City Information Systems as E-Manucipality Application in Local Administrations; An Evaluation Over Konya and Kayseri Big Cities Examples

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Abstract

Information has become the most important resource for local administrations. Especially in face of rapid urbanization, cities' expansion and planning in a more healthy way, optimal usages of existing resources, services' being carried out in a contemporary perspective are available only by systematic analyze of the information gathered by local institutions. Developments observed in recent years in information and communication fields caused important changes in government structures. That is, refraining from classical, bureaucratic structures, governments proceeded to structures in which processes are done more easily and less costly. Rapid change that was experienced showed the fact that a structural transformation was required in "Public Administration" field. Like all over the world, this transformation has two main trivets in Turkey, as well. These are "e-government" and "mobile government" notions. Reflection of these two notions on local administrations is "e-municipality". In local administrations, especially municipalities are leading institutions which are extremely involved in data processing and required to share the produced information with public. With their dynamic and sophisticated organizations, municipalities need to create more resources as a result of the increase in their functions in both urban and rural areas. This case increases the needs of politicians to have more information and process them to form up-to-date, easily available, reliable policies. Compared to the total, %77.6 of the population lives in the borders of municipalities. It is an obligation to employ information technologies to govern the cities which have such an important potential. In this study, how local administrations exploit "City Information Systems" as an "e-government" application in detecting, planning and meeting the needs of public, and the legal, social and technologic motives directing municipalities to "City Information Systems" will be examined comprehensively. In addition, current situation in Turkey in view of city information systems will be indicated and Konya-Kayseri Big City Municipalities' city information systems will be handled to put forward new suggestions.

Key Words: Public Administration, E-Government, E-Municipality, City Information System, Konya Municipality, Kayseri Municipality.

1. Introduction

In rapidly growing and developing cities, information systems are required for controlling urbanization, carrying out the performances of investment and services in the most optimum and economical conditions, detection, planning and supplying the requirements of the people living in cities today and will live in future . Establishing city information systems (CIS) is a priority for local authorities to meet the necessities mentioned above. In this framework, CISs are important tools in view of policy making process. CIS is a system which controls and directs all graph and non-graph information.

The importance of the information system used actively in modern societies has been understood in our country recently and it has found lots of fields to be carried out. Today some municipalities such as Ankara, Antalya, Aydın, Bursa, İstanbul, İzmir, Kayseri, Konya and Trabzon struggle to establish and sustain CIS. However, it is observed that CIS is not utilized effectively because of traditional governance understanding and lack of information update. In this study, Kayseri and Konya municipalities that establish and carry out CIS successfully are handled as good examples in Turkey.

2. City information system and general performance

Authorities' abilities in planning, program making and decision making depend on the location and administration and saving of information. Saving and administration of information concerning location is one of the computer abilities that are carried out in many disciplines. (Ucuzal, 1999:2) Thanks to the system called as CIS, we get information about the city, urban life and citizens, then process the information in a system, and finally make use of this information system in many fields.

CISs, which are depicted as very examples of e-government notion, can be explained as systems that collect information about the city and citizens, process this information in a database, associate and organize this information to be benefited in performing economical, social, cultural, administrative and other services. (Erdoğan, Can ve Alkan, 2005). CIS consists of different components. Especially local municipalities tend to establish and use CIS with the intention of improving government understanding which is more effective, cooperative, efficient and storing, questioning, analyzing information in a sustainable way. (Morova, 2006)..Designing of CIS is based on two main pillars.

a. City dweller; the person who has relationship with city life and so benefit from services of municipality

b. Property; the place or location which city dwellers own or use.

