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Foreword

This report is one in a series of country reviews undertaken by the OECD to analyse the successes and challenges of e-government in a national context, and to make proposals for action that can help countries improve their e-government efforts. By placing e-government in the context of national public management reform and good governance initiatives, these reviews help countries identify how e-government can best support overall government objectives and performance.

With financing from Turkey's government, the OECD E-Government Project has conducted this country study of e-government to assess how Turkey's e-government strategies and solutions contribute, and could contribute in the future, to good governance objectives in the information age.

The report was completed in September 2006. It draws on a survey of Turkish central and local government organisations administered in July 2005, extensive review of information about public management and e-government in Turkey, and a series of interviews with Turkish officials and other commentators held in October and November 2005. The report was drafted with the participation of peer reviewers from the governments of South Korea and Mexico, and the World Bank. These e-government experts played an invaluable role by participating in interviews and contributing to the drafting of the report.

The analytical framework for the report is based on the OECD synthesis reports The E-Government Imperative *(2003) and* E-Government for Better Government *(2005). The review was carried out under the auspices of the OECD Network of Senior E-Government Officials, which considered its main findings as part of the work programme of the Public Governance and Territorial Development Directorate (GOV).*

Under the leadership of Edwin Lau and Christian Vergez, the review was managed by Ernst Nilsson, who was assisted by Bilal Ozden and Ahmet Korkmaz. Special acknowledgements are due to the three peer reviewers: Chang Kil Lee (South Korea), Sergio Alvarez (Mexico), and Bruno Lanvin (the World Bank); and to Melissa Peerless who helped to review and edit the report.

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Assessments and Proposals for Action

Main findings

E-government in Turkey has developed in distinct phases. During the 1970s and 1980s, the focus was mainly on automating back-office functions such as processing of the census and taxes. Then, during the 1990s there was a drive to define the Information Society and the knowledge-based economy. A third phase (2000-2002) consisted of planning how to implement e-government. The current phase of implementing e-government began in November 2002 with the election of a reform government with economic and political stability, and public sector modernisation on its agenda. The challenge that lies ahead for Turkey is how to provide infrastructure and standard methodologies in order to support the generalisation of e-government across central government and into local governments.

- ***Turkey is making strong progress in implementing e-government.*** Turkey has achieved quick wins in the e-government arena by prioritising projects that make government more efficient, effective, transparent and accountable. Turkey has focused on:
  - Bringing online high-volume/high-value transactions – such as e-procurement, making social security and health payments, and collecting customs, tax and social security payments – instead of trying to create as many e-services as possible.
  - Establishing e-government infrastructure, such as building ICT networks for tax offices, Ministry of Finance accounting offices, the national judiciary system, and the national police system.

  The establishment of citizen and legal person identification (ID) projects has also been an important enabler for e-government development, as these provide every person and firm with a unique ID number that can be used to share ID information with authorised public agencies.
- ***Ensuring continued returns on investment will require more use of business cases.*** As e-government projects are generalised beyond high-volume/high-value projects, more rigorous efforts are needed to maintain a positive rate of return. Like many OECD countries, Turkey suffers from a lack of information on investment expenditures and returns, and a lack of project

and change management skills to ensure that promised costs and benefits are realised.

To meet these challenges, Turkey will need to consider implementing cost accounting systems, introducing standard cost/benefit analysis for project appraisal, using evaluations to learn from completed investments, measuring user benefits, and developing a government-wide enterprise architecture to ensure that investments do not duplicate existing applications and that different applications will be interoperable.

- ***Leadership of public sector modernisation needs to be broadened and deepened.*** Turkey's rapid implementation of e-government initiatives is in large part a result of high-level political leadership that has established a vision, short-term action plans and a strategic plan setting out quantitative goals for 2010. The e-Transformation Turkey Executive Board's leadership on future e-government projects needs to be complemented by oversight of e-government results to ensure that promised benefits and changes are proceeding as planned. In addition, line ministries need to assume increased leadership in terms of planning and implementing e-government initiatives within their sectors. Because Turkey is devolving resources and responsibilities from central government to local government, the 3 225 municipalities will be developing e-services to serve their own populations. To avoid municipalities developing applications in isolation, strong local-level leadership and collaboration is needed to enable joint development, interoperability and shared services from the start.
- ***Fostering a Turkish Information Society requires additional initiatives.*** Development of the Information Society in Turkey remains uneven. Turkish businesses have a high level of Internet use, motivated to a large degree by the desire to use government e-services. However, Turkey has markedly lower individual Internet use (14%) than the EU25 average (47%). Significant differences also exist within Turkey: between urban and rural areas, men and women, and young people and individuals aged 55-74.

  Turkey has demonstrated that some important e-government advances can be made despite the relatively low Internet access rates. For example, with the help of intermediaries such as accountants, Turkey has achieved very good take-up of electronic tax returns. For the 2005 tax year, 69% of firms and 55% of citizens submitted electronic income tax declarations – up from 53% and 22%, respectively, for 2004. In addition, by using banks as intermediaries for paying taxes, the cost per transaction for collecting taxes has dropped from USD 2 to USD 0.35.

  However, further development of the Information Society will provide economic and social benefits for Turkey as well as improve e-government take-up. Turkey has launched an ambitious initiative teaching computer

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and information literacy in primary and secondary schools, but more is needed. Turkey should provide means to increase computer and information literacy for people who are not in school, perhaps through online distance learning programmes and encouraging Internet cafes to provide training in using the Internet. The government should also find means to further motivate citizens to use the Internet by demonstrating and informing citizens about the benefits and advantages of accessing information and government services online.

