
Electronic city: A City of Today and Tomorrow

Ali Zeynali Azim¹, Elnaz Behnud², Mohammad Zeynali³, Shohre kasiri⁴

^{1,2}Department of Architecture, Sardrood Branch, Islamic Azad University, Sardrood, Iran

³Department of Computer Science, Bostanabad Branch, Islamic Azad University, Bostanabad, Iran

⁴Department of Architecture, Osku Branch, Islamic Azad University, Osku, Iran

ABSTRACT

Nowadays Information Technology (IT) and communication system has evolved many societies, especially cities and governments in which the concept of electronic city, electronic government, electronic municipality, electronic citizen and electronic services are included. These concepts are at the centre of researchers' and intellectuals' attention. At the time being, many countries' endeavor is to implement this electronic city and electronic government. This paper aims at defining electronic city and its goals in the developing world. Experiments in this area were successfully. The aim of this paper is to identify electronic city and its principals in relation to each other.

KEYWORDS: Electronic City, Electronic Government, Electronic Citizen, Electronic Municipality.

1. INTRODUCTION

During the recent decades, one of concepts that has been investigated comprehensively is the concept of electronic city. It has been implemented successfully in some countries and developed societies.

Recently, the world's approach has been toward making electronic societies.

Nowadays any society that has instant access to information and is more expert in exchanging information will be more developed. With regard to the new technologies that makes social life very complicated, some affairs will be solved more easily and by utilizing some aspects of information Technology, there will be no need for people to refer to organizations in order to do their daily affairs.

Electronic city is a new form of city life that can endure beside the real city. Electronic city is not only incompatible with the real city but also they are in complete Compatible. Electronic city can solve many problems that the real one is faced with. Such as traffic, air pollution, official corruption, Social inequalities, etc.

In the mean while, we should also pay attention to the problems caused by electronic city, because if we ignore these problems they may cause irreversible damages to the society.

New ways of interaction, especially internet has provided different forms of virtual environments, this lead to a great evolution in any aspect of organizations' and human beings life. This technology changed people, organization and governments' performance and attitude and created new industries, Jobs, creativities for doing things. The advent of some phenomenon like smart cards, electronic banking, electronic education, electronic health, electronic business, electronic government and the like that redeveloped recently are the result of IT development in any aspect. This lead to the formation of electronic city in which great amount of activation & services in the city were performed electronically. Electronic city is not an invention or a creative suggestion, but it's a reality that will be present in accordance with the needs of people and societies. If we ignore these requirements today, we have to pay great amount of money in order to implement it.

2. Electronic City

2.1. The Concept of Electronic City

The term "electronic city" was proposed in 1994 and in a conference about Digital city. This program administered in 1996 in Some European cities like Helsinki and Amsterdam.

Electronic city that developed along with the development of IT during the recent decades, entered the social and economical arena that is: the use of IT and communication For the purpose of providing onetime and direct services For citizens; 24 hours a day. (Taghvaei & Maroufi, 1388 : P. 9).

Electronic city provides the required Facilities in order to have access to Information and services ; providing Further opportunities for people to participate in some activities.

There have been different definitions for Electronic city (Jalali, 1386).

In other words, in electronic cities all requirements of citizens are provided through computer networks. Therefore, electronic city is somehow a relative term; the more services provided by computers, the more the meaning of electronic city will be clarified. (Jalali, 1382: P. 27)

Odendaal defines electronic city as a city in which the city plans to invest on opportunities created by IT and communication and for the purpose of increasing success and impression. (odendaal , 2003)

Building an electronic city, will eradicate the need to resort to physical activities and efforts in order to get things done. In electronic city, digital offices have been replaced the physical offices , organizations , municipalities , public transport system , irrigation system and the like in order to provide services to customers virtually or by ICT facilities . In electronic city in addition to the fact that citizens use virtual city and electronic ministry, they can also do their shopping and other daily affairs by using network. Electronic city is a real city that has its own citizens, offices and different organizations, in which the only communication system, some social interactions and daily requirements of people are performed by the Internet. We can find some qualities and specifications of this IT in urban transposition unforeseen disasters' network that can manage time and place of the incident as fast as possible. (Safuri & kan'ani, 1386: P. 5)

Building an Electronic has many useful impacts on economic, social, cultural an political aspects in order to manage city and citizens.

