Transformation of administration into e-government

From municipality to e-municipality in İstanbul Metropolitan Municipality in Turkey
Abstract

Today, citizens are government-related jobs, more quickly and are being carried out in a systematic way of e-government, began to implement a rebuke to all the countries of the world. According to the level of development of countries, this transition moving forward fast or slow.

To create the infrastructure of e-government, huge investments need to be made financially. For this reason, e-government applications in each country with the same speed and the same advanced infrastructure take place.

E-government, E-municipality in itself e-finance and so on divided into subtypes. In this species, e-municipalities have an important place. Municipalities with the basic element of urban life, is extremely important to provide services in the form of e-government. Transparency is fundamental to increasing confidence in the local government and citizen-municipal applications, and the city moving forward on more regular jobs.

Turkey is a country that has the category of developing countries. The transition to e-government applications is still in the country, are carried out for E-municipal applications. Country, city divided into units called local government services is realized. Municipalities and cities with population over a certain number of other provinces administered in the form of the Municipality. Municipalities depend on the central government.

Istanbul is the most populous province in Turkey. For this reason, many municipalities in the country to the other applications that are running in this city are a pioneer. E-municipality application is one of the applications of this type. Istanbul Metropolitan Municipality, e-municipal applications continues to transition. It has continued to work on infrastructure and related units. A portion of the system works. E- Municipalities applications Istanbul's city hall, the municipal authorities, as well as their approach citizens wary of e-municipality system. However, many began to carry out transactions in the virtual environment.
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1 Introduction

The term e-Government emerged in the late 1990s, but the history of computing in governmental organizations can be traced back to the beginnings of computer history (Horan, 2004). Just like the term e-Commerce, the term e-Government was born out of the Internet boom. However, it is not limited to Internet use or publicly accessible systems for direct use by customers or citizens. E-Government started as a practitioner field, basically convening practitioners struggling to meet the new challenges of the Internet medium by implementing new systems creatively (Salem, 2003). As a new and rapidly growing field, the concepts and theories of e-Government are still in a premature stage. Researchers from different disciplines address this theme from different perspectives and conceptualize it in a scattered fashion. e-Government has several aspects including social, technical, economic, political, and public administrative issues (Heeks et al., 2007). However, the most dominating concepts of e-Government arise from the technical perspective and a combination of the socio-economic and public administrative perspectives. Nevertheless, all the definitions are headed towards a single notion and encompass a generic and unique mission of e-Government presenting governmental systems using information and communication technology (ICT) to serve citizens better.

Turkey, officially the Republic of Turkey (Türkiye Cumhuriyeti) is a Eurasian country, located mostly on the Anatolia in Western Asia and on East Thrace in Southeastern Europe. Turkey is a parliamentary representative democracy. Since its foundation as a republic in 1923, Turkey has developed a strong tradition of secularism. Turkey’s constitution governs the legal framework of the country. It sets out the main principles of government and establishes Turkey as a unitary centralized state. The capital city of Turkey is Ankara. The territory of Turkey is subdivided into 81 provinces for administrative purposes. The provinces are organized into seven regions for census purposes. However, they do not represent an administrative structure. Each province is divided into districts. Provinces with the largest populations are Istanbul (13 million), Ankara (5 million), İzmir (4 million), Bursa (3 million) and Adana (2 million).

The big provinces are run by an organization called Metropolitan municipality (Tu. Büyükşehir Belediyesi), with smaller municipalities (Tu. Belediye) responsible for subdivisions of the town. The other towns and their subdivisions are run by municipalities (Tu. Belediye).

The Turkish government set up a portal accessible from its website www.turkiye.gov.tr called “e-government gateway” to facilitate the public’s usage of all services in an electronic environment. These services include access to information under various headings; birth, military service, career opportunities, employment advertisements, family services and social security operations among others. The Turkish government also provides information services, such as integrated electronic services, payments management; shortcuts to public authorities and organization; current news and announcements, messages from official bodies to the general public, and the sharing of knowledge and documentation between different public departments. (turkiye.gov.tr)

1.1 Problem

As a result of the rapid technological advancement, the expansion of technology has become a part of everyday life. Internet has been used since the 1990s. Since then, the rapidly spreading Internet has entered into almost every field of life. Where people are interacting with each other to exchange information, a virtual world of interaction has
occurred. Institutions run by the state are no exception. In this respect, it could be interesting to explore the motives behind why governmental bodies provide e-Government, which is e-services, to citizens. How do governmental bodies go about this and what do citizens gain from e-Government?

1.2 Purpose

The purpose of this study is to describe the stages of transformation from government to E-Government, and what citizens would gain from this development.

1.3 Research Questions

Implementation and successive upgrading of e-Government systems follow certain paths, levels of maturity, stages, or phases. The gradual development of an e-Government system in any country follows some unique levels of service maturity for evolution. Each of the service levels represents a different service pattern, different levels of technological sophistication, different stakeholder orientation, and different types of interaction, different security requirements, and different reengineering processes (Dorner, 2009). The municipality of Istanbul was chosen as the research object of this study.

The research questions of this study are:

1. What are the overriding missions and objectives of developing e-Government services in Istanbul municipality?
2. Which are the developmental stages of e-Government in Istanbul municipality?
3. What are the outcomes of e-Government?
4. What are the barriers of e-Government implementation?

1.4 Delimitations

The study will focus on e-Government in Turkish municipalities. The study was limited geographically to Turkey which is among the developing countries. The country has just begun its journey from a traditional administrative state into e-Government transformation. As a result, Turkey is still in the beginning of the development of e-Government services. Therefore, implications from this study can only be drawn for countries in similar circumstances.

A municipality was chosen as the research object as public administration units are closest to the citizens. Municipalities are formed to obtain high quality and good service for citizens. The electronic environment has become necessary to provide services in the municipalities. Therefore, this study focuses on e-Government in municipalities.

1.5 Definitions


G2E: Government to Employees: the relationship between government and employees in e-Government.


E-municipality: E-Municipality, rapid changes in the world of technological developments, emerging technologies, to serve the people who constitute the basis of transparency and the formation of a new understanding of the local government.

Municipality: Country, city divided into units called local government services is realized. Municipalities and cities with population over a certain number of other provinces administered in the form of the Municipality. Municipalities depend on the central government.
2 Theoretical framework

2.1 The concept of e-government

E-Government is the daily administrative affairs of the state in facilitating the use of communication and information technologies. Citizens is organized their own with the electronic services can attenuate more comfortable with the state affairs (Horan, 2004). E-Government is defined as the use of information and communication technologies in order to support the use of public activities (Saga, 2001). E-Government can also be defined as the electronic interaction (transaction and information exchange) between the government, the public (citizens and businesses) and employees (Abramson & Means, 2001).

Muir and Oppenheim (2002) defines E-Government as the delivery of government information and services online through the internet or other digital means. This definition focus on one-way delivery of information and services in contrast to the definition phrased by Abramson and Means (2001). Furthermore, E-Government has been defined as the delivery of improved services to citizens, businesses, and other members of the society through drastically changing the way governments manage information (Kumar et al. 2007). This definition has a focus on the information management of governments.

The goals of E-Government are to ensure effectiveness and efficiency of public administration, citizens, to create a high level of knowledge, service-friendliness, to develop business-industry-government interaction, cost savings, productivity and income growth. Among the goals are also the fight against bribery and corruption in government, to achieve greater transparency and public entities provides many benefits such as convenience and comfort (Clift, 2004). E-Government is making operations easier, faster and at less costly than participatory management in addition to making offers (Jezzard, 2002).

Implementation and successive upgrading of the e-Government system follow certain paths, levels of maturity, stages, or phases. Different countries implementing e-Government in their ICT framework have different missions and objectives. However, the gradual development of an e-Government system in any country follows some unique levels of service maturity for evolution. Each of the service levels represents a different service pattern, different levels of technological sophistication, different stakeholder orientation, different types of interaction, different security requirements, and different reengineering processes. It can also be inferred that these levels describe the development of maturity of service in a sequential manner.

According to Greenberg (2006) the realization of the objectives of e-Government applications requires the following aspects to be fulfilled:

- **Ease of use:** Citizens should be able to use the applications according to their preferences and the needs of the state and local governmental bodies.
- **E-Government services should be accessible from home, work, school, library, and other places open to the public.**
- **Private and Secure:** E-Government must be proven reliable and confidentiality standards must be unique.
- **Innovative and results orientation:** the latest technology should be used wherever possible.
2.2 Why e-government?

The adoption of information and communications technology (ICT) and related practices in the commercial sectors, such as e-commerce, and the diffusion of the internet among the general population have resulted in a rising level of comfort and familiarity with the technologies in many contexts (e.g. communicating with people, electronic marketing, and academic activities). This has increased the expectations of citizens that public sector organizations should provide services similar to those in the commercial sector with the same effectiveness and efficiency. A recent survey by James (2000) reported that 60 percent of respondents believed that government organizations would be more effective if citizens could use the internet to register their cars, pay parking tickets, fill out forms and apply for permits. About 50 percent thought it would be a good idea to allow citizens to vote online and have government auctions on the internet.

