

Modern Cadastre, Paving Ground for Electronic City in Iran



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Abstract

Electronic city (E-city) has entered into urban planning literature to reduce or prevent challenges in big cities. Iran has exerted efforts for formation of information and knowledge based society in order to achieve E-cities in line with the targets set in Vision 2025.

Iran designated the Persian Gulf island of Kish as the country's first E-city in 2000. The move led to official introduction of E-cities to the country. Mashhad, Hamedan, Ilam, Shiraz, Qeshm and Tehran became E-cities consequently.

Iran embraced new approaches and ideas such as E-cities immediately after its creation. However, it has been unable to reach its defined targets despite passage of many years. Various reasons can be listed for the failure including lack of required investments, but lack of needed information infrastructures can be listed as the most important challenge facing E-cities to reach targets in Iran.

One of the elements needed for E-city is the existence of the cadastre system as a land information system. The cadastre system can shorten the red-tapes and numerous visits by agents. The cadastre system is an acceptable and comprehensive information base for urban management bodies. In other words, it is like an electronic signature for electronic identity of individuals and electronic identity of an estate.

The paper refers to modern cadastre as a must for formation of E-city. It assesses the system and its current situation in Iran and the necessity for change in its condition in Iran to prepare the ground for materialization of digital city.

Keywords: Electronic City (E-City), Modern Cadastre, Land Information System (LIS)

1. Introduction

Various definitions and categories are presented for electronic city. A general definition for the E-city is that it is a city whose citizens could have a safe access to electronic services 24/7 without any restrictions.

A large section of these services must be online (ictpress, 2009). Many new jobs are generated in the E-city. It helps resolve unemployment problem (Reddick, 2002:41).

Investments are made in opportunities generated by information technology and telecommunications of this city (Odendaal, 2003:588). An electronic city positively influences cultural field. For example, transparency, information dissemination, virtual education of citizens in public and specialized fields, release of digital media, on time dissemination of news and information are among many positive impacts of electronic city in the cultural field. (King, 2007:50)

Another definition for the E-city says using information technology and telecommunication to facilitate:

- 1-Running public and state issues by the government (electronic government)
- 2-Running personal and family issues by the citizens

The electronic government generally means re-engineering of the government with the emphasis on:

“Using information technology by the government to materialize long-term objectives and create information link between government agencies and the research society of information technology via internet.” In other words, it is utilization of information technology and internet by the government to render public services to citizens (Chen, 2002: 223).

Electronic citizen is an individual capable of using information technology to do his daily affairs and is able to receive his required services by employing electronic tools and systems at home, office and related institutions (Singh, 2007: 66).

Contrary to electronic city which has been created over a decade ago and is based on modern knowledge, cadastre dates back to thousands years. The early meaning of cadastre points its objective as a public registration, a map or a survey of dimension, size and property of a land to make safe land deals (registration) or property definition and tax levy. However, the best and most precise definition is provided by the International Federation of Surveyors (FIG). The federation defines the cadastre as follows:

"A cadastre is normally a parcel based and up-to-date land information system containing a record of interests in land (i.e. rights, restrictions and responsibilities). It usually includes a geometric description of land parcels linked to other records describing the nature of the interests, and ownership or control of those interests, and often the value of the parcel and its improvements. It may be established for fiscal purposes (e.g. valuation and equitable taxation), legal purposes (conveyancing), to assist in the management of land and land use (e.g. for planning and other administrative purposes), and enables sustainable development and environmental protection." (FIG, 1995)

The definition of cadastre has expanded nowadays. Map has no place in modern cadastre. Information model-making is what is important in new cadastre (Stuedler, 2004). In fact, modern cadastre is land information system (LIS). This system is comprised of an organized collection from detailed to general data on each patch of land such as its place, ownership rights, size, function, and value and ... In other words, the cadastre system is all descriptive and geometrical data of a patch of land with unique identification details available to reach various objectives. (Fig.1)

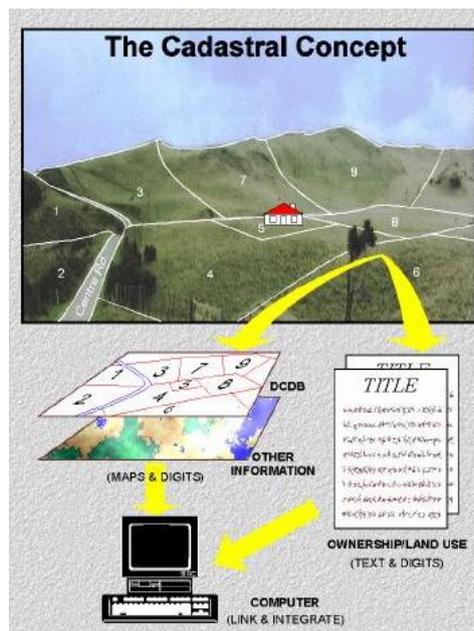


Fig1: The cadastral concept (FIG, 1995).

