IMPORTANCE OF E-EDUCATION AND E-GOVERNANCE: CASE OF ZONGULDAK KARAELMAS UNIVERSITY, DEPARTMENT OF LANDSCAPE ARCHITECTURE

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ABSTRACT

Governance is the using of political, economical and administrative authority in all level of a country's administration. It includes the mechanisms, processes and institutions through which citizens articulate their interests, mediate their differences and exercise their rights and obligation. At the same time, today computer aided communication is imbibed by the institutions both traditional and distant education, and it is disseminated all over the world. In this study, two important issues –electronic governance (e-governance) and electronic education (e-education)– are discussed on the Scenario of Zonguldak Karaelmas University (ZKU), Bartın Faculty of Forestry, Department of Landscape Architecture. In this study, three international and one national cases are examined, and they are compared with the ZKU. As a result of the study, the common problems of e-governance and e-education, their problems in Turkey and at the ZKU are determined, and the proposals for the solution of these problems are developed. As a final remark, the contributions of universities for the constitution of Knowledge Cities and the reflections of this study to the City of Bartın are emphasized.

Keywords: E-education, e-governance, Department of Landscape Architecture, Zonguldak Karaelmas University, Bartın.

E-EĞİTİM VE E-YÖNETİŞİMİN ÖNEMİ: ZONGULDAK KARAELMAS ÜNİVERSİTESİ PEYZAJ MİMARLIĞI BÖLÜMÜ ÖRNEĞİ

ÖZET

Yönetişim bir ülkenin idaresinde politik, ekonomik ve idarî otoritenin tüm düzeylerde kullanılmasıdır. Yönetişim vatandaşların yararlarını birleştirdiği, farklılıklar arasında orta yol bulduğu, hak ve sorumluluklarını hayata geçirdiği, mekanizmalar, süreç ve kurumları kapsamaktadır. Buna paralel olarak, günümüzde bilgisayar destekli iletişim hem geleneksel hem de uzaktan öğretim veren kurumlarca benimsenmekte ve bu ortamın egitimde kullanımı tüm dünyada hızla yayılmaktadir. Bu çalışmada, iki önemli konu –elektronik yönetişim (e-yönetişim) ve elektronik eğitim (e-eğitim)– Zonguldak Karaelmas Üniversitesi (ZKÜ) Bartın Orman Fakültesi Peyzaj Mimarlığı Bölümü'ne yönelik olarak oluşturulan bir senaryo üzerinde tartışılmıştır. Çalışmada bu konuda örnek oluşturan üç uluslararası ve bir ulusal örnek incelenerek, ZKÜ ile karşılaştırılmıştır. Çalışmanın sonucunda, e-yönetişim ve e-eğitimin genel sorunları, Türkiye'deki sorunları ve ZKÜ'nün sorunları saptanmış ve çözümüne ilişkin öneriler geliştirilmiştir. Son söz olarak, üniversitelerin Bilgi Kenti oluşturmadaki katkıları ve bu çalışmanın Bartın Kenti'ne yansıması vurgulanmıştır.

Anahtar Kelimeler: E-eğitim, e-yönetişim, Peyzaj Mimarlığı Bölümü, Zonguldak Karaelmas Üniversitesi, Bartın.

1. INTRODUCTION

This study focuses on e-governance (Figure 1.1.), meaning the ways that Information and Communication Technologies (ICT) are used in management, communication and decision making within city management and within and between cities. Transparency and effectiveness in public sector management of cities and organisations directly involved in the provision of urban services are a function of a well-established information management that has at its core an Urban Information System (UIS). However, the remarkable amount of data that is generated by cities and its institutions is usually scattered among agencies and different entities not only within the public realm but also within private and commnuity sectors. Consequently, the organisation, sharing, updating, processing, retrieval and the dissemination of sector related data and knowledge generated from it have become one of the greatest challenges for contemporary urban planning and urban management (Davidson and Van Winden, 2005).

Governance is a concept that involves the interactions among structures, processes and traditions that determine how power is exercised, how decisions are taken and how their say has been by citizens or other stakeholders (Davidson, 2005).

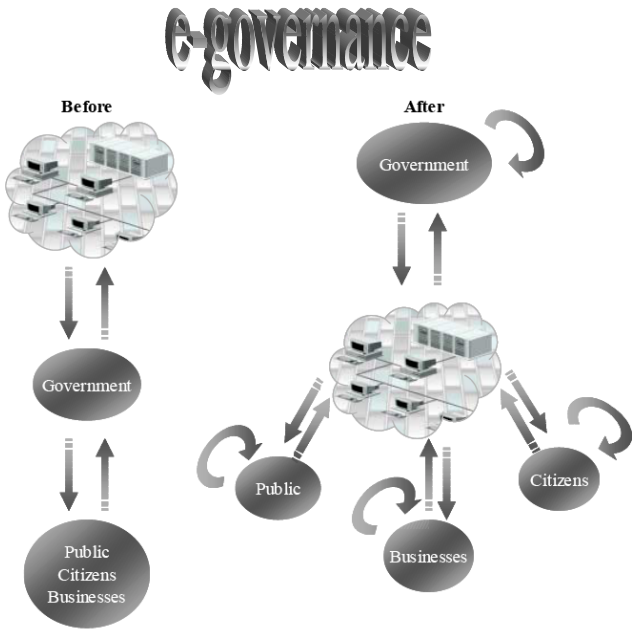

Figure 1.1. Schematic Explanation of E-Governance (Saidi and Yared, 2001)

