

# **Evolution of the e-records management practices in terms of e-government, the issues and expectations, reflections from Turkey<sup>1</sup>**

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In this study, practices of electronic records management are evaluated in terms of e-government. The change observed in the field of records management with the spread of the electronic signature and the conditions introduced by this change will be discussed in particular. Within this framework, the practices of records management in the public sector, which has started to be transferred in the electronic environment in Turkey, will be presented. This study aims at evaluating the new aspects of records management practices introduced by the start of the provision of public services in the electronic environment.

In more recent times, many fields of the service sector have been transferred into the electronic environment and e-government applications have become widespread in order to increase the speed and improve the efficiency of the public services, and to accelerate the communication between the government and citizen. However, the transfer of the printed records and the services with the same content into the electronic environment and the development of records management applications have taken up time. So as to indicate that the records in the electronic environment are authentic and reliable, the records should have a ‘qualified electronic certificate. Having a full legal validity in many Western countries as of the mid-1990s, the Electronic Signature Act was adopted in 2004, in Turkey. Following the emergence of ‘qualified electronic certificate’ providing institutions, the legal and administrative criteria of the electronic records management practices are defined. It is impossible to discuss e-records management applications without defining firstly the factors indicating that the records have the characteristics of evidence in the electronic environment. In this context, the e-records management applications are discussed along with the

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development of the arrangements made with respect to the legal validity of the records in the electronic environment. A significant number of the e-government applications, which is the transfer of the communication and the information exchange between government and citizen into the electronic environment via internet and telecommunication utilities, may be addressed within the scope of e-records management. In this study, the relationship between the e-government, e-records management and the electronic signature applications will be analyzed and the applications within the example of Turkey will be evaluated.

### **The Development of the E-government Applications**

The transfer of the records management applications and into the electronic environment and the development of digital signature and e-government applications gained impetus in the middle of the 1990s. As of the mid-1990s, Along with the U.S.A and Great Britain, a number of States, such as Canada and Australia, acted as pioneers to start the provision of public services on the Web. (Lee, 2005, p.99). E-government is mainly concerned with providing quality public services and value-added information to citizens. It has the potential to build better relationships between government and the public by making interactions between citizens and government agencies smoother, easier, and more efficient. E-government has made significant progress in the last few years, especially in the form of portal-based Web sites that provide citizens and firms with access to public administration and services. (Lee, 2005, p.100).

The concept of e-government is defined as the utilization of information technologies for the operations within a government and for the services that the government provides. (Özcivelek, 2002, p.1). An increasing number of governments all over the world are adopting modern information communication technologies (ICT) as a tool for providing effective and efficient services to their citizens (Mnjama, 2007, p. 274).

However, the rate of the e-government applications to be defined within the scope of e-record works is debatable. (Sundberg, 2007, p.31). A significant number of these services has remained within the scope of the institutional communication services, and addressed apart from the structured record applications.

The Centre for Technology in Government notes that e-government encompasses four key functions of the government, namely:

1. *E-services*. The electronic delivery of government information, programs, and services often (but not exclusively) over the internet.
2. *E-democracy*. The use of electronic communications to increase citizen participation in the public decision-making process.
3. *E-commerce*. The electronic exchange of money for goods and services such as citizens paying taxes and utility bills, renewing vehicle registrations, and paying for recreation programs, or government buying supplies and auctioning surplus equipment.
4. *E-management*. The use of information technology to improve the management of government, from streamlining business processes to maintaining e-records, to improving the flow and integration of information (Centre for Technology in Government, 2004; Mnjama, 2007; World Bank, 2004).

A significant number of the abovementioned e-government applications are based on running records procedures in the electronic environment. The practices for the transfer of the records procedures, which are addressed within the scope of records management works, have gained impetus with the developing technological utilities.