During the last twenty years, the worlds' approach has been toward providing information for societies and making a well – developed information which has an outstanding ability in producing and exchanging information rapidly. Considering recent technologies that might make social life a little complicated we also need to facilitate doing different tasks and ignore those technologies which will not be supported, performed and administered. At the time being, IT has provided this opportunity to citizens to have a quick access to information they are looking for. Electronic city is an undeniable chance and is an important factor in making glass organizations in a way that all performances and purposes of the organization are observable. In electronic city, citizens can confidently and easily have access to municipalities, governmental agencies, economic agencies and all cultural and sanitary services of the city. This city can expand telecommunicational information in a way that one can be in contact with other houses, schools, offices, etc. through computer. Meanwhile, electronic city is not a sole invention or an innovational proposal, but it's a reality which will be available in accordance with the needs of people, if ignored, we have to pay great amount of money in order to get things done. (Sarfarazi & Memarzadeh, 1386: p. 7)

Three indexes of implementing electronic city are: Political, technical and organizational. Political indexes pay attention to macro policy making acts, strategy making, citizenship charters, The administration and bureaucratic setting of the city, along with the development of society's information is requisite. Regarding technical indexes it is necessary that municipalities focus on establishing electronic ties between organizations, facilitating internet connections and providing cohesive ties between the related organizations. In organizational indexes, if we assume the city an huge organization, the citizens will be like customers and they should be at the centre of attention. Electronic city provides some qualifications that will facilitate meeting citizens' needs. (Montazer & Tahami, 1388)

2.2. Advantages of Creating Electronic City:

Building electronic city has many advantages among which we can enumerate:

a. Economic advantage : Electronic city will decrease urban traffic expenditure , increase investments on expanding world communication , economize using limited Fuels , Facilitate doing economic affairs because of providing services all 24 hours a day , etc

The time waste on traffic will be decreased, the services will be provided in a better way, The qualities will be distributed more equitably, Air pollution will be lessened and there will be more employment chances. Better enduring municipal management is another economical advantages of electronic city.

b. Cultural and social advantages:

Some of the important cultural traces of this city includes fast transformation of the required information, publication of electronic magazines for citizens, distant learning, building digital library , increasing profits and changing peoples' viewpoint about the world which will lead to the increase in welfare and cultural level of citizens. Actually, electronic city is not a city whose buildings are high , streets are packed with traffic , and the weather is polluted but it is a city in which the relationship between citizens and those who are responsible for country's welfare , is of utmost importance and this bilateral interaction can create an acceptable & favorable social environment : This is even more important in megalopolises. In electronic city, large cities are not those with large and high skyscrapers , cinemas , or auditoriums as places for establishing communication , etc . , but they are cities in which we can see great movies on small screens, can walk in museums behind our tables generally there is no need to a physical city framework. In fact, electronic city means superiority of citizens in managing the city. (Rohani, & Sheikhemami 1386: P.11)

Therefore, we can classify the advantages of electronic city as the following:

- a. Providing high quality internet services for citizens with high speed.(creating an appropriate infrastructure in order to connect to Internet and global network)
- b. Improving the quality of life with facilitating urban activities (activities pertaining to city life) and economic status of the city which is the result of life improvement in cities and public knowledge of urban qualities and processes.
- c. Defining urban communication by IT and electronizing them which leads to one stage service provision. Consequently, there will be no need to frequent & subsequent reference to offices and different organizations.
- d. Improving the relationship between organizations and different organs of the city electronically. Facilitating communication via internet and established infrastructure made by municipalities.
- e. Connection availability between citizens and business men, municipalities, those responsible in the government in order to solve problems in cities. Therefore, the problems of the cities will be solved rapidly.