E-education that its importance can not be ignored nowadays, is another focus point of the study. The study examines the significance of the emergence of e-governance as a mode of practice the re-invention of good governance in the scenario of universities on the subject of e-education.

The issues include: functions and data requirements within an organisation (i.e. actors, responsibilities), the need of information management strategies (i.e. key elements, actors, the structure and mission/business objectives of an organisation and data requirements), the function of modern information-based organisations and the critical factors of success (Davidson, 2005).

The study introduces the *ZKU, Department of Landscape Architecture* as a special focus centre, to date the only one of its kind in the ZKU and beyond, poised to be the organization of choice in moving the ZKU forward in the use of the new information and communication technologies as a tool for re-inventing Good Governance throght the Knowledge City of Bartın.

2. METHOD

The research is a qualitative study based on quantitative and qualitative data. The method includes primary and secondary data collections. The research methodology is explained on Figure 2.1.

Firstly, the aim of research and research questions are determined. The resulting aim would be compiling the list of policy and planning aspects to encourage the e-governance and e-education in order to achieve one's goal of the improvement of ZKU's education. Therefore, it will be positive effect being a model for Bartın through Knowledge City.

The research questions are formulated as follows;

1. What is e-governance?
2. What is the importance of e-governance and e-education in the improvement of the ZKU?
3. What are the reflections of e-governance through the Knowledge City of Bartın?

Secondly, the case area is selected which is the ZKU, Bartın Faculty of Forestry, Department of Landscape Architecture. Thirdly, literature review and theoretical framework are presented which are the bases for the analysis of data and for drawing conclusions. In the desk study, Anna University (Chennai-India), Barcelona University (Barcelona-Spain), Erasmus University (Rotterdam-the Netherlands), and Gebze Institute of High Technology (GHIT) (Gebze-Turkey) are selected as samples which have different projects in terms of strategic ICT management. The samples are discussed, and compared with the ZKU. Finally, results and recommendations are carried out according to the evaluation.