An e-Government strategy is a fundamental element in modernizing the public sector, through identifying and developing organizational structures, new ways of interactions with citizens and business, and reducing cost and layers of organizational business processes. It provides a wide variety of information to citizens and businesses through Internet. However, the role of e-Government is not only to provide information and services to citizens, which could be provided by commercial firms. E-Government can develop the strategic connections between public sector organizations and their departments, and make a communication between government levels (e.g. central, city, and local levels). This connection and communication improve the cooperation between government levels through facilitating the provision and implementation of the government strategies, transactions, and policies, and also providing better use and running of government processes, information, and resources (Heeks, 2001). Governments can also transfer funds electronically to other governmental agencies or provide information to public employees through an intranet or internet. Cabinet Office (2000) and Tyndale (2002) both agree that e-Government has improved communication between different parts of governments so that people do not need to ask repeatedly for the same information from different service providers.

Through an integrated web-portal, it will be possible for citizens and businesses to complete transactions with government agencies without having to visit several separate ministries/departments in separate physical locations. In addition, e-Government strategies are enabling public sector organizations to interact directly and work better with businesses, irrespective of their locations within the physical world. This includes digitizing procurement services from and to businesses in order to improve their service quality, convenience, and cost effectiveness (Heeks, 2001).

The momentum for new service delivery models is building throughout governmental bodies. No government wants to be left behind in the movement to improve government through electronic delivery of information and services to citizens. The vision of digital
government created by these images is powerful and compelling. The focus should be kept on the vision, but it is also important to pay attention to the complex realities of implementing that vision. Digital government initiatives, of whatever type, are complex mixtures of technological, managerial and policy related challenges. The risk of not understanding and addressing these complexities is a costly failure (Pardo, 2000).

The target of e-Government encompasses four main groups; citizens, businesses, governments and employees. The electronic transactions and interactions between government and each group constitute the e-Government web of relationships and the respective four main blocks of e-Government, that are: Government to Citizens (G2C), Government to Business (G2B), Government to Government (G2G), and Government to Employees (G2E) (Rao, 2011).

Most researchers and academics refer only to the first three blocks, without considering the fourth or simply including it as part of ‘government to government’ block. The relationships, interactions and transactions between government and employees in fact constitute another large e-Government block, which requires a separate and very careful handling. Many people today refer to employees as internal customers and as a result, in order for an e-Government initiative to be customer oriented and centric, it has to take into account needs and requirements of this group as well. More specifically, these e-Government blocks can be characterized as follows:

Government to Citizen (G2C): deals with the relationship between government and citizens. E-Government allows government agencies to talk, listen, relate and continuously communicate with its citizens, supporting, in this way, accountability, democracy and improvements to public services. A broad array of interactions can be developed ranging from the delivery of services and the provision of welfare and health benefits to regulatory and compliance oriented licensing (Riley, 2001). G2C allows customers to access government information and services instantly, conveniently, from everywhere, by use of multiple channels. It also enables and reinforces their participation in local community life.

Government to Business (G2B): consists of the electronic interactions between government agencies and private businesses. It allows e-transaction initiatives such as procurement and the development of an electronic marketplace for government (Fang, 2002).

Companies everywhere are conducting business-to-business e-commerce in order to lower their costs and improve inventory control. The opportunity to conduct online transactions with government reduces red tape and simplifies regulatory processes, therefore helping businesses to become more competitive. The delivery of integrated, single-source public services creates opportunities for businesses and government to partner together for establishing a web presence faster and cheaper.

Government to Government (G2G): Refers to the relationship between governmental organizations, as for example national, regional and local governmental organizations, or with other foreign government organizations. Governments depend on other levels of government within the state to effectively deliver services and allocate responsibilities (Riley, 2001). In order to realize a single access point, collaboration and cooperation among different governmental departments and agencies is compulsory. Online communication and cooperation allows government agencies and departments to share databases, resources, pool skills and capabilities, enhancing the efficiency and effectiveness of processes.
Government to Employees (G2E): refers to the relationship between government and its employees. G2E is an effective way to provide e-learning, bring employees together and to promote knowledge sharing among them. It gives employees the possibility of accessing relevant information regarding: compensation and benefit policies, training and learning opportunities, civil rights laws, etc. G2E refers also to strategic and tactical mechanisms for encouraging the implementation of government goals and programs as well as human resource management, budgeting and accounting (Riley, 2001). The full exploitation and implementation of these complex webs of inter-relationships requires three main application domains for e-Government (Heeks, 2001). These are E-Administration, E-Citizens and e-Services, E-Society.

These three application domains should be considered as overlapping and e-Government can be found in the overlapping area of these three application domains, demonstrating the complexities and heterogeneities needed to be handled for assuring its success.

2.3 Benefits of e-government

E-Government can also result in huge cost savings to governments and citizens alike, increase transparency and reduce corrupt activities in public service delivery. Previous studies have categorized public service delivery in three groups: publishing, interacting, and transacting (Kumar et al., 2007). It can transform old challenges and create unprecedented possibilities for sustainable economic development, just as it has done for businesses in the industrial world. ICTs offer the potential not just to collect, store, process and diffuse enormous quantities of information at minimal cost, but also to network, interact and communicate across the world (Crede & Mansell, 1998).

Main benefits of E-Government have been found to be the following (Ndou, 2004; Reynolds & Regio, 2001):

• Cost reduction and efficiency gains
• Quality of service delivery to businesses and customers
• Transparency, anticorruption, accountability
• Increase the capacity of government
• Improve the quality of decision making
• Deliver electronic and integrated public services.
• Bridge the digital divide.
• Achieve lifelong learning.
• Rebuild government-customer relationship.
• Foster economic development.
• Create a more participative form of government.

Challenges of e-Government are identified as follows (Alshehri & Drew, 2010):

• IT Infrastructural weakness
• Lack of knowledge about the e-Government program
2.4 Barriers and challenges of transformation into e-government

E-Government implementation, in different countries, implies different objectives and levels of transformation in public services (Weerakkody et al., 2007). E-Government barriers are both technical and non-technical. According to egov.infodev.org, "successful e-Government is at most 20% technology and at least 80% about people, processes, and organizations."

During the last decade, numerous of e-services evaluation frameworks have been developed. However, few of them addressed barriers affecting e-Government implementation in the developing countries. Ebrahim and Irani (2005) have summarized barriers to e-Government adoption and implementation from several perspectives; infrastructure, technological and organizational. The barriers summarized below have been empirically found in many e-Government adoption and implementation projects. These barriers are:

- Lack of participation; citizens, political and internal government users participation,
- Low commitment; government leaders and employees commitment,
- Lack of partnership/collaboration; partnership or collaboration among local governments, inter-departments and among employees,
- Lack of responsibility; responsibility of government Leaders, officials and ICT management,
- Inadequate or no change of management Strategy; change management strategy according to new way of doing government business,
- Lack of transparency; transparency in management, decision making and administration,
- Lack of trust; trust between employees and government institutions,
- Lack of organizational/employees learning; governments do not learn from other governments’ experience and do not provide training for employees. Employees do not have skills to use technology.
- Unclear mission and visions; mission and visions are unclear or not stated before e-Government implementation,
- Conflict or unclear of goals; goals to implement e-Government are unclear, not stated or they conflict with central government (local government goals) or with other government projects implementation,
- Lack of implementation strategy; strategy formulation does not include planning and strategy to align front office with back office of e-Government
- Restrictive law and regulations; no formal rules and regulations to regulate e-transactions or data sharing,
- Rigid organization structure/hierarchy; organization structure and hierarchy are not reformed and impede service integration and administrative processes as well as delaying services,
- Weak coordination; coordination between central and local government, between departments and employees.

Many studies focus on success factors for public sector reform and the implementation of information systems (Fernandez & Rainey 2006; Rosacker & Olson 2008) instead of on barriers or impeding factors (Ebrahim & Irani, 2005). However, considering the ongoing debate on whether IT-driven transformation is actually taking place, research on organizational transformation could benefit from barrier identification. Van Veenstra et al. (2009), who sought to identify barriers to leveraging benefits from IT in government organizations, suggested a layer categorization into governance, organizational and managerial, and a technological layer. These barriers are summarized as follows:

- Governance (including political and legal): Insufficient IT governance, Structure of the public sector, Political pressure, Division of costs (Scholl 2005, Gil-Garcia & Pardo, 2005; Fernandez & Rainey, 2006).
- Organizational and managerial: lack of IT skills and personnel, lack of coordination, lack of implementation, guidelines, lack of organizational readiness to business, process re-engineering (Dhillon et al., 2008).
- Information and technology: System complexity and incompatibility, security threats, lack of enterprise architecture (Kamal et al., 2009).

Lam’s (2005) research findings resulted in a set of 17 barriers which were organized into one of four categories: strategy, technology, policy and organization. “Strategy barriers include common e-Government goals and objectives, delivery timeframes, and ownership and governance. Technology barriers include architecture interoperability, data standards and legacy systems. Policy barriers include citizen privacy, data ownership and policy implications. Organization barriers include pace of government reform, legacy government processes and management and technical skills.” (p. 511).

### 2.5 Stages of from government to E-Government

Transformation can be defined as a complete change in character, condition which refers to the invasiveness of the process (West, 2004). Transformational Government is the mindset that aims for political and organizational transformation of the entire public sector (West, 2004; OECD e-Government Studies, 2005).