- f. Increasing citizen cooperation in problem solving via increasing the feeling of participation. So that they can express their ideas about their cities and communicate with the mayor
- g. Decreasing air pollution by decreasing urban traffic and utilizing internet in order to take part in activities.
- h. Expediting problem solving in the city by establishing direct connection with the mayor.
- i. Economizing time and energy via decrease in movement from one place to another one and making electric activities.
- j. Preventing further investments on old fashioned methods of city management.
- k. Increasing order and decreasing official corruption.
- l. Decreasing communications outside the organization in order to examine files and dossiers.
- m. Increasing security in exchanging information by preventing from probable attacks and providing the chance to identify them.
- n. Solving problems such as sanction or company servers' close down.
- o. Having simultaneous connection between users via internet.
- p. Creating job for youth in the city.
- q. Improving public knowledge of official bureaucracy and governmental circular through establishing direct connections between those who are responsible in government.(Safari & kanani, 1386: P .8 – 9)
- r.

2.3. Aims of electronic city:

Generally, the aims of electronic city can be classified as:

- a. Building a unique city for living, working and having fun.
- b. Creating active economic environment with which others may compete.
- c. Decreasing urban movement and expanding IT applications.
- d. Providing all required services actively and continuously.(Kakapour, Amiri, 1389 , P .7)

2.4. Duties of electronic city:

Recent researches on duties of electronic city shows that there is no difference between electronic city's duties and those of an ordinary citizen in an ordinary city. In other works, IT has made some duties of an ordinary city to be done electronically. These duties have made up of four parts. They are :

Providing information related to the outline.

Providing online services

Providing immediate information

Exchanging social information

- a. Providing outline information: such as maps, news, services electronic shopping, welfare and business information, Tourism, Hotel management, mail and other communication services for citizens and tourists.
- b. Providing online services: such as filling out and sending forms getting or extending Job or driving license , file storage , software programming using internet which are under city's supervision , conducting a survey and distant learning. Doing some financial affairs such as paying fines, bills, taxes, electronic shopping and even holding governmental tender.
- c. Providing immediate information: such as weather forecast, traffic information, emergency rescue, police and information related to fiscal and landed properties.
- d. Exchanging social information: such as chat rooms, conversation group, Environment Protection organization scientific, cultural, Political, economical and art groups which apart from sharing knowledge, it may help people to spend their free time and provides a cultural ground needed for establishing electronic democracy. (Albadvi & Ghepanchi, 1386 , P . 43)
- e.

2.5. Activities of Electronic city:

Any activity done by ordinary cities can be performed electronically in electronic cities more easily. Some of them are:

- a. Bank activities: such as paying bills, money withdrawal, money transfer, etc.
- b. Bureaucratic activities: such as recording documents & properties, passport request etc.
- c. Commercial activities: such as buying and selling goods, musical instrument, movies and food materials.
- d. Amusement activities: such as computer games, visiting museums, parks, etc .
- e. Gathering information: such as news, news papers, weather forecast, traffic, take off times of air planes, etc.
- f. Scientific activities: such as researcher on project, finding papers, having access to reliable references, libraries, books, new compilations, etc.
- g. Educational activities: schools, universities and other training centers.
- h. Political activities: such as participating in electrons, expressing ideas about assemblies and other open political sections.
- i. Travel activities: such as ticket, hotel, car reservations.
- j. Finding Job and applying for it: finding out about Job opportunities, filling out application form, sending and getting results. etc.
- k. Therapeutic activities: such as referring to the doctor, getting safety instruction and getting information about the latest medical news.
- l. Decision – making activities: such as showing the best and least crowded way in order to get to the intended place, showing the best restaurant in order to serve food, showing the best amusement places. (Kazemi,1386: P . 2)

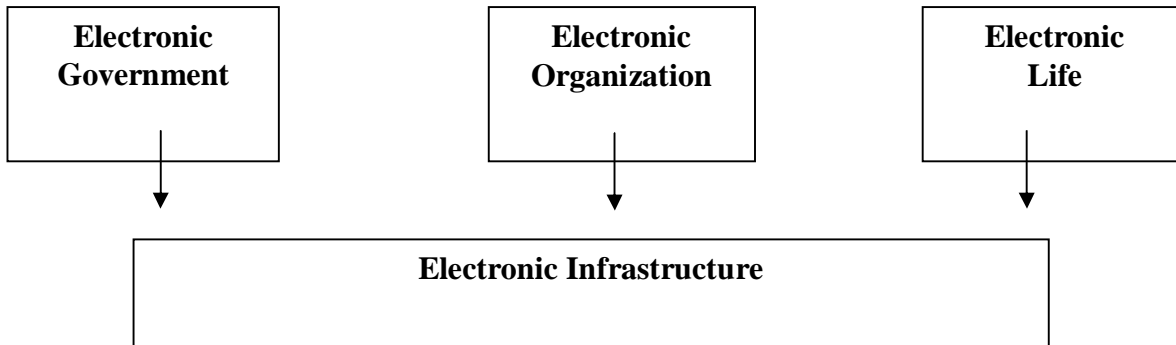
2.6. Main axes of electronic city:

Electronic city has been made up of many parts which their conscious and bilateral relationship lead to the formation of a virtual environment for electronic life.

These parts and axes are:

- a. Electronic life: developing electronic cities may lead to a new style of life for people and electronic citizens which include parts such as electronic education, electronic amusement, electronic communication and electronic.
- b. Electronic organization: IT makes globalization possible for companies and organizations. We can have: electronic business, electronic supplies, organizations programming system, and managing customer's relationship.
- c. Electronic government: includes four basic aspects of: government and people, government and private section, government and employees, government and other sections. Electronic government is a method for states to use new Technology that provides facilities in order to have access to information, government services, improving their qualities and providing opportunities in order to take part in some events. In fact there is no definite way of describing Electronic government and this may be because of dynamic and versatile technology. The purpose of IT and communication is improving efficiency, impression, clarity of information and exchanging money and information inter and intra states and organizations, government and citizens, government and private section of electronic government.
- d. Electronic Infrastructure: Provides the required ground for IT.
Electronic Infrastructure can be divided into three subcategories:
 - Laws and regulations
 - Human power
 - Cultural and environmental situation of IT infrastructure. (Safari and Kan'ani , 1386 : P .15)

The relationship between different sections is shown in the following diagram:



3. What is E-Government?

As defined by Kuno Schedler and Maria Christina Scharf, "Electronic Government is a form of organization that integrates the interactions and relationships between government and citizens, companies, clients and public institutions through the application of information and technologies modern communication. "The forms used by city governments today are web sites and web portals. The offer of e-government in the form of websites, a city usually have a main page (and sub-pages) for the site with links to individual and unique page sets associated with specific municipal offices and agencies . A lightweight alternative to this approach is the technique of portal. A portal is characterized by a page, usually organized around the type of user (initially selected by the user) and has links to a variety of service groups or the different city offices and all agencies offers the same style, easy to use and organizational design. For the purposes of this article, the website of the phrase (s) refers to Web sites and Internet portals, as mentioned above (Joshua Franzel: 2010).

3.1. Goals of E-Government Program

The overall objectives and priorities for lunch e-government are: -

1. Increase the effectiveness and efficiency of internal operations of the government sectors by: -
 - a. Reduce the time spent on activities within each department
 - b. Learning from the experience of best practices in carrying out the work.
 - c. Accuracy in performing various functions
2. Reducing the costs of government
 - a. The improvement and development of business processes.
 - b. Facilitate the flow of business and entry into a highly transparent and easy.
 - c. Reduce duplication of processes and information seminars in the business chain.
 - d. To promote integration and data exchange.
3. Raising the level of customer satisfaction with the services provided to them through:
 - a. Facilitate the use of public services.
 - b. Reduce the time it takes to get the recipient to the need for service.
 - c. To provide accurate data in a timely manner when necessary.
4. Support economic development programs, through:

- a. Facilitate transactions between the sectors of public and private sectors.
 - b. Reduce the costs of coordination and monitoring.
 - c. Increase employment opportunities
 - d. Increasing returns to profitability of the business of government business sectors.
 - e. Encourage the construction of infrastructure and the dissemination of technical information high efficiency.
 - f. The opening of new investment opportunities primarily in the information.
 - g. Achieving a high degree of integration between government projects and private sector in the national economy.
- These objectives ranked the different governments in different orders, but all these objectives the results of efforts to switch to electronic administration.

4. An electronic citizen:

An electronic citizen can be defined by electronic government. In fact, it is the union of nation and government that are inseparable. (Bahri & Sadeghpour. etal, 1388:P. 9)

This concept expresses characteristics of a citizen in information community. The citizens of information community is the one who is able to use hardware and software technology.