In particular Sweden, Denmark, Norway, U.S.A., The Netherlands, Korea, Canada, Australia, France, England and Japan are among the top ranking countries in the e-government index issued by the United Nations in 2007. Turkey is on the 76<sup>th</sup> rank in this index with 0.4834 points among 182 countries. (Lee, 2005, p.102; World Bank, 2007). Nevertheless, according to the results of the researches conducted and renewed every seven years by Darrell M. West, Director of the Taubman Center for Public Policy at Brown University, Turkey has managed to advance her position, which was previously 35<sup>th</sup>, by ranking 8<sup>th</sup> among 198 countries in terms of e-government applications in 2007 (West, 2007).

### **The Development of the Electronic Records Management**

The records have been used traditionally as documentary sources, which have the characteristics of evidence for the applications providing the internal and external

communication of the institutions. (Kunis and Schwind, 2007, p.191; Rosenfeld and Morville, 2002, p.221). In the identification of the records, the authenticity and the reliability of the information that it includes, rather than the environment or the format in which it was produced, have been determinative. (Reed, 2005, p.41). ISO 15489 International Records Management Standard underscores the characteristics of evidence and legal validity in the identification of the records as well. Records management works refer to the effective provision of the institutional information services (International Organization for Standardization ISO 15489-1:2001; Sundberg, 2007, p.32). Records management works in the institutions includes the process from the creation to the disposition of the records for the purpose of official communication or confirmation. (Batley, 2007, p.141). With the transfer of the activities of the institutions into the electronic environment, records management applications have started to be identified within the same environment and e-government works have become widespread with the contribution of information technologies. Today, the utilization of the electronic records is increasing quite swiftly. According to the study conducted by ARMA, more than 90% of the records are now produced in the electronic environment. It is considered that the communication through electronic mail, which was started to be used in the 1970s, have contributed to this high rate. (ARMA, 2008; Sundberg, 2007, p.31).

Electronic records management has emerged in parallel with the information technologies. In a general sense of the term, the electronic records refer to the records that are produced, processed and kept within a computer. (Kandur, 1999, s. 16). The electronic records are comprised of digitally coded electronic data, which have the characteristics of evidence like the printed records. In this sense, the legal transactions carried out on the internet, declarations of intent sent through e-mail and the electronic data recorded on various data carriers and that include declaration of will are among the most striking examples. (Erturgut, 2004, p.66; Wamukoya and Mutula, 2005, p.71). With respect to the distinctive features of the electronic records vis-à-vis the records that are produced in the electronic environment, Duranti (2001, p.4) underlines six factors. These factors are listed as: the medium, the content, physical and intellectual form, function, archival value and legal and administrative conditions of the records. The documents in the electronic environment are to have a 'qualified electronic certificate' or in a more general sense of the term, a "digital signature" in order to have the characteristics of a record (to have legal validity). In the Glossary of Records Management Terms, prepared by National Archives of Australia, digital signature is

defined as a “security mechanism included within a digital record that enables the identification of the creator of the digital object and that can also be used to detect and track any changes that have been made to the digital object” (Glossary of Records Management Terms, 2008) As it is clearly understood from the definition, electronic records are to have a security indicator that is similar to the signature that identify the authenticity the printed records.

In today’s world, it is a clear fact that the digital signature has a profound influence on records management works. Its reflections may be observed in the daily life. As Orhun, the director of a digital signature service providing institution in Turkey, (2007) states: “Stamps, petitions remained in the past... So is the panic in the public institutions, waiting for hours in order to hand a document... From now on, we will push just a button and sign the documents accordingly, at home or at work, and we will send our documents...” The facility that the e-signature introduced in our social lives is that now, we may run our procedures on the internet easily without going to any of the institutions that we would have to go to otherwise.

