Institutional Policies on Geographical Information System (GIS) Studies in Turkey

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Key words: GIS, Institutional, Policy

SUMMARY

New technologies can be applied in every branch of occupations nowadays called information age and save time, labor and cost for the users. Founding Information System interesting all occupation branches is one of the most popular work field.

The studies on founding and applying spatial based Geographic Information System (GIS) by both private and government institutions in our country are increasing rapidly. Today GIS or Urban Information System (UIS) applications are being used by various institutions such as TAKBIS (Turkish Land Registry and Cadastre Information System), MERNIS (Central Population Information System) and E-DEVLET (Electronic-State) but in the past it was only mentioned. However, these applications cause confusion in terms of data standardisation and institutional benefits. Namely, Urban Information System used by municipalities is not coordinated with the GIS used by Turkish Land Registry and Cadastre and other institutions. The fact that there is not an accurate database prevent to establish an institutional structure, to share information, and to coordinate today.

In this study, the applications which are called GIS in Turkey were examined. The institutional approaches re-organizations, coordination and data standarts were studied and we suggested new approaches.

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1. INTRODUCTION

There are many institutional structures having the purpose of civil service in Turkey. They generally perform their present activities appropriate to classical comprehensions. The institutional preferences in institutional goals, comprehensions, methods, relationships with other institutions and etc. are regarded with great importance and other services and relations with other institutions can be regarded with minor importance.

At the same time, institutions are in re-organization research in order to present appropriate service to new social needs and expectations. It is observed that the usual institutional preferences are regarded with great importance in the re-organization studies that are compatible with the necessities of the present era. Because of their properties, preferences and resistances to protect their existing structures, it is evident that there will be experienced difficulties in achieving the goals to form institutional structures and understandings compatible with this century.

2. THE PRESENT CONDITION AND ANALYSIS OF INFORMATION SUBSTRUCTURE IN TURKEY

There are many institutions aimed to provide national needs in Turkey. Each institutional structure is generally established to perform specific goals of that day's needs and chooses the protection of their properties compatible with their first establishment goals as the basic goal. (Erdi and etc, 1996)Generally each institution adopts to obtain information related with their service goals individually and did not present any sufficient effort in sharing data.

Instead of forming goal and application accordance necessary in present studies, there can be met opposite results of each study. Having had great confusion in the past, studies are still continuing today with their similar properties. The list of some institutions in Turkey active today in business on spatial and non-spatial substructure is given in Figure 1.
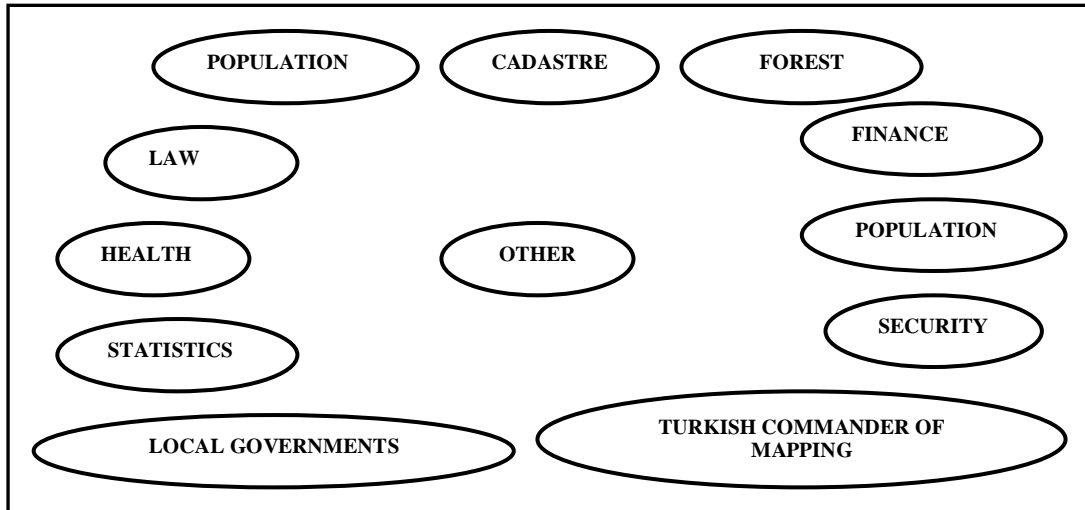
Figure 1: Institutions Studying with Information Dense Information in Turkey