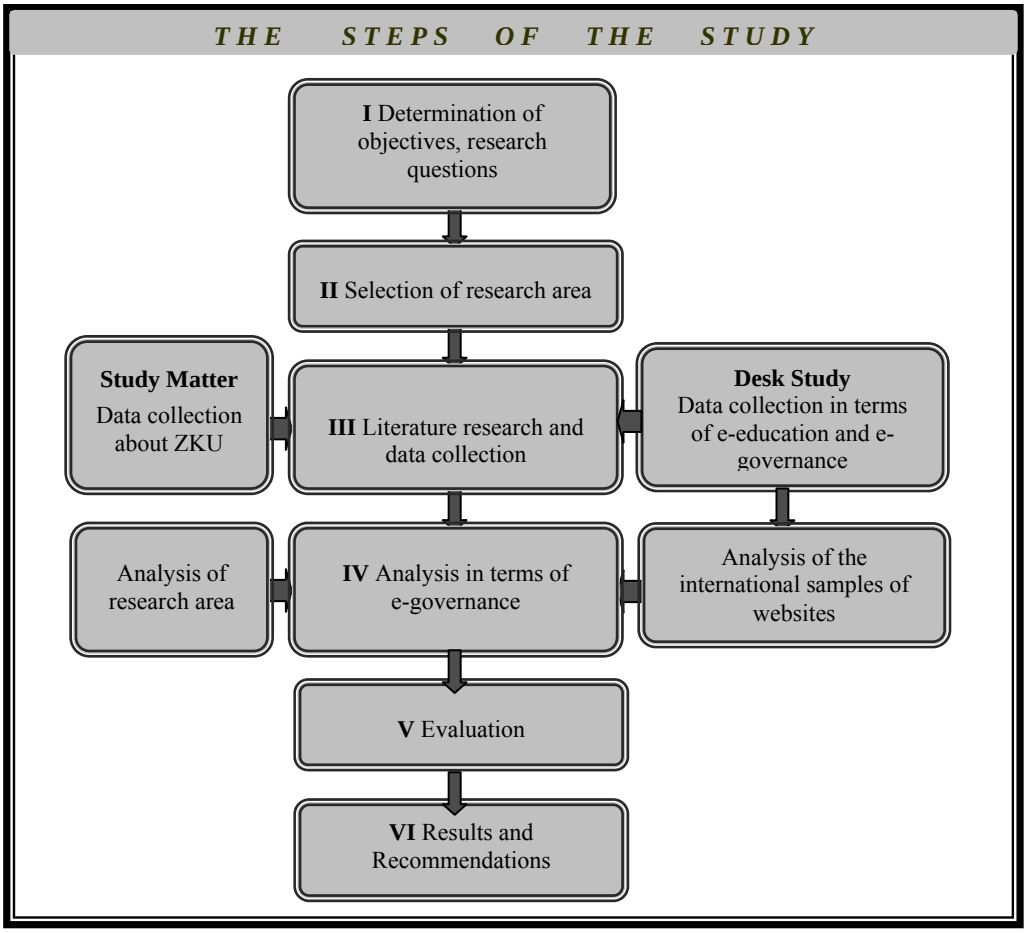

Figure 2.1. Schematic Explanation of Research Method.

3. ANALYSIS

The analysis includes two parts. First part presents the context of the case study: the ZKU, Department of Landscape Architecture in the City of Bartın included geographical location, and the structure of ZKU in terms of e-governance. Second part elaborates five selected samples and compares with the ZKU.

3.1. Case Study: The ZKU, Department of Landscape Architecture

The Department of Landscape Architecture is a part of the ZKU which is located into Zonguldak in Northwest Anatolia (Figure 3.1). The ZKU has campuses that are located into various cities including Zonguldak, Bartın, Karabük. In Bartın, there is a faculty named Bartın Faculty of Forestry that contains three departments, and one institution of higher education.

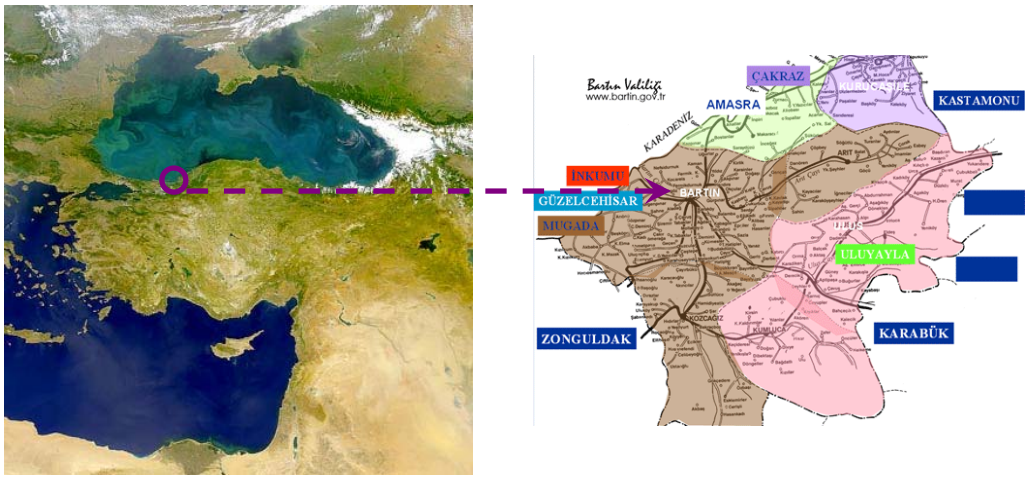

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Figure 3.1. a- The location of Bartın (NASA, 2004); **b-** The map of Bartın (Bartın Valiliği, 2007)

Using Information and Communication Technologies (ICT) effectively and efficiently is becoming very important because of the distance between each location of the university and even departments. In terms of e-governance, there is not enough infrastructure of ICT at the Bartın Campus. Lacks of hardware, a shortage of wireless connection, the lack of an information database as well as integrated system are the main problems. There is a strong internet connection in the vocational school. There are three computer labs for students, but there aren't enough them and they are out of date in terms of both hardware and software. There are skilled personnel such as research and teaching assistants and assistant professors who are proficient on computers. The ZKU has a web page (Figure 3.2.a ve 3.2.b.) like the other universities in Turkey (Table 3.1). It has an Information Operation Centre. The university personnel download the grades into the database and the university web page display for the students. There is an intranet within between the departments at the campus for sharing information. Improving the quality and quantity of the ICT system at the ZKU is very difficult, because of the state universities' organizational structure and the funding problem in Turkey. The scenario of Department of Landscape Architecture is explained on Figure 3.5. in order to summarize the proposal of structure for e-governance. The organizational structure of the Turkish Higher Education System is presented on Figure 3.3.

In terms of e-governance, the internal dynamics of the organization need a better technical infrastructure, more and better technical services/communities and more conscious users who share information. External factors such as institutional conditions, economic conditions and national policies affect this structure (Van der Meer and Van Winden, 2003). For improving institutional conditions of ICT, the awareness of a top manager is the first required factor. The organization needs the training at all levels of the organization, advanced infrastructure (i.e. GIS Centre), efficient use of information and communication network, trained educators, as well as e-education for reaching a quality education in today's global information-based economy. In this respect, a coordinated strategy will be implemented around four main themes: ICT awareness raising, improving infrastructure of ICT, human capital creation and providing e-education.