2. Research Methodology

The methodology of the research is qualitative. To make the research more transparent and organized, interview technique has been employed. The reason for using the technique is lack of samples and clear processes for defining the role cadastre in electronic city. It should be mentioned that interview in common literature is a journalism technique and has often had a show-off aspect while the interview means in this research means:

A type of scientific research using verbal communication to gain information for a defined objective. (Grawitz, 1993)

There are various methods to use the interview technique. The subject of interview is initially suggested by researchers in this technique. Secondly, the researcher is completely free about how to manage the interview and interviewee is free on choosing his responses.

3. Results and Analysis

A total ten sessions of interviews with five experts in IT, urban development, surveying engineering and cadastre were carried out to make the role and necessity of cadastre in the electronic city clear.

The interviewees were requested to express their views about the role and impact modern cadastre can play in the electronic government and citizen. The results of the interviews are:

- 1- A collection of place-oriented information which is the output of cadastre plays a fundamental role for related organizations. Cadastre is one of the effective factors for development and progress of the countries. The system is an effort for full materialization of the electronic government, which is a yardstick for development in the current age. On the other hand, cadastre not only improves traditional registration of properties but also reduces red-tapes, costs, time and lodging complaints and problems facing a citizen living in an electronic city.
- 2- Cadastre is an important index for usage of lands, maps of patches of lands and important information layers of a mixed land management system. These information layers are bases of information systems of modern governments. Cadastre can be a base for mixing land information generated by various organizations producing maps and land information. Scientific studies show that 80 percent of data needed by organizations involved in decision making, decision taking, planning, management, execution and even daily land-oriented operations have land nature and characteristic.
- 3- Cadastre can create acceptable information for urban management bodies and all interested owners that can have comprehensive information. An element of E-city is cadastre which is an inseparable part of urban complex. Cadastre can shorten the long bureaucratic road coupled with numerous visits by official agents. Cadastre could also help managers in the field of information technology and have advantages for people as well. From the perspective of citizens, people search transparent and accessible information and cadastre can do this for them. On inter-organizational and managerial aspect, it can be a reliable source for any organization. In other word, cadastre is like an electronic signature that manages the electronic identity of man and land.
- 4- Cadastre paves the way for sustainable development. People, organizations and institutions benefit from cadastre. Cadastre can secure the safety of real estate deals and bring about social justice. It is necessary that all activities of offices and organizations including municipality, registry, water and electricity and other urban management services must be carried out with the interaction with cadastre.
- 5- Multipurpose cadastre can both improve the quality and accessibility of information and registration maps and prevent mistakes in issuing of contradictory documents. Multipurpose cadastre create precise and on time registration information, which is effective in registration of rights and ownership of people. It can be said cadastre is society- and people-oriented.
- 6- Using land information system can make identification codes consistent and uniform; make exchange of information between information bases of various organizations and statistic information bases possible. Such reciprocal relations can lead to upgrade data of information bases of organization and the country's statistic bases. Most important advantages of cadastre include improve in statistic data collection process, improve in quality of statistic plans, reduction of errors in data collection, increase in the speed of the extraction of results given that the data are numerical,

improvement of executive management, using land aspect of data collection units, cut in executive costs and ...

4. Conclusions

Electronic city is a city that has the following aspects:

- Automation of governmental systems and rendering online state services
- Citizens and the government to surf internet for doing affairs
- Time-saving, cost reduction, performance improvement, gaining assurance in deals by rendering electronic services by the government and its usage by the citizens
- New models of participation of citizens by using telecommunication technology such as online voting and etc.

The definition of modern cadastre is needed to create a link between E-city and multipurpose cadastre. In conclusion, it can be mentioned that cadastre is an effective system in gathering and processing reference land data and preparing a mechanism in E-city in order to provide electronic citizens with information services as well as decision makers and decision takers to enhance land management.

- Cadastre is a land-oriented information source for various organizations in electronic city and an effective factor for complete materialization of electronic government
- Cadastre is an important index for usage of lands, maps of patches of lands, information layers and a base for mixing land information to improve decision making, planning, management, execution and in an E-city.
- Cadastre is a transparent and reliable information base for urban management and all interested individuals including electronic citizens
- Cadastre is a medium for improving quality and accessibility of information and registration maps and preventing mistakes in contradictory documents.
- Cadastre paves the way for improving productivity in statistic collection process, quality of data collection plans, reducing mistakes in data collection stage, extraction of land aspects of statistics units, saving executive costs and etc in the an E-city
- Cadastre facilitate rendering services to people as electronic citizens, and meet the needs of organizations that constitute an electronic government such as electricity office, water and sewerage organization, telecommunication company, municipality and ...
- Cadastre is a medium that reduce bureaucracy , gain public confidence in land and real estate deals

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