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THE EVALUATION OF URBAN INFORMATION SYSTEM APPLICATIONS IN TURKEY

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1. INTRODUCTION

In 21st century, great majority of the population are living in cities and city managements are formed from complex structures. In order to increase the life standards of people distributed through large residential areas and not to make them meet any problem but benefit from urban services effectively, cheaper and in comfort, the city should be managed in planned manner with the developing technology.

This century is the century in which information was used right, fast, effective, current and optimum by the help of new information technologies. Because, producing, modeling, operating and analyzing information with manual methods as in present structure cause losses in time, cost and manpower.

There is no doubt that municipalities lead in the application of this type of system. Because local governments take the leader part of institutions that are mostly in contact with citizens in Turkey.



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2. URBAN INFORMATION SYSTEM (UIS) APPLICATIONS IN TURKEY

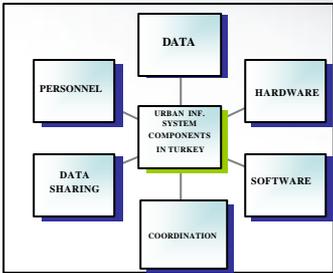
A status determination has been made about the position of Urban Information System (UIS) study in all of the municipalities in Turkey by The Institute of Statistics in Turkey (TIST). In this study, there were made researches about maps whether they were in digital format or not and about numbering information whether they were updated or not, recorded in computer medium or not and related with digital maps or not. The research was applied on all the municipalities in Turkey during May 2005 – August 2005 time period. According to the results compiled from 3066 of 3228 municipalities, 543 municipalities (18 %) have numbering unit. 104 of these have updated numbering information. However, only 7 of 104 have numbering information recorded in the computers. In addition, 126 municipalities (4 %) have existing UIS study (TÜİK, 2006)..

Some of the local units presenting Urban Information System application efforts in Turkey can be listed in alphabetical order as Ankara, Alanya, Antalya, Aydı n, Bursa, İstanbul and İzmir.



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A general evaluation is made by gathering UIS applications in Turkey under subtitles of: data, hardware, software, personnel, data sharing and coordination (Figure 1).





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2.1 Data in UIS Applications

Existing data in urban applying Urban Information System in Turkey are digitalized due to following reasons;

- development applications in general,
- determination of up-to-date present maps by the help of satellite views,
- making digitalization processes due to local applications,
- and necessity of data collection for the application of prepared engineering projects.

2.2 Hardware in UIS Applications

Most of the Urban Information System applications in Turkey have hardware opportunities. The hardware of desired trade and properties can be chosen and purchased in Turkey in this century in which we live information technology. Municipalities are presenting a transparent management in supplying necessary hardware.

2.3 Software in UIS Applications

There are used 3 types of softwares in Urban Information System applications in Turkey which are named as CAD products, mapping products and UIS softwares.

Within these softwares, NETCAD products are usually used in performing mapping activities and MAPINFO and ARCGIS9.0 softwares preferred among UIS softwares and their compatibility with CAD products also facilitate their usage in other engineering studies.



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2.4 Personnel in UIS Applications

In cities performing Urban Information System study; the personnel who were so far busy with the beginning stage of the projects, were mainly formed from people that were closer or interested in this subject instead of having profession information. Afterwards, especially in the application stage, the necessity of employing experienced and educated personnel in this subject who have serious engineering, computer and system information was perceived after the confronted problems.

2.5 Data Sharing in UIS Applications

Inside institution data sharing is provided in the municipalities that perform Urban Information System. Since municipality has a network system between its units, data transfer and data sharing between units can be done easily.

2.6 Coordination in UIS Applications

In general, a complete coordination does not exist in Urban Information System applications. On the contrary, an institutional confidence takes place which fulfills service in the same urban, uses the same digital maps, needs but not shares the same information and hesitates from coordination.

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3. PROBLEMS CONFRONTED IN URBAN INFORMATION SYSTEM APPLICATIONS

In Urban Information System applications being performed in Turkey, there were met various problems related with data, management, justice, coordination and economics during and after system installation. These problems are explained item by item in the following (Figure 2)

Figure 2: Problems of Urban Information System

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3.1 Problems related with data in UIS applications

There are met problems related with data collecting, updating and standards in the urban applying Urban Information System during the period of data collection till the data integration into the system.