This transformation is spurred by the implementation of a large number of e-Government initiatives that promise to change the way the public sector functions (Kim, Pan & Pan 2007), for example by encouraging cooperation between public officials and government organizations and the development of cross-agency portals (West 2004, p 16). Irani and Elliman & Jackson (2007) extend this idea and define the rationale for Transformational Government as “the exploitation of e-Government such that benefits can be realized” (Irani et al. 2007, p. 327). From a business perspective, Transformational Government can thus be seen as the value added of e-Government initiatives for citizens and businesses.

The realization of such value added requires transformation in multiple directions. Public administration is foremost expected to become more customer-oriented and act more proactively towards citizens and businesses in order to deliver these benefits. Government will then enable “fully integrated and fully executable online services”, as well as “options for website personalization […] and push technology” (West 2004, p. 17).
Examples include citizens and businesses only providing their information once to any government agency involved in a service, and single contact points in the form of designated websites that function as the unique information and service access points for all government agencies. Realizing these initiatives requires change to occur not only in the service delivering front office, but also in the back office of organizations (Beynon-Davies 2007). This could lead to cooperation between multiple autonomous organizations and the transformation from a siloed structure to performing tasks as part of chains or networks. This, in turn, requires that tasks should be assigned to the organization that is best-equipped to carry it out in order to achieve optimization of these processes. Shared service centers can then be formed, in which services from multiple organizations are concentrated in one joint center (Janssen & Joha, 2006).

Following these elements, the transformation of public agencies includes some or all of the following dimensions: adoption of service orientation, formation of service chains, business process re-engineering of the back office, integration with other government agencies, formation of shared services, networked or modular organizational structure, and organizational and governance support for transformation.

A major challenge to achieve any of these dimensions of transformation is the structure of the public sector. The landscape of public administration is largely fragmented, as many different agencies exist that are responsible for their own specific tasks and that have a relatively large degree of autonomy. Therefore, transforming the processes of these organizations to form a service delivering chain is a difficult process. Although the introduction of e-Government holds great promises for changing the public sector, many authors, therefore, claim that in reality very little of this transformation can be observed (Coursey & Norris 2008). Furthermore, the practice of transformation is not considered to be one of radical re-design, but rather a process of ‘muddling through’ in which small, incremental steps are being made that might, in time, lead to change. These notions run squarely into the ideas promoted by Transformational Government as they claim that there are severe limitations to the capacity of the public sector to transform. Based on the conceptualization of service development stages of e-Government by different researchers, the evolution of e-Government programs can be conceptualized in a number of ways. Given a state's political and economic circumstances, programs can develop and change quickly, sometimes “skipping” a developmental phase. In contrast, programs may remain in a particular phase for a longer period due to funding constraints or political pressure to maintain the status quo.

A Gartner Group Report from 2000 identified four phases of e-Government development that consider the level of information technology used by the government to relay information online (Table-1) (Garson, Pavlichev, 2004).
Table 1: Delivery of e-services: Technologies and examples by stages of e-Government developments (Garson, Pavlichev, 2004).

<table>
<thead>
<tr>
<th>Stages of E-Government Development</th>
<th>Service Delivery Modes</th>
<th>Examples of E-Government Services: Internet or Intranet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence</td>
<td>• Information access and delivery</td>
<td>Providing names and phone numbers of government officials</td>
</tr>
<tr>
<td></td>
<td>• Document access and download</td>
<td>Allow access to government documents</td>
</tr>
<tr>
<td></td>
<td>• Online Mapping/GIS Applications</td>
<td></td>
</tr>
<tr>
<td>Interaction and Communication</td>
<td>• Communication with officials</td>
<td>Email forms to allow citizens to send requests for services to government officials</td>
</tr>
<tr>
<td></td>
<td>• Multimedia-Streaming and Playback</td>
<td>Multimedia Presentations</td>
</tr>
<tr>
<td></td>
<td>• Interactive discussions</td>
<td></td>
</tr>
<tr>
<td>Transaction</td>
<td>• Online databases</td>
<td>E-commerce transactions such as the purchase and renewal of licenses, and the purchase of government data or documents</td>
</tr>
<tr>
<td></td>
<td>• Online forms</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• E-Commerce Applications</td>
<td></td>
</tr>
<tr>
<td>Transformation</td>
<td>• Online Mapping/GIS Applications</td>
<td>Smart permitting involving online request submissions, GIS, document management, 3D modeling of proposed projects, wireless applications</td>
</tr>
<tr>
<td></td>
<td>• E-Permitting/Wireless Applications</td>
<td></td>
</tr>
</tbody>
</table>
The Gartner Report and the UN Report identify key development stages for e-Government programs describing the level of technological advancement, information and communication abilities, and the kinds of services offered in each phase. Both reports note that there are few countries in the final stages (“transformative” and “seamless”) for a number of economic and political reasons.

Every e-Government project needs to put five kinds of skills to achieve a successful e-Government (LaVigne, 2001). They are hard to separate in practice, but they do represent distinct abilities that are worth understanding: analytical skills, information management skills, technical skills, communication and presentation skills and project management skills as shown in Figure-1.

<table>
<thead>
<tr>
<th>Stage of E-government</th>
<th>Description of Government Websites</th>
<th>Applications and Services</th>
</tr>
</thead>
</table>
| Emerging              | Limited and static information    | • Website posts government information on-line  
                         |                                    | • Interaction and transactions are not possible for government inquiries and services |
| Enhanced              | Regularly updated information     | • The number of websites increases  
                         |                                    | • Websites include frequently updated information |
| Interactive           | Downloading and communication is possible | • Many government service interactions are possible  
                         |                                    | • Message posting, e-mail, document and data downloading, and document submission are possible |
| Transactional         | Payment of service is possible    | • Passport, visa, birth/death certificates, and payments for licenses, permits, fees, bills, and taxes are available on-line  
                         |                                    | • Security measures and more sophisticated functions are available including digital signatures, encryption, and passwords |
| Seamless              | Total integration of all services across administrative and departmental boundaries | • All services can be accessed from one portal “without differentiation between government agencies” |
Analytical skills: Analysis and interpretation skills are necessary at every stage of an e-Government project or any project, for that matter. They start with problem definition, the process by which an organization describes current symptoms and uncovers the processes, policies and practices that are contributing factors. At this stage, process analysis, system audits, stakeholder analysis, customer satisfaction surveys, performance reviews, statistical trending and similar activities are needed. In later stages, analysis of user needs, business process alternatives, work flow, and information flow become more important. Research into what other people and organizations are doing to solve similar problems is also critical. These analyses help to design and build the system or solution. When a new system is prototyped, tested, and implemented, the analytical skills of system users’ increase in importance.

Information management skills: Skills in information management include treating information as a valuable organizational resource. Skilled staffs know that the information content, quality, format, storage, transmission, accessibility, usability, security and preservation contribute to its value.

Technical skills: Depending on the type of e-Government challenge an organization is facing, higher order technical skills will probably be required to implement the chosen solution.

Communication and presentation skills: There is a need throughout a project to communicate its goals, progress, issues and results. Presentations about a project are an ongoing requirement. Meeting might be required with legislative or executive leaders to obtain initial and continuing funding and support. Meetings with stakeholders can explain how they will be affected and encourage their buy-in and participation. Newsletters, e-mail lists, and formal reports are all ways to communicate about a project. Presentation skills extend to more than preparing and delivering a talk, with or without visuals. They also comprise the ability to take complex data and distil it into information that is useful for a particular audience. Information needs to be categorised, summarised, and turned into
briefings that convey the important facts without oversimplifying or drawing conclusions that were beyond the underlying supporting data.

Project management skills: Project management skills include the ability to plan, organise, estimate and allocate resources, negotiate, track progress, measure results, troubleshoot and most importantly to communicate. Project management includes handling scope, time, cost, quality and risk. No matter the size of the project, these skills will be needed to guide the work to a successful outcome of an e-Government.

2.6 Outcomes of E-Government

The scope of e-Government as it is implemented today is not wide enough to have generated a macro level impact which is discernible through studies of macro indicators. Investments in e-Government are relatively small to have created such a macro impact.

Outcomes of e-Government are classified as increased transparency and reduced corruption, service delivery and digital divide, and interactions.

2.6.1 Increased transparency and reduced corruption

Although few governments have explicitly stated transparency as a goal, some transparency gains have been achieved through e-applications.

The Cristal website in Argentina published information about public funds distribution, information on national policies and controlling corruption. The website received favorable attention in the press and enabled transparency. While there has been initial success, Cristal has had difficulty operationally because of the lack of compliance by departments to submit and disseminate information in a timely manner to Cristal project managers.

In Korea, the Seoul government created the OPEN system to target corruption in the processing of permits and licenses online. The system publishes information related to services, permits and licenses issues by the local government. The system allowed the public to track the process from beginning to end. The success of the system is attributed to the commitment from the Mayor, who led the initiative. Another success factor was the re-engineering, greater access to information, improved communication with citizens, which led to greater transparency overall.