As it is seen in the figure, the basic structure of each unit in turning into an institution is the formation organized for various goals. The general determinations given in the following titles are made in a study performed to determine the condition of existing structure. /HAKAR/

The confusions related with Information System Concept, Formation, Keeping Up-to-Date and Supply of Needs take place in the present system.

2.1 Confusion about Information System Concept

The thought of considering the existing studies with an Information System Concept has not been formed. This situation prevents to take information and resources with sufficient properties. Most of the needs cannot be supplied from a definite center that institutions generally try to supply their needs by special solutions without making any relationships with the other institutions in Turkey.

Nowadays, when the studies of public institutions related with collecting information were examined, it was observed that the classification of the produced information was not made, by who and how the information will be collected was not defined and the information sharing rules were not formed sufficiently.

In the light of these determinations it is possible to say that confusion is being experienced in Turkey since there is not formed system logic in producing, applying and using information.

2.2 Confusion about Formation Activities

A master plan concept cannot be put forward in order to take system services to all over the country. While taking services to the whole country, not making time planning, not determining need and goal relationships, not making human and hardware projections and not having any responsible person in the whole system over the country cause to have coordination problems and emptiness in the services.

The basic component of Information Systems is Data. Institutions have many problems in obtaining data yet in the formation stage. There are experienced serious unfavorable events in the subjects like goals, timing and planning, because there are done many tings out of logic of Information System formation.

2.3 Confusion about Keeping Up-to-Date Activities

Updates of collected information parallel with time and changes have great importance besides collecting, storing and operating data in Information Systems. Present information substructure not being used by institutions and not serving the needs expected from the system is one of the experienced confusions.

2.4 Confusion about Supply of Needs

The qualities of information in the existing system does not let decision organs take reliable decisions. Some information existing in the system does not have the quality to be a base to other activities and usually cannot serve the needs of its institution. Since a systematic structure necessary for updating information cannot be established, there will appear many new problems.

The condition of existing information substructure in Turkey can be summarized with the following two determinations (Figure 2).

1 – An information system concept whose goal and content are specified could not be exposed until today.

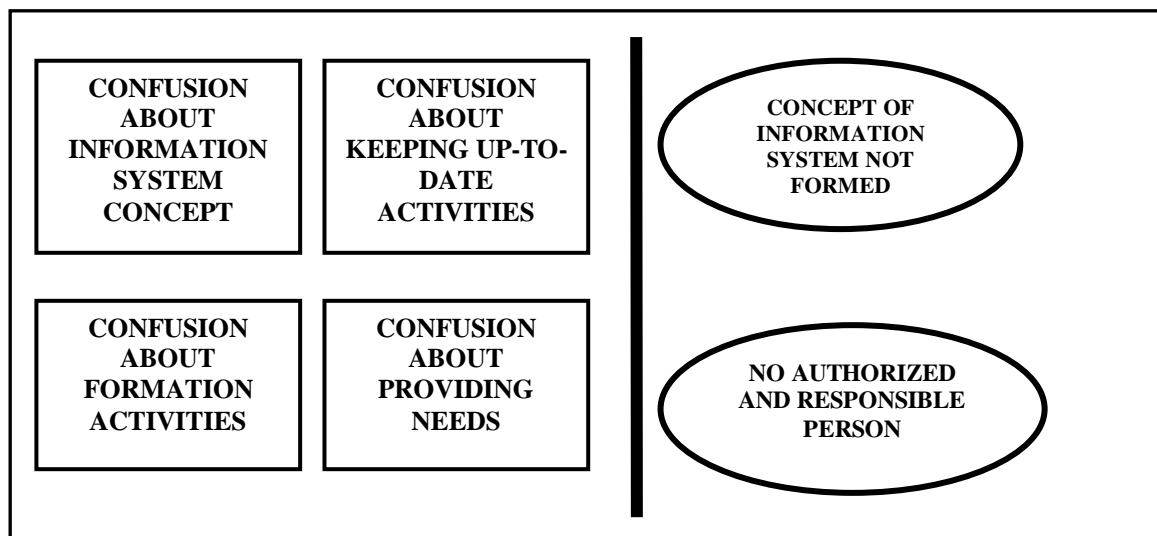2 – There exists no organization in Turkey authorized and responsible for the whole system.