### **The Problems of the Electronic Records Management**

In spite of the positive environment created by the electronic record management applications, there are a number of problems. It is accepted that much more effort is to be exerted than it is in the printed environment with particular respect to the long term preservation and security. The fact that the paper, which is the only format to keep the records in the traditional environment, is leaving its place to the digital environment whose format and structure changes every day may lead to serious problems. For example, the question on what will happen to the information recorded on the punch cards, which ceased to be used years ago or on the floppy disks whose utilization will end in the very near future, is a major point of discussion. (Duranti, 2001; InterPARES Project, 2008). Lyman and Varian (2000) declared that 55% of a typical organization’s information, much of which again might be in the form of records, is stored on single user storage media such as hard disc drives. This information is unlikely to be part of a formal recordkeeping system but needs to be managed and is potentially discoverable, in the legal sense of the term (McLeod, Hare and Johare, 2004). The current discussions on these issues still persist. (InterPARES Project, 2008).

Nevertheless, the protection of the traditional medium used for keeping records (paper, etc.) provided the protection of the content as well. Darlington (Darlington and Pearce, 2003) demonstrated that the protection of the media (e.g. the floppy/hard disc or tape) in the electronic environment do not provide automatic access to the information it includes; giving the example of “1986 Domesday project”. Within this framework, unless comprehensive solutions are found for such problems prior to the development of e-records management applications, not only business information, but also corporate memory of the organisation may be lost. (Sundberg, 2007, p.37).

In the digital environment, the management and preservation of electronic records needs new theories, methods and knowledge. This has during the last fifteen years, or so, been recognised as a difficult task, both from technological, methodological, and theoretical perspectives (Bearman, 1994; Duranti, 2001; Upward, 2000; Reed, 2005). The regulations in the field of records management starting with the AS 4390 (McLeod, Hare and Johare, 2004), and improving with ISO 15489 and *MoReq*, are at the same time aimed at overcoming the problems encountered in the electronic records management and building the required infrastructure in the field (Blazic, 2007, p.1; Kunis, 2007, p.191). Besides, the regulations such as the ‘Freedom of Information’, ‘Digital Signature Act’, ‘Data Protection’ and ‘*Electronic Evidence Act*’, ‘*United Nations Model Law on Electronic Commerce*’ etc., have been developed in the recent years with a view to indicate the validity of the records procedures in the electronic environment (Barata, 2004, p.63; Spratt, 2004; United Nations, 1996; United Nations, 1998). The application models and regulations that have been developed define to a large extent the required infrastructural conditions for the record procedures in the electronic environment.

At this juncture, it will be beneficial to address the regulations that were developed for the digital signature. Digital signatures are commonly presented as a proof of the authenticity and integrity of digital objects (Boudrez, 2007). In this contribution, the concepts authenticity and integrity are used as they have been defined by the InterPARES project (InterPARES Authenticity Task Force 2002, pp.2–3). Authenticity and integrity are essential characteristics of a reliable or trustworthy record. A record is authentic if it is what it purports to be and if it was created or sent by the person who claims to have sent it. Integrity means that the record is complete and unaltered. This does not mean that records may not experience any changes, but it does mean that records must be protected against tampering or corruption and that it is

clearly defined which changes or annotations might occur after the creation or capture of record (Boudrez, 2007). As the required conditions for running the records procedures smoothly in the electronic environment are defined, the hesitations in practice are overcome. Today, we witness that many public services including record procedures are being transferred in the digital environment and that the transition is constantly gaining impetus. In this context, the conditions and practices for running the records procedures in the electronic environment in Turkey will be discussed in the following sections.