The Central Vigilance Commission in India, a government agency designed to monitor corruption, created a website that publishes the names of officers from the elite administration and revenue service against whom investigation have been ordered. The website received a lot of attention because the press used the information to highlight corruption cases to a national audience. While there are concerns that public officials may be smeared wrongly through the website, the tool has had a big impact in highlighting corruption (Bhatnagar, 2003).

To summarize different applications across the world, which have been designed, developed and implemented by e-governments, prove to be successful. They notably allow reducing bribes, reducing brokers’ power, raising public awareness and increasing transparency and accountability, in other words they help reducing corruption in the public sector (Bhatnagar 2003; Reffat 2006). Of course there is still a lot to do, so that corruption decreases worldwide. Therefore e-governments need to be considered as a tool, which combats corruption. Moreover it has to be implemented as a part of a wider program, because one single department implementing e-government won’t be able to eradicate
corruption alone (Bhatnagar 2003). But e-governments are on the right path towards reaching this objective.

2.6.2 Service delivery and the digital divide

An increasing efficiency and effectiveness in service delivery has been observed in the last few years. In fact many projects have been designed and developed to enhance efficiency and effectiveness in terms of timeframe and numbers of steps and actors involved in processes. Due to those different applications, processes have become automated, and therefore require less time. Thus, e-government projects often imply the notion of simplification. Studies have been conducted to calculate the gains gained through different types of applications, in different countries around the world (Bhatnagar, 2003).

Many projects have boasted impressive efficiency gains in terms of cutting the number of steps involved, cutting the timeframe, and reducing the number of agencies that need to be consulted. These gains have been achieved because processes get automated requiring less time. For example in CARD the use of electronic archiving has shaved off the largest process time. Process simplification often accompanies the introduction of e-Government. ASYCUDA which is used by more than 60 countries for processing import/export by the Customs agencies ensures that the number of signatures needed is cut by 60%. Some of the efficiency benefits reported by different applications:

- Faster processing, shorter wait, and shorter queues
- Less number of trips to government offices: saves transport cost and avoids wage loss
- More accurate and legible documents, easy recovery from errors, better reception areas
- Lesser corruption and more transparency
- Improved access to offices (delivery points are closer and sometimes available. There are fewer intermediaries.

2.6.3 Interactions

One of the main impacts domains of e-government, as already seen in the previous chapters is “interactions”, for instance interactions within a government and external interactions with citizens and businesses.

Different authors between 2003 and 2009 have conducted a study (Andersen et al., 2010). Their objective was to explore impacts of e-government through 55 different articles. The impacts were conceptualized into four domains: capabilities, interactions, orientations and value distribution. As part of our chapter, we concentrated our attention on the results regarding the second domain, interactions. They notably tried assessing how Information and Communication Technology affected patterns of control and power, communication among units, the coordination of tasks or policies and the cooperation (Andersen et al., 2010). Different parameters were evaluated, for instance: improved coordination/cooperation/government to government (G2G); citizen-public sector interactions; private-sector public-sector interactions; citizen-citizen interactions; and organizational control and power. To very briefly summarize their findings, as shown in the figure below, they were generally positive (80%). Thus ICT has eased the linkages between governments and those they serve (Andersen et al., 2010).
3 Methods

3.1 Research Philosophy

A research philosophy is a belief about the way in which data about a phenomenon should be gathered, analyzed and used. The term epistemology (what is known to be true) as opposed to doxology (what is believed to be true) encompasses the various philosophies of research approach.

A case study is defined as ‘an empirical inquiry that investigates a contemporary phenomenon within its real-life context’ (Yin, 2003, p. 13). A case study is a research strategy which concentrates on perceiving the dynamics present within single settings (Eisenhardt, 1989).

A case study is particularly good for examining ‘how’ as well as ‘why’ and ‘what’ questions (among question series: ‘who’, ‘what’, ‘where’, ‘how’ and ‘why’), which are enquiries about a contemporary set of events over which the investigator has little or no control (Yin, 2003, Saunders et al., 2007). Especially, the “how” question is suitable for a case study because this question deals with operational links needed to be traced over time, rather than mere frequencies or incidence (Yin, 2003). Thus, the case study strategy is most often employed in explanatory and exploratory research (Saunders et al., 2007).

3.2 Research Design

In this study firstly, internet literature study on e-government has been conducted. Secondly, a descriptive case study of Istanbul Municipality has been conducted in order to illustrate how e-government can be implemented and contributing to answering the research questions. This type of case study is used to describe a phenomenon or intervention and real-life context in which it occurred. (Yin, 2003).

3.2.1 Research strategy

A large number of research methodologies have been identified, Galliers (1991) for example listing fourteen, while Alavi and Carlson (1992), reported in Pervan (1994b), use a hierarchical taxonomy with three levels and eighteen categories.

Strategies identified by Galliers (1991, p. 149);

- “Subjective/Argumentative
- Reviews
- Action Research
- Case Studies
- Descriptive/Interpretive
- Futures Research
- Role/Game Playing”

This study's strategy is chosen to be a descriptive/interpretative case study as defined by Galliers'.
3.2.2 Method Choice

In this study, preferred method is descriptive case study.

Qualitative researchers were equally critical of positivists’ work, arguing that the positivists’ search for generalizable rules and their focus on quantification ignored matters that are important but not easily counted and denied the complexity and the conditional nature of reality.

In this study was used Qualitative Data (QD) with internet-based. Internet-based data sources generate immense quantities of Qualitative Data; however, much of it may be useless without methods to collect, analyze, process, and make sense out of it.

Information systems (IS) methodology for analysis of Internet-based Qualitative Data consisting of three steps: elicitation; reduction through IS-facilitated selection, coding, and clustering; and visualization to provide at a glance understanding to produce meaningful information, knowledge and wisdom firms can use for a number of purposes including new product development and quality improvement, accurate "user-focused" profiling, and future sales prediction.

Journal databases like ABI/Inform (ProQuest) accelerate identification of relevant articles, scanning a journals table of contents is a useful way to pinpoint others not caught by keyword sieve. E-Government, E-Municipality, Barriers of E-Government, Challenge of E-Government etc. were keywords in the literature search. In this study examine selected conference proceedings, especially those with a reputation for quality.

Deductive method is used as literature methods. In this study, first of all all e-government elements are processed. Study by applying the deductive method, first of all the concept of e-government, and then analyzes the concept of e-municipality in Istanbul Metropolitan Municipality. One of the important elements of e-government has focused on the concept of the e-municipality.

3.3 Research setting

Turkey, officially the Republic of Turkey (Türkiye Cumhuriyeti) is a Eurasian country, located mostly on the Anatolia in Western Asia and on East Thrace in Southeastern Europe. Turkey is a parliamentary representative democracy. Since its foundation as a republic in 1923, Turkey has developed a strong tradition of secularism. Turkey's constitution governs the legal framework of the country. It sets out the main principles of government and establishes Turkey as a unitary centralized state. The capital city of Turkey is Ankara. The territory of Turkey is subdivided into 81 provinces for administrative purposes. The provinces are organized into 7 regions for census purposes; however, they do not represent an administrative structure. Each province is divided into districts. Provinces with the largest populations are Istanbul (13 million), Ankara (5 million), İzmir (4 million), Bursa (3 million) and Adana (2 million).

The big provinces are run by an organization called Metropolitan municipality (Büyükşehir Belediyesi), with smaller municipalities (Belediye) responsible for subdivisions of the town. The other towns and their subdivisions are ran by municipalities (Belediye).

Municipalities in Turkey, there are 81 provinces. Among the 81 provincial centers 29 of them are called metropolitan municipalities (Turkish: Büyükşehir). Within city borders of the metropolitan municipalities, there are more than one district governorate (Turkish: ilçe)
where each governorate has a municipality which is a vassal of the metropolitan municipality. For each province, the population of all districts as well as of all cities, towns and villages with more than 750 inhabitants.
4 Findings

4.1 E-Government in Turkish municipalities

4.1.1 E-Government in Turkey

The Turkish government set up a portal accessible from its website www.turkiye.gov.tr called “e-government gateway” to facilitate the public’s usage of all services in an electronic environment. These services include access to information under various headings: birth, military service, career opportunities, employment advertisements, family services and social security operations amongst others, together with information services such as: integrated electronic services; payments management; shortcuts to public authorities and organizations; current news and announcements; messages from official bodies to the general public; and the sharing of knowledge and documentation between different public departments (turkiye.gov.tr).

The establishment, leadership and management of the e-government gateway was underpinned by a decision taken by the Council of Ministers on 24th March 2006 and numbered 2006/10316 which was then signed by the Prime Minister and given to the Ministry of Communications as the responsible body. The decision was published in the 26255 numbered Official Gazette on 10th August 2006, and was the subject of a Prime Minister’s Circular number 2006/22, stating that public services would be made available in an electronic format, via a shared platform and to ensure public interest the work would be carried out swiftly, efficiently and utilizing appropriate integrated standards; any necessary legislation would be put in place and the whole would be coordinated by the Ministry of Communications, involve all public authorities and also have the active participation of the Turksat Satellite News, Cable and TV Company (turkiye.gov.tr).