In this framework, a system established to develop municipality's services inevitably has to take these two concepts "City Dweller and Property" into consideration. So, forming city dweller and property registers in CIS is vital. Concerning this context, following components are the examples for the establishment of necessary mechanisms of a system.; (Eser, 2009:35).

    a.   Adress Information System
    b.   Available Numerical Maps
    c.   Land Registry Cadastre Information System
    d.   Population Information System
    e.   Reconstruction Information System
    f.   Infrastructure Information System (water, electricity, gas)
    g.   Construction Projects Information System (www.alfabim.com.tr)

To do right investments by making right decisions for the future, a well designed CIS is crucially important .For that reason, CIS must be designed in accordance with the following targets. (Baz, 1999; 32)

a) Eliciting necessary communication and coordination between municipal units, waste of time, man power, budget for similar or same activities should be prevented and efficiency promoting activities should be carried out.

b) All necessary information, graphics, results of surveys and analyses should be easily reached to have a more efficient planning and administration process.

c) Oversight of infrastructure, transportation, cleaning of environment, income and expenditure should be transferred to automation, and this kind of services should be offered to citizens electronically.

d) Municipality's property and other kind of tax incomes should be oversighted electronically.

3. The reasons that lead local authorities to city information systems

The technological advancements which are changing and developing day by day have come up with a more delicate , more efficient, and citizen-based process. This process covers e-state, e-government, and e-municipality; all of which have been prospered to catch the European Union Criteria. Information systems enable institutions to perform faster with less cost. (Yomralıoğlu and Mataracı, 1999:143)

Today, there is a need for information systems in cities to meet not only people's demands, but also institutions' needs. Multi-dimensional information analyses are required to take right steps. Appeared in the early 1960s and used for city planning, computers have become the most effective tools when determining strategies on the cities' development.

Among those reasons leading the municipalities to city information systems, there are legal regulations apart from the technological advancements. According to the laws (number 5393, article 14), it is stated that municipalities have to launch a city information system. In addition, in the related article of metropolitan municipalities' law, building city information systems is issued as the metropolitan municipalities' responsibility.

Here are the benefits of city information systems to municipalities: (İnce, 1999:46-47):

    1-   To give efficient municipal service and to follow and function a municipality's revenues,
    2-   To create an efficient environment for a city's physical planning and applying this plan,
    3-   To execute the most productive and suitable applications for planning, performing, and operating the

investments,

4- To minimize the abuses of duties and to guarantee the state's and citizens' rights.

In any city, building an information system helps to meet the local government's and citizens' needs in a very short time.

4. The evaluation of the current situation by examining Konya and Kayseri metropolitan municipalities

Although building city information systems is issued as metropolitan municipalities' responsibility by the related laws (5393, 5216), it is not the case in many places. The level that municipalities reach is generally providing a limited e-municipality service. For this reason, the obstacles and problems of local authorities in building city information systems should be solved immediately with cooperation among public, private and voluntary institutions and foundations. This cooperation should cover financial, legal, technical, educational issues, and municipalities should be equipped with high technology.

Though limited in number, there are municipalities which has already built and operated city information systems. Konya Metropolitan Municipality and Kayseri Metropolitan Municipality are two successful examples.

4.1 The example of Konya metropolitan municipality

Konya City Information System was put forward with an understanding based on dealing with the city's everything at the same time. As Konya is expanding gradually, it is getting more difficult to handle all problems in different parts of the city at the same time. If you want to manage all problems, the solution is that the authorities should know everything about the city. As stated before, building the system is the municipality's duty.

Konya City Information System was built on January 1st, 2005 by the directorate of construction affairs and the existing numerating unit was linked to the directorate. The system was built after consulting other institutions.

Konya City Information System was built on three fundamental units (http://www.konya.bel.tr):

- Konya Metropolitan Municipality (the numeration, the collection of the social data, the integration of all data, to update the system),
- Land Office (numerical land information)
- Province Bank (the existing maps and orthographic images).

Via this information system (http://www.konya.bel.tr), citizens can:

- surf on the virtual model of the city,
- reach the information of completed, incomplete, or planned projects,
- go virtually around the streets of the city and watch it 3D,
- reach the necessary information such as the important public places, foundations, schools, medical centres, pharmacies, the police, hotels, and so on under the title of city guide,
- reach the information and photos of all historical masterpieces,
- reach land information and building permission information,
- watch the touristic places via live camera,
- get information about transportation
- reach the demographic, cultural, social database of the city.

4.2 The example of Kayseri metropolitan municipality

"3 Dimensional City Information System" has been formed for 5 towns inside the borders of Kayseri Metropolitan Municipality named Melikgazi, Kocasinan, Talas, Hacılar, and İncesu. The system is being updated frequently. Thanks to this system, one can reach a wide range of information from all the units of Kayseri Metropolitan Municipality to historical places of the city. Moreover, there are photos of the cultural and touristic places and roads. The system also includes an updated database which private institutions and citizens may need. It is stated that the system is being periodically updated by the staff of the Directorate of Geographical Information System. With this geographic information system prepared by Kayseri Metropolitan Municipality (http://cbs.kayseri.bel.tr/), citizens can:

- surf on the virtual model and delicate land model of the city with the latest (2010) satellite images,
- reach the information of planned projects(Erciyes Winter Sports Centre, Anatolian Wonders Land, etc.),
- go virtually around the streets of the city and watch it 3D,

- reach the necessary information such as the important public places, foundations, schools, medical centres, pharmacies, the police, hotels, and so on under the title of city guide,
- get information about transportation (tram, bus, biking roads and stops),
- analyse the shortest way for a destination inside the city,
- learn the nearest hospital, pharmacy, or other emergency units to your location,
- reach the short information and photos of all (confirmed or non-confirmed) historical masterpieces,
- reach the demographic information and learn the chief of the district,
- reach the list of the tombs in the cemetery,
- reach the information of hobby gardens,
- reach the information of police's responsible area, fire brigades' area
- view any address on a 3D map when they use the search engine,
- get the address of a location when they click on any spot,
- go to a destination when they write the coordinations,
- measure the area or distance on the 3D model,
- get information about the latest earthquakes and weather forecast,
- view mapping services such as Google Maps, Windows Live maps, Openstreet maps.

There is no limit for the number of the users.

Here is a list of the works achieved by Kayseri Metropolitan Municipality in recent years.

- Kayseri City Guide, which was developed for Android operation system, has been broadcasted.
- The 2.0 version of Kayseri City Guide has been broadcasted.
- The Transportation Information System has been added to Kayseri City Guide.
- Complaint and request module has been added to the city guide.
- Cemetery Information System has been added to the city guide.

Developed for Android operation system, free Kayseri City Guide has been launched by Kayseri Metropolitan Municipality.

5. Conclusion

The quick advancements in information technologies affect human life directly. As the individuals in a society demand to reach and question a variety of information, the institutions have to be ready for such things. That is, building those systems and providing certain services should be one of the duties of the local authorities.

Today, there is a need for information systems in cities to meet not only people's demands, but also institutions' needs. In particular, multi-dimensional information analyses are required to take right steps. Appeared in the early 1960s and used for city planning, computers have become the most effective tools when determining strategies on the cities' development. However, in today's world, managing the information has become more important than the installation of computerized systems. Therefore, local authorities should absolutely give enough importance to city information system which is a type of geographical information system, and they should try to settle it down.

Thanks to city information systems, local authorities can save time and money to great extent for maintenance works by mastering the infrastructures of the cities. Municipalities can serve citizens better and faster in terms of construction, tax, punishment, renting and paying the rents, the vacancy in the houses, following a city's socio-cultural development, public assistance, fixing the possible fire area, defining roads for fire brigade, making the transportation system more rational, and many more.

Konya and Kayseri Metropolitan Municipality realize e-state which can be called the technological reflection on public work. They meet the citizens needs in a very short time via those information systems and the tasks functioned by those systems.

Although building city information systems is issued as metropolitan municipalities' responsibility by the related laws (5393, 5216), it is not the case in many places. The level that municipalities reach is generally providing a limited e-municipality service. For this reason, the obstacles before the local authorities should be solved in cooperation and this system should be used more common all around the country.

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