Turkey faces a strategic opportunity with regard to broadband implementation strategy. The country can either let the market for Internet use determine the pace of development or promote a more rapid development of broadband infrastructure, as has been done in Korea and Sweden. Increased use of broadband benefits the public sector by increasing capability to deliver more user-centred services and speeding take-up of e-government services. Broadband availability can also provide an important platform for sectoral co-operation and for meeting the upcoming challenge of expanding local e-government. Additionally, increased availability will allow faster development of e-commerce and serve as an important factor in attracting foreign domestic investment in the Turkish economy.

Challenges to e-government

The new government's modernisation agenda considers e-government as a major tool for change. E-government initiatives have given the modernisation agenda momentum, but some basic challenges need to be met in order to continue progress in e-government:

- **A comprehensive regulatory approach to electronic data and transactions is needed.** Turkey's public sector has a tradition of passing legislation rather than using secondary regulations to interpret basic legislation. The legislative approach to ensuring proper functioning, equity and fairness in the public sector is slower and more difficult to change – and thereby less responsive – than using a framework of secondary regulations to guide e-government implementation in a context of technological and process change.
- **Investments in e-government need to provide an appropriate return.** The government has prioritised funding high-volume/high-value central government e-services (especially services that collect revenue or disburse benefits), central key databases for citizen and business information, and sector information networks for justice, taxes, health and the school system. But the lack of cost and benefit data and consistent measurement

of realised benefit/cost ratios will make it more difficult to demonstrate returns as e-government is diffused to a broader set of e-services.

- **Improving Internet access and broadband development should be a priority.** Compared with the EU, Turkey faces significant challenges in terms of individual Internet usage, at 14% in Turkey compared with 47% in the EU25. Turkey has significant divides between urban (19%) and rural areas (6%), and between men (19%) and women (9%). Turkey's basic communications infrastructure is the telephone line network, reaching almost all 15 million households and providing potential access to the Internet via dial-up modem and DSL. However, this has not resulted in a high number of households with Internet access (8.66%). This is in part because Internet access costs – measured as Internet subscription cost as share of average monthly income – are high.

Key assessments

- While most of the regulatory framework is in place, electronic data and transactions have required revisions to laws designed for paper-based signatures and transactions, and new measures to ensure data security and privacy.
- The State Planning Organisation (SPO), a central co-ordinating agency attached to the Prime Minister's Office, reviews all ICT investments. Business cases have recently become mandatory for large projects; however, they are not yet commonly used across agencies. Enterprise architecture describes the structure of an organisation's processes, information systems, personnel and organisational sub-units, with a view to aligning them with the organisation's core goals and strategic direction. New investments need to be guided by an enterprise architecture that can point to duplication and overlap with previous investments and the possibility of sharing applications, data and even services.
- Initiatives to reduce the digital divide in Turkey include expanding the number of computers and computer classes in primary and secondary schools, and providing increased access to the Internet through community use of school computers. Turkey's 12 000 Internet cafes have allowed a large number of individuals to access the Internet even if they do not own a computer. Some Internet cafes provide training and assistance. Other efforts to get citizens on line are directed at improving motivation, such as increasing content in Turkish and providing more high-value e-services.
- Internet use will likely increase significantly if the cost of accessing the Internet can be reduced. As part of the need to augment the tax base during the economic crises of 2000-2001, Turkey raised taxes on telecommunication

services. While these measures have increased tax revenues, they may be having a negative effect on e-services take-up. Increased competition in providing Internet services and new technologies also holds promise of increased access and decreased costs. Experiences in many OECD countries show that governments should leave the choice of technology and type of infrastructure expansion as much as possible to market forces, while promoting a level playing field for different technologies. Turkey is implementing such a policy through the privatisation of its incumbent telecom operator (55% was sold to the private sector in August 2005) and by implementing rules to provide competitors access to telephone lines.

- E-government can also affect infrastructure profitability by increasing Internet traffic through demand and supply activities. When government uses the Internet as a major delivery channel it increases demand on the Internet network. By encouraging businesses and citizens to pay taxes using Internet banks, the government is stimulating development of this capability. In supplying information and e-services, the government provides valuable online content that might encourage citizens and businesses to become Internet users.

Main proposals for action

- Turkey should consider developing a common regulatory approach for electronic transactions, e-authentication, and personal data protection – and complement this with a "soft regulatory framework". That is, agreements and understandings on standards and guidelines among industry, citizens and businesses that can evolve over time as more experiences are gathered on challenges and solutions for electronic transactions and data. Turkey should consider addressing the need for a comprehensive personal data protection law and ensure that the planned Personal Data Protection Institution is created.
- The government should consider developing performance information on ICT systems that will allow for analysis of the return on ICT investments. Turkey should also accelerate its development of an enterprise architecture for the public sector, which could provide a strong tool for guiding ICT investments.
- Stronger efforts to reduce the digital divide are needed. The Telecommunications Authority should continue to actively stimulate competition in the telecommunications sector to promote faster and more affordable Internet access in line with EU initiatives in this area. The government should consider creating a legal incentive to increase the number of Internet cafes that provide training and assistance. Turkey's

experience in developing distance learning programmes at all levels of education could be used to increase computer and information literacy. This would complement the more traditional education and training provided by schools and would allow anyone with access to the Internet to obtain training.

- Waiting for household demand for high-speed Internet access to encourage the development of broadband will take years, and the public sector should consider taking a more pronounced role in stimulating the development of broadband infrastructure and using this capacity for modernising the public sector.

E-government leadership

One of the reasons for the rapid development of e-government in Turkey is its strong support within the high-level political leadership. E-government leadership is provided by the e-Transformation Turkey Executive Board, chaired by the Deputy Prime Minister. The Board has formulated an e-government vision and a medium-term strategic plan specifying objectives for 2010, including quantitative targets for outputs and outcomes. The Executive Board is aided by the State Planning Organisation, which is responsible for scrutinising all investments. Together, these agencies have been able to focus e-government development on high-value/high-volume initiatives. However, as e-government applications increase, the central leadership needs to be complemented by leadership in the line ministries and in local government.