The numbers of e-government services were initially 22. This number increased to 139 in 2009 and 246 in 2010. E-government regarded as the number of registered users has had a significant increase. In 2008, 10,000 people registered users. In 2010, this number increased to 1.95 million. It was reached 7.14 million people in 2011 (DPT, 2009; DPT, 2010; DPT, 2011).

According to global research performed by United Nations in 2010, Turkey lies in 69th place. In effect Turkey lies just within the upper half of the rankings.

For public authorities to gain maximum benefit from their services being available via information and management technology, it is vital that working practice within these authorities be redesigned to enable personnel to work in a more active and accountable fashion (Acar & Kuvaş, 2008). In an e-government system a central spine must be created from which users can reach information in all directions. This spine will connect central administrative units to their local equivalents, and allow users to connect to any location as well as to relevant third party sites (Ince, 2001).

To offer public services electronically the necessary technologies are the internet, on-line services and e-mail in that order. Users of e-government services may carry out a range of functions facilitating aspects of their daily life (ticket reservations), to seeking direction from a remote location (an electronic form may be filled out) and taking part in political acts (voting or completing questionnaires) (Demirel, 2006). It is possible to delineate the factors required for e-government applications under four headings: telecommunications
infrastructure; appropriate legislation; capital funds; public authorities using information technology (Ulusoy & Karakurt, 2002).

In preparing the ground for e-government applications the first steps should be to address the legal basis, the technological foundation, people, funders and services along with security and privacy: all of these are critical success factors (Arifoğlu et al., 2002).

Problems encountered in e-government applications include legal problems, administrative problems, technological issues and security of data problems, amongst others (Çelikkol, 2008). Obstacles which may be encountered when establishing e-government include legal parameters, budget issues, internet infrastructure and technological capability of personnel. E-government applications require commitment to keep up with technological change, universal internet access at equal speed, and users and providers of services with sufficient technological skill (Özcivelek, 2009).

Nowadays citizens want and expect public services to be more dynamic, faster, more open and honest, and to cost less to run. In utilising the opportunities made available by technology, the e-government project brings change to the agenda of public authorities and organisations used to functioning in a culture of working according to established routines. It is crucial that information is shared within and between public bodies and work processes are redesigned (DPT, 2005). It can be said that the largest barriers to the implementation of e-government are “bureaucratic resistance, personnel training and consistency issues, sources of funding and weaknesses in the technological infrastructure”. (Özcivelek 2009, p 66)

In 2009 the Prime Minister’s office issued an “E-government and the Information Community Projected Act” in draft format which contained 35 clauses and a further eight proposed clauses (Başbakanlık, 2009). This has not yet been signed into the legislation and should be addressed as a matter of urgency. Currently, the e-government system has no legal foundation whatsoever.

4.2 E-Government in Turkish municipalities

E-municipality, rapid technological developments, changes in the world, using emerging technologies, to serve the human being is defined as the transparency and understanding of the basis of the modern municipality. E-municipality is a mechanical system. It has got transparent and supervisory structure.

Electronic municipality is an important part of e-government. E-municipality, the municipalities, the country will increase contributions to the development of a transformation. With this transformation, an indispensable technology in the era of internet is expected to be available to serve the local community to use. In this way, mutual communication and exchange of information between the municipality and the local people are targeted. The reason for this is to ensure quality service delivery and the development of local democracy.

E- Municipality, municipal management, and local government service, and use of information technologies in its activities, citizens and businesses in an effective service delivery via the internet, in-house units of computer networks and integration, and communication via the network are to provide for the titles.

E-Municipality is not only to be operational for a website on the internet, conversion of a holistic movement. This transformation, all departments within the municipality and the circle represents the presidencies of information technologies and merging. The success of
e-Municipality studies, transformation, assimilation of all the units of the municipality and its ownership passes. Provision of the necessary software and hardware requirements for the municipality, aims to ensure interaction with citizens and businesses over the internet. Effective use of public computing technologies, personnel and training requirements must be met adaptation to the new situation.

Municipalities in the five-stage conversion process on track. Computerization, automation, Internet usage, Web site set up, Management of transport to the internet. New management approaches with e-municipal applications, the following features are included;

- Sharing of decisions taken electronically,
- Quick and serial electronic process,
- Local population wishes and advice and the provision of services,
- Accessibility of the principle of continuous improvement and acquisition,
- Inter-agency integration and efficiency,
- Individual participation and performance measurement.

All over the world, citizens benefit from the services of local government in order to get their work done and did not have to go to the local council is moving rapidly towards a system. Technological advances, the life time easier and provide valuable use. Citizens in developed countries can work done more than 50% over the internet. In Turkey, this rate takes around 3%. Increase in this ratio in recent years, e-government and e-municipality transformation efforts have been accelerated. (Acar & Kuvaş, 2008)

### 4.3 E-Municipality transformation process in Turkey and the reasons for this

The process of urbanization in recent years, the rapid development of information and communication technologies; diversified needs and demands, as well as diversified are qualitatively. Municipalities are now faced with a growing and complex demand. The traditional management mentality, it is difficult to overcome these problems. Inefficiency in the delivery of services, heavy financial expenditure, extravagance, which proves that were created by uncontrolled corruption, citizens’ dissatisfaction with the state of the system explains that.

Required by the information age, urban life easier carrying out the activities planned and scheduled, municipalities, has a huge task and responsibilities. Citizens' expectation of local governments continues to increase. The effectiveness and efficiency of municipal services, more regular and healthy environment is emerging as a priority demands.

The necessity of e-municipality(TBD, 2004);

- People and institutions, local governments’ expectations.
- The effectiveness and efficiency of municipal services,
- More regular and healthy environment,
- A regular road traffic and roads, guidance,
- Subscribe to speed transactions and payments,
- In case of disaster fast, efficient and useful intervention,
- Reconstruction process speed,
Expressing the problem of authorized persons, access to, Local government units and the structure itself as it expect the restructuring and produced within the framework of information technology to redefine the concept of local service obligation has emerged. Changing technology, restructuring of the reasons is the first place. Service areas of change and variations, the establishment of new units, replacement of joints, requires the removal of a large part. Overcome this transformation of local governments in Turkey and in order to accomplish transformation of e-government, with the Introduction of information technologies, those who are acquainted with the skills to use these technologies to be developed (Ergun, 2004).

In this context, gaining new functions of municipalities and cities are revised content. As a part of this challenging this differentiation reflects the change in the effective urban service networks formed by local authorities.

Most of the municipalities in Turkey are using the Internet to benefit from the opportunities of modern technologies. However, these efforts are far from the real from the goal. This objective is fully not understood in Turkey. Established by municipalities in Turkey to introduce themselves to the web sites, e-government perceives it as. These applications come out for a moment before the introduction stage; the level should be to make an online transaction. Municipalities have established web sites, and understanding of different content based upon. There is no unity among them. This is a common platform where public services are offered by all means move away.

For this purpose between local governments, government-supported projects designed to facilitate coordination and information sharing. These are "Local Net" and "Local Information" projects. Uçkan, Ö. (2003).

Local Government Information Base Project (local information project); upon the proposal of the Ministry of Interior Public Administration Institute for Turkey and the Middle East (TODAIE) and the Local Government Research and Training Center (YYAEM) has been prepared by. Project, a protocol was signed between the two institutions, starting with the 4 April 2001 entered into force. Local Information Project, which is related to local governments collect data in electronic form, this data is compiled to assist in policy development and decision-making process and subjecting them to question the analytical aims.

Local net, State Planning Organization, TODAIE, YYAEM, prepared and conducted by. Spread over the surface of the country, a large number of autonomous units of local government experience acquired in continuous need of sharing a common pool of communication, since 2001, been met by the local net(Altinok & Bengshir, 2005). Municipalities, Special Provincial Administrations, companies and affiliates, villages contain information about. Local Authorities are also included on the latest news. In the Web site, e-municipality in terms of applications, there are also studies that lead to other local governments.

Local net content of the website, consist of the following: For each of which there are 3216 municipalities, has a web page. Municipalities in these pages, the user name and password are entered. There are these web sites; election results, staff structures, the chairman and members of the municipal councils have information and announcements.
Information technology requires huge cost of installation stage, forcing municipalities with limited resources. E-transformation of a public entity grasped what it is; it does not seem to be able to practice in a healthy way (Uçkan, 2003).

The current system has some difficulties. Some of these are as follows (Uçkan, 2003, p. 309):

- Limited municipal budgets, to not meet the cost of financial transformation.
- In smaller cities because of the low income and level of education people stop distance information technology.
- High unemployment and infrastructure problems the unresolved.
- Unconsciousness and the reluctance of public participation and management control issues.

The level of use of information and data on the structure of the municipalities in Turkey are as follows (3064 was based on the total number of municipalities) (TBD, 2004);

- Municipalities in Turkey, 86% have a computer.
- Municipalities across the country, 75% of internet access.
- Municipalities, 38% use software package for automation.
- Data processing unit, the number of municipalities is 15%.
- Number of municipalities with a local computer network is 45%.

73% of municipalities are a private company service support. High rate of markets service procurement are performed. However, this does not mean that capture the level of automation of procurement in municipalities. Activity in the market shows that a total of approximately 200 companies. The first 10 of the largest companies are serving approximately 72% of the municipalities.

