E-GOVERNMENT CONCEPT AND SPATIAL INFORMATION: A CASE STUDY IN ISLAMIC REPUBLIC OF IRAN

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ABSTRACT:

As an accepted definition, E-governments can be considered as use of information and communication technology in public administrations combined with an organizational change and new skills in order to improve public services and strengthen support to public policies. With this regard, National Mapping Organizations (NMOs) around the world have to stabilize their position in the future government body by playing an effective role in establishing E-Government within country. As a general rule, implementation of E-Government concept in NMOs will result to change in document and data exchange process inside and outside organization, demand to simple and free access to their products and information, better responsibility to customers, improvement in working process of technical and administration sections, reduction in costs and in one word, more efficient and effective organization.

In this paper we try to report the recent achievements and developments in this subject in National Cartographic Centre of Iran (NCC) which actually act as Iranian national mapping organization. In the first step, concepts and models for implementation of E-Government concept and role of Spatial Information in it will be explained with focus on Government to Citizens relations (G2C), Government to Business services (G2B) and Government to Government relations (G2G). in the next part, the current situation of E-Governance in Iran in different aspects will be discussed. Suitable role of National Cartographic Centre of Iran in E-Government concept will shape the next part. The last part of this paper will focus on proper policies and plans for NCC in order to play an effective role in E-Government.

1. INTRODUCTION

One of the basic policies for democratic governance around the globe is to decrease the administrative size and costs and to increase the functionality of government body. This is the motivation behind research activities within governments for utilizing them to new methods and technology. Based on this fact, the target point for this kind of governments can be considered as proper use of information and communication technology in public administrations combined with an organizational change and new skills in order to improve public services and strengthen support to public policies. This will lead us to the E-Government concept which is commonly defined as "continuous and safe execution of the mutual duties and services between government and citizens in the environment of electronic communication and transaction". Obviously, based on these definitions, one can consider E-Government concept as a proper basis of good and efficient governance, keeping in mind that E-Government is more about government than about electronics.

It is proven that incorporation of spatial information in the provision of E-Government will bring benefits to the citizen in terms of relevance and ease of use and to government in terms of improved management of public resources, particularly in promoting better planning and targeting policies to address problems of local communities. National mapping organizations as part of government body and providers of spatial information which are an important part of governmental information infrastructure have to be more active in this area in order to survive in this new era and find their proper place in the future Electronic Governments.

In Islamic Republic of Iran, the same policy has been followed by government during the last few years. During these years, more than 1000 web sites related to governmental organizations and agencies have been established and despite all deficiencies, they are working as part of government digital public relation and public service providers. In addition, electronic government offices with authorized access to police, cadastre and other governmental databases, are working around the country as a right step toward E-Governance concept.

National Cartographic Centre of Iran not only doesn't consider itself as an exception to this rule but also is trying to stabilize its position in the future government body with playing an effective role in establishing E-Government within country. As a general rule, implementation of E-Government concept in NCC will result to change in document and data exchange process inside and outside organization, demand to simple and free access to our products and information, better responsibility to our customers, improvement in working process of technical and administration sections, reduction in

costs and in one word, more efficient and effective organization. In this regard, a research program has been started in order to develop policies and plans necessary for NCC to arrive in this new era. This paper will discuss about achievements and developments in the mentioned research program.

2. E-GOVERNMENT CONCEPTS AND MODELS

E-Government or electronic government, also known as e-gov, digital government and online government is a governance method based on use of internet technology as a platform for exchanging information, providing services and transacting with citizens, businesses, and other arms of government (Wikipedia). The primary models for E-Government are:

- Government-to-Citizen or Government-to-Customer (G2C) model which is the online non-commercial interaction between local and central Government and private individuals, rather than the commercial business sector (G2B). For example Government sectors become visibly open to the public domain via a Web Portal. Thus making public services and information accessible to all is the main goal of this model.
- Government-to-Business (G2B) model which is the online non-commercial interaction between local and central government and the commercial business sector, rather than private individuals (G2C).
- Government-to-Government (G2G) & Government-to-Employees (G2E) model which is the online non-commercial interaction between Government organisations, departments and authorities with other Government organisations, departments and authorities.