In many countries, electronic government is based on electronic state according to the viewpoints of electronic municipality. Electronic government is based on electronic city. (mahaki .1386: P.77)

5. Conceptual Definition of Electronic Municipality:

IT with its own developments has its own specific places among societies. Therefore, governments and organizations can interact with citizens exchange ideas, provide information in providing virtual electronic services. The government provides new services and plays a major role in improving the quality of countries by using these new services. As municipalities cover a major part of organizational activities and has an important role in any program and decision-making acts , can be the first one who succeeded in forming electronic city.

In other words electronic city is an organization that uses IT and communication, provides services within the duties of municipalities in a fast and reliable manner. It can be said that municipalities teach evolution and settlement of one comprehensive system of electronic services, such as online services , redesigning organizations outline , paying attention to citizens and making different sections cohesive in order to facilitate interaction , decrease expenditure and expanding municipal services.

(Sarfaraizi & Memarzadeh , 1386 , P.1-2)

Electronic municipality is simply a way by the use of which one can have access to all municipal services. Electronic municipality helps to have a group management, presence of citizens in managing the city. Electronic municipality acts as, channel in order to facilitate citizen interaction with those responsible in government.

Electronic municipality responsible asks citizens' ideas about major events of a city and use their ideas in their decision making.(AsgharKia, etal,1386:p . 11-12)

An e-municipality has a number of mechanisms that convert the paper procedures of traditional municipal office electronic processes with the aim of creating a paperless office and to increase productivity and performance of municipalities. It aims to improve transparency and accountability leads to better e-government in municipalities⁸. In summary e-town development is an opportunity to regulate the processes of public administration, to visualize and simplify them and realize them online (Irshad, 2009).

5.1. Developing Electronic Municipality and Formation Methodology.

Generally Electronic Municipality has been formed in 4 stages of emergence, improvement, interaction and cohesion.

Emergence:

The first step in forming an electronic municipality is preparing a strategic document on the basis of field works on qualifications, the present status, and investigating actions and global experiments.

Improvement stage:

Many Electronic municipalities in the world started their activities by providing basic services on websites and clarifying infrastructures and educating employees.

Interaction stage:

At the next stage, websites and networks will provide establishing, bilateral communication and people will be able to communicate with each other easily via electronic city.

Cohesion stage:

In this stage some services like Information of bank storage gets accessible through websites , and many citizens can have access to municipal services via wide local networks and internet. This stage provides the ground for making electronic municipality. Some dominant cities of the world like Toronto, Berlin, Boston have just started this stage. Building virtual organizations and offices and remote working system are next plans of electronic city. That by administering them, there won't be any need to refer to the offices and the employees will be able to do their work. (Sarfaraizi & Memarzadeh 1380 , P.3)

6. Summary and Concluding Remarks

In nowadays societies factors Such as in creasing of the poverty and Social and economic injustice, increasing of the population, increasing of the urbanism have offered many problems for civilians in conducting and mangers cities. many ways to solve these problems have suggested by authorities that one of them is Electronic city. No doubt fully, Electronic City is one of the new concepts that have been appeared with development of the Information Technology and communication and have the capability of solving many critical and complex living problems especially in megacities , although executing needs to have a correlative and coherent scheme and its requirements to execute through the society should be pre pared. An Electronic City Can Contain a variety of purposes, Such as developing civil applications of Information technology aswell as creating same opportunities for all citizens in utilizing the advantages of citizenship and participating in an Information Society has a. unique role and place and in case of play this role appropriately he or she can have a significant portion in development and extension of the other citizens and finally their society and country .Civil associations and entities.

That mostly offer civil services, can be noticed as a cradle of creation of Electronic city in the future. Future Electronic City is output of cooperation and increasing of the knowledge power of different informative associations in a society and cannot depend only on the communication and information structures.

In a general and logical perspective we con imply the important and inevitable role of Information Technology and communication toward impelmenting and facilitating the affair of the nowadays and modern cities and logical movement to optimal use of this technology In the following researches we should pay attention to new perspectives in the use of Electronic city in city mänge men.

