



# Turkish Court of Accounts

Performance Audit Report

## THE ACTIVITIES CARRIED OUT WITHIN THE FRAMEWORK OF e-TRANSFORMATION TURKEY PROJECT

Summarized Version



June 2006

This report was prepared in accordance with the Additional Article 10 annexed to TCA Law No:832 with the Law No: 4149 and it is deemed appropriate to be submitted to the Turkish Grand National Assembly upon the decree No: 5166/6 dated 24.07.2006 of the General Assembly of the Turkish Court of Accounts.

**Audit Team:**

Levent KARABEYLİ (Principal Auditor; Audit Director)  
Arife COŞKUN (Principal Auditor; Audit Manager)  
Melda SONUVAR (Principal Auditor)  
Ali ÖZEK (Principal Auditor)  
Nükrettin PARLAK (Principal Auditor)

**Technical Advisor:**

Hayati YAŞAR (Senior Auditor)

**Evaluation of the Survey:**

Mehmet ÇIVGIN (Auditor)  
Sinan ÖZSOY (Auditor)  
Mehmet KÖKSEL (Auditor)

**Address:** T.C. SAYIŞTAY BAŞKANLIĞI  
06100 Balgat ANKARA/TURKEY

**Phone:** 0 (90) 312 295 30 00; **Fax:** 0 (90) 312 295 40 94

**e-Mail:** sayistay@sayistay.gov.tr; **mailto:**performans@sayistay.gov.tr  
<http://www.sayistay.gov.tr>

# THE ACTIVITIES CARRIED OUT WITHIN THE FRAMEWORK OF e-TRANSFORMATION TURKEY PROJECT

## INTRODUCTION

Nowadays, developments in the information technologies which affects all dimensions of life and eradicates the time and place differences have lead to the establishment of a vision in all the countries and regional unions that envisage the transformation of the society to an information society that can keep up with the rapid changes in the world, access to the information with qualified manpower and that can produce and utilize. In line with the developments in the world, the issue has also been put in the agenda of the European Union and an e-Europe Strategic Plan and Action Plans have been adopted with a view to realizing this vision.

As a reflection of these developments in the world, several studies have been conducted in our country as well since 1990s. The Transformation Turkey Project (eDTr) which is the subject of our study constitutes a comprehensive and significant progress in this field. Since the year 2002, the date at which the project was initiated; two action plans have been prepared and put into practice. A strategic plan which would ensure that the project and the actions are determined and implemented correctly could be finalized as of July 2006.

## AUDIT ISSUE AND EXAMINATION

- **Audit Issue:** The eDTr Project covers a vast area including ;
  - ✓ The establishment of the Information Society Strategy which shall be the road map during the transition from the traditional society to information society; from the production-consumption economy which is based on labor to information economy;
  - ✓ Preparation of the technical infrastructure through which the services shall be delivered and ensuring the information security,
  - ✓ Formulation of the regularity and legal framework,
  - ✓ Planning and training of the human resources required by the information society
  - ✓ Delivery of services in an electronic environment without the intervention of bureaucracy,

- ✓ Establishment of the standards which shall provide reference to the studies of the entities which are carried out so as to ensure that they deliver interoperable, integrated services,
- ✓ Development of the electronic services in the fields of health and trade.
- In this performance audit study titled “*The Activities Carried Out Within the eDTr Project*”, the activities in the eDTr Project are examined within the framework of the following questions:
  - ✓ Are the activities within the eDTr Project being carried out in coordination?
  - ✓ Is an appropriate infrastructure being established for a sustainable e-Government?
  - ✓ Is the cost effectiveness ensured in the activities carried out within the context of the eDTr Project?
- In this context; coordination, monitoring and evaluation of the activities carried out within the eDTr Project and the costs of this project and the Information Technology (IT) investments within the Investment Program, the activities concerning the technical infrastructure of e-Government such as the establishment of the Electronic Signature (e-Signature), e-Portal, Electronic Document Management System (EBYS), and ensuring the widespread service delivery were assessed.
- **Audit Objectives:** The objective of this audit activity is to take necessary measures on due time with a view to :
  - ✓ Developing a strategic plan for the project through prioritizing the activities carried out within the eDTr Project and implementing it in coordination,
  - ✓ Increasing the effectiveness in the public services through harmonizing the objectives of the activities aimed at re-engineering the public sector and the eDTr Project,
  - ✓ Redefining and simplifying the business process in the public entities by taking the public sector management reforms into account and ensuring that the public services are appropriate to be delivered in the electronic environment,
  - ✓ Establishing a technical infrastructure suitable for an e-Government which shall ensure network security and interoperability in the transformation of public services to electronic environment,
  - ✓ Determining the costs to sustain the eDTr Project and sub-projects such as e-Portal, e-Signature, internet connections at schools; the benefits to be obtained from the project and the measurement criteria for these;
  - ✓ Utilizing from the resources economically and efficiently by preventing repetitions and losses in the resources through ensuring that the eDTr Project and the IT investments are monitored on the basis of work/time/cost.