Key assessments

- The e-Transformation Turkey Executive Board does not currently provide strong oversight of e-government progress. This could result in the development of strategies and policies at the central and local government levels that are not consistently informed by overall progress in implementing e-government.
- The capacity of line ministries to develop and implement e-government within their respective sectors and in their subordinate agencies needs to be strengthened. This includes building capacity to allow line ministries to identify projects that will have high payoff (*i.e.* integrating front and back offices, building shared data and shared services, and being more customer-focused), ensuring that projects follow an iterative incremental ICT development plan (instead of the traditional sequential approach), and ensuring that projects deliver benefits in terms of reduced costs and increased benefits.

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- As the 3 225 local governments face the challenge of developing similar e-government applications, databases and services, a strong case can be made for co-operating rather than developing solutions in isolation.

Main proposals for action

- To obtain a whole-of-government view of e-government implementation progress, the e-Transformation Turkey Executive Board should consider instituting oversight of major e-government projects and progress in order to provide more e-services, reduce the digital divide, and make government more responsive to citizens and businesses.
- Line ministries need to assign high-level responsibility for developing e-government initiatives, as well as ensuring that they provide an adequate return on investment. The new strategic planning units in the line ministries could provide valuable input to sector-oriented e-government development.
- Instead of allowing local governments to develop e-government applications in a potentially duplicative and isolated manner, the central government should encourage local governments to "develop applications once – use many times" by assisting in promulgating standards and guidelines, and encouraging local government to collaborate on developing e-services and sharing databases and services. The central government might also consider creating an incentive – like the local e-government fund provided by the UK central government – to finance the development of best practices that might be used by other local governments and to promote the sharing and joint development of e-government solutions.

Implementation of e-government

Implementation of e-government initiatives is as important as the leadership and planning functions. Strong management and project oversight are essential to address the risk of failure of large, multi-year transformational e-government initiatives. In an initial phase of e-government development, control of implementation can be maintained by ensuring that ICT investments are consistent with a strategic vision and using cost-benefit analysis to select ICT portfolios. However, when the number of installed applications grows and initiatives embrace more integrated and transformative applications, additional management instruments for prioritising spending and managing implementation may be necessary to ensure higher rates of return on ICT investments.

Key assessments

- **Successful oversight and management of e-government projects require timely information.** Data on costs, outputs, customer satisfaction and other benefits to users and government is largely lacking in Turkey.
- **Technical guidelines lack uniformity.** An OECD survey showed that – to a large extent – guidance for standards (*e.g.* XML and enterprise architecture), privacy, security, electronic networks, e-procurement and e-authentication came from inside each agency. This may hinder interoperability and the application of uniform approaches to privacy, security and data sharing.
- **A critical success factor in implementing e-transformation projects is having people who can both manage ICT projects and manage change.** A study by the Middle East Technical University documented that programme managers viewed ICT as an automation tool rather than a transformation instrument. Another study of public administration courses documented that only rudimentary ICT skills were taught.
- **Having an ICT department in each agency might not be the best way to ensure capacity, competency and flexibility.** Many Turkish government agencies have small ICT departments that have difficulty developing ICT applications. One development strategy is to grow these departments over time. Another strategy is to consolidate small ICT departments and outsource some functions, thereby creating units with enough resources to develop and maintain advanced skills in privacy, security, networks and procurement.

Main proposals for action

- Ministries should develop e-government project information systems to track project costs and accomplishments, as well as benefits and costs to users. Turkey should consider requiring a benefits realisation plan for large ICT projects, improving oversight of project implementation, and mandating post-implementation evaluation.
- Ministries, agencies and local governments need to collaborate on e-government policies, standards, and privacy and security safeguards in a uniform manner.
- The government should take steps to increase the project management, change management, business process engineering and ICT skills of managers in the public sector to ensure that the necessary professional skills are available for e-government implementation.

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- Turkey might consider consolidating ICT departments or even creating one centralised ICT capacity in each ministry. This would facilitate attracting and maintaining key competencies in building an enterprise architecture, business process re-engineering, procurement, and managing consultants. In addition, instead of developing and running applications in-house, the government could open some implementation to competitive outsourcing which would also stimulate development of the private-sector ICT industry, one of Turkey's long-term goals.

Collaboration frameworks

A major e-government challenge is achieving orders of magnitude increases in public sector efficiency and effectiveness. This can be achieved in part by replacing the traditional environment of government characterised by little co-operation among organisations with "joined-up government" where agencies share data, portals, back-office processes and even organisations. The OECD survey showed that only 10-25% of the respondents from central and municipal government say they are collaborating with other public sector organisations. In central government, the major area of collaboration is in the definition of standards and delivery of information; in municipal government, collaboration takes place on research and development, and IT procurement.

Key assessments

- Turkey has implemented many collaborative programmes in data sharing, information networks, shared services and sector initiatives, and has recognised the benefits that these initiatives can provide. It has established or is in the process of establishing many of the essential building blocks (*e.g.* registry of persons and legal entities) and networks (*e.g.* electronic exchange of information to facilitate the movement of goods across borders, the justice sector network for exchanging information, and the network serving the Ministry of Finance's 1 660 auditing branches and 39 500 budget offices). It now needs to continue to develop networks such as the Health Information Network, and to determine how to provide incentives for organisations to participate in developing such services.
- Turkey is addressing data sharing and developing information networks through many major projects. SPO published the Interoperability Framework Guidelines version 1.0 in August 2005. This is an important step in terms of defining data structures and providing data dictionaries that identify where in government specific information can be found. Turkey, however, lacks a public sector enterprise architecture. This can provide a

powerful tool for standardising data, and identifying common business processes and opportunities for shared services.