Figure 2. Confusions and Outcome Determinations Experienced in Existing Conditions in Turkey

3. GIS STUDIES IN TURKEY, APPLIED POLICIES AND EXPERIENCED PROBLEMS

Being one of the indispensable goals of technology and improving itself rapidly in last years, information usage event is the greatest treasure of the countries to be used in future plans. For this reason, the formation of Geographical Information Systems (GIS) will help to provide a fast, effective and dynamic information flow and have an effective structure by breaking the clumsy structure of bureaucracy. At the same time, the usage of contemporary technological opportunities will carry great importance in considering the coordination between institutions more effectively.

The institutions in Turkey are working to perform the establishment and application aimed studies for Information Systems that take place in the contemporary solutions as in the other countries. The subjects like Information, Informatics, Information Technology and Geographical Information System carry priority among the planned investments of all institutions. It is evaluated as a natural position that **"obtaining information"** and **"using it congruent"** event being tended by the whole world is also inside the priorities of Turkish institutions.

The formation and utilization of GIS aimed studies of private and official institutions with position reference are continuing in Turkey. Many studies only mentioned in the past, began to be performed today with e-Government concept and aimed to be finished. A summary of primary and comprehensive studies performed in Turkey under the name of information system is given in Table 1.

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Table 1: Studies about Formation of Information System in Turkey

NAME OF STUDY	INSTITUTION PERFORMING THE STUDY AND OBJECT
E-DEVLET	Office of Prime Minister
TAKBIS	Information System of General Directorate of Deed Cadastre
MERNIS	Central Population Studies System of Ministry of Internal Affairs
KBS	Urban Information System Performed by Local Governments
CBS	National Geographical Information System of Map General Comm.
ORBIS	Forest Information System
GİMOP	Automation of Customs Systems of Ministry of Customs
VEDOP	Automation of Customs Systems of Ministry of Customs
UYAP	National Judgment Network of Ministry of Justice
ILEMOD	City Inventory Modernization of Ministry of Internal Affairs
POL-NET	Formation of Police Network
MEB-NET	Management Information System of Ministry of Education
SAGBIS	Basic Health Statistics System of Ministry of Health
DİĞER	Others

In these studies, because of institutional comprehensions, there are met confusions in terms of "formation, utilization, goals, data standards and sharing etc.". It is a reality that these studies should be in wholeness in a system especially in e-Government studies. It is observed that, the behaviors of criticisms given in the 2nd section are continuing exactly the same in information system aimed studies.

There are not adopted a noteworthy policy compatible with system logic in the subjects like which data will be included in the system, by whom and how this data will be collected, updated and shared.