- ***Audit Methodology:*** In the audit carried out by the Performance Audit Group;
  - ✓ It was examined whether the eDTr Project and the IT investments within the Investment Program for the years 2003–2005 were monitored on the basis of work/time/cost; the documents and the reports regarding the monitor and evaluation of the IT projects were assessed at State Planning Organization (DPT). It was scrutinized whether the Management Information System (MIS) of the entity includes sufficient information for an effective coordination or not. The studies on the Project conducted so far by the Ministry of Education (MEB) and the Ministry of Transportation, General Directorate of State Archives (DAGM), Turkish Statistical Institute (TÜİK), The Scientific and Technological Research Council of Turkey (TÜBİTAK), Telecommunication Authority (TK), Turk Telecommunication Company (TTAŞ), Turkish Standards Institute (TSE) and the NGOs which are within the scope of the eDTr Project were examined comparatively by taking the information and documents in DPT as basis.
  - ✓ By examining the relations among the Investment Program, budget and final account laws; the sufficiency of the process applied in order to monitor the allocation and usage of the resources in eDTr Project and IT investments and the implementations were assessed. The studies towards the preparation of a strategic plan were evaluated in the light of the plans of the countries such as France, the USA and Ireland; while the e-Portal was assessed in the light of the USA, the UK, Canada, Singapore examples. The previous studies made by the Supreme Audit Institutions (SAIs) of other countries and international organizations and the literature were utilized; the current developments were followed through attending the conferences, symposiums, congresses organized at home.
  - ✓ E-Signature and information security were examined at DPT and TÜBİTAK; e-Portal was examined at DPT and TTAŞ by taking the documents and data as basis and interviews were made with academicians and experts in this field.
  - ✓ A survey was conducted in order to specify and evaluate the practices regarding the e-services and studies for e-signature, the dimensions of their dependency to technology, the adequacy of the human resources well informed and experienced in the field of IT and the studies which were made with a view to detecting the needs for IT investments of the public entities. It was assessed by means of the mentioned survey whether the public entities had re-engineered their business processes regarding their services that they would deliver in an electronic environment as a preparation to e-Government or not.
  - ✓ The studies concerning the Public Certification Center (KSM) were examined on site in Gebze the Scientific and Technological Research Council of Turkey- National Research Institute of Electronics and Cryptology (TÜBİTAK-UEKAE). A logic model was made together with TÜBİTAK with a view to determining the costs, significant

expenditure items and the ones that can be saved among them and detecting what may be the practices that can lead to sunk cost if measures are not taken on due time. A similar study was launched to be applied for e-Portal; however, it could not be finalized since an addressee could not be found due to the fact that the responsible entity for the establishment of portal was changed and the procedures for the transfer were not completed.

- The audit findings in this report are mainly based on the documents and information regarding the eDTr Project between the years 2003-2005. The significant changes occurred in 2006 are reflected in the report as far as possible.
- Documents, papers, notes taken during the interviews and working papers regarding the studies are kept at the Presidency of Turkish Court of Accounts (TCA). The opinions of the State Planning Organization (DPT) and the Scientific and Technological Research Council of Turkey (TUBİTAK) on the draft report were received and evaluated.
- In the report prepared according to the Additional Article 10 of the TCA Law No: 832; the audit findings, results and recommendations are stated.

## **AUDIT FINDINGS, RESULTS AND RECOMMENDATIONS**

### **COORDINATION OF THE PROJECT**

#### ***The Objectives and Targets of the eDTr Project***

- The objectives and the targets laid down at the beginning of the project have been specified with a short sighted approach and without conducting any study that puts forward up-to-date, scientific and detailed situation analysis and the inner dynamics of our country in the field of information society and prepared in the form of adaptation of the EU documents to our country's conditions. On the other hand, the objectives determined are not transformed to annual and concrete intermediary objectives.
- The performance criteria which are one of the most important instruments in the monitoring of the projects for eDTr Project and its sub-projects, measurement of their success and securing the quality assurance were not specified during the implementation period of 2003-2005. For this reason; it is not possible to evaluate whether the objectives and targets have been achieved, at what level they become successful and how our country has progressed in the way to become an information society.
- The adoption of the information society projects on the highest levels and approval by all the relevant parties is of great importance in terms of the success of the project. Despite the fact that there is an acceptance of a high level in the eDTr Project; it is seen that it is not fully understood and accepted by the implementing entities.
- *In order for the activities within the framework of the eDTr Project to be implemented in a planned and coordinated manner and to attain successful results:*

- ✓ *The objectives and targets of the project should be reviewed in the light of the up-to-date, scientific and comprehensive situation analysis, inventory records, the indications on the country's itself inner dynamics and degree of development by taking the criteria of the information society as basis. The objectives and targets should be transformed into annual and intermediary targets and the entities themselves should establish their institutional targets in line with the targets of the eDTr Project.*
- ✓ *In the strategic plan of the information society; the objectives, targets and the actions and projects which shall help our country in the course of transformation to the information society should be clearly stated by using an appropriate infrastructure, human resources and sources of finance economically. The priorities should be specified and implemented in coordination, on time and with favourable costs.*
- ✓ *The performance criteria, which create opportunity to evaluate efficiency and effectiveness of the e-Transformation activities and whether the resources are used economically or not and which include the elements of project management and technical quality, should be clearly set. These criteria should be suitable for the monitoring and evaluation of the developments in our country on the way to become an information society in general and of the success level of the projects mentioned in the action plan, in particular. They should be correlated with the strategic plan of the information society and the action plan projects of the eDTr Project.*
- ✓ *The objectives, targets and policies of the project should be acknowledged and adopted satisfactorily by the relevant entities and public.*