### **The Development of the E-government and E-records Management Applications in Turkey**

The infrastructure for the applications of e-government started to improve in Turkey at the beginning of the 2000s. The retardations in the field of Internet and information technology are indicated to be among the main reasons for this delay. The present capacity of the information technologies market in Turkey is thought to be 5, 5 billion dollars. The household computer ownership rate is 12, 75 % in Turkey. The 6, 6 % of the households are connected to the Internet. (Bilişim'07, 2008). The Electronic Signature Act, which will be the legal framework for the records management works in the electronic environment, as adopted in 2004 in Turkey. Furthermore, the Article 295/A of the Turkish Civil Procedure Code, amended in 2004, stipulates that the data signed with a reliable electronic signature have the equal effect of a receipt. According to this article, provided that a record with a reliable electronic signature is submitted by the parties in a prosecution, this record has the characteristics of “full evidence” that will be binding for the judge. It is impossible to address any electronic record management applications prior to 2004, as the legal conditions for this provision could not be provided then. (Erturgut, 2004, s. 66; Hukuk Usulü Mahkemeleri Kanunu, 2004).

The recently enacted Law on the Right to Information and the Electronic Signature Act have enabled the redefinition of the record management applications in Turkey. In this context, Turkish Law on the Right to Information was prepared with a similar content to the Freedom of Information Acts, adopted first in Sweden and later in nearly all of the Western countries. The aim of this law, which entered into effect in 2003, is defined as regulating the provisions of the right to information, in particular in the public institutions, “within the framework of

the principles of equality, impartiality and openness, which are required by a democratic and transparent administration” (Bilgi Edinme Hakkı Kanunu, 2003).

The aim of the Electronic Signature Act, which came into force in 2004 in Turkey, is defined as “regulating the principles related to the utilization and the legal and technical aspects of the electronic signature”. The Act applies to the legal nature of the electronic signature, to the activities of the electronic certificate providers and procedures related to the utilization of the electronic signature in different environments. The Electronic Signature Act aims at attributing the electronic record a legal nature. (Elektronik İmza Kanunu, 2004). Today there are four 4 intermediary institutions that provide digital signature service called ‘qualified electronic certificate’ within the framework of the Electronic Signature Act in Turkey. These institutions are respectively as follows: the National Research Institute of Electronics and Cryptology (National..., 2008) which is a public institution at the same time attached to The Scientific and Technological Research Council of Turkey (TÜBİTAK) and the private institutions of E-Güven (E-Güven, 2008), E-Tuğra (E-Tuğra, 2008) and Turktrust (Turktrust, 2008).

The regulation for identifying the cyber crimes and their penal sanctions in Turkey entered into force in May 2007. The regulation that came into effect under the name of the "Law on the Regulation of Internet Publications and on the Fight against Crimes Committed through These Publications” is heavily criticized for some of its aspects. It is indicated that the sanctions of the Law towards the cyber crimes are not in conformity with the modern concept of law. The controversy regarding the fact that the Law is not compatible with the accession process of Turkey, nor with the objectives of the information society still persist (Bilişim’07, 2007; İnternet Ortamında Yapılan Yayınların Düzenlenmesi, 2007).

However, in the recent years, a number of boards have been formed to inspect the e-government and e-records management applications in the public sector in Turkey. In this context, the Executive Board of the e-Turkey Project within the State Planning Organization was restructured in July, 2007, and the Information Society Unit, which was previously operating as a Department, was transferred into a Directorate General. (Bilişim’07, 2007, p.7).



## **E-record Applications in Turkey in terms of E-government**

Within the framework of these general definitions, some examples of the e-government applications in the public sector in Turkey are presented below. These examples are considered to be significant as they are demonstrating the development of the record management applications in the electronic environment and the level reached in Turkey, all of which has been discussed in the theoretical section.