- Turkey is devolving resources and responsibilities from central to local government. The 16 largest municipalities (including Istanbul, Ankara, Izmir and Bursa) have the resources to develop their own applications. However, medium and small municipalities often lack the resources and specialised skills to implement ICT-enabled processes. Collaboration in developing databases, e-services and – in some instances – shared services would be a cost-effective strategy for Turkey's over 3 000 municipalities.

Main proposals for action

- The government should consider further developing the similar business processes of service clusters such as the Social Insurance Organisation, the Government Employees Retirement Fund, and the Social Insurance Agency of Merchants, Artisans and Self-Employed towards shared services.
- Turkey should continue to develop data and technical standards to promote data exchange and interoperability. However, it is important for the public sector to co-operate with the private sector to ensure that data standards will be compatible with standards developed in the private sector. Interoperability can mean simply enabling the exchange of data, but can also be part of an effort to standardise and harmonize data definitions, achieving interoperability across government and with the EU.
- Collaboration could also be facilitated by a forum or organisation for each level of government where e-government challenges, applications, and best practices can be discussed.

Outputs and outcomes

The EU has defined a basic set of 20 public services (EU20 services) in order to benchmark members' progress in putting them on line, as well as a metric which measures the share of these 12 citizen and 8 business services that are fully transactional (*i.e.* user can submit forms and make payments over the Internet). A larger share of Turkey's business services are fully transactional compared with its citizen services. The share of its business services that are fully transactional is almost as large as the average for the EU28 countries (EU25 plus Norway, Iceland and Switzerland) and greater than for the EU10 countries.

Turkey's challenge now is to improve its delivery of citizen services, and to make them more user-focused, thereby promoting take-up.

Share of EU 20 services that are fully transactional (%)	Turkey	EU18	EU28	EU10
Citizen services	25	37	36	33
Business services	63	74	67	55

Source: Turkey OECD data and Cap Gemini *Online Availability of Public Services: How is Europe Progressing?* (June 2006).

Key assessments

- In July 2006, Turkey's public sector had 10 667 websites, 3 812 of which were in central government. This large number of sites makes it more difficult for users to find information and services. Turkey is currently building a national portal to help users find information and access services; it will also include several e-services.
- As case studies on social insurance and retirement systems demonstrate, there are significant benefits from increased data matching. By checking if a person is eligible for health or social services against databases with information on social security payments, Turkey has saved up to USD 3 billion annually.
- To calculate returns on investment in terms of ROI or benefit/cost ratio, evaluations need to become standard tools of benefits realisation management. Even though Turkey requires business cases *ex ante* for large ICT investments, the OECD survey indicated that user surveys of needs and satisfaction with current services is not yet a commonly used tool to ensure user-focused development.

Main proposals for action

- Turkey should continue the development of a national government portal. The challenge is designing a portal that it is useful and used, which includes interactions with users in the design phase and frequent user satisfaction surveys to ensure that the portal is user-focused.
- Turkey should continue to expand the use of shared central databases to reduce fraud, increase the tax base and provide benefits to those who are entitled to them. While the establishment of the citizen and legal person identification (ID) projects are an important step in improving programme integrity, the government should develop a common approach to implementing e-authentication to further promote the reliability of e-services.

- Because many benefits from e-services are proportional to the number of persons using them, Turkey should consider stimulating take-up using a carrot-and-stick approach by demonstrating advantages to potential users and offering more user-friendly e-services (carrot), and by requiring that some users interact electronically with government (stick). For example, the high Internet penetration rate for businesses (relative to households) in Turkey could allow the government to achieve further savings by mandating electronic interaction for tax declarations, e-procurement and certain benefits. The government should also consider providing inducements such as quicker service, faster payment of benefits and reduction in fees.
- In order to better assess the user value achieved through the use of e-services, agencies should be encouraged to carry out customer satisfaction surveys and evaluations of implemented projects. Technical assistance and guidance should be provided to ensure a standard and comparable approach across sectors.

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Évaluations et mesures proposées

Principales conclusions

L'administration électronique en Turquie a connu plusieurs phases. Pendant les années 1970 et 1980, la priorité était principalement d'automatiser les fonctions d'arrière-guichet, comme le traitement du recensement et de l'impôt. Puis, dans les années 1990, une initiative a été lancée pour définir la société de l'information et l'économie fondée sur le savoir. Une troisième phase (2000-2002) a consisté à planifier la mise en place de l'administration électronique. La phase actuelle d'introduction de l'administration électronique a débuté en novembre 2002, avec l'élection d'un gouvernement de réforme ayant pour programme la stabilité économique et politique ainsi que la modernisation dans le secteur public. L'enjeu pour la Turquie est de savoir comment mettre en place une infrastructure et des méthodologies normalisées pour permettre la généralisation de l'administration électronique dans l'ensemble de l'administration centrale et dans les administrations locales.

- ***La Turquie enregistre des progrès significatifs dans l'introduction de l'administration électronique***. La Turquie a obtenu de rapides succès dans le domaine de l'administration électronique en donnant la priorité aux projets qui rendent l'administration publique plus efficiente, efficace, transparente et responsable. Le « plan d'action à court terme » de la Turquie a privilégié :
  - La mise en ligne de transactions à grand volume/forte valeur tels que les marchés publics, le versement des prestations de sécurité sociale et d'assurance maladie ou la perception des droits de douane, impôts et cotisations sociales – plutôt que d'essayer de créer le plus grand nombre possible de services électroniques.
  - La mise en place d'une infrastructure d'administration électronique, comme la réalisation de réseaux informatiques pour les centres des impôts, les services comptables du ministère des Finances et le système de la police nationale.