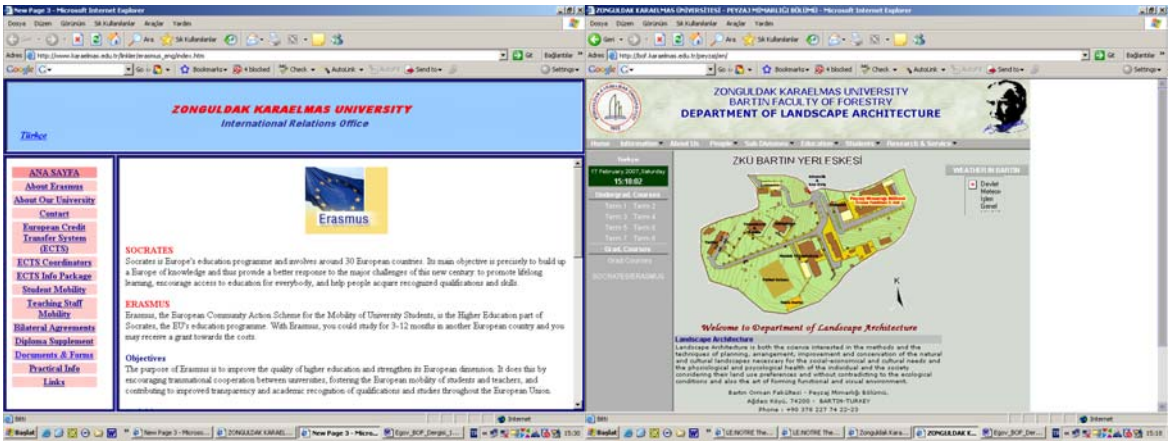

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Figure 3.2. a- The website of ZKU (ZKU, 2007a)
b- The website of the Department of Landscape Architecture (ZKU, 2007b)

Table 3.1. Websites Presence in the Mediterranean Countries-January 2001 (Saidi and Yared, 2001)

	Primary and Secondary Schools	High Schools and Universities	National Ministries	Regional and Local Authorities	Hospitals and Clinics	Museums	Libraries
Algeria	0%	28%	47%	33%	1%	31%	3%
Cyprus	6%	38%	100%	n.a	8%	11%	1%
Egypt	1%	7%	38%	n.a	0%	8%	6%
Israel	17%	85%	91%	99%	52%	24%	5%
Jordan	0%	22%	100%	0%	7%	0%	0%
Lebanon	3%	74%	73%	12%	8%	75%	40%
Malta	6%	4%	35%	21%	20%	21%	2%
Morocco	0%	75%	136%	1%	25%	n.a	n.a
Palestine	0%	36%	29%	8%	4%	0%	6%
Syria	0%	25%	35%	0%	0%	0%	0%
Tunisia	1%	33%	95%	0%	0%	60%	0%
Turkey	1%	100%	100%	4%	6%	30%	8%
Average	**3%**	**44%**	**73%**	**18%**	**11%**	**24%**	**7%**

Scenario
Department of Landscape Architecture: Government

- Professional top management: Chairperson
- Political or board of directors: Departmental Board
- Technical/professional middle level: Research and Teaching Personnel
- Technical/field staff: IT staff, secretary, etc.
- External partners (private sector, community, central government): Local Government, Private Sector such as IslemGIS, Bartın's citizens, students.

Figure 3.3. Information Needs and Role of E-Governance: Scenario of Department of Landscape Architecture