Each institution makes studies related with its activity only by perceiving the world different as in Figure 2 and another institution or need stay out of its interest area. There is formed various and repeated data due to the number of that type of institutions.
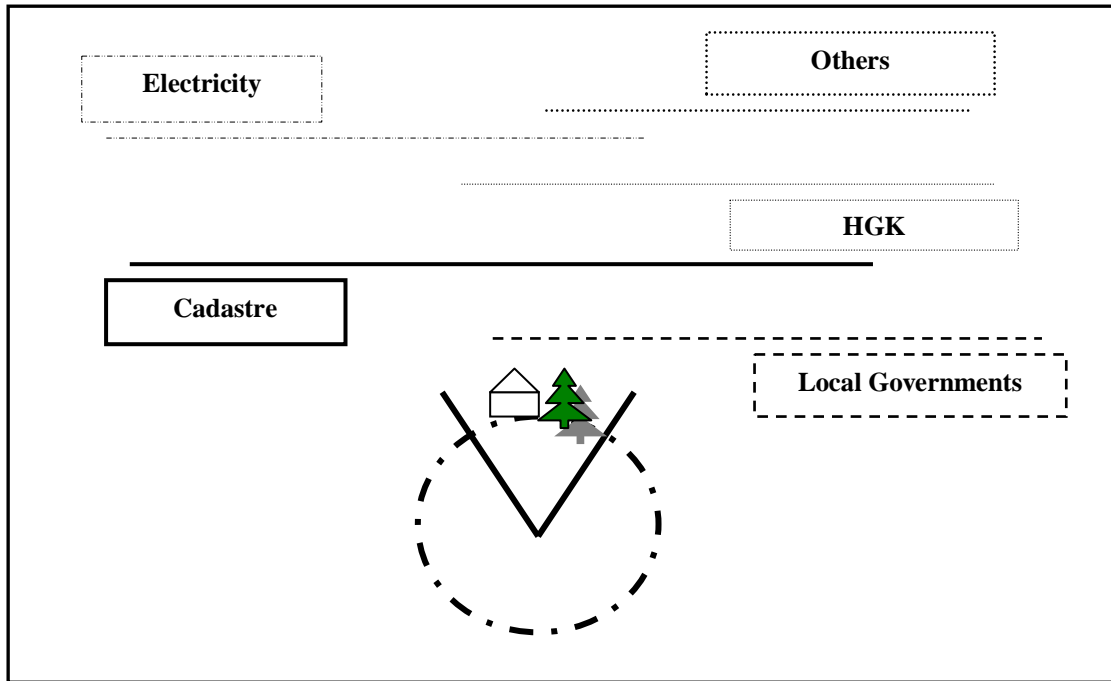
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Figure 2. Institutions Working in the Same Place with Different Rules in Turkey

As it is known, Geographical Information System has five basic components (Figure 3). There exist many question marks about these basic components.
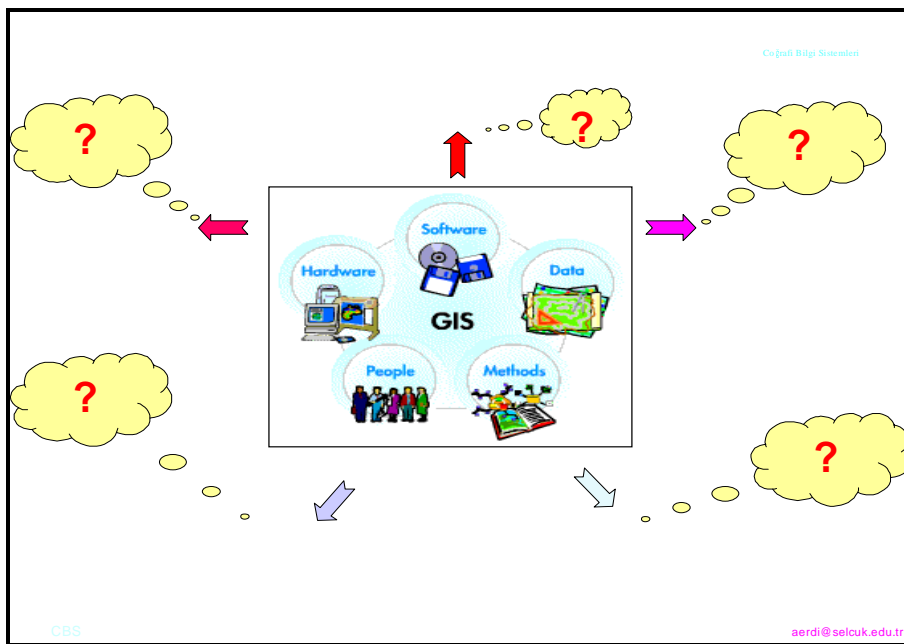

Figure 3. Components of GIS.