La mise en place de projets d'identification des personnes physiques et morales a également été un facteur important pour le développement de l'administration électronique, car ainsi chaque personne et entreprise dispose

d'un identifiant unique pouvant être utilisé pour échanger des informations nominatives avec les organismes publics autorisés.

- ***D'importants résultats quantitatifs ont été obtenus.*** Les investissements pour l'administration électronique dans le secteur de la sécurité sociale, d'un montant de USD 2.5 millions, ont permis une réduction de la fraude (économie annuelle estimée à USD 1 milliard) et procuré des gains d'efficacité (économie annuelle estimée de USD 3 milliards). Les versements de sécurité sociale sont passés de USD 12.5 milliards en 2003 à USD 17.9 milliards, en partie du fait des contrôles améliorés rendus possibles par les initiatives d'administration électronique. La perception de l'impôt sur le revenu par l'intermédiaire des banques plutôt que des bureaux du Trésor a ramené le coût unitaire de la perception de l'impôt sur le revenu de USD 2 à USD 0.35.
- ***Le maintien de la rentabilité des investissements nécessitera un recours accru aux études de rentabilité.*** Avec la généralisation progressive des projets d'administration électronique au-delà des applications à grand volume et forte valeur, une plus grande rigueur sera nécessaire pour maintenir un taux de rentabilité positif. Comme de nombreux pays de l'OCDE, la Turquie souffre d'un manque d'information sur les dépenses et gains liés aux investissements, et d'un manque de compétence dans la gestion des projets et du changement pour faire en sorte que les coûts et avantages promis se matérialisent.

  Pour relever ces défis, la Turquie devra envisager mettre en place des systèmes de comptabilité analytique, d'introduire des analyses standard coûts/avantages pour l'évaluation des projets, d'établir des bilans pour dégager les enseignements des investissements réalisés, de mesurer les retombées pour les utilisateurs et d'élaborer une architecture fédératrice à l'échelle de toute l'administration afin que les investissements ne fassent pas double emploi avec des applications existantes et que les différentes applications soient interopérables.
- ***Le leadership de la modernisation du secteur public doit être élargie et intensifiée.*** La mise en place rapide par la Turquie d'initiatives d'administration électronique résulte pour une large part d'un leadership politique à haut niveau qui a défini une vision d'ensemble, des plans d'action à court terme et un plan stratégique fixant des objectifs quantitatifs pour 2010. Le leadership du Conseil exécutif pour le développement de la société de l'information en Turquie pour les futurs projets d'administration électronique doit être complétée par un contrôle des résultats de l'administration électronique pour faire en sorte que les avantages et changements promis se matérialisent comme prévu. Par ailleurs, les ministères fonctionnels doivent assumer une plus grande

autorité dans la planification et la mise en œuvre des initiatives d'administration électronique dans leurs secteurs de compétences. Puisque la Turquie délègue des ressources et des responsabilités de l'administration centrale aux collectivités locales, il appartiendra aux 3 225 communes de mettre en place des services électroniques pour desservir leurs propres populations. Pour éviter que les communes n'élaborent des applications de façon indépendante, un leadership fort et une collaboration étroite au niveau local sont nécessaires pour permettre dès le départ le développement conjoint, l'interopérabilité et le partage des services.

- ***L'action en faveur de la Société de l'information en Turquie nécessite des initiatives supplémentaires.*** Le développement de la Société de l'information demeure inégal en Turquie. Les entreprises turques affichent un taux élevé d'utilisation de l'Internet, qui s'explique dans une large mesure par le désir d'utiliser les services électroniques publics. Toutefois, le taux d'utilisation d'Internet par les particuliers est sensiblement plus bas (14 %) que la moyenne de l'UE25 (47 %). Il existe également des différences significatives à l'intérieur de la Turquie, entre zones rurales et zones urbaines, entre hommes et femmes et entre jeunes et personnes de 55 à 74 ans.

  La Turquie a démontré que certains progrès importants en matière d'administration électronique pouvaient être réalisés malgré des taux d'accès à Internet relativement bas. Ainsi, avec l'aide d'intermédiaires tels que les comptables, la Turquie a enregistré un très bon taux d'adoption de la déclaration fiscale électronique. Pour l'exercice fiscal 2005, 69 % des entreprises et 55 % des particuliers ont fait leur déclaration d'impôts par voie électronique – contre 53 % et 22 % respectivement en 2004. De plus, avec l'utilisation des banques comme intermédiaires pour le paiement de l'impôt, le coût par transaction de la collecte de l'impôt est passé d'USD 2 à USD 0.35.

  Toutefois, la poursuite du développement de la Société de l'information va procurer des avantages économiques et sociaux à la Turquie en même temps qu'elle favorisera l'adoption de l'administration électronique. La Turquie a lancé une initiative ambitieuse d'initiation à l'informatique et aux technologies de l'information dans les écoles primaires et secondaires, mais il faut aller plus loin. La Turquie devrait fournir des moyens pour améliorer la maîtrise de l'informatique et des technologies de l'information par les personnes qui ne sont pas dans le système scolaire, éventuellement en mettant en ligne des programmes d'enseignement à distance et en encourageant les cybercafés à dispenser une formation à l'utilisation de l'Internet. Le gouvernement devrait également trouver des moyens de motiver davantage les citoyens à utiliser l'Internet par des campagnes d'information et de démonstration sur les retombées et avantages de l'accès à l'information et aux services publics en ligne.