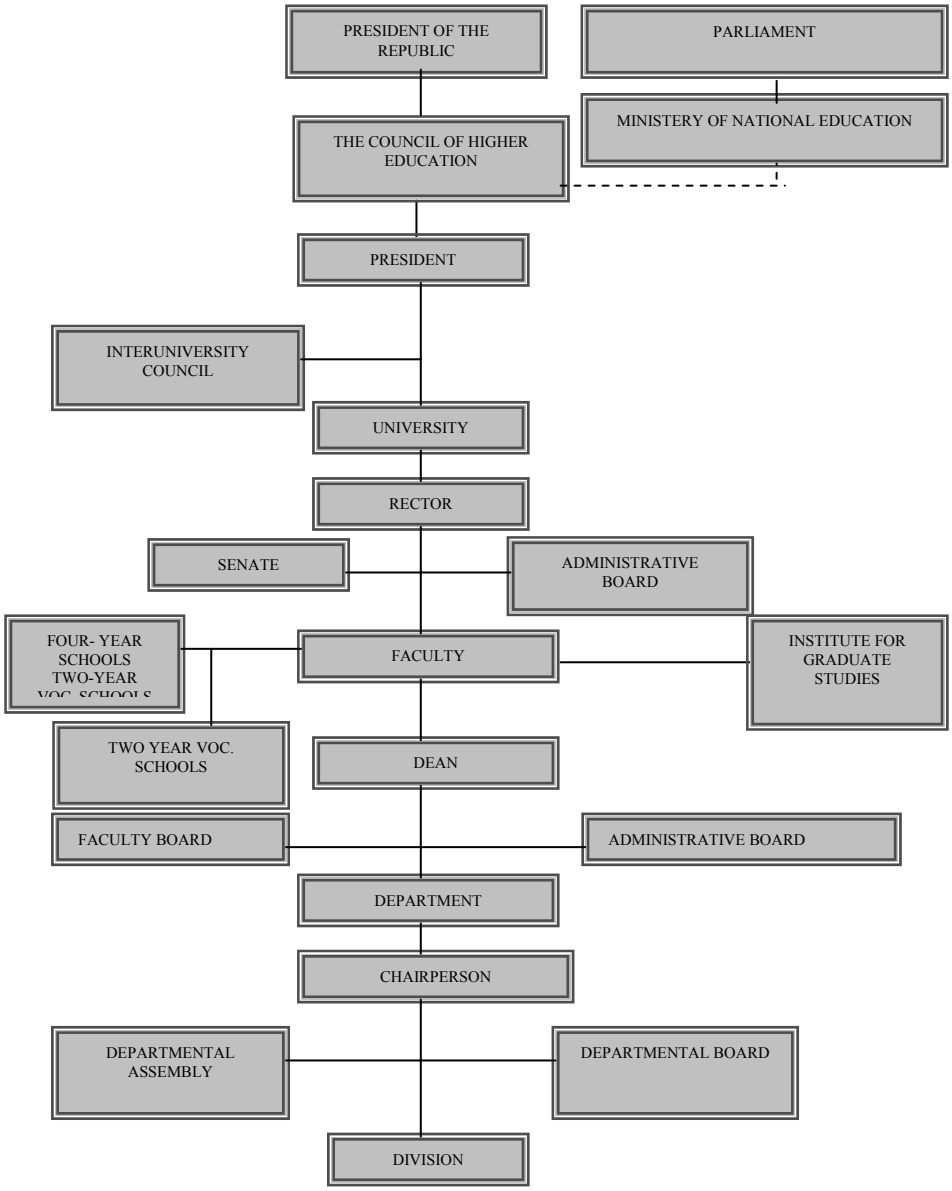

Figure 3.4. Organizational Chart of the Turkish Higher Education System (YÖK, 2007)

3.2. Relevance of International Experience

Anna University, Barcelona University, Erasmus University and GHIT are selected as samples which have different projects in terms of strategic ICT management. The selected samples are discussed on the topics of accessibility, transparency, system integration and the capacity of ICT infrastructure, and are compared with the ZKU. Anna University which is an important international example and GHIT which is an important national example for e-governance in education is presented in Figure 3.5.a. and 3.5.b.

Anna University has a project about the implementation of an electronic governance model for Indian Universities. The main objective of this project is to develop a software package in a standard data base environment running on a campus network that will provide a smooth flow of information, commands, requests and reporting between the "Government" (university administration) and the "Citizens" (students, staff, and public) so as to enhance the speed and quality of internal functioning as well as provide productivity, efficiency

and "customer satisfaction" in the environment of a typical Indian University. A tangible result of this would be a substantial reduction in the use of movement of paper, as well as, reduced need for the movement of people searching for information, leading to reduced delays, cost savings as well as environmental conservation (Anna University, 2007). *GHIT* developed a "Web Based Information System for Academic Activities". It was developed for organizing the main activities of academic departments of the universities. In this project, it was purposed gathering, digitizing, storing, querying, analyzing on internet, and presenting to the potential users as documents and reports of the data interested with academic activities. The system was designed as the part of GHIT Campus Information System and associated spatial data of the university (GHIT, 2007). *Barcelona University* and *Erasmus University*'s web pages have a lot of facilities such as student information, international relations office, library, virtual desk, and blackboard (Figure 3.6.a. and Figure 3.6.b.) (Barcelona University, 2007; Erasmus University, 2007).

For the creation and implementation of these projects mentioned in all campuses of the ZKU, there are two main weak and two main strong points: The state universities' organizational structure and the funding problem are weak points. The awareness of the importance of ICT and skilled young personnel are strong points of the ZKU.