In the light of these data; most of the municipalities’ under-employing information technologies, lack of qualified personnel to be trained, those who have trained personnel records and documentation purposes than it uses observed. 43% of these are used as service.

Municipalities in Turkey, e-government transformation, carry out in a five-step process. These are (Güler, 2001, p. 3);

- Computerization,
- Automation,
- Using the Internet
- Setting up the Web site,
- Urban Information System Migration
In this design applications from citizens can be made entering municipality, the transfer of, finalization, tax debts deemed the property declaration follow-up, individuals and organizations can be seen the results of the applications made by the municipality include issues (Figure 2).

The Role of the Urban Information System is to ensure the quality of life in urban local authorities in order to protect the infrastructure, construction, traffic management, land registry and cadaster information in a central computer environment, such as the collection and delivery of shared aims.
Figure 3: Zoning status and application sketch, giving on-line via the Internet (Geymen, 2006).
Figure 4: Showing Graphic and Attributes to parcel (Geymen, 2006).
E-municipal applications in some of the municipalities in Turkey are as follows;

On the Ankara Metropolitan Municipality: Web page, users are offered the following services; Municipal service units; project and investment information about the city; the municipal budget; municipal service directory; the historical development of the city; what to do in Ankara; municipal annual reports; tender notices; city guide; frequently asked questions; date information about the municipality and the council; information about local authorities and municipalities; useful links.

For example, in the Web Page "service book" section, the following information is entered: helping the poor, the funeral-burial operations, accumulated garbage and waste cleaning, cleaning up the environment tax payment time, spraying against pests, asphalt-road repairs (see Figure-5).
Uyarılar


Web Uygulamaları
Ankara Büyükşehir Belediyesi

- E-Tahsilat
- İhale İlanları
- İlkeler
- Hal - Balkı Fiyatları
- ASKİ Genel Müdürlüğü
- ASKİ Online
- ASKİ E-Fatura
- ASKİ Uluslararası
- ASKİ Anza Bildirim
- ASKİ Güvenlik Faaliyeti
- Mavi Masa
- İmar Planları
- UKOME Kararları
- Aykome Kazı İhiro
- ASKİ Beslenme
- Bilgi Edinme
- Mezarlık Bilgi Sistemi

Mobil Uygulamalar

- EGO Mobil Uygulama Apple Store
- EGO Mobil Uygulama Google Play

Ankara Büyükşehir Belediyesi © 2013

Figure 5: Ankara Metropolitan Municipality, e-municipal applications(www.ankara.bel.tr).
Izmir Metropolitan Municipality: Services are offered to users on a Web page the following topics; city related news, information about the mayor and the municipal council, the municipal announcements, service manual, regulations, urban transportation information, social services, culture and arts, municipal companies, projects, annual reports, about the city information, citizen communication center; useful links.

Izmir Metropolitan Municipality, e-municipal applications, is used for certain services. Only a part of collection transactions are within the e-municipal applications.
5 Analysis

In this section of the thesis, the e-Governmental services of Istanbul municipality will be analyzed according to the three research questions of the thesis:

1. What are the overriding missions and objectives of developing e-Government services in Istanbul municipality?

2. Which are the developmental stages of e-Government in Istanbul municipality on the road from government to e-Government?

3. What are the outcomes of e-Government?

4. What are the barriers of e-Government implementation?

5.1 Developmental stages of e-Government in Istanbul municipality

In this section, the reviewed e-Government services of Istanbul municipality will be analyzed according the developmental stages of emerging, enhanced, interactive, transactional and seamless services (Garson & Pavlichev, 2004).

5.2 E-Government Outcomes

Municipalities, public units are structured to take service to the society. Municipalities receive powers the Constitution. A municipality, the central government is based on the understanding of the different services. This difference; interact making public services more than the public stage, shows itself in the understanding of participatory democracy. Smaller municipalities’ structured dynamic organizational structure is more advantageous in the implementation of e-government projects (Uçkan, 2003).

E-municipal applications in public and social life, projected benefits are as follows (Öner & Uğur, 2004, p. 8);

- "Paperwork and bureaucracy will be reduced,
- Resources to be used more efficiently and effectively,
- Citizens will respond as soon as possible to the service requested,
- Municipal-citizen relations will be strengthened,
- The city's agenda can be viewed comfortably,
- In the light of current and accurate information that can be decided quickly and effectively,
- This will lead to important decisions,
- This will lead to the production stage of the policy,
- Halting applications fractions quickly be recognized,
- management, resolve defects quickly,
- Increase transparency in the management process,
- Inspection and enforcement power of the people will grow,
- Corruption will decrease,
- Increase public participation through information sharing and accessibility,
- Functioning of democracy that will contribute to,
- Services will be offered as a more effective and efficient,
- Increase collaboration with the private sector, jobs that require expertise to better quality and cheaper, to be made easier,
- Municipalities constantly renew itself, the structure of the dynamic system with the cost of change and can adapt quickly to changes in saved,
- Fast and accurate response to a sudden crisis and the volatility can be given."

5.3 Barriers of transformation from Municipality to E-Municipality

Municipalities in the conversion process, both internal dynamics, as well as experiencing some difficulties due to legal procedures (E-Municipality Report, 2004).

Technically, the resulting blocks by combining different data bases.

Lack of financial and material resources, the establishment stage the system requires a high cost.

Socio-economically developed regions in Turkey of the municipalities the computer infrastructure is more developed. The computer infrastructure of small municipalities is quite weak. Çoruh (2009), the total 973 municipalities (Metropolitan, metropolitan districts, including the provincial and district municipality) as a result of the research on the applications of e-municipality served by the municipality were reported to vary depending on the population of settlements. According to the results of this study, 97% of municipalities with a population of 500 thousand and above, provide an e-municipal services. 12% of municipalities with a population of 20-50 thousand, 10-20 thousand people, 1% of municipalities; 1-10 thousand people, 2% of the municipalities, the municipal e-services.

Accordance with the legislation, Municipalities have to work with state-owned banks, these banks in issuing e-services informatics infrastructure failure.

- The operation of computer systems, from the records, is not accepted by the Directorate of Local Authorities.
- In-house staff resistance to change, managers of information and lack of education, unwillingness to change.
- Current municipal legislation, information technology needs inability.
- Computer equipment, inventory status are accepted. These equipment statuses are their regeneration difficult.
- Lack of technical staff and IT specialist.

A very large extent after 2000 despite the increase in the number of Internet users in Turkey, according to 2010 statistics, approximately 45% of Turkey's population are Internet users. According to this study, the elderly Internet usage rate observed to be very low.

Turkey Statistical Institute (TUİK), according to the results of 2010 Household ICT Usage Survey, 65.2% of young people surveyed in the 16-24 age groups, 62.9% of the computer
and the internet has been used. Persons in the 65-74 age group, 2.7% is using the computer and the internet was observed (TUİK, 2010) (Figure-6).

![Figure 6: Turkey Statistical Institute (TUİK), according to the results of 2010 Household ICT Usage Survey (TUİK 2012).](image)

TUİK according to the results of 2010 Household ICT Usage Survey, the use of computers and the Internet were found to be more prevalent among men. 53.4% of men surveyed thirds computer, 51.8% using the Internet, women 33.2% PC, % 31.7 uses the Internet respectively. The difference between men and women in the use of computers and the internet, were found to be applicable to all age groups surveyed (TUİK, 2012) (Figure-9).

<table>
<thead>
<tr>
<th>Yaş Grubu</th>
<th>Bilgisayar (%)</th>
<th>İnternet (%)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Erkek</td>
<td>Kadın</td>
</tr>
<tr>
<td>16-24</td>
<td>77.9</td>
<td>58.3</td>
</tr>
<tr>
<td>25-34</td>
<td>67.5</td>
<td>46.7</td>
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<td>35-44</td>
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<td>45-54</td>
<td>34.3</td>
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<td>55-64</td>
<td>17.2</td>
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<td>65-74</td>
<td>5.0</td>
<td>1.4</td>
</tr>
<tr>
<td>Toplam</td>
<td>56.1</td>
<td>36.9</td>
</tr>
</tbody>
</table>

![Figure 9: TUİK according to the results of 2010 Household ICT Usage Survey, the use of computers (TUİK, 2010).](image)

Identify and meet the needs of people living in urban areas, growing and developing rapidly in urban areas, urbanization, control, investment and service work will be done in the most
efficient and economical, the problems facing e-municipal applications, the solution must be fast (II. Türkiye Bilişim Şurası, 2004).

5.4  **Transformation from Municipality to E-Municipality in İstanbul Metropolitan Municipality**

Istanbul is Turkey's most populous province. Istanbul has a total of 29 district municipalities. These municipalities are bound Istanbul Metropolitan Municipality. Istanbul Metropolitan Municipality is one of the country's big-budget public institutions.

Istanbul Metropolitan Municipality, Department 16, 67 are still in the organizational structure of the Directorate and the general ISKI and ETT has been operating two separate headquarters (Figure-7).

![Istanbul Metropolitan Municipality Departments and Directorates](image-url)

Figure 7: Istanbul Metropolitan Municipality Departments and Directorates.
E-Municipality practices are implemented in all the departments of the Istanbul Metropolitan Municipality. These applications are coordinated by the Department of Information Technology.