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It is observed that there is no duty compatible with the system logic and no common policy about the collected data. Besides not making any classification for the collected data, there is not considered any systematic approach about the subjects of which institution will collect which data and according to which rules the update, security and sharing of data will be made. As in the existing structure, there is not behaved compatible with the era for the subjects like formation, keeping up-to-date, sharing, serving needs and the system logic could not be completely settled even if it takes place in their names.

Those problems continue inside the whole system beginning from data obtaining stage yet. There are problems caused from institutional comprehension of each institution, managerial approaches of them in formation activities and not having data of a definite standard but produced in various data formats or formed in various standards in technical meaning.

When there is asked a question like **"What is the Country Policy?"** about these components, it is difficult to say that there is a reliable plan, policy, volition or result even only about a subject.

When the data concentration and sharing obligation in an ideal Geographical Information System is considered, it seems to be impossible to achieve reliable results with the studies performed in today's comprehension.

In Figure 4, it is presented that the primary institutions adopted goals and policies according to their constitutional assumptions in system formation.
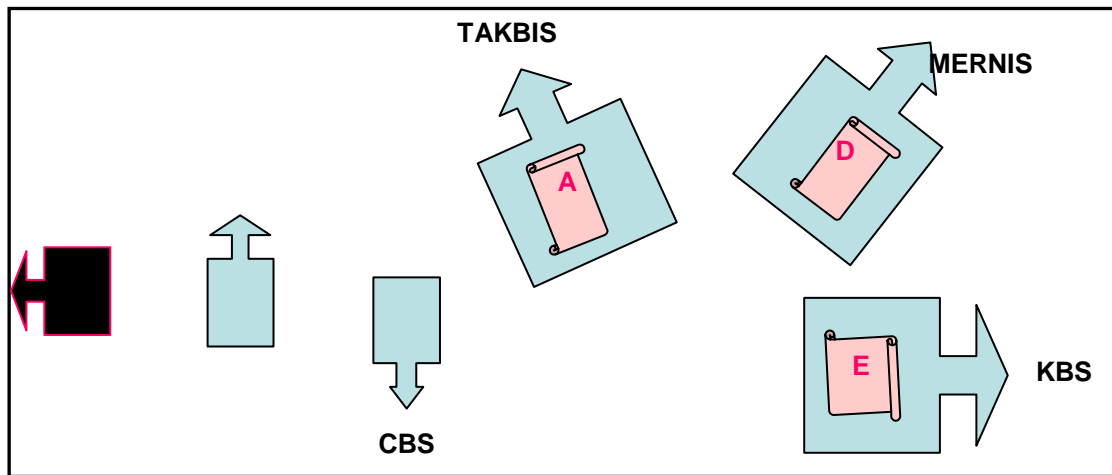

Figure 4. Information System Studies Performed with Specific Goals in Turkey

There are not shown sufficient effort and self-sacrifice related with standard accordance and behavior that should be in information system aimed studies. The institutional assumptions and adoptions can be regarded with greater importance than the national and scientific truths. It is observed that this comprehension is still continuing. As a result of these adopted political approaches, it can be said that this general opinion is obtained. The institutions are making

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only an institutional automation by using their information technologies in their studies described as confusion in institutional existence. It is thought that the inclusion of information system additions to their studies is not suitable with system logic. Moreover, as a result of this approach, institutions are facing with great difficulties in providing information needs. As a matter of fact, achieving an ideal structure with information system activities in the country should be the basic goal. The truth of being components of a whole should always be considered.

4. A PROPOSAL

There is tried to draw a road map by considering the whole national information system and leaving some approaches in the information system formation activities in Turkey. The way that should be followed is listed in the following by moving from the truth of necessity to continue existing services without stopping.