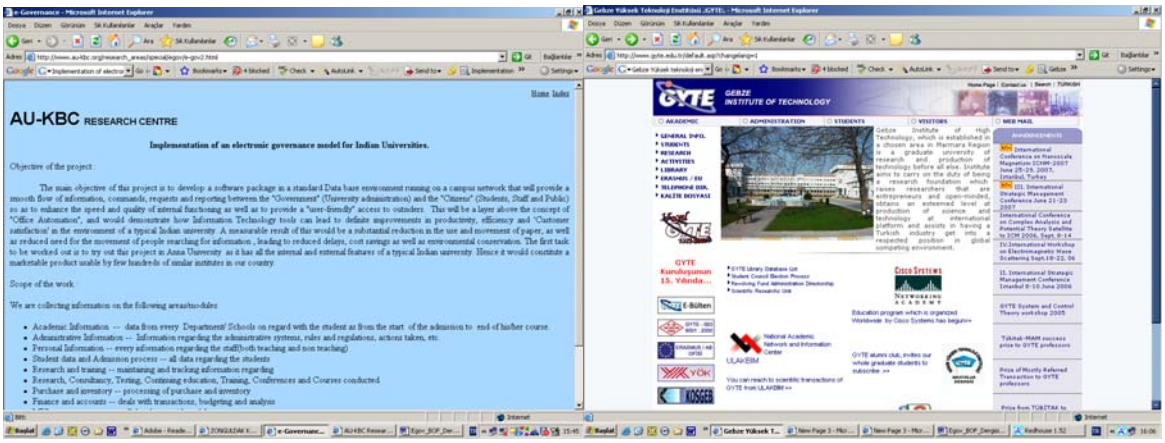

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Figure 3.5. a- Implementation of E-Governance Model for Indian Universities (Anna University, 2007)
b- GHIT's Website (GHIT, 2007)

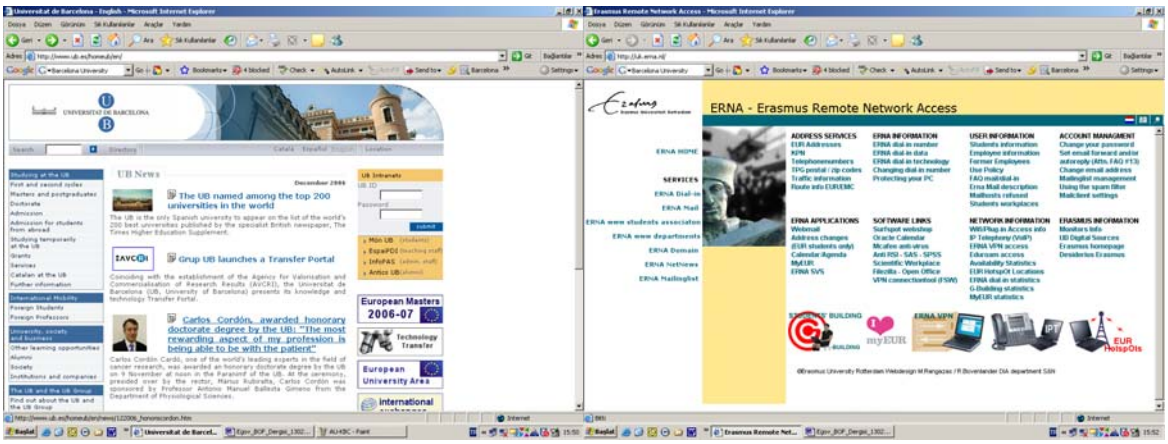

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Figure 3.6. a- Barcelona University's Website (Barcelona University, 2007)
b- The Website of Erasmus University (Erasmus University, 2007)

4. RESULTS AND RECOMMENDATIONS

In this section of the study, firstly the results and recommendations which are based on answering of research questions are clarified. Furthermore the author proposes a series of recommendations for the problem which is related with e-governance in the Department of Landscape Architecture at the ZKU in Bartın and proposes opinions for the City of Bartın. According to the analysis and determinations of the study, the results and recommendations are given as follows.

What are key issues for success in establishing and running systems for e-governance?

In general:

- In order for the governments to reap the full potential of benefits of e-government, a number of conditions, a number of building blocks, are necessary: leadership, connectivity and network readiness, business environment, human capital, privacy, trust and security (Saidi and Yared, 2001).
- E-government initiatives require substantial investments and innovation before they are ready for public use e-government implies administrative and civil service reform as part of the business-process re-engineering of government. Strong, high-level leadership –typically at the level of the head of state –is needed to supply the vision, establish a national e-strategy and ICT task force and rally support from the public and private sectors (Saidi and Yared, 2001).
- Reliable, accessible and secure telecommunication infrastructure is a key to the development of e-government. This includes the availability of telecommunication services, community access centers and network readiness. The main challenge is the pricing, affordability and reliability of network access. Efficient networks should also be designed to benefit from interoperability and interconnection, lowering service and transactions costs to consumers and business (Saidi and Yared, 2001).
- E-government can only succeed in an environment where the appropriate framework supports the development of e-initiatives. Political stability, financial soundness, and government policies will affect competitiveness in the field of the network readiness of the countries (Saidi and Yared, 2001).
- ICT and e-Government can only thrive when the necessary technical infrastructure is available. Sufficient investments need to be made into setting up wide-reaching backbone networks, broadband access and the required systems and networks (UNDP 2003).
- E-government can only achieve success with private sector involvement and support. To attract and provide incentives for private sector initiatives, an enabling policy environment needs to put in place. The regulatory and policy environment is the facto implementer of ICT strategy (UNDP 2003).