Department of Information Processing, Information Process Management, Information Transaction Coordination Directorate is composed of two sub-sections.

**Information Technology Department:** The Metropolitan Municipality informatics strategies, proposals and implementation of investment decisions.

**Information Transaction Coordination Office:** Office, City Information Systems, City Information Bank of execution of the work project, the project directorates, district municipalities and government agencies to ensure coordination between the tasks undertaken.

**Information Processing Directorate:** Follow-up of ICT and new technologies, according to the structure of institutions the implementation, establishment and operation of computer network infrastructure, providing services in software and hardware areas of the main duties and responsibilities.

**Information Processing Directorate:** Information, however, Metropolitan Municipality carries out the following activities within the IT Department (Düzoğlu, 2002, p. 3);

- “Municipality directorates pass the computer environment,
- Istanbul metropolitan municipality of the existing internal and external directorates software, hardware, program needs and provide technical support,
- Computers, printers, and uninterruptible power supplies, maintenance and repairing,
- Programs that are installed on the computer systems of the municipality, making maintenance and updates,
- Internal and external departments and other relevant institutions network (network) data lines set up to exchange information,
- Establishing the infrastructure of the Internet and the web site of contemporary communication and exchange of information to start,
- Various departments of the municipality, to assess computing needs, and provide the necessary technical support to help ensure compatibility of related units,
- Hardware (PCs, printers, etc.). determine the needs and to support the establishment,
- To analyze future needs and the provision of informatics to ensure,
- To help grow the system in line with technological development,
- Needs of the municipality, application programs, analysis, design and preparation of all the transactions that make up,
- The central computer system management, maintenance and development of the business and data ensure the safety,
- Management Information System (MIS) project, execute
- Data Warehouse Project, execute,
- To carry out the municipal staff payroll.
- Studies developed by the Information Technology Department, and are still the main data processing projects and programs carried out as follows (Erdal, 2004, p.42-43);
- real estate automation
- Housing and slum automation manager
E-municipal project applications are built on five systems. These are; Data Warehouse Project, Disaster Prevention System Project, Decision Support System, Management Information System (MIS) Project, Urban Information System (Erdal, 2004).

Data Warehouse Project: This project, the Municipality covers all companies connected. The main goal is the establishment of inter-institutional infrastructure of digital data. Exchange of information provide continuous and quickly, computing center of Istanbul Metropolitan Municipality in a database, all information is accounted collection, keeping up to date information to senior management and the desired is to report every form.

Disaster Prevention System Project: Disasters, was launched the project work to ensure the protection systems. A new system installation, centralized backup project work, data with data from the data processing center of the municipality reserves the external units will be automatically construction of the system, the establishment of new hardware in order to ensure the security of the infrastructure of the Internet, priority objectives and plans for this purpose is the development of various software.

Decision Support System (DSS) Project: Regular operation of the project, the MIS project, integration, operation and involvement of all relevant units, regular and continuous reporting of information in the data repository, administrators’ hill towards widespread use of this information, to make decisions quickly and effectively to the decision support system (DSS) to ensure the formation of targeted.

Management Information System (MIS) Project: Monitoring of investment projects carried out by the Istanbul Metropolitan Municipality, in particular to support the decisions of senior management, which is intended to produce meaningful data. The later stages of the
project, the transfer of all the directorates jobs IT environment, it is aimed to provide data on the media management summaries.

Urban Information System: Istanbul Metropolitan Municipality and the neighboring district municipalities the area within the boundaries of all kinds of services in coordination with other government agencies (planning, infrastructure, transportation, environmental protection, health care and control and so on.) fast, economical and healthy and coordination in order to be based on municipalities within the knowledge base is being established.

The system, by addressing the needs of the people of the city, to solve problems, fair, effective, all of the data required for rational planning, research results, "urban information system" will be available more easily. Investment spending to be done in the city, in order to meet them in determining potential sources, rational use of the city's budget "urban information system" is required. As a result, rapid information flow management levels thus improving decision-making process about the city managers.

Ever evolving information technology, multi-faceted services to local governments are able to offer appropriate solutions according to the needs and problems opening up new horizons.

Istanbul Metropolitan Municipality, which was established in ICT professional teams to follow on a daily basis and continuously invests in all areas needed. Data processing center of the municipality to cover all internal and external units with digital data infrastructure equipment put into service. Municipal institutions in the digital environment, can communicate with each other all kinds of data. Depending on the municipality and the number of Internet users in organizations is 3000. Indirectly benefit from all of the staff of these services.

Istanbul Metropolitan Municipality, give the service infrastructure of the Internet has reached all units. Established by The municipality of 52 external units, digital data communication can be performed in a wide area network. Data processing high-speed communication infrastructure between the central and external units, a powerful host (server) from a single management is provided with the support of institutional basis, can be more effective and more efficient services.

Internet security software and hardware necessary to (firewall server) was established. Municipality over the internet from the computer system, the municipal computer system to the Internet all the e-mails and files are being scanned for viruses. Municipality all web hosting services infrastructure offers its own specialized human resources and technical equipment. Application software, information processing units needed by the municipal manager development and the need for on-site analyzes.

Istanbul Metropolitan Municipality's web site (www.ibb.gov.tr), the site is constantly updated. Started test broadcasts in December of 1997. ibb.gov.tr, the Metropolitan Municipality of making one to one public relations, played an important role clearing the way. Site, Turkish and English broadcasts. ibb.gov.tr Turkey among the websites of the municipalities are characterized by having the largest content. Web site, the Metropolitan Municipality, corporate identity, budget, investments and projects, tender notices and service areas offer all the clarity and detail information of the citizen.

Istanbul Metropolitan Municipality web site, www.ibb.gov.tr address is planned in two separate sections below.
ISTANBUL METROPOLITAN MUNICIPALITY WEB SITES


Internet-related services and information to the people of Istanbul city through the virtual environment and learn to get started.

On municipal activities and events, information and public relations work for the citizens of this chapter headings and sub-headings, including the following (Figure-8) (www.ibb.gov.tr)

**Services & Links**

**Emergency**
The Istanbul Fire Station
AKOM (Disaster Coordination Center)
Police Force
Istanbul and Earthquake

**Social Services**
Health & Social Services
Services for Handicapped People
ISMEK (The IMM Arts and Vocational Training Courses)
Women’s Coordination
Social Facilities
Environmental Protection

**Libraries & Museums**
Libraries
Museums
Library Book Catalog

**Investment & Financial Services**
Maps of Istanbul’s Districts
Submit your project
Support for Academic Researchers
Investment Portal
The European Union
Strategic Planning Fiscal Year of 2007
Financial Report and Prospects of the IMM
Financial Services

**Licensing and Services**
License and Inspection Services
Public Housing

**City Guide & Transportation Services**
Public Transportation Services
Road Maintenance and Repair Works
Railway Systems
Transportation Master Plan
Area information for Istanbul and its Counties
Service Rates of the IMM
Managing Electronic Wastes
Lighting and Energy
Noise Map of The Ataturk Int. Airport

**Live Camera Views**
Traffic Cameras
Worksite Cameras
Touristic Cameras

**Culture Art / Publications**
Art and Culture Portal
The CRR Concert Hall
Theatre
The City Band
Historical Environment
IMM Family Magazine
Istanbul Bulletin

**Organization**
The Organizational Chart
Municipal Council
Companies

**Links**
Belnet
Submit Your Resume

Figure 8: Istanbul Metropolitan Municipality Web Sites
ISTANBUL CITY WEB-SITE

Images of city traffic plan, the city's access to the arts and sports agenda a lot of information easily accessible directory under the headings of this chapter are presented (Erdal, 2004, p.49).

A GUIDE TO THE CITY

1.1. City Guide Maps

1.2. What? Where is it? How?

1.3. Istanbul and Districts

1.4. Bureaucracy Guide (Official)

1.5. City Travel Guide

1.6. Istanbul and Tourism

2. TRANSPORTATION

2.1. Traffic Cameras

2.2. Urban Transportation Guide

3. WEATHER FORECAST

3.1. Meteorological Data

3.2. General Actuality

4. ISTANBUL Forums

4.1. Presentation of the platform

4.2. Conclusions and Recommendations

ibb.gov.tr web site is aimed to the realization of the following objectives(Erdal, 2004, p.48):

Istanbul Metropolitan Municipality's activities by the public to ensure continuous monitoring and up to date,

The municipality of Istanbul and the national and international scale, with the lowest cost and most efficient way to promote,

The municipality, the press and broadcasting organizations are fast, accurate and reliable information, and it's able to allow data transfer; based on the electronic mail system to perform fast communication with these organizations,

Using Internet technologies, Municipal - Citizen relationship, move to a more interactive floor,

Istanbul's agenda, versatile and up to date on the website, to provide monitoring,

Istanbul data bank of data on urban development,

The municipality web site, which pages are most visited are as follows;
**Online Traffic Images:** These images, Istanbul 10 major junction consists of 24-hour live broadcast traffic. Metropolitan Municipality Traffic Monitoring Center received these images transferred to the Internet full-time (real time) are presented as images in the viewer.