La Turquie est devant une opportunité stratégique pour le développement du haut débit. Le pays peut soit laisser le marché de l'Internet déterminer le rythme d'évolution, soit promouvoir un développement plus rapide de l'infrastructure à haut débit, comme cela a été fait en Corée et en Suède. L'utilisation accrue du haut débit a des retombées sur le secteur public, car elle améliore la capacité à fournir des services davantage centrés sur l'utilisateur et elle accélère l'adoption des services d'administration électronique. La disponibilité du haut débit peut également fournir une importante plateforme pour développer la coopération sectorielle et faire face au défi à venir de l'expansion de l'administration électronique au niveau local. En outre, cette disponibilité accrue permettra un développement plus rapide du commerce électronique et sera essentielle pour attirer les investissements étrangers dans l'économie turque.

Les obstacles à l'administration électronique

Dans le programme de modernisation du nouveau gouvernement, l'administration électronique est vue comme un important outil de changement. Les initiatives d'administration électronique ont donné une impulsion au programme de modernisation, mais il reste certains éléments fondamentaux à mettre en place pour continuer de progresser dans le domaine de l'administration électronique :

- **Une approche réglementaire globale est nécessaire pour les données et transactions électroniques.** Le secteur public turc a pour tradition de s'appuyer sur la loi plutôt que sur des textes d'application interprétant la législation de base. L'approche législative destinée à assurer le bon fonctionnement, l'équité et la justice dans le secteur public est plus lente et plus difficile à modifier – et donc moins réactive – que l'utilisation d'un ensemble de textes d'application pour guider le déploiement de l'administration électronique dans un contexte d'évolution des technologies et procédures.
- **Les investissements dans l'administration électronique doivent procurer une rentabilité suffisante.** Le gouvernement a choisi de financer en priorité les services électroniques de l'administration centrale à grand volume et forte valeur (notamment des services qui recueillent des recettes ou versent des prestations), les bases de données clés au niveau central pour l'information des citoyens et des entreprises et les réseaux d'information sectoriels de la justice, du fisc, de la santé et du système scolaire. Cependant, le manque de données sur les coûts et les gains ainsi que d'indicateurs compatibles des ratios coûts/avantages effectifs rendront plus difficile la démonstration des retombées à mesure que l'administration

électronique va se propager dans un ensemble plus vaste de services publics.

- **L'amélioration de l'accès Internet et le développement du haut débit devraient être prioritaires.** Par rapport à l'UE, la Turquie est confrontée à des enjeux significatifs en termes d'utilisation d'Internet par les particuliers, avec un taux de 14 % en Turquie contre 47 % dans l'UE25. On observe en Turquie des fractures très marquées entre les zones urbaines (9 %) et rurales (6 %) ainsi qu'entre les hommes (19 %) et les femmes (9 %). L'infrastructure de télécommunication de base en Turquie est constituée par le réseau téléphonique filaire, qui dessert la quasi-totalité des 15 millions de ménages et pourrait donner accès à Internet *via* un modem téléphonique ou une ligne DSL. Toutefois, la proportion de ménages ayant accès à Internet n'est pas très élevée (14 %), ce qui s'explique en partie par le coût élevé de l'accès à Internet, compte tenu du montant de l'abonnement à Internet par rapport au revenu mensuel moyen.

Évaluations essentielles

- Bien que la majeure partie du cadre réglementaire soit en place, les données et transactions électroniques ont nécessité des révisions des lois conçues pour des signatures et transactions sur papier, ainsi que de nouvelles mesures pour assurer la sécurité des données et la vie privée.
- L'Organisme de planification d'État, instance centrale de coordination rattachée au Cabinet du Premier ministre, examine tous les investissements dans les TIC. Les analyses de rentabilité sont récemment devenues obligatoires pour les grands projets; toutefois, elles ne sont pas encore couramment pratiquées dans tous les services. De plus, les nouveaux investissements doivent s'articuler autour d'une architecture fédératrice permettant de repérer les doublons et les chevauchements avec des investissements antérieurs et offrant la possibilité d'un partage des applications, des données et même des services.
- Les initiatives destinées à réduire le fossé numérique en Turquie visent notamment à accroître le nombre d'ordinateurs et de classes d'informatique dans les écoles primaires et secondaires et à développer l'accès en autorisant l'utilisation par la collectivité des ordinateurs dans les écoles. Les 12 000 cybercafés turcs ont permis à un grand nombre de personnes d'accéder à Internet même quand elles ne possèdent pas d'ordinateur. Certains cybercafés offrent une formation et une assistance. De même, pour développer l'accès en ligne des citoyens un certain nombre de mesures d'incitation sont mises en œuvre, comme l'augmentation des

contenus disponibles en langue turque et l'offre de services électroniques à plus forte valeur ajoutée.

- L'utilisation d'Internet augmentera sans doute fortement si le coût de l'accès peut être réduit. Face à la nécessité d'augmenter les bases d'imposition durant les crises économiques de 2000-2001, la Turquie a taxé les services de télécommunications. Bien que ces mesures aient permis d'accroître les recettes fiscales, elles ont pu avoir un effet négatif sur l'adoption des services électroniques. Le développement de la concurrence dans la fourniture des services Internet et des nouvelles technologies peut faire espérer un développement de l'accès et une baisse des coûts. L'expérience de nombreux pays de l'OCDE montre que les gouvernements devraient dans toute la mesure du possible laisser le choix de la technologie et du type d'expansion de l'infrastructure aux forces du marché, tout en favorisant des conditions d'égale concurrence pour les différentes technologies. C'est le type de politique que la Turquie met en œuvre en privatisant son opérateur de télécommunications historique (dont 55 % du capital ont été cédés au secteur privé en août 2005) et en mettant en place des règles permettant aux concurrents d'avoir accès aux lignes téléphoniques.
- L'administration électronique peut également influer sur la rentabilité de l'infrastructure en augmentant le trafic Internet du fait de l'accroissement de l'offre et de la demande. Quand le gouvernement utilise l'Internet comme principal support pour la prestation de services, il accroît la demande sur le réseau Internet. En encourageant les entreprises et les citoyens à payer leurs impôts par le biais des banques sur Internet, le gouvernement stimule le développement de ce support. En fournissant des informations et des services électroniques, il rend disponible un contenu en ligne utile susceptible d'encourager les citoyens et les entreprises à devenir utilisateurs d'Internet.