In Turkey:

- Creation of a proper legal environment is critical to the effective use of ICT. Despite the efforts made by Turkey in this direction, the legal framework is not yet sufficiently conducive to the rapid development of ICT and meeting the needs of their citizens. The Turkish government is committed to the ambitious target of introducing Internet access to every school in the country, even at village levels. However, new educational policies will need to be developed and implemented to ensure that this ICT tool is used to support human development in the education system (UNDP, 2003).
- Expensive internet access in Turkey relative to other countries and the high price of hardware and software are barriers for the millions of Turks who wish to join the information society (UNDP 2003).
- In order to benefit from ICT, people need to understand how to use and apply it. In the future, the most productive jobs will be found in computerized and on-line workplaces. Turkey needs to significantly improve the overall quality of ICT education and training and make it available to all; young and old, female and male, city and village, rich and poor. The Turkish government is committed to the ambitious target of introducing Internet access to every school in the country, even at village levels. However, new educational policies will need to be developed and implemented to ensure that this ICT tool is used to support human development in the education system (UNDP, 2003).
- There is a general lack of knowledge and reliable statistics on ICT. In general, the information available in Turkey does not reflect the real situation. Accurate statistics are needed to develop sound policies and plans. Government and civil society organizations will need to build on this work to continually improve reporting on the contribution of ICT to human development in Turkey (UNDP, 2003).
- Creating National Spatial Data Infrastructure (NSDI) is very important. NSDI has originally been envisioned for “sharing data” to cut down the data production cost, improve spatial data access and use throughout networked systems in a country. Public and private sectors, local governments, universities, and

finally citizens would have been connected to each other via NSDI (Figure 4.1). The more important was the legal infrastructure to officially enforce cooperation among the participants (Cömert and Akıncı, 2004).

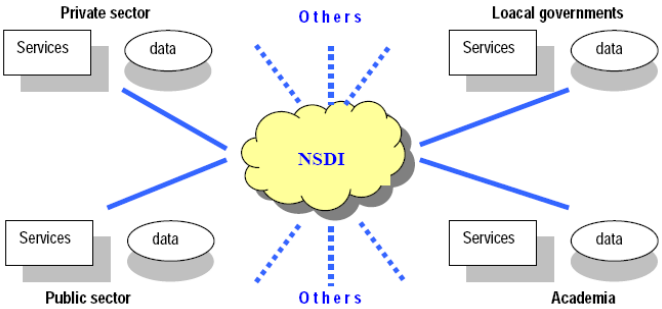

Figure 4.1. Web services in NSDI and the importance of universities (Cömert and Akıncı, 2004)

In Education:

- One of the main challenges for Turkey will be to meet the huge demand for higher education with scarce financial resources.
- A major building block, a critical factor for success is a country's human capital. People need to be able to use ICT, but also to understand, create local content and manage e-initiatives and their environment. Governments can through their public education policies influence the formation of a new type of human capital: e-human capital (Saidi and Yared, 2001).
- Reform educational curricula to include computer and ICT literacy and through the definition of a core e-literacy curriculum. High quality ICT training opportunities should be set up, including on-the-job-training, and the distance learning. ICT education should start in primary schools, thus laying the foundations for a high ICT skill level in the population, can enhance the creation of e-human capital (Saidi and Yared, 2001).
- The other major challenge is for governments to generate the financial resources for human capacity building, for e-human capital. ICT student loan packages and investment tax credits for investment in ICT skills and education can and should be designed and set-up. Similarly, distance learning, regional and international educational alliances and networks can promote investment in e-human capital (Saidi and Yared, 2001).
- For the success of e-Government, citizens' corporations and institutions need to be able to handle technologies that come with it. Therefore, it is crucial to invest in e-human capital. The two most prominent ways to achieve this include an institutionalization of e-learning– i.e. the usage of ICT in all areas of education- and the advancement of education in the field of ICT. This should include education at all levels, i.e. from universities down to primary schools, with degrees and certificates to be earned in the field of ICT, as well as the General Digital Certificate. Just as important as the type of education is the quality of education: governments and educational bodies should therefore direct their expenditures toward programs that further the level of proficiency and research. (Saidi and Yared, 2001).

What in particular are issues relating to contracting with outside suppliers?