Within each of these interaction domains, four kinds of activities take place:

- Pushing information over the Internet, e.g. regulatory services, general holidays, public hearing schedules, issue briefs, notifications, etc.
- Two-way communications between the agency and the citizen, a business, or another government agency. In this model, users can engage in dialogue with agencies and post problems, comments, or send their requests to the agency.
- Conducting transactions, e.g. lodging tax returns, applying for services and grants.
- Governance, e.g. online voting, and campaigning.

2.1 Benefits of E-Government

Improving quality of life for citizens is the main benefit of a good government and good governance method. Among many advantages of E-Government concept, one can consider the following items as the most important ones:
- Better and on time service to customers
- Decreasing costs and administrative size of government
- Sound and smooth flow of information among citizens, private sector and public governmental agencies
- More efficiency in organizational processes
- Effective, efficient and decentralized government
- Interoperability between service providers and customers
- Shorter distance between citizens and government
- Social equity resulted from availability of information for all

2.2 E-Government requirements

Implementation of E-Government idea requires lots of efforts in a systematic and designed plan. Obviously all of these requirements can not be mentioned in this paper but these plans must aim a defined target which could be considered as follows:

- Using communication networks as correspondence highway between main government structure and lower levels of government agencies and customers of governmental services.
- Replacing current methods and processes with simple and efficient ones.
- Increasing the efficiency and affectivity of government agencies in management level by flattening their management pyramid.
- Improving responsibility against customers and interacting with them in order to provide better services.
- cutting administrative expenses and complexity of work processes in governmental organizations by joining up the parallel systems and eliminating redundancy among them.

2.3 Obstacles in establishment of E-Government

There are many problems and obstacles that E-Government establishment process in Iran as well as other developing countries will face with. They can be categorized in social, cultural, legal, IT infrastructure, and security aspects that among them the following items must be carefully considered:

- Insufficient PCs and internet connections in organizations as well as public access.
- Low speed networks.
- Lack of efficient banking system.
- Unwillingness of supreme management level to accept new initiatives particularly to E-Government concept.
- Resistance against change.
- Shortage of computer literacy and IT knowledge among officials and citizens.
- Lack of coordination among organizations.
- Separation between classified and unclassified information.
- Vast investment needed for establishment of IT network and data banks.

3. E-GOVERNMENT IN IRAN

The progress toward implementation of E-Government in Iran has recently received the interest of the authorities and policy makers. The requirement for an adaptive approach in its development, and relevance as a recommended loom is realized. Providing an obvious explanation for E-Government in Iran to cover its cultural, social, and political characteristics, and also its actual and prospective position considering access to science and technology, will be an important measure in ensuring its success.

From a theoretical point of view, e-government in Iran is perceived as a major view in the phase of rising to a new performance level, including reducing the operations cycle time; responding to intolerant and challenging citizens in receiving quality, cheap, and immediate services ;and also fulfilling the government staff, whom bear the shortcomings of the systems.

3.1 Islamic Republic of Iran E-Government action plan

The road map and action plan for implementation of the E-Government project by different agencies was prepared by the Management and Planning Organization (MPO) and approved by the Supreme Administrative Council (SAC). In this document, actions to be taken were mostly put in five categories:

- Automating general processes like office automation, paperless environment, human resource management systems like personnel and financial systems, etc.
- Applying IT to re-engineered agency-specific procedures (work flow) across the nation for a total of ten procedures each year. The main criterion for selecting these procedures is the importance of the mechanization of procedures in providing greater majority of citizens with better services.
- Requiring all governmental agencies to connect their LAN to the Internet and to create their websites.
- Creating a citizen portal through which governmental agencies' information and services might be accessed.
- Selecting IT courses and specifying their contents by all governmental organizations so that their employees can take these IT courses.

3.2 Progress of E-Government in Iran

E-Government may be a new phenomenon in our country, but with a little effort from the authorities and responsible sources and help from experts, this technique is going to accelerate more. It is significant here to mention that regardless of all historical and political concerns which Iran has experienced in the last decades, the people have showed their innovation and ability for improvement. That is one of the basic reasons for implementing of E-Government in this country. E-Government is going to effect on every social, technical as well as the political aspects. It improves the level of the education, public relations with the authorities and private sectors and eases the daily administrative job for a single Iranian.

In the past few years, Islamic Republic of Iran Government has attached great importance to allocating increased budgets to public organisations and state companies to develop IT industry. The Islamic Republic of Iran in its five-year Development Plan seriously started to provide the government family with the specified annual budgets for ICT. It was in 2001 when the first considerable budget, about US$160 million, was allocated to the expansion of the ITC industry. This budget has been increased annually and almost three-fifths of this budget was considered for hardware and software equipment as well as a commercial comprehensive information network, while the remaining was spent on employment generation through IT.

Economic and social affairs office of the United Nation Organization issued a report entitled UN E-Government survey 2008 and compares the situation of countries in terms of E-Government readiness. For this reason, an E-Government readiness index has been designed which includes three sub indexes namely web measure index, infrastructure index and human capital index. According to this survey, measures of mentioned sub indexes for Iran are about 0.26, 0.18 and 0.79 respectively. It makes the total measure for Iranian E-Government readiness index equal to 0.41 and Iranian ranking among 192 countries is 108. Although the measure for Iran E-Government readiness has been improved during the last 3 years (from 0.38 in 2005 to 0.41 in 2008), but the ranking of

country has been decreased from 98 in 2007 to 108 in 2008. It shows our speed toward E-Government is less than the world average.

4. SPATIAL INFORMATION AND ITS ROLE IN E-GOVERNMENT

Public has right to access information in general and spatial information in particular. This information is crucial to decisions of national policy and to the general public and every country tries to endure this concept. Traditionally governments acquire information as mandated by laws and regulations and for day-to-day operation of public administration; as a custodian manages and processes information in a systematic manner; as a regulator prevents the abuse of information and ensures fair and equal access to information and as a user uses information for day to day operation and policy making.

Access to this information is every citizen's right. The right to know is the foundation of modern democracy. Now there is growing recognition of the importance of information or knowledge-based industries to the nation's economic well-being. Spatial information on the web has important role in improving public access to environmental and other data, and involvement in decision making. The rising public demand for access to government information gives rise to a strong opportunity to build a national Clearinghouse. Facilitating public access to spatial information is a key National Information Infrastructure requirement. National Spatial Data Infrastructure (NSDI) addresses issues pertaining to spatial information within the conceptual framework of National Information Infrastructure. There is a need to increase the awareness of the value, use and management of spatial data among governmental agencies; fostering development of a variety of educational and training opportunities to increase the awareness and understanding of the vision, concepts and benefits of NSDI, and to improve the collection, management and use of spatial data.

4.1 National Spatial Data Infrastructure

The idea of national spatial data infrastructure tries to make a linkage among important factors such as policies, organizations, data, technologies, standards, delivery mechanism and financial and human resources in order to facilitate access of all interested people to geo-information. Establishment of such an infrastructure is a step by step process and it may consist of several components. The key components of a national spatial data infrastructure can be summarized as follows:

- Organizational structure reform
- Establishing national standards
- Providing fundamental data and associated metadata
- Establishing national network
- Creating a national framework for training and education
- Establishing national clearinghouse
- Creating a framework for data sharing and partnership
- Designing standard services

It should be considered that national Spatial Data Clearinghouse is an important component of the National Spatial Data Infrastructure (NSDI). The Clearinghouse provides a pathway to find information about spatial data available in the country. Clearinghouse uses the Internet infrastructure, including the international standard and other standards. Locator records maintained by Clearinghouse will be reviewed for accuracy at

least annually, and will be maintained for permanent public access.