**City Guide:** Istanbul, street, street, street, street crawl able allows. City Guide page, ibb.gov.tr the visitor density living in one of the other pages. Contacts, processed on the map three thousand schools, universities, government offices, libraries, cemetery, consular, medical institutions, etc. are enhanced by dots. By districts, neighborhood, street, street, place, possibility to scan the name was put into operation.

**Requirements:** Istanbul, hundreds of projects that are carried out in the municipality. For this reason, many municipalities auction takes place every day. Which constitutes the most important feature of the application of e-government transparency, ibb.gov.tr in the introduction of tenders to the public came into force as soon as possible.

**Culture and Arts:** Municipalities exhibited within all cultural and artistic activities are published on a regular basis every month.

**Transportation Guide:** Istanbul which is important for those who live, IETT, İDO, City Lines (TD), Light Rail, Commuter trains local transport information on the site is up to date.

**360 Degrees Istanbul Images:** Istanbul's historic sight, squares and 360 degree images of the metropolitan municipality of projects are one of the pages on the site followed with interest.
6 Discussion

6.1 Results discussion

Istanbul Metropolitan Municipality to adapt quickly to new technology applications and e-municipality work seeks to speed with all the effort.

However, at the beginning of the difficulties encountered in the e-municipality, municipal institutions are a lack of organization. New applications for e-government and e-transformation should be started.

E-municipality brings uncertainties in a number of studies to be a pioneer. E-municipal areas of interaction in relation to the work, the scope of the services offered on the website what to take part in what is likely to miss what information is shared with citizens and businesses, in-house informatics applications and the related units, such as compliance with legal and ethical rules different opinions about the issues may occur. E-municipal organizations and contacts that can be taken to the small number of examples of activities carried out today slow down the speed.

E-Municipalities, and efficient management to create accessible to citizens and business to provide a high quality service to the world of modern information and communication must use technologies. To achieve this, the modern e-municipalities must:

- Channels of communication to citizens about the priority selection should be given the option of digital channels,
- Web page meet the needs of different user groups,
- Citizens through democratic dialogue on the internet, some important social ensure the participation of topics,
- Should increase the number of services accessed via the Internet,
- Other public and private organizations, to interact electronically must be,
- Personality rights protected and provide security of information,
- To increase the efficiency of the administration, the source for information and communication technologies apart.

However, citizens do not have access to these pages, and as long as these services are utilized, the internet will be monopolized by a minority in Turkey and certain administrative and political effects are also likely to will not be at the expected level.

Electronic municipal cases an interdisciplinary phenomenon. Except in issues of technology-based, public administration, international relations, law, business parties are also available.

E-municipality, all of these different disciplines work in practice is an expression of tangible assets. Respond to the problems of the citizens directly and internally being able to provide local governments, individuals the state has an important role in the reliability of the relationship.

E-municipality, thanks to shorter duration of action and service. Municipal governments, efficiency, effectiveness and quality of service increased. Management transparency can be achieved.
E-municipal service titles, maps, zoning application and cadastral operations, urban and regional planning, and coordination of the technical infrastructure services, parks and gardens and green areas, construction and management services, crisis management, urban management-control, management and supervision of technical and social infrastructure, transportation, traffic, address numbering information system, the subscription system, development status, operations, construction permit, occupancy permit, science, business, tax, and vehicles, public transportation systems, public health, education, defense and security, trade and industry, tourism, service desks.

E-municipality, the standard of living is rising. Each individual debts or payments without having to wait in long queues, without depending on working hours in front of a screen will ask you to make a very short time and effortlessly. This situation benefiting both service providers and the service would be in terms of saving time and resources.

6.2 Implications for research

The promotion of equal opportunities, citizens, local governments, has a strong effect. Citizens to benefit from e-municipal services, provides direct and indirect impacts to the region.

E-municipal applications municipalities competitive advantages.

Information technologies, new services reveal. These new services are lead to the emergence of new business areas.

E-municipal decision-making processes, ensures public participation. Thus, society is organized much better by e-democracy.

Municipalities have gained a very important role in the transformation process. Required to capture the quality of local services, the technology is closely has become necessary to monitoring of.

E-municipal service titles, maps, zoning application and cadastral operations, urban and regional planning, and coordination of the technical infrastructure services, parks and gardens and green areas, construction and management services, crisis management, urban management-control, management and supervision of technical and social infrastructure, transportation, traffic, address numbering information system, subscriber system, the development process-status-diameter construction, building use license-permit, science, business, tax, and vehicles, mass transit systems, public health, education, defense and security, trade and industry, tourism, service desks.

Municipal web sites, the above-mentioned data, e-municipality constitute the basic elements. Municipalities, the benefits of web sites are listed as follows;

- Always offer the image of municipal development.
- Collecting and separating the views of the public convenience,
- Municipal policies reflect public needs and views of the floor,
- The ability to apply the social responsibility of the municipalities,
- Facilitate public participation in government decision-making process and provide access to the minutes,
- Public, municipal administrative structure, units, operations, officials informing them about.
E-municipality also describes the activities of local governments. These activities are listed as follows:

- General information about the city (Date, statistical information, maps, and such as images)
- Municipal managers and information on the city council (on units phone numbers and names of the persons authorized hours of operation, etc.)
- Announcement of urban activities;
- Important calendar days (including days and hours of cleaning the municipality);
- Announcement of sport and leisure activities;
- Work plan for transport
- Addresses and access to public and private institutions in the city canals about promoting.

Turkey municipal networking sites are used as one-sided. The individual-state equilibrium, the equilibrium point is the individual cannot provide the correct shift.

E-municipal educational efforts related to the information society are exhibited.

The point to be noted, as the digital divide, or so-called digital divide, access to information and communication technologies, the unequal distribution of information to prevent inequality. If you are not paying attention in this regard, the technological knowledge of every aspect of e-democracy with the goal not only "elite cognitarians" will be applied to. Municipalities are seen as a means to prevent the creation of the digital divide.

### 6.3 Implications for practice

Municipalities of the information society in Turkey, the point of the formation and dissemination of e-public services are seen as an important application area. In recent years, steps have been taken in the direction of reducing the state in Turkey. For this reason, local governments gained more importance (Bengshir, 2000).

In Turkey, e-municipal applications, sites statistical information is presented, announcements are made. The majority of these applications do not include mutual communication features. Part of the municipalities in Turkey, municipal applications may e-perceived differently. These types of sites, e-municipality, is a list of the municipal units. Related links in this list is opened, the remote user to see service, usually corporate history, the municipal units are described. Information page contains basic information only. Seeing the diversity of work is very limited. E-municipal applications of this type are more sparsely populated municipalities.

A part of the metropolitan municipalities, e-municipal applications, captures the age level. Istanbul Metropolitan Municipality is one of them.


There are images of city traffic plan, the city's access to the arts and sports agenda in the Istanbul city web-site;
In Turkey, insufficient trained personnel to carry out the e-municipal applications. However, the service training is the quality and quantity weak. There is a standard practice all over Turkey. In Turkey, the lack of legal regulation on the subject, e-municipal applications leads to disruption. Municipalities in Turkey, the traditional understanding of managers to be closed innovation, e-municipality leads to unhealthy practices.

In Turkey, the municipal programs and service programs are not compatible with other public institutions.

Computer hardware and software purchases, maintenance are updated in the municipalities.

An important part of the budget resources, e-applications should be directed to the municipality.

Municipal laws and regulations necessary renewals, arranged according to the developments in the IT sector. Municipal legislation in Turkey, the most recent changes were made in 2006.

Computing infrastructures should be established in all municipalities.

In addition, computer literacy should be ensured that all municipal staff. Municipalities in Turkey, the computer cannot use the number of personnel is very high.

E-municipal applications and the municipalities can create new revenue opportunities. People in the region are included in the new applications, as well as for the citizens of the municipality, the new gain the doors of the stand.

6.4 Future research

E-municipal applications in Turkey were first started in 1997. These applications are introduced themselves to the municipalities did not go beyond web sites. In 2006, the government introduced a legal arrangement for the carriage of electronic media organizations.

Today, the vast majority of municipalities in Turkey have websites. However, in these web sites, e-municipality characteristics of carriers, their number is low. Some municipalities have access to the internet, is realized only at certain times of the day. Istanbul Metropolitan Municipality, e-municipal applications are well advanced. E-municipal applications, all service units spread. Ankara and Izmir metropolitan municipalities partially implemented.

Today, about the e-municipality, although at a table with the least advanced e-municipal applications, where it was first time, reached a more advanced level. The next few years, e-municipal applications, all at the country level will become widespread. In almost every municipality in the country has started to build the necessary infrastructure. However, the
financial impossibilities, equipment shortages, slow down the speed of these studies. E-municipal applications have become increasingly imperative.

Due to the lack of specialized personnel, the cost of an e-municipality transitions thoroughly increasing. Today, municipalities accordingly tended to raise their own specialist personnel. This training will give good results in the coming years. Thus, municipalities, e-municipality will be able to meet their own needs within the institution.

In Turkey, the scientific studies about e-municipality are also quite limited. The studies on this subject, new systems, new solutions, will enable the emergence of new models.
List of references


Appendix


Appendix


Appendix