Principales mesures proposées

- La Turquie devrait envisager l'élaboration d'une approche réglementaire commune pour les transactions électroniques, l'authentification électronique et la protection des données à caractère personnel, et compléter celle-ci par un « cadre réglementaire flexible », c'est-à-dire des accords et conventions sur des normes et principes entre l'industrie, les citoyens et les entreprises, qui seraient susceptibles d'évoluer dans le temps à mesure de l'expérience accumulée sur les problèmes et solutions concernant les transactions et données électroniques. La Turquie devrait étudier également le besoin d'une loi générale de protection des données à

caractère personnel et veiller à ce que l'Institut de protection des données personnelles, en projet, voie effectivement le jour.

- Le gouvernement devrait envisager de rassembler des informations sur les performances des systèmes TIC qui permettront l'analyse de la rentabilité des investissements dans ce domaine. La Turquie devrait également accélérer son développement d'une architecture fédératrice pour le secteur public afin de disposer d'un solide outil pour guider les investissements dans les TIC.
- Des efforts plus énergiques doivent être déployés pour réduire la fracture numérique. L'Autorité des télécommunications devrait continuer de stimuler activement la concurrence dans le secteur des télécommunications afin de promouvoir un accès plus rapide et plus abordable à Internet, conformément aux directives de l'UE dans ce domaine. Le gouvernement devrait envisager la création d'une incitation juridique à accroître le nombre de cybercafés dispensant des formations. L'expérience de la Turquie dans l'élaboration de programmes de télé-enseignement à tous les niveaux d'apprentissage pourrait être exploitée pour améliorer la maîtrise de l'informatique et des technologies de l'information. Cela complèterait l'enseignement et la formation plus traditionnels dispensés dans les établissements scolaires et permettrait à quiconque ayant un accès à Internet d'acquérir une formation.
- Si les autorités s'en remettent à la demande des ménages pour encourager l'accès haut débit à Internet, il faudra des années pour que cette technologie se développe, et le secteur public devrait envisager de jouer un rôle plus actif dans la stimulation du développement de l'infrastructure à haut débit et dans l'utilisation de cette capacité pour moderniser le secteur public.

Le leadership dans l'administration électronique

L'une des raisons du développement rapide de l'administration électronique en Turquie tient au soutien résolu dont elle bénéficie à un niveau politique élevé. L'administration électronique est pilotée par le Conseil exécutif turc pour le développement de la société de l'information, présidé par le Premier ministre adjoint. Cet organe a défini une orientation stratégique ainsi qu'un plan à moyen terme fixant des objectifs pour 2010, notamment des objectifs quantitatifs en termes de produits et de résultats. Le Conseil exécutif est assisté par l'Organisme de planification d'État, qui est chargé de contrôler tous les investissements. Ensemble, ces organismes ont pu centrer le développement de l'administration électronique sur des initiatives à forte valeur et grand volume. Toutefois, avec la multiplication des applications d'administration électronique, le leadership au niveau central doit être complétée par un leadership dans les ministères fonctionnels et dans les administrations locales.

Évaluations essentielles

- Le Conseil exécutif turc pour le développement de la société de l'information n'assure actuellement pas un contrôle étroit de l'avancement de l'administration électronique. Il pourrait en résulter au niveau central et au niveau local des stratégies et politiques qui ne prennent pas systématiquement en compte les progrès d'ensemble dans l'introduction de l'administration électronique.
- La capacité des ministères fonctionnels à élaborer et mettre en œuvre des services d'administration électronique dans leur secteur respectif et dans les services dont ils assurent la tutelle doit être renforcée. Il s'agit notamment de renforcer les capacités pour permettre aux ministères fonctionnels d'identifier les projets à forte rentabilité (à savoir intégration des opérations de guichet et d'arrière-guichet, mise en place de services et de données en utilisation partagée et politiques davantage centrées sur l'utilisateur), de veiller à ce que les projets respectent un plan de développement progressif itératif des TIC (et non l'approche séquentielle traditionnelle), et de faire en sorte que les projets aient des retombées en termes de réduction des coûts et de gains plus importants.
- Comme les 3 225 autorités locales sont confrontées au défi d'élaborer des applications, bases de données et services d'administration électronique similaires, une action en coopération paraît certainement justifiée, plutôt que l'élaboration isolée de solutions.

Principales mesures proposées

- Afin d'avoir une vision globale du progrès du développement de l'administration électronique, le Conseil exécutif turc pour le développement de la société de l'information devrait envisager de mettre en place des mécanismes de supervision des grands projets d'administration électronique ainsi que des progrès réalisés dans ce domaine, de manière à proposer davantage de services électroniques, à réduire le fossé numérique et à faire en sorte que les pouvoirs publics soient davantage à l'écoute des citoyens et des entreprises.
- Les ministères fonctionnels doivent donner une priorité importante au développement d'initiatives d'administration électronique, et veiller à ce que ces programmes procurent une rentabilité suffisante de l'investissement. Les nouvelles unités de planification stratégique dans les ministères fonctionnels pourraient apporter une contribution utile au développement d'une administration électronique à vocation sectorielle.

- Plutôt que de laisser les collectivités locales développer des applications d'administration électronique dans des conditions susceptibles de conduire à des doubles emplois, l'administration centrale devrait encourager les autorités locales à élaborer des applications « réutilisables », en aidant à la promulgation de normes et de principes et en encourageant ces autorités à collaborer à l'élaboration de services électroniques et au partage de bases de données et de services. L'administration centrale doit également envisager de créer une incitation – à l'instar du Fonds pour l'administration électronique au niveau local mis en place par le gouvernement central britannique – pour financer l'élaboration de pratiques exemplaires qui pourraient être reprises par d'autres autorités locales et pour promouvoir le partage et l'élaboration conjointe de solutions d'administration électronique.