- 1. Problems related with data collection**
 - ❑ Problems sourced from the team forming data substructure and not working with sufficient planning and coordination,
 - ❑ Problems resulted from not choosing the best procedure and method for data collection and losses occurred due to this.
 - ❑ Problems due to faulty storage of data obtained by data collection and data losses caused during data usage.
- 2. Problems related with data updating**
 - ❑ Problems met in transferring necessary cadastral maps and development plans into the system,
 - ❑ Cadastral maps not being in digital format,
 - ❑ Sheet deformation confronted in cadastral bases,
 - ❑ Having been drawn with measurement methods away from today's technology, old cadastral maps not having spatial accuracy,
 - ❑ Faults occurred during the transfer of data produced with different coordinate system into national coordinate system.

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3. Problems related with data standards

- ❑ Problems sourced from various types of data obtained as a result of not having a particular standard in data that will be integrated into the system and data types and formats coming from abroad.
- ❑ Naming streets, main roads and districts without any particular system which are being used in Urban Information System,
- ❑ While the projects of Urban Information System are produced with definite software, data coming from abroad is produced with CAD softwares and there are met problems in integrating them into the system.

3.2 Managerial and Administrative Problems Met in UIS Applications

Managerial and administrative problems lead the problems met by municipalities in performing Urban Information System. These problems are listed as in the following.

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- 1. Managerial Problems**
 - ❑ Problems sourced from political approach lived between managers about municipality benefits being nearly at the same level of advantage.
 - ❑ Economical problems caused from using limited money in performing the system and having been contracted to credit use provisions,
 - ❑ Problems resulted from political fan and not having continuous, permanent managers who dominate the subject and have spacious horizons,
- 2. Administrative Problems**
 - ❑ Different administrative standpoints occurred during the completion period of Urban Information System project,
 - ❑ Data collection, updating and keeping alive problems encountered during the establishment stage of the system due to personnel having insufficient information, skill and experience.
 - ❑ Problems caused from replacements of administrative and technical personnel at the establishment stage of the system, negative standpoints, reluctant behaviors of personnel and negative effect of local elections on municipalities.

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3.3 Judicial Problems in UIS Applications

- ❑ Problems sourced from not having any arrangement that will provide coordination between institutions in order to perform Urban Information System and execute and complete the projects,
- ❑ Problems caused from legal arrangements of other institutions in the urban by not giving permission to form bases and data sharing activities of municipalities,
- ❑ Problems confronted due to treaty endings of bilateral protocols performed provisionally at General Directorate level and not obtaining and sharing data in UIS like long term projects,
- ❑ Problems met because of not providing effectively the coordination of all the institutions in the urban under a common roof with a legal arrangement.

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3.4 Problems related with Coordination in UIS Applications

- ❑ Problems caused from arbitrary and managerial type of institutions that are under coordination,
- ❑ Reluctance problems presented as personnel and institutional in data sharing movements of the institutions,
- ❑ Problems created on data sharing and updating due to annulment of protocols between institutions with subsequent regulations or legal supports,

3.5 Economical Problems Confronted in Urban Information System Applications

- ❑ Problems caused from municipalities not having sufficient monetary sources during the period passed until the completion of Urban Information System,
- ❑ Having a monetary cost for all activities performed during the project and besides having less number of municipalities with budgets that can pay this monetary cost,
- ❑ During the preparation of annual municipality budget, reserving less money that will not be enough for the execution of Urban Information System,

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4. CONCLUSION

Having and effectively using spatial information carries great importance in performing urban activities reliably. Feeling the need of planning especially in terms of local governments, reaching the information of engineering projects and applications quickly, producing newer information by using former information and pursuing and controlling all of them are indispensable components for a planned urbanization.

There are no specific principles and standards in Turkey in order to establish Urban Information System. This condition falls the relevant and institutions into pessimism who want to be busy with this subject. There should be established regional organizations or centers formed from relevant agencies of all institutions and universities that produce topographic, cadastral, forest, infrastructure maps, plans etc. under the municipality association or a regarded organization. Principles and standards of Urban Information System should be specified with the coordination and collaboration that will be provided between these centers. Furthermore, these centers could give consulting service by making collaboration with universities.

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Institutions; every institution should carry out its duty in point of making legal arrangements that will necessitate institutions to be in collaboration with GIS-UIS Center in terms of establishing their own information systems, signing mutual collaboration protocols and behaving to use information technology for the benefits of people.

The numerous advantages of widespread use of Urban Information System in Turkey are known by institutions and organizations that mostly need spatial data. Information will be reached quickly, correctly and updated with the establishment of Urban Information System and decision support politics will gain speed.

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Thank You

for your attention!

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