- The first step of establishing IT system within an organization is the analysis and evaluation process. The process begins by defining a problem or purpose within its environmental context. It then goes on to identify and test possible solutions. The third face focuses on the evaluation of alternatives and the selection of a preferred approach (Davis *et.al*. 2003). Making a SMART IT choices are very important for an organization before contracting with outside suppliers.
- Risk of lock-in is the main issue relating to contracting with outside suppliers. Cities are more likely to become locked-in to the systems of private suppliers when 1) they don't have strategic ICT competences in the organization and 2) when they outsource substantial part of their ICT to a single supplier (Van Winden and Van der Meer, 2004). Types of lock-in are contractual commitments, durable purchases, brand-specific training, information and databases, specialized suppliers, search costs and loyalty programs.

For the Department of Landscape Architecture in the ZKU, it is crucial to establish a GIS lab. Analysis and evaluation process is very important for generating a sustainable system. There are a few suppliers for GIS in Turkey. Avoiding from lock-in for an organization is very difficult. According to three basic lessons for purchasers of information systems and technology are as follows (Shapiro and Varian, 2004):

- Bargain hard before you are locked in for concessions in exchange for putting yourself in a vulnerable position.
- Pursue strategies like second sourcing and open systems to minimize the extent of your lock-in.
- Look ahead to the next time you'll be picking a vendor, and take steps at the outset to improve your bargaining position at that time.

As a conclusion: The governments, people and communities of Bartin City face a multitude of daunting challenges in achieving sustainable economic growth and development. Building institutions that will promote wide, participatory democracy and good governance is both an objective and a determining factor of economic development. Setting an e-strategy encompassing e-government is a practical efficient policy and provides instruments for addressing both traditional challenges –such as institutional reform, civil service reform and creating an efficient public sector– and the more recent pressures resulting from globalization and the adoption of new technologies. It has the potential benefit all constituents: citizens, private sector and governments themselves. In this context, the importance of the universities' assistance and contribution should not be ignored for creating a Knowledge City of Bartin.

REFERENCES

- Anna University 2007. Implementation of electronic governance for Indian Universities (online), http://www.au-kbc.org/research_areas/special/egov/e-gov2.html, AU-KBC Research Center, Anna University, Chennai, India.
- Barcelona University 2007. Barcelona University Web page, available from: http://www.ub.es/homeub/en/, Barcelona, Spain.
- Bartın Valiliği 2007. The Map of Bartın Province, www.bartin.gov.tr/images/icerik/harita.gif, Bartın.
- Cömert C. and Akıncı H. 2004. Web Services, NSDI and E-Government, FIG Working Week, Athens, Greek.
- Davidson, F. 2005. Information and Organizations/Use of Indicators, E-governance Syllabus, IHS, Rotterdam, The Netherlands.
- Davidson, F. and Van Winden, W. 2005. Introduction, E-governance Syllabus, IHS, Rotterdam, the Netherlands.
- Dawis, S. S., Pardo, T. A., Simon, S., Creswell, A. M., Lavigne, M. F., Andersen, D. F. and Bloniarz, P. A. 2003. Making SMART IT Choices: Understanding Value and Risk in Government IT investment, Governance Syllabus, IHS, Rotterdam, the Netherlands.
- Erasmus University 2007. ERNA-Erasmus Remote Network Access, Erasmus University, available from: http://uk.erna.nl/, Rotterdam, the Netherlands.
- GHIT 2007. Web Based Information System for Academic Activities, Gebze High Institute of Technology, http://www.gyte.edu.tr/default.asp?changelang=1, Gebze, Turkey.
- NASA 2004. A Satellite Image of the Turkish Mediterranean Coast and Cyprus in 1990, http://zulu.ssc.nasa.gov/mrsid.
- Saidi, N. and Yared H. 2001. E-Government: Technology for Good Governance, Development and Democracy in the MENA countries.
- Shapiro, C. and Varian H. R. 2004. Information Rules: a strategic guide to the network economy. E-Governance Syllabus, IHS, Rotterdam, the Netherlands.
- UNDP 2003. Azerbaijan & Turkey: National Human Development Reports 2003 (online), United Nations Development Programme, www.un-az.org/undp/nhdr2003.
- Van der Meer, A. and Van Winden, W. 2003. E-governance in Cities: A Comparison of urban information and communication technology, E- Governance Syllabus, IHS, Rotterdam, the Netherlands.
- Van Winden, W. and Van der Meer, A. 2004. E-Government and Strategic ICT management: an international comparative analysis, a research paper, E- Governance Syllabus, IHS, Rotterdam, the Netherlands.
- Y0K 2007. Organizational Chart of the Turkish Education System, http://www.yok.gov.tr/english/part2.doc, Ankara, Turkey.
- ZKU 2007a. Zonguldak Karaelmas University, Department of Landscape Architecture's website, http://bof.karaelmas.edu.tr/peyzaj/en/index.php, Bartın, Turkey.
- ZKU 2007b. Zonguldak Karaelmas University website, available from: http://www.karaelmas.edu.tr, Zonguldak, Turkey.