Mise en place de l'administration électronique

La mise en œuvre d'initiatives d'administration électronique est tout aussi importante que les fonctions de leadership et de planification. Il est essentiel d'assurer un contrôle étroit de la gestion et des projets pour prévenir les risques d'échec des grandes initiatives pluriannuelles d'administration électronique destinées à introduire des changements de rupture. Dans la phase initiale du développement de l'administration électronique, le contrôle de la mise en œuvre peut être assuré en veillant à ce que les investissements dans les TIC soient en cohérence avec la vision stratégique et en se basant sur des analyses coûts/avantages pour choisir entre les différentes solutions TIC. Toutefois, quand le nombre des applications installées augmente et que les initiatives portent sur des applications plus intégrées et novatrices, d'autres instruments de gestion pour hiérarchiser les dépenses et gérer la mise en œuvre peuvent être nécessaires de manière à obtenir une plus forte rentabilité des investissements dans les TIC.

Évaluations essentielles

- **Pour superviser et gérer avec succès les projets d'administration électronique, il est nécessaire de disposer d'informations à jour.** La Turquie manque dans une large mesure de données sur les coûts, les résultats, la satisfaction des usagers et les autres retombées pour les utilisateurs et le secteur public.
- **Les principes techniques manquent d'uniformité.** Une étude de l'OCDE a montré que dans une large mesure les principes en matière de normalisation (par exemple XML et architecture fédératrice), vie privée, sécurité, réseaux électroniques, marchés publics électroniques et

authentification électronique sont à l'initiative de chaque agence. Cela peut nuire à l'interopérabilité et à l'application d'approches uniformes concernant la protection de la vie privée, la sécurité et l'échange de données.

- **Un facteur essentiel au succès dans la mise en œuvre de projets d'informatisation est de disposer de personnes capables à la fois de gérer les projets des TIC et de gérer le changement.** Une étude de l'Université technique du Moyen Orient a montré que les responsables de projets considéraient les TIC comme un outil d'automatisation plutôt que comme un instrument de transformation. Une autre étude sur les cours d'administration publique a montré que seul un enseignement rudimentaire dans le domaine des TIC était dispensé.
- **Disposer d'un service des TIC dans chaque ministère n'est peut-être pas le meilleur moyen d'assurer la capacité, la compétence et la flexibilité.** De nombreux organismes publics turcs disposent de petits services informatiques qui ont des difficultés à développer des applications TIC. Une stratégie de développement consiste à faire croître ces services au fil du temps. Une autre est de fusionner les petits services des TIC et d'externaliser certaines fonctions, de manière à créer des unités disposant de ressources suffisantes pour développer et entretenir des compétences poussées en matière de vie privée, de sécurité, de réseaux et de marchés publics.

Principales mesures proposées

- Les ministères devraient développer des systèmes d'information sur les projets d'administration électronique afin de suivre les coûts et les résultats des projets, de même que les retombées et les coûts pour les utilisateurs. La Turquie devrait envisager d'exiger un plan de réalisation des avantages pour les grands projets de TIC, de superviser plus étroitement la mise en œuvre des projets et d'imposer un bilan du projet une fois que celui-ci est devenu opérationnel.
- Les ministères, les autres organismes et les autorités locales doivent mettre en œuvre de façon uniforme des politiques et normes d'administration électronique ainsi que des mesures de protection de la vie privée et de sécurité.
- Le gouvernement devrait s'efforcer d'améliorer la gestion des projets, la gestion du changement, la reconfiguration des processus métier et les qualifications en TIC des responsables du secteur public afin de disposer des compétences professionnelles nécessaires pour l'introduction de l'administration électronique.

- La Turquie pourrait envisager de fusionner des services des TIC ou même de créer dans chaque ministère un service des TIC au niveau central. Cela permettrait d'attirer et de conserver plus aisément des compétences clés pour la mise en place d'une architecture fédératrice, la reconfiguration des processus métier, les marchés publics et la gestion des consultants. Par ailleurs, au lieu d'élaborer et d'exploiter des applications en interne, le gouvernement pourrait externaliser avec appel à la concurrence une partie de ces réalisations, ce qui stimulerait par ailleurs l'apparition d'une industrie privée des TIC, l'un des objectifs à long terme du pays.

Cadres de collaboration

L'un des défis majeurs de l'administration électronique est de réaliser des gains considérables d'efficience et d'efficacité dans le secteur public. Un moyen d'y parvenir est de remplacer l'environnement traditionnel de la fonction publique caractérisé par une faible coopération entre organisations par une administration décloisonnée dans laquelle les services échangent des données, des portails, des procédures d'arrière guichet et même des organisations. L'enquête de l'OCDE a montré que seuls 10 à 25 % des agents interrogés des administrations centrales et municipales indiquent collaborer avec d'autres organismes du secteur public. Dans l'administration centrale, le principal domaine de collaboration est celui de la définition de normes et la diffusion d'informations; au niveau des communes, la collaboration porte sur la recherche et le développement, ainsi que sur les marchés publics pour l'informatique.

Principales évaluations

- La Turquie a mis en place de nombreux programmes en collaboration concernant l'échange de données, les réseaux d'information, des services communs et des initiatives sectorielles, et elle a pris conscience des retombées à attendre de ces initiatives. Elle a mis ou met actuellement en place un grand nombre des modules de base essentiels (par exemple registre des personnes physiques ou morales) et réseaux (par exemple de données informatisées pour faciliter les mