Cadastre, Land administration systems and e-Government
FIG Commission 7 contribution

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INTRODUCTION

The development of information technology is extremely fast world wide. The wide range of applications of information technology on the technical fields follow the fast development but the applications of IT in governmental, public institutions are far behind possibilities.

To introduce and operate the electronic Government is an increasing importance, interest and in the same time very strong need by the society world wide.

I developed countries governments started to develop e-Government system to support and improve the effectiveness of government activities but also provide e-services for the citizens and external users. In many less developed countries especially in Asia (India, South Korea, China,) the advanced information technology is existing but many other conditions (legal, institutional) are missing to introduce e-Government.

Many requirements and conditions are needed to develop operational e-Government.

1. legal changes, new laws
2. fully operational IT systems
3. harmonisation of databases
4. integration of different public databases
5. institutional aspects
6. Acceptance of e-government and administration by the entire society

REQUIREMNTS TO DEVELOP AND OPERATE E-GOVERNMENT

1. Legal changes, new laws

The speed of development of the information technology is extremely fast the legal changes don't follow the changes in technology and states, governments don't benefit enough from the advantages of using information technology. The changes in law supporting the introduction of electronic Government, administration is very slow. There are many reasons: the legal profession is quite conservative, very much attached to traditions, paper deeds, documents, sealing of documents.

Introduction of e-documents, workflow, transactions are also can improve the transparency of administration and this fact is not always the interest of the legal profession in many countries. It's also a fact that the general public in many countries still attached to paper

documents and personal presence in offices, etc. In countries with long time of democratic traditions the development and introduction of e-Government is in more advanced stage. Scandinavian countries, The Netherlands, UK for example.

Wide range of legal changes are needed to operate e-Government and e-services, introduction of

- E-signature
- e-documents
- e-conveyancing

Copy right of different data is also an issue. There are different state, public organisations holding and maintaining data, register changes and in the same time providing data and other services for external users. These services are part of their financial sources therefore many of the public institutions have monopoly to own and sell services and data

2. Fully operational IT systems

To introduce and operate e-Government, administration, the existence of fully operational, country wide IT system is needed. The state is responsible to finance and build up the basic technical conditions and infrastructure for operating e-Government.

Which are the most important technical conditions to operate the systems ?

- big capacity of telecommunication lines covering the entire country. It's important that all citizens should have equal possibilities to access e-Government services
- digital public databases
  - It's essential that public databases should be in digital format
  - Cadastre, land registry, company registration, building registration, address registration,
  - Tax authorities, local governments are the most important databases in e-Government
- the development of National Spatial Data Infrastructure is also a basic conditions to introduce and operate e-Government

„The NSDI is about to change our lives by documenting the real world and integrating that information into our lifestyle. The citizens will find Location Based Services and geographical information widely distributed on the Web and routinely integrated into most applications and services" („Geographical information and value for society" Knut O Flaathen, Director General, Norwegian Mapping and Cadastre Authority)

3. Harmonisation of public databases

During the last 10-15 years different public institutions, private firms developed spatial databases, These databases haven't been harmonised. Many times spatial databases have been duplicated, multiplied. To avoid duplication of databases in future, the harmonisation of databases is important. The most economic and cheapest solution the compulsory use of basic digital cadastral, topographic maps, national spatial data and add different tematics.

4. Integration of different public databases

There is a world wide trend to integrate different public databases, especially land and property related data and change from sector oriented service to an integrated approach. Many countries have already recognised the advantages of integration of land and property related activities and data. One of the example the integration of Cadastre and Land registry but not only in database but on legal basis and institutional level.

It's a great advantage to integrate different databases like

- cadastre
- land registry
- company registry
- building registry
- address registry

It's good for public institutions having connections and access to other public databases, but also good for external users because they can find important basic data in one central database.

5. Institutional aspects

To operate e-Government, e-administration operational institutional framework is needed. I mentioned earlier the trend is the integrated approach which means one institutional network can co-ordinate e-Government services. According to some example, experience, in countries where the development of e-Government is in advanced stage, Cadastre organisation, Mapping Authority, or Unified system(Integration of Cadastre, land registry) is responsible to co-ordinate the development, operation of e-Government, e-administration.

Some example

Denmark	Danish Cadastre
Norway	Norwegian Mapping and Cadastre Authority
Sweden	Land survey, Cadastre (Lantmateriet)

What is the reason that this kind of institutions, organisations are able to operate, co-ordinate e-Government

A. owner and provider of digital cadastral and other mapping data, information. In case of unified system, the organisation is the owner and also provider of all land and real estate property legal data. They are also responsible to register changes and maintain the legal and mapping database. This database should contain the majority of land and property related legal and mapping information

Legal information:
Ownership rights, public rights, restrictions, easements, mortgage rights and other land and property related data, information.

Mapping information:
Mapping information are the descriptive part of land and property related data. Parcel or ID number, address, building information, cultivation, land use, value of land, area of parcels, etc. Cadastral maps also provide parcel boundary and administrative boundary (state, county, settlement) information. The system should also contains spatial information.