4.1 Data and National Data Format (Standards) Should Be Determined

The basic characteristics of information systems are being true, up-to-date, standard, flexible, unrepeated, in desired form and sufficient to the needs and their share ability. One of the first process that should be performed is to answer the questions of "which information will be necessary for whom and how much?" "By whom or which institution will the information be collected and how will it be collected?" and "How will the information be updated, shared?". Actually, this means the determination of national data standards.

4.2 The studies should be performed according to National Standards

It should be provided that the institutions should carry out their existing studies according to designated national standards. If this is succeeded and the behavior suitable for the realities of nation and century instead of institutional emotions is decided, there will be taken an important distance in establishing national information system.

4.3 Transition to National Information System

When it is ready for the formation of national information system and the decision is given, the congregation of the institutions collecting information according to national standards can be provided around the national information highway (Figure 5). Since all data in the institutions are in the same standard, data grouping and sliding, institutional joining and decomposition will be very easy. As seen in Figure 5, if (X) information or information group has become together in three different institutions repeatedly, the data would be made single and completed in the institution.

By the same way, an institution present in the existing structure can easily become integrated with another institution and new institutional formations can be provided when needed.

The movement of all institutions in the country with this point of view means *"A NEW RE-ORGANIZATION"* in means of institutional structure and professional component logic.
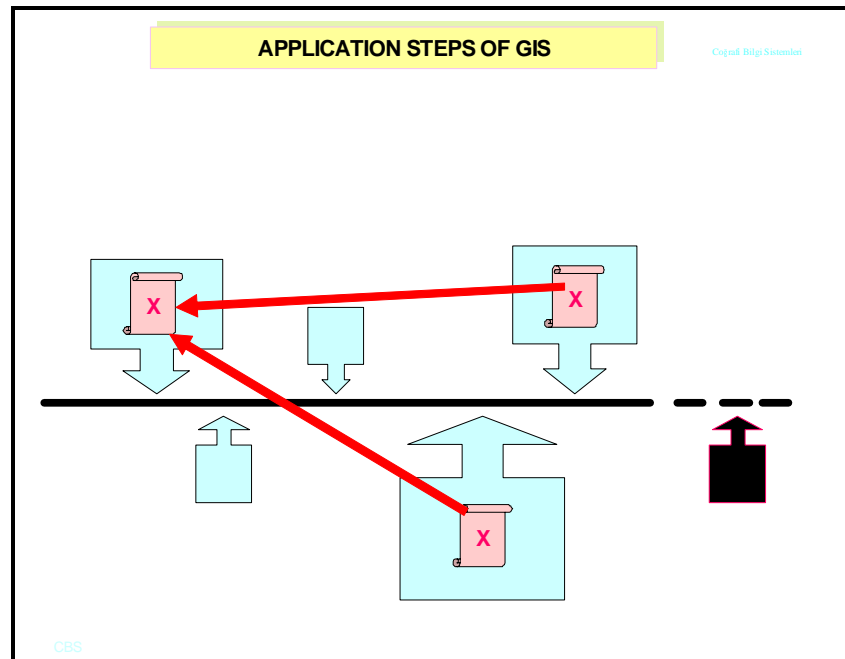

Figure 5. Transition from Standard Systems to Information Systems

5. CONCLUSION

There are met many confusions in the existing information substructure of Turkey. There are considered many new goals and studies in order to benefit from developing new information technologies and opportunities. The institutions in Turkey are continuing their usual policies under the name of "information system" by regarding their institutional priorities with great importance in their information system studies performed by them as a necessity of today.

There are also met many confusions during the formation of information systems, since national standards are not considered and no sanction is enforced in information systems. In order not to let this confusion grow and to perform the formation of national information system immediately, the national standards should be immediately determined and all the studies in the country should be performed appropriate to these standards.

Since data transfer and sharing will be very easy after having standard data in digital media, and then a re-organization will be possible.

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This re-organization will be possible when profession groups, institutions and lawmakers want it and work together. This will be a re-organization. This will be a real system. This will be a deliverance from confusion.

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BIOGRAPHICAL NOTES

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