Define priorities and impact

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Core Factors	Symptoms	Consequences
Institutional Weakness	Insufficient Planning Unclear Objectives	Inadequately Designed Systems Cost Over-runs
Human Resources	Shortage of Qualified Personnel Lack or Professional Training	Insufficient Support Isolation from sources of technology
Funding Arrangements	Underestimated Project Costs Lack of recurring expenditure	Unfinished Projects Higher Maintenance Costs
Local Environment	Lack of Vendor representation Lack of back-up systems / parts	Lack of qualified technical support Implementation Problems
Technology and Information Changes	Limited Hardware / Software Inappropriate software	System Incompatibility Over-reliance on Customer Applications

2.4. Challenges and Solutions [URL3]

It is clear that serious challenges face the electronic government development process.
One: The absence of public access to the Internet. Only 2% of the population (80-100 thousand people) has access to Internet.

The state may develop and implement a sound electronic government program offering a wide range of e-services, however, citizens may not use them due to lack of knowledge about these services and limited opportunities to access them. The marketing of electronic services is an important factor but in order to attract people to use them, it is necessary to grant access to all social groups. To address this issue, it is necessary to provide simple, inexpensive Internet access points (Internet kiosks) for the general public. These systems should be connected to WAN. Therefore, the creation of public access points in remote areas should be considered the most important task.

It is necessary to create a network of public access points in cooperation with international organizations.

Two: The informatization of the state bodies is another issue that needs to be addressed. The most important obstacle to the development of electronic services is insufficient financing and the unwillingness of ICT-trained specialists to enter public service.

State bodies are using information technologies to automate existing processes instead of reengineering and improving business processes. Each government organization uses information systems for internal needs only, and such systems are not designed to connect to each other.

Citizens must therefore access several state bodies in order to locate the necessary service. Commercial organizations also have to submit the same documents and information several times, and state bodies do not have access to a single unified database.

Budget limitations did not permit the allocation of the necessary resources for the creation of interdepartmental information systems. Also, the management culture of the state bodies and the reluctance to reform create additional barriers to integrating and developing a single information system by and for a number of state bodies.

Three: People expect much from the state, and transition to electronic government should be a priority. If services are offered faster, better and more effectively, it results in a positive response from citizens and private companies. The automation of state services is successful when it both involves and influences society as a whole.

The probability of success is higher when state bodies can **establish partnerships with private companies that have effectively developed their information and communication technologies.** These partnerships would ultimately establish online communication with citizens and companies.

A transformation would lead to the rethinking of the roles and structures of state bodies. Citizens will ultimately define the time, place and manner in which the e-services should be offered. Citizens would be able personalize access to the web portals of state services and

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use electronic government services, as well as the services offered by commercial websites. People will be better informed and more willing to participate in state affairs thanks to the easy interaction with state bodies and access to public information and official documents. The result will be the creation of information communities and the establishment of models of governing, with citizens who are heavily involved in the decision-making process.

Four: Electronic government is effective when it strikes a balance between the quality of electronic services, their impact on the economy and the political benefits. The relationship between the government and its citizens is more complex than the relationship between government and business because providing e-services to citizens may be influenced by certain political interests. Depending on the value of the services offered to citizens, political benefits can either further or impede electronic government-related initiatives.

Although government process automation is essential, tangible benefits become evident when fundamental changes in the approach of state bodies to the issue of dialogue with citizens and businesses are realized. The changes described in this document can only become reality when internal changes in the mode of operation of the government and the state bodies is achieved through the use of ICT.

Therefore, in order to effectively implement electronic government, it is necessary to **develop and support the policy, laws and regulating structures required for the successful development of an electronic government project**. In this regard, the following three basic elements must be determined:
1. Development and introduction of ICT necessary for everyday operation of the state
2. Establishment of a common structure managing various departments of the ministries and other state bodies on the basis of a single information architecture
3. Policy making and regulating on the scale of the whole country.

3. Conclusion

The movement to e-government, at its heart, is changing the way people and businesses interact with government. E-Government offers a huge potential in seeking innovative way to reach the ideal of government of people, by people and for people.

This paper just provides a basic view for guidelines and stages that address e-government's definition, characteristics and types. It also discusses the e-government of three countries. By analyzing concepts and theoretical framework in these issues may give the broader context of structural initiatives for E-government development. Now we have some success factors, features, some experience and we believe that it is time to move towards E government in our country cause of its vital benefits.

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