I think one of the aim of operating e-Government to provide different services to citizens and other users by electronic way and the land and property related basic data are the most important and frequently used by external users and also basic data for local governments, municipalities and other governmental institutions.

These basic data should be used for town planning, land use plan, building administration, traffic control, ambulance services, disaster management, property management, etc.

B. countrywide institution
Cadastre, Unified Land registry are countrywide institutional network, generally covering the entire country. It's easy access to services by citizens, users even though that the land, property related databases are not in the Internet.

C. Sufficient number of educated staff
In Cadastre, Unified organisations there are sufficient number of educated staff. Land surveyors, legal experts, lawyers, IT experts, marketing experts with a wide range of knowledge and they are able to co-ordinate, operate e-Government and its services. There is no other public organisation with the same kind of capacity and professional knowledge.

The importance of permanent lifelong education is also a key factor to improve the knowledge of the staff and follow the quick changes in IT.

6. Acceptance of e-Government and administration by the entire society

To introduce and use of e-Government services is also depends on the acceptance by the users and society. According to experience in Europe during the development of e-Government, two kind of barriers- so called formal and informal- hindering the introduction of e-Government.
The "formal" barriers, I have already mentioned, the slow process of legal changes necessary to introduce e-Government. The "informal" barriers are traditions, different views by the general public and also the traditional institutions.
In respect of above the acceptance of introducing e-Government by the society is equally important as the existence of modern technology and legal changes.

FIG COMMISSION 7 ROLE IN SUPPORTING THE DEVELOPMENT OF E-GOVERNMENT

FIG Commission 7- Cadastre, land administration- is the flagship and active commission of FIG. FIG achieves its goals, based on FIG professional strategy, through commissions and commissions achieve their plan through working groups.

During the 2002-2006 period Commission 7 Working group 3, Advances in Modern Land Administration" dealt with, among others, e-Government matters. The Work plan contained many topics, elements, supporting the development of e-Government, focusing on issues, like electronic conveyancing and electronic submission of documents, electronic signature, internet distribution channel, standards, etc. The existence of above elements are needed to introduce and operate e-Government, administration. Even in the most developed countries, there is no fully operational e-Government, the Commission, based on international experience, try to develop guidelines and identify good practices to support the development of e-Government.

The Commission organises annual meeting in each year, separately from major FIG conferences. During the annual meeting we always organise 1-2 days open symposium attached to a selected important topic relevant to Commission 7.

In 2005 during the Commission 7 annual meeting in Wisconsin, USA, 1 day open seminar was organised on the real advanced technical development that will influence the work process in the near future which influence the development of e-Government.

The Commission co-organised, together with BEV (Austrian Mapping and Cadastre Authority) a Seminar on e-Land administration in Innsbruck, Austria in 2-4 June 2004. The seminar was a great success with about 100 participants from many countries. E-Land administration is the part of the e-Government and support the idea, the Land administration (Cadastre, Unified Land registry system) should be the co-ordinator institutional network to operate e-Government.

Other two events were co-organised by Commission 7 during the 2002-2006 period with important topics influencing and supporting the development of e-Government.

8-9 May 2003 Enschede, The Netherlands "Symposium on IT Renewal for land registry and Cadastre" The application of advanced technology is essential to introduce e-Government activities.

9-10 December 2004 Bamberg, Germany "Workshop on Standardisation in the Cadastral Domain"
The goals of this workshop was to bring together disciplines: legal specialists, survey knowledge engineers, ICT experts from different organisations. Standards, harmonisation, integration of data is important to develop e-Government and many professions'- legal, land surveyor, ICT- contributions are needed for the successful development of e-Government.

Commission 7 intends to continue the support of the e-Government matters through Working group, during the next period 2007-2010.
Some of the topics:

- Cadastre- good governance
- National and international data infrastructure initiatives: SDI, NGDI, INSPIRE

Following FIG general strategy, Commission 7 continues its efforts focus on countries in Africa, Asia, Latin-America, Middle-East. The development of e-Government is also an issue in many Asian, Latin American countries due to the advanced IT but there are difficulties with legal and institutional matters which are the barriers to introduce e-Government.

Lack of financial sources is also one of the major problems in many less developed countries therefore the application of innovative, low cost solutions should be the first step for further development of e-matters.

Commission 7 Work plan for the 2007-2010 period is not finalised yet but it will support the development of e-Government world wide. The Commission 7 should try co-organising workshop, seminar on e-Government and related matters providing meeting place in order to exchange information, develop guidelines, identify good practices.

REFERENCES

Knuth O Flaathen: Geographical information and value for society

Paul van der Molen: Commission 7 Work plan 2002-2006

BIOGRAPHICAL NOTES

Academic experience**:** Dipl**.** Ing**.** Land surveyor MSc**.** Budapest Technical University
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International experience: expert in Nigeria 1977-79, 1982-86
Activities in home and International relations: Member Hungarian Society of Surveying Mapping and Remote Sensing 1971-
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FIG Commission 7 delegate 1995-
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