- In the Article 10/A, appended to the Law No. 4487 and the Capital Markets Law on 18 December 1999, it is resolved that the capital market instruments and related rights shall be monitored by a Central Record Institution (CRI), which is vested with legal personality as per the private law. Within the scope of the project that is implemented by the Central Record Institution (CRI) of the Capital Markets Board, the members of the CRI may access the system through the qualified electronic certificate that is set up on the smart cards. Furthermore, the application enables the user to view and read the whole text to be signed prior to signature, as stipulated by the Electronic Signature Act. One of the authentic features of the application is that the texts may be signed by several users. (Merkezi Kayıt Kuruluşu, 2008).
- The Ministry of Justice has completed the National Judicial Network Project (UYAP), which is an e-government application, in December 2001. With the materialization of this project, citizens do not need to go to the Court of Justice in order to be informed about the dates of the proceedings and the progress of the lawsuit. The opportunity to follow the course of the lawsuit on the Internet is presented. Moreover, the Advocate Information System, a service provided by UYAP, enables the advocates to follow the existing cases, to bring a lawsuit, to send any kind of documents to the case file, to make any kind of on-line money transfer related to the judicial expenses, payment and other expenditures. (Adalet Bakanlığı, 2008).
- Central Population Management System (MERNIS) Project was put into practice by the Directorate General of Population and Citizen Affairs of the Ministry of Internal Affairs in 2002, with the support of the World Bank. The population records were transferred into the electronic environment between 1997 and 1999; an ID number was generated for each citizen in 2000 and 927 birth registration offices around the country started to provide services related to population and citizenship issues on-line

in 2002. The project also aimed at reliable information exchange, swift update of information and increasing the speed and efficiency of the service provided for the citizens. With this project, the different ID numbers that the institutions in Turkey generated for the citizens are unified. The project is listed under the applications of infrastructure for providing public services in the electronic environment. In this context, with the ID Sharing System Project which is the extension of the former project and which was put into practice in 2004, the information system was opened for the access of other public institutions. (T.C. İçişleri Bakanlığı, 2008). Lastly, within the framework of the Mernis Project, Address Based Information System was put into practice in 2007, thus one of the major problems of the government, the address system, is updated and the related applications started to be conducted in the electronic environment. (Bilişim'07, 2007).

- Inward Processing Regime (DİR) Automation was put into practice by the Undersecretariat of Foreign Trade of the Prime Ministry in 2005, as an e-government application in Turkey including the electronic signature in the public sector. With this application, import firms may run any kind of procedures in the electronic environment related to the records within the scope of the Inward and Outward Processing Regime conducted by the Undersecretariat of Foreign Trade without any time and space restriction. The mentioned firms may now apply online or offline in the electronic environment, which was previously carried out on paper; these applications may be transmitted to the Undersecretariat of Foreign Trade (export/import lists, tables demonstrating the raw material consumption, etc.), and the Undersecretariat may conduct the whole evaluation process in the electronic environment. The application was put into practice on 1 August 2005 (Hatır, 2005; T.C. Başbakanlık Dış Ticaret Müsteşarlığı, 2008a).
- Another e-record management work within the scope of the e-government applications in Turkey was launched on 1 June 2007 by the Directorate General for the Protection of Citizens and Competition of the Ministry of Industry and Trade. With this application, the procedures for granting a certificate of warranty, post-purchase service qualification certificate (SSHYP) and exemption certificate, as well as the procedures related to the authorization of assignees and to the power of attorney are transferred into the electronic environment. An e-signature certificate is required

for carrying out these applications in the electronic environment. (T.C. Sanayi ve Ticaret Bakanlığı, 2008).

- As of 1 August 2007, the and services of accepting direct applications or applications via mail along with the those made for trademark registration services with an e-signature have been available on the Internet at the Turkish Patent Institution (TPE). With the online application system, the citizens aspiring to make an application for the trademark registration are presented the opportunity to make their application online with an e-signature, rather than dealing with traditional mail services or going directly to the facilities of the TPE. An electronic signature is a must for the online application for trademark registration to the Turkish Patent Institute. (Türk Patent Enstitüsü, 2008).