### ***Determination and Prioritization of the Project Actions***

- *The studies to be conducted within the scope of the eDTr Project are specified with two different successive Action Plans for the term 2003-2005. Among the actions stated in the Action Plans, the ones which are leading and significant to be fulfilled at the beginning of the work such as the establishment of an information society, e-Government practices and determination of the inventories of information and communication technologies (ICT) were not fulfilled during the two years period. The intermediary objectives regarding the project were not specified on the basis of time/work/cost and the work programs which ensure the monitoring of the project were not prepared. This situation adversely affected the success of the project and eliminated the opportunity to take measures and monitoring in due time.*
- *The information technology infrastructure and capacity of the country, the status of the existing public services, institutional changes, dynamics of progress, and the weak and*

*strong facets should be carefully analyzed and the project actions should be specified on the basis of time/work/cost. The actions and the sub-projects should be prioritized and effective solutions should be presented in order to ensure the timely implementation.*

### ***The Consistency between the eDTr Project and the Investment Program***

- The public investments are planned, evaluated and followed-up by the State Planning Organization. Until the Investment Program of the year 2005; the investments in the field of information and communication technologies (ICT) were not followed-up as a separate item. The number of the investment projects that are related to the ICT and eDTr Project and their qualities that can contribute to the assessment and coordination activities can not be specified and examined. While accepting the ICT projects to the Investment Program; they are not fully examined in terms of their relevance to the action plans of the eDTr Project. Thus; the sub-projects can not be assessed in terms of consistency with the aim, target and action plans of eDTr Project, correctly, wholly and so as to avoid the repetitions.
- *It is of utmost importance for Turkey to use its resources in the most effective way through planning and an integrated approach. The new ICT projects proposed to the Investment Programs should be developed by considering the ongoing ICT investments and evaluating the e-transformation infrastructure and all the projects should be followed-up on the basis of time and cost.*

### ***Technological Dependency***

- The projects which are predominantly technologic such as e-Transformation inevitably require a preference of technology. Making preferences which have high level of dependency would lead to a structure which is inefficient, expensive and incompatible with the changing conditions in the future. Since a general technical design for the eDTr project has not been prepared; a background is not established for the preference of technology and the issue of dependency.
- *A general technical design of the eDTr Project should be prepared and solutions which do not create technological dependency should be produced. During the planning of the actions within the scope of the project and the ICT investments and during the procurement of services and goods; solutions that are clear based on the standards and do not lead to technological dependency should be defined and produced. Moreover, in the evaluation of all the ICT projects which are to be included to the Investment Programs; it is important not to create technological dependency. A technical center should be established which shall be responsible for the monitoring and directing the implementations.*



### ***Prioritization together with the Responsible and Relevant Entities***

- During the implementation of the actions within the scope of the eDTr Project; it is observed that responsible teams and units were not formed in the relevant entities and a work plan in which a prioritization is made was not prepared. However, if the coordination unit is to make the technical and financial evaluation of the eDTr Project, identify the risks and ensure that the corrective decisions are taken at all the stages of the project including its initiation; it has to handle the project as a whole. Although there are data processing centres at most of the public entities; they have no strategy of harmonization to e-government which is approved by their higher administrations, objectives compatible with the eDTr Project and responsible teams.
- *Responsible and relevant entities and the working groups should prepare work programs related with their field of work and submit them to the entity in charge of the coordination before the implementation phase. Besides, all the changes realized at all the stages of the project should be implemented upon taking the opinion of the coordination unit.*

### ***The Organizational Structure of the Project***

- The coordination function of the eDTr Project is carried out by Department of Information Society which is composed of approximately 10 experts without sufficient contribution of other units of DPT. Within this context; the coordination, management, monitoring of a project; evaluation of the IT investments and ensuring their integration with the Project constitute an overload. The existing organizational structure of the eDTr Project has been insufficient in realizing the objectives and targets and performing the activities on due time and in coordination so far.
- *In order to establish a coordination structure that shall effectively plan and implement the project and follow its outcomes along with its subprojects:*
  - ✓ *An organizational structure should be established under which all the relevant units work with coordination and which shall ensure the appropriate planning and realization of the projects being carried out in line with the general policies of the eDTr Project. Besides; regarding all the units in the organizational structure and the activities of the responsible entities; the coordination unit (DPT) should be informed regularly and sufficiently and the results collected should be reported.*
  - ✓ *For the effective coordination of the eDTr Project; firstly, the number and qualifications of the staff needed should be determined and accordingly the personnel should be employed. Apart from this; the support of other units of DPT should be*

*ensured. The powers, responsibilities and the job descriptions of all the entities and organizations which take place in the project should be clearly defined.*