A primary goal of Clearinghouse is the ability to find spatial data throughout the entire community, not one site at a time which is distributed on network and includes a registry of servers. Note that clearinghouse will not operate without Metadata

4.2 Spatial Information and E-Government

Different aspects form relation between spatial information and E-Government concept in which the following items are in great importance:

a. From G2C point of view
- Establishing public sites for presenting spatial information
- Presenting spatial information trough internet and national web
- Providing a system for public access to geo-spatial information such as postal code, urban development plans, urban services (infrastructure, emergency, etc) and cadastre
- Establishing a comprehensive cadastral system
- Providing a framework for free access to statistical and administrative information
- Providing public access to thematic information such as boundaries, roads, emergency and rescue centers, geological and meteorological information and so on.

b. From G2B point of view
- Establishing national clearinghouse for demonstrating information about spatial products and services around country.
- Providing a national framework for electronic shopping from geo-spatial data providers and dealers.

c. From G2G point of view
- Collaboration for creating national spatial data infrastructure.
- Establishing national clearinghouse for demonstrating information about spatial products and services around country.
- International cooperation in regional and global level for data, knowledge and technology transfer.
- Collaboration in global map project.

5. ROLE OF NATIONAL CARTOGRAPHIC CENTRE OF IRAN IN DELIVERING E-GOVERNMENT

National Cartographic Centre of Iran the same as the other national mapping agencies, is associated with geodesy, surveying and cartographic activities. During the last decade, it charged with responsibility of creating and managing digital products across the entire country. This means its work is oriented toward the creation of consistent and homogenous digital geo-databases. This enables NCC to provide similar information across entire countries, while also enabling governments, businesses and individuals, the ability to create policies, operations and expectations of a countrywide nature. This value cannot be underestimated. It is the seed for designing development programs, managerial strategies for environment, land use, population and other national policy initiatives. Without such data, country is a collection of places with no real understanding, no basis for national decision making relative to

land resources and has no consistent and useful means for protecting and understanding itself.

It is a proven fact that any government who wants to be on the leading edge of the future should be investing in its national mapping agency. The reasons behind this fact are:

- National mapping is a foundation for delivering e-government,
- It provides the capability for establishing sustainable policy making, development and monitoring framework,
- It is highly linked to the statistical organisation within country, providing an understanding of people to place,
- It enables national infrastructure decision making for projects requiring consistent and homogenous data, enabling them to be planned, built and operated.

According to this, the main role NCC have to play in E-Government scenario can be considered as providing common framework for access to geo-spatial information; something which could be named as the GEO Portal. The main purpose of this Portal is to provide access to geospatial data and information. Obviously this is a co-operative project between several national, regional and local agencies and communities and has to be financed by the government. Note that this project can only be started after presenting a clear and consistent strategy for managing geospatial information by relevant authorities mainly the supreme council for surveying which acts under direct supervision of deputy of the Iranian President.

In long term view, NCC will be transformed from a mapping agency to an IT policy and service provider that will not be a smooth and easy way.

5.1 Challenges ahead for NCC

NCC faces a series of important challenges in order to continue successfully evolving into an efficient and up-to-date IT-based government agency in the future Iranian E-government structure. Some of the most pressing factors can be summarised in the following groups:

- Budgetary barriers: One of the main challenges for NCC is to find the means to recoup investments and develop the mechanisms for longer-term budgetary planning. Recent emphasis of government to decrease the budget of agencies and organization caused serious problems for NCC to invest in frameworks to exploit the existing infrastructure of standards, content, IT system layers, access mechanisms, and interface.
- Monitoring, evaluation and quality control: Since NCC has the responsibility of creating a quality assurance framework for the whole geo-spatial information produced in country; it should be figured out how to accomplish this task in new IT environment. It will need strong formal tools for decision-making and monitoring activities both in order to monitor activities of governmental and non-governmental partners and to evaluate the quality of data to be shared.
- Privacy and consumer protection issues: In long term a major part of Geo-Portal would be information about land and property registration which contain citizen identity and privet information. In this regard NCC needs to pay close attention to privacy and consumer protection issues.
- Collaboration problems: Information linkages across government agencies are still at their pilot stage. However, political interests and personal views have

made some collaborative basis but NCC needs to take a more active role to push agencies for more collaboration or to explain more fully the benefits of collaboration among them.

- Drive and leadership: The push for E-Government and seamless services has been regarded by officials at NCC as being mainly an optimistic drive for change. In the way to designed perspective, NCC needs a lead organization or ministry to provide practical drive to support its efforts. It is proven that NCC's programs and plans can not work as real drivers; support from more powerful organizations will be necessary to drive e-government and transformation in NCC.

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