REFERENCES

- [1] Safari Saeed and Kanaani Ahmad Baghlou Ali, 2008. Electronic Municipality Base of the Electronic City, First International Conference on Electronic City, International Congress saloon, Milad Tower, Isfand 1th and 2nd, Tehran. pp. 5-15.
- [2] Sarfarazi Mehrzad and Memarzadeh Gholamreza, 2008. Paradigm of Electronic Municipality a Necessary in Virtual Age, first International Conference, International Congress Saloon, Milad Tower, Isfand 1th and 2nd, Tehran, pp. 1-3.
- [3] Safarazi Mehrzad and Memarzade Gholamreza, 2008. Paradigm of Electronic Government a Basic Necessary in Establishment of Electronic Municipality, Fourth International Congress on Management of Information and Communication international Congress Saloon of Olympic Hotel, Bahman 29th & 30th , Tehran, p. 7-8.
- [4] Montazer Gholamali, Sadattahami Sara, 2010. Codification of Designing Ways to Create a Digital City in Tehran in the Perspective of 1404, Second International Conference on Electronic City, Ordibehesht, 22nd to 23rd, Tehran, pp. 2 - 3.
- [5] Rohani Parisa, at el, 2010, Correlation Ship Between Electronic City and Electronic Municipality, Second International Conference on Electronic City, Ordibehesht, 22nd to 23 rd, Tehran, pp. 11-13.
- [6] khakpoor Baratali and Amiri Aghil, 2011. Electronic City a Step Toward a Healthy City, Second National Congress on Healthy City, Sabzvar , 5th, pp. 7- 9.
- [7] Kazemi Bahareh, 2008. Electronic Bill Paying a Step Toward Developing Electronic City , First International Conference Electronic Municipality, the Municipalities and Rural Governing of Iran, pp. 2-5 .
- [8] Nejajavadipour Mehran, 2010. Offering a three Dimentional Model for Codification of Guidelining Document to Electronic City, Second International Conference on Electronic Cities , Ordibesht 22nd to 23 rd, Tehran , pp. 4-8
- [9] Kiya Aliasghar at el, 2010. Future City, Electronic City: Electronic Municipality an Inevitable Necessity, Second International Conference on Electronic Municipality, Ordibehesht 22nd to 23 rd, pp. 11-12
- [10] Mahaki Aliasghar, Electronic Municipality, 2008. Takfa Magazine, 5th year, Number 2, pp. 77-78.
- [11] Taghvae Aliakbar and Maroufi Sakineh, 2010. Electronic City a Step Toward Reaching the Purposes of the Healthy city, Second International Conference on Electronic City, Ordibehesht 22nd to 23 rd, Tehran, pp. 7-9.
- [12] Jalali Aliakbar, 2004. Electronic City, Science and Technology University of Iran, Publication Centre, Tehran, pp. 27.
- [13] Jalali Aliakbar 2008. Electronic City, Takfa Magazine, Khordad, 5th year, Number 2, pp. 67.
- [14] Bahri Arman, 2008. Electronic Municipality Serving the Purblind Citizens, Second International Conference on Electronic Municipality, Ordibehesht 22nd to 23 rd, pp.9-10.
- [15] Odendaal, N, 2003. "Information and Communication Technology and Local Governance: Understanding the Difference between Cities in Developed and Emerging economies", Computers, Environment and Urban Systems, 27/6: 585-607.

- [16] Irshad Humeira Report, “Broadband as a Catalyst for E-Government-A Case Study of Five Rural Municipalities in Alberta” is Based on Research Conducted from June to September 2009.
- [17] Mohammad Hiba and at el, 2009. E-government in Jordan, European Journal of Scientific Research ISSN 1450-216X Vol.35 ,No.2 ,pp. 188-197.
- [18] Joshua M Franzel, 2010. Urban Electronic Government- Innovation, Adoption, and Metropolitan Characteristics, Systemics, Cybernetics and Informatics Volume 2- Number 2.
- [19] Albadvi Amir and Ghapanchi Amirhossein, 2008. Designing and Constructing of an Electronic City: Case Study of Barizban city, Takfa Magazine, Number 2, Khordad, 5th year, pp. 4-4.