### ***The Monitoring and Evaluation of the Activities Carried under the Project***

- It is stipulated that the activities carried out within the framework of the action plans of the eDTr Project are to be monitored and evaluated by Working Group on Monitoring that is coordinated in terms of implementation by DPT-Department of Information Society (DPT-BTDB) and IT Association of Turkey (TBD), which is a non-governmental organization (NGO). However; both the evaluation reports published by Directorate of Information Society (DPT-BTDB) and the works of the Working Group have not been regular, unified and leading for the project.
- DPT- BTDB is carrying out the activities specified in the actions plans of eDTr Project and Monitoring studies of the IT Projects selected from the Investment Programs separately; since there is not a relation established between the action plans and the Investment Program. For the monitoring of the action plans of the eDTr Project; 5 evaluation and 2 conclusion reports were issued which include the information gathered from the responsible entities through forms. However it is seen that the forms are not prepared in a structure which reflects the needs of all the parties of the project and is not suitable for the monitoring of the activity and cost data in an integrated way. Besides, the data in the existing information system of DPT does not contain sufficient and appropriate information for combining the activity and cost data and is not suitable to the objective. Moreover; in the data about the implementation of the projects, monitoring and verification can not be performed through comparing the records of DPT with that of state accounting.
- On the other hand; the monitoring and evaluation of the investments made by Turkey in the field of information and communication technologies have great importance by considering its relation to the eDTr Project. In the implementation, with the effect created by the insufficiency of the information system data and coding system of DPT; the detection and evaluation of the ICT projects has not been fully performed and the eDTr Project can not be related with the Investment Program and State Budget. Besides, due to the fact that most parts of the investments are accumulated under the title "miscellaneous"; it is unlikely to follow up properly its distribution to districts and regions in the management information system of DPT.
- *The activities and action plans of the entities responsible in the project should be followed and evaluated on the basis of work/time/cost together with all the ICT projects in the Investment Program. The management information system of the entity responsible for*

*the coordination of the project should be convenient to prepare reports that shall ensure timely and corrective decisions.*

## **TECHNICAL INFRASTRUCTURE**

### **Internet Infrastructure and Alternative Communication Technologies**

- The development of the information society and delivery of the e-government services in a better way depend on sufficient internet infrastructure and access possibilities. In the action plans and draft strategic plan of the eDTr Project; actions aim to provide rapid, economic, uninterrupted and secure access and put the “internet access” infrastructure into the service of all the parts of the society. However between the years 2003-2005; the activities to establish the appropriate technical infrastructure could not be carried out within a coordination and in due time. Moreover; while the rate of internet usage in Turkey is under the European average, the rate of unused internet capacity is still high and this indicates that we still have deficiencies in the access to internet and in ensuring the widespread usage.
- *As stated in the eDTr action plans; investments of the e-Government with coordination in line with the priorities and needs of our country is of great importance for the success of the e-Transformation of Turkey. For this reason; a strategy should be established in order to ensure rapid, uninterrupted, economic and secure access and delivery of the service of “internet access” infrastructure to all the parts of the society and this strategy should be carried out on time and within coordination.*

### **Digital Divide and Universal Services**

- Today, on another issue as important as the establishment of the ICT infrastructure in the e-government services is the fair access of the public to this technology. Shortly, if the digital divide which can be regarded as injustice in the access to ICT is not eradicated, the ICT investments which have high costs will remain idle. The most important two indicators used in measuring digital divide are the distribution of the number of computer and internet access in terms of various social parts of the society such as age, revenue, education and gender groups and their distribution among geographical regions, households and work places. The Turkish Statistical Institute is assigned the duty to produce information and statistics about the correct and complete evaluation of the digital divide and the specification of the information society criteria, which is stated in the 2003-2004 short-term Action Plan of the eDTr Project. In the years 2003-2005; adequate information and statistics were not produced in order to state the digital divide precisely.

This situation makes it difficult to produce the correct policies to decrease the digital divide.

- Nowadays, among the policies developed in order to prevent digital divide, the “universal services” stand in the forefront. When the action plans of 2003-2005 and the strategic plan are analysed; it can be said that the number of the actions envisaged to be taken in order to decrease the digital divide within the context of the eDTr Project is adequate. Internet service delivery to public free of charge, establishment of IT classes in the schools affiliated to the Ministry of Education (MEB) and providing internet connection to these classes and opening them to public can be counted as examples in this field. However, the plans which are prepared in order to decrease the digital divide and to make the universal services widespread are not based on a prioritization that is to eradicate the regional imbalances and decrease the digital divide; since an IT inventory has not been made up. Besides; most of the actions planned in connection with the public access to internet free of charge were not finalized within its due time as in the case of a number of actions specified in the eDTr Project.
- *In order to develop and implement accurate policies concerning the issue of decreasing the digital divide; first the situation analysis of our country should be carried out. The actions should be planned and finalized in due time so as to deliver rapid, uninterrupted, secure and inexpensive access, decrease the geographical and social inequalities, cover the all and present alternatives to the users.*

### **Qualified Personnel**

- The planning, implementation and maintaining of the projects realized within the scope of the eDTr Project require qualified and experienced personnel in the field of IT. There is not any sound and systematic study aimed to determine how many ICT personnel the public work force is comprised of and the shortage of manpower in this field. The studies carried out by the Directorate of State Personnel (DPB) on the establishment of a public personnel information system which shall be beneficial in preparing an inventory of the public IT personnel and increasing the computer skills of the public personnel have not been finalized as of May, 2006. On the other hand, adequate progress can not be achieved within the planned time period in the projects conducted by the Ministry of Education (MEB) with a view to educating the human resource necessary for the information society.
- *The existing and needed human resource inventory required in the public and private sector should be prepared and the IT personnel should be trained so as to increase their knowledge in this field. In order to ensure the sustainability of the e-Government, in the areas such as software which require continuous support and resource; the*

*precautionary measures should be taken which shall decrease the dependency and ensure that our human resource is trained.*

### **e-Inclusion**

- Apart from the transfer of the public services to electronic environment, it is important to increase the demand to these services and the rate of usage within the framework of a specific plan. In our country the rate of IT ownership and internet access is significantly low. Moreover this rate decreases more in the low income groups and displays critical differences according to the geographical regions. Besides, the high cost of the services for internet access is another factor that adversely affects the rate of demand to e-services. Several studies that are aimed to make the IT usage widespread have been carried out in our country; however, adequate progress in the IT usage and the demand to e-Government services can not be achieved since these studies are not being conducted within the framework of a specific strategy.
- *In order to make the services to be transferred to the electronic environment widespread;*
  - ✓ *The practice of the citizens in using the e-Government services should be encouraged by giving priority to the services which are easy to use and enable time and cost saving.*
  - ✓ *Measures should be taken so as to create opportunity to deliver internet service to all socio-economic parts of the society with reasonable prices.*
  - ✓ *Internet access centers which are open to public free of charge should be established in order to ensure that especially the ones living in rural areas and/or socio-economically weak individuals can have access to e-Government services.*
  - ✓ *Access to internet should be made widespread fairly and within the framework of a plan in line with the principles of universal service.*

### **e-Portal**

- With a view to decreasing the red tape, time losses, mistakes and high costs that are created by the traditional delivery of the public services especially the ones that can only be completed by applying to more than one entity (*combined services*); the establishment of a developed public portal enabling access to central and categorized information from one single point, in other words, e-Portal is put on the agenda with the eDTr Project in our country, as in many other countries.
- Within the scope of the project, an e-Portal shall be established and the works shall be carried out by DPT. In the beginning, DPT proposed that the implementation project

would be given out by contract at the end of the year 2005 and implemented between the years 2006-2007. This schedule proposed by DPT for the establishment of the e-portal was found to be late by eDTr executive board and despite the drawbacks, this duty and responsibility was assigned to Turk Telecom (TTAŞ) which was under privatization process. The establishment of the portal was given out by contract in November, 2005. However, with the privatization of the Turk Telecom, the studies towards the establishment of e-Portal were interrupted. For this reason the duty and responsibility to establish and manage e-Portal was taken from Turk Telecom and entrusted to the Ministry of Transportation and Satellite Communication and Cable TV Operation AS (TÜRKSAT) affiliated to it. These changes made during the designation of the responsible entities for the establishment of the portal shall lead to delays in the transfer of the e-Government services to the electronic environment and interactive delivery of the services.

- An arrangement has not been made between Turk Telecom and TÜRKSAT on the transfer conditions of the e-Portal project. Thus, as of June 2006, the issues such as at what conditions the contract signed with the contracting firm of the e-Portal project and the other fixed systems shall be transferred, how the project shall be financed and what shall be the legal basis of all these transfer procedures have not been clarified. At the fourth year of the eDTr Project, a correct designation can not be made even on the issue of which entity shall establish the e-Portal and how.
- *In order to establish a flexible, secure, sustainable e-Portal whose architecture is well designed;*
  - ✓ *An organizational structure should be constructed which is comprised of cadres competent and experienced in IT, system integration, e-Government architecture, public business processes.*
  - ✓ *Its coordination with the eDTr Project and strategic plan should be ensured in the best way.*
  - ✓ *The operations for the establishment of the portal should be carefully controlled.*
  - ✓ *In order to ensure the security of the personal and public information, necessary legal and technical measures should be taken.*

### **Electronic Signature (e-Signature)**

- “Electronic Signature” (e-Signature) is one of the instruments which are important in terms of information security in an electronic environment. In the transactions made in electronic environment, it is possible to secure the indispensable elements of information security such as proof of identity, integrity, privacy and undeniability by means of e-

signature technologies. In our country on the date of July, 2004; the Law on e-Signature (dated on January 15, 2004 and No: 5070) was put into effect and the opportunity to take an e-signature certificate individually from a certificate service provider eligible in accordance with the conditions specified in this Law was introduced to the public entities and organizations. Later with the circular dated September, 2004 of the Prime Ministry; it was decided that the electronic certificate need of the public entities and organizations would be met by one single center and this duty of establishing the Public Certification Center (KSM) was assigned to TÜBİTAK-National Research Institute of Electronics and Cryptology (UEKAE). Undersecretariat of the State Planning Organization was given the responsibility of the coordination of the works to be carried out in the public entities and organizations in order to harmonize them with this new structure.

- The field of e-Signature has not been adequately defined and regulated by laws. The arrangements made in this field were limited with the formation of a secure e-signature and specification of some technical criteria for the confirmation instruments. This situation shall create some risks that may give rise to the transformation of these investment made in this sector into lost investments. These risks may adversely affect the integration and interoperability of e-signature and e-implementation and cause this investment to become lost investment.
- As of the end of the year 2005, there is not much progress in the transformation of the public entities to the e-signature. Besides, no study have been conducted on the topics such as the readiness of the entities, until which date the entities are required to pass to e-signature, with which priorities and by using which technologies; risky fields, disaster scenarios, proposed solutions, cost-benefit analysis and feasibility studies, the duty and responsibilities of the entities in the operations, methods and resources of finance.
- *In order to establish an e-signature system of which interoperability and security are ensured; to make its usage widespread and prevent the repetitions in this field of investment;*
  - ✓ *The existing infrastructure and the business procedures should be reviewed and made ready for the usage of e-signature.*
  - ✓ *A comprehensive and coordinated transition plan should be prepared so as to determine which entities start to use e-signature at what date and the cost savings and benefits obtained through the implementation of e-signature should be determined.*
  - ✓ *In the investments to be made in the e-Government services; the e-signature necessities should be taken into account as well.*

### ***Electronic Document Management System (EBYS)***

- The e-Government services require the compatible operation of the electronic record systems with each other which shall be set up at the entities. With the e-signature legislation and the publication of the regulation enabling official exchange of electronic letters; from now on there is no legal barrier for electronic correspondence. Thus, this makes it necessary to determine the principles and procedures which the electronic information and document shall be subject to in terms of record, transmission, sharing, destruction and security. In the first action plan of the eDTr Project; an arrangement was not made concerning the electronic document management system which should have been established; before the e-signature became legally valid. This deficiency in the Short-Term Action Plan (KDEP) was recognized later and Prime Ministry General Directorate of State Archives (DAGM) was held responsible for the pilot study in September, 2004. In August, 2005 DAGM prepared the draft "Reference Model for the Criteria of Electronic Document Management System" and publicized it with a view to taking the public opinion. However; the abovementioned study that should have been finalized at the end of the year 2005 was finalized and put into practice as of June, 2006.
- *In order to make the electronic correspondence widespread in the public sector;*
  - ✓ *The Reference Model for the Criteria of Electronic Document Management System should be regulated in accordance with the conditions of our country by considering its consistency with e-signature and be finalized as soon as possible; the software standards that must be applied should be established and put into practice.*
  - ✓ *Necessary precautionary measures should be taken in order to obtain the implementation software on EBYS which ensures unity and consistency in the implementation and the entities need in order to prevent wasteful expenditure and repeated investments.*

### **THE COSTS OF eDTr PROJECT AND ICT INVESTMENT PROJECTS**

- Like all other big projects about social transformation; e-Transformation projects are also the projects that require long time and resource for their implementation. Since it makes the transfer of the new technologies necessary, costs regarding the installation of these projects are rather high. In the cases when an appropriate and interoperable structure can not be established or the structure already established can not be maintained; there will be a high risk for the project to be unsuccessful and the resources shall be wasted. As a matter of fact, the practices in the world indicate that 15% of the e-Transformation



projects being implemented in the developing countries is successful; 50% is partly unsuccessful and the remaining 35% is unsuccessful. The low rate of success in the world increases the importance of the correct assessments of the needs and resource planning in accordance with the necessities for the success and sustainability of these projects which requires high costs.

### ***Resource Planning in the eDTr Project***

- eDTr Project is built on a structure which is based on the investments such as data processing centers, management information centers and internet web sites established before 2003. In our country, there has not been any satisfactory study conducted so far for the preparation of an IT inventory. Since an inventory and cost study is not conducted; it is not possible to figure out the amounts of expenses for these projects. The eDTr Project was started to be implemented without preparing a sufficient IT inventory and strategic plan. Since the beginning of the project till today, a realistic resource and needs planning has not been prepared. In the 2003 Short-Term Action Plan (KDEP), only for five actions the amount of the financing was calculated without displaying the resource and in the Action plan of 2005, there is not any information specified about the cost estimations and the resources of finance. This uncertainty regarding the costs was also continued in the strategic plan proposal of the consultancy firm and in the draft strategic plan. Thus a realistic cost estimation could not be put forward.
- In the very big transformation projects such as eDTr Project; making connection between the project and the Investment Program with which all the investment of the country can be followed, has great importance as much as making sound cost estimations. However, as of the end of 2005, a connection could not be established between the Investment Program, budget and eDTr Project action plans. For example; the most fundamental projects of the e-Transformation such as the establishment of the infrastructure of e-Portal and e-signature, are not correlated both with the Investment Program and action plans and the required amount of finance and resources are not specified.
- *In order to make a realistic needs and resources planning of the eDTr Project;*
  - ✓ *A strategic plan based on realistic cost estimations should be prepared.*
  - ✓ *The projects to be implemented within the scope of the strategic plan should be determined via considering the analysis such as cost-benefit analysis.*
  - ✓ *Among the sub-projects and Investment Program specified in accordance with the information society strategic plan and the budget and final account laws; a system that ensures the monitoring of the project on the basis of time/cost should be established.*

### ***The Cost of e-Portal***

- In the establishment of e-Portal, the costs are comprised of the items such as software, hardware, feasibility, integration and training. The most important cost item is the cost of software and hardware with the percentage of 62%, which are required continuous renewal and update. Thus, constant financing is needed during the delivery of the services. The arrangement regarding the designation of which entity is to carry out the project for the establishment of an e-Portal was amended twice within a period of approximately 15 months. The amendments made in this project which has so much technical features and few qualified man power shall lead to repeated and sunk costs as well as labour and time losses.
- At the preliminary stage, 19 public services is planned to be delivered in the e-Portal. The integration of 120 public services that are planned to be delivered later shall create a serious need of finance. When the studies conducted so far are scrutinized; it is observed that the activities about e-Portal have not been successfully and timely implemented. Besides, not much progress have been attained so far in the efforts to increase the capacities of the public entities to deliver interactive services on their own web sites and the rate of usage of these web sites by the citizens and this indicates that there is a high risk for these investments to be idle.
- *The decisions and implementations regarding the e-Portal should be reviewed and measures should be taken for the cost-effective implementation of the project so as to prevent serious losses in the labour force, software, hardware and financial resources and to ensure its sustainability. Apart from this, the public entities should be ensured to reach a specified level of perfection and security in the delivery of electronic services in our country.*

### ***The Cost of the e-Signature Infrastructure***

- In June, 2004; the National Research Institute of Electronic and Cryptology (UEKAE) which is affiliated to Turkey Scientific and Technological Research Institute (TÜBİTAK) was assigned the duty of establishing the Public Certification Center (KSM). However; like most of the actions carried out within the context of the eDTr Project, a resource allocation was not made both in the budget and in the plan for the establishment of the Public Certification Center (KSM). TÜBİTAK and UEKAE have been covering the expenditures from their own budgets to recollect it later.

- The activities that should be carried out are not limited with the establishment of the KSM. At the same time; e-Signature should be established in the public entities. The costs of e-Signature can be classified under three titles. These are as follows:

- ✓ The costs related to the implementation of the e-Signature.
- ✓ The costs required for the harmonization of the e-Signature with the existing software
- ✓ Costs of certificate and card.

Apart from these costs, the public entities should conduct studies in order to establish the systems such as electronic document management and electronic archive and to ensure the information security in the transition to e-signature. These are all different cost items that require financing the amounts of which shouldn't be underestimated and no study has been carried out so far concerning the cost of these items. Several public entities started to deliver e-Services before the e-Signature arrangements. Most part of the e-Services were designed without considering the usage of e-Signature. Thus this shall create problems in the implementation of the e-Signature and/or interoperability and the solutions to each of these problems shall bring out additional costs.

- *In order to ensure the most effective utilization from the limited resources:*
  - ✓ *The priorities in the field of e-Signature should be designated in the public sector by considering the cost/benefits of the institutional projects.*
  - ✓ *How the financing is obtained and the alternative financing opportunities should be evaluated by calculating the total costs resulted from the transformation of the public entities to e-Signature.*
  - ✓ *A system should be developed in order to secure the procurement and production of new implementing softwares which are in compliance with the standards and e-Signature.*
  - ✓ *Measures should be taken to harmonize the existing implementations about e-Services with e-signature in the most economic way.*
  - ✓ *By considering the incompetency of the public officers in terms of information and experience; the legal framework of these fields and the rights and obligations of the software suppliers should be formed so as not to cause any waste of resources in short time.*

### ***The costs in the field of the Security of Information Technology Systems***

- Necessary measures should be taken so as to ensure that the risk analysis are conducted with a view to determining the security levels of the entities and organizations which have responsibility for the services to be delivered in the e-Portal and/or use e-Signature and to ensure the appropriate level of security. "Report on Security and Risk Analysis and Security Design" which is stated in the Short-Term Action Plan (KDEP) of

2003-2004 and prepared for the Radio and Television Supreme Council (RTÜK) as a pilot study is the only study until the end of 2005. Nearly all the public entities which are making transactions in the electronic environment are obliged to make risk analysis. While the costs items of the eDTr Project were designated; a study concerning the cost of the risk analysis of the public entities was not made as in the case of other actions.

- *Due to its importance of ensuring the information security during the period of e-Transformation; the risk analysis should be taken into account in the plans regarding e-Portal and e-signature and in the cost estimations.*

### ***Costs for the Maintenance of the Projects, Alternative Resources of Finance and Repeated Costs***

- Apart from the costs for the implementation of the subprojects carried out within the context of the eDTr Project; it is seen that they require significant costs to be sustained. To calculate the costs for the sustainability of the projects, a study titled “Determining the Financing Model for e-Government Applications” is planned in 2003-2004 Short-term Action Plan (KDEP) of eDTr Project. In KDEP Evaluation Reports published every three months; although it is stated that the studies in this regard are ongoing; this action has not been finalized; moreover, it was also excluded in the Action Plan (EP) of 2005. A study concerning the amount of resource needed to ensure the sustainability of the ongoing projects and how and from where these resources can be obtained has not been conducted and a financing model is not established. If the costs for the sustainability of the projects and how the financing is obtained were not determined; the Applications of e-Government would be under risk of becoming non-functional and the existing investments would be wasted. A financing plan is not prepared in the studies conducted within the framework of eDTr Project. Moreover; the alternative financing resources are not considered.
- *In order to ensure the sustainability of the projects in the field of the e-Government and that the necessary investments are made;*
  - ✓ *Resource planning must be performed and future financing models must be developed.*
  - ✓ *By considering the high cost of the e-transformation projects; alternative financing resources must be taken into account and a system which shall ensure the utilization of the equipment surpassing the actual need should be established.*
- In order to abstain from repetitions in the projects and investments; it is important to build up a sound IT inventory. Although it is stipulated in the Short-Term Action Plan of 2003-2004 that the IT inventory would be built up; the studies conducted so far are not

adequate. Since which entities shall benefit from the projects and how; the elements such as technology, preference of software, project capacity affect other projects and entities have not yet been determined; it can not be possible to prevent the unnecessary and repetitive investments in the studies carried out by different entities. Although the eDTr Project is in its fourth year; investment and financing needs can not be determined correctly and realistically, since the Strategic Plan and IT inventory have not been prepared.

- *With a view to preventing the repetitive e-Government investments; the IT inventory of our country should be prepared and through evaluating the technical infrastructure of the entities, the needs should be identified and apart from these, the repetitive investments should be prevented through setting how other entities shall benefit from this infrastructure.*

#### ***The Harmonization of the IT investments within the Investment Program with the eDTr Project***

- The IT Projects within the Investment Program and the data of costs related to these can not be laid down completely and correctly due to the ineffectiveness of the management information system of DPT and non-existence of descriptive labelling on all the IT Projects. According to the data stated in the lists of IT Projects prepared by the experts from Directorate of Information Society (DPT-BTDB) through scanning the Investment Program; annually, there are average 200 IT projects in the Investment Programs of 2003-2005. So far, 11 of these projects have been sent to (DPT-BTDB) in order to evaluate their competence with the eDTr Project. Consequently, %7 of the IT Projects only in the year 2005 and which are included to Investment Program that year have been evaluated according to their competence with the principles put forward within the eDTr Project and “the Guide on the Preparation for Public Information and Communication Technology Project”. This is a significant progress; despite the fact that the DPT’s efforts in planning the investments that are to be carried out within the framework of eDTr Project in general and the IT investments in particular are delayed. However; it is important to implement the guide for the planning of IT investments as much as preparing it. Despite the arrangements made in the “Guide for the Preparation of Investment Program” and the Guide on the Preparation of Public Information and Communication Technology Project; a connection between the IT Projects within the Investment Program and the eDTr Project can not be established. The number of the IT projects and their allocation rates within the public investments can not be properly determined.
- *In order to prevent the repetitive and unnecessary investments in the field of IT and to use the public resources more efficiently;*

- ✓ *Measures should be taken to increase the effectiveness of the DPT-BTDB with respect to its evaluation of the IT projects which shall be incorporated in Investment Program.*
- ✓ *Detailed criteria are set in the Guide for the Preparation of IT Projects. However it is not sufficient to define these analysis and assessment criteria. These must be implemented and monitored.*
- ✓ *While setting the new IT projects to be incorporated to Investment Program; a realistic cost and time estimations should be made in the light of past determinations regarding IT and through associating them with the action plans and they should be ensured to be finalized in due time and with the cost planned previously.*

### ***Monitoring of the Physical and Financial Implementation of the IT Projects***

- The implementation of the Investment Program is followed-up and assessed by DPT through considering the reports and information gathered from the implementing entities. Although DPT's management information system is not adequate; the costs of the investments are being monitored; however there is no mechanism for the monitoring of the implementation of the projects. Also in the evaluation reports prepared by DPT regarding the eDTr Project; there is not any information concerning the physical and financial implementation of the IT projects. In the study concerning the Results of the Implementation of Investment Program made by DPT-BTDB, the expenses are given cumulatively on the basis of project. Thus, the amount of the expenditure regarding one or all the IT projects is not shown in any year; since the total amount of all expenditures as of the year in which the project is incorporated to Investment Program is stated in ongoing projects. Consequently; the physical and financial realization of the IT projects within the Investment Program can not be monitored fully and comparatively. Besides; the expenditures of the IT investments is not monitored in coordination with the budget and the overcost of project can not be set.
- *A mechanism should be established which shall ensure the complete, comparative monitoring of the physical and financial realization of the IT projects within the Investment Program in coordination with the budget and which shall support the decision-makers to take corrective and timely decisions.*

***TCA's Performance Audit Reports:***

- The Road Maintenance and Betterment Activities of the General Directorate of Highways. (Pilot Project)
- Acquisition, Storage, Display, Recording and Inventory of Collection Objects of Turkish National Museum. (Pilot Project)
- The Activities in the Aftermath of Earthquake in Marmara Region in 1999.
- How well is İstanbul Getting Prepared for the Earthquake?
- Preventing and Dealing with Pollution from Ships.
- The Management of Medicine& Medical Equipment in the Hospitals.
- Preserving the Historical Monuments and Objects under the Responsibility of General Directory of Foundations.
- The Activities for Protecting National Forests.
- The Planning and Control of the Coastal Utilization.
- The Activities Carried Out within the Framework of e-Transformation Turkey Project.
- The Public Web-sites During a Period of Transmission to e-Government.

***Performance Audit Projects Underway in 2006:***

- Management of Hospital-acquired Infection
- The Traffic Safety Activities on the Highway.