The abovementioned examples of e-record applications are among the principal projects of the e-government transfer project of Turkey. Moreover, these applications are considered to be quite significant in terms of improving the speed and the efficiency of the communication between the government and the citizens in the public institutions. The transfer of the communication and record procedures into the electronic environment and the transfer of the record management applications into the electronic environment via the Internet and the Intranet utilities, bring about an increase in the quality of the services. Further spreading of these applications is expected. In this context, the following applications are envisaged to be materialized:

- With the e-insurance project conducted by the Social Security Administration, all of the social security directorates will transfer the procedures related to premium collection into the electronic environment. With another project, citizens will be able to receive their insurance sheets on the Internet, and be informed about the premium, and whether his pension is deposited or not, and even when they will be retired without going to the social security directorates. (T.C. Sosyal Güvenlik Kurumu, 2008).
- Directorate General of National Estate, which monitors and administers the real properties of the Treasury, will start transferring all of the immovables registered in the name of the Treasury into the electronic environment and announcing the citizens which immovables will be put up for sale (T.C Maliye Bakanlığı Milli Emlak Genel Müdürlüğü, 2008).

- Undersecretariat of Customs will transfer all of the stages of an article from its arrival at the customs to the completion of exportation or importation procedures real-time into the electronic environment. This initiative aims at facilitating the trade and supports the export or import firms that will be in a competition in the world markets. (T.C. Başbakanlık Gümrük Müsteşarlığı, 2008).
- In the near future, Turkish Land Registry and Cadastre Information System will put a project into practice which aims at running any kind of procedures related to the land registry in the electronic environment. When this project is completed, all of the procedures, namely debt collection, purchase and sale, determination of the assets in property, rentals, transfers, mortgage, etc. will be carried out on the Internet. Besides, a major part of the infrastructure works of the other public institutions will be accessible within the framework of this project. For example, the municipalities may be informed about the procedures to be carried out for the sites to prepare their construction plans through accessing this system. (T.C. Bayındırlık ve İskân Bakanlığı Tapu ve Kadasro Genel Müdürlüğü, 2008).
- The Ministry of Agriculture aims at helping the agricultural sector by building an agricultural database and creating a holistic e-agricultural structure with a farmer registration system, a farm accountancy system, animal care system and organic agriculture system. (T.C. Tarım ve Köyişleri Bakanlığı, 2008).
- The Ministry of Foreign Affairs has transferred its own records and archive system into the electronic environment since the 1990s. All of the in-house correspondence is carried out and the records are archived in the electronic environment. As an up-to-date application, the Ministry conducts an e-government project which is composed of three main parts: Turkish citizens abroad will be able to perform their actions at their homes; they will be able to access easily the forms they need from the electronic archive; and be informed about the points they would like to learn from the databank. (T.C. Dışişleri Bakanlığı, 2008).

## **Conclusion and Evaluation**

The e-government applications have evolved gradually from accessing information in the public sector to a transfer of the communication between the government and the citizens into the electronic environment. An evolution from one-way information transfer to a

communication was enabled by the transfer of records management applications into the electronic environment. The adoption of the Electronic Signature Act, the emergence of the “qualified electronic certificate” providing intermediary institutions and the development of the infrastructure elements in the field of telecommunications lead to the improvement of the conditions. Today, the e-records management forms a structured and legally valid aspect of the e-government applications. Within the framework of these applications, the e-records management refers to the transfer of the structured bureaucracy into the electronic environment. The development of the official communication flow with the opportunities of the electronic environment is a must of the modern state concept. In this study, the e-records management applications developed within the framework of e-government in Turkey are considered to be significant in terms of overcoming the handicaps between the government and the citizen as well as cutting the red tape; and these applications are thought to be contributory to the development of records management applications. However, it is a fact that the conditions of reliability and durability of the printed environment have not yet been achieved in the electronic environment. Within these conditions, carelessly taken steps would surely lead to a disaster. Particularly in a developing country like Turkey, the relative cost reduction introduced by the virtual environment, the speed and efficiency may lead every administrator to prefer e-government and e-records management applications as an easy solution at the beginning. However, meeting the required legal and administrative criteria related to electronic records management applications, filling the gaps, taking actions on the examples of the developed countries, and following the outputs of projects like InterPARES are considered to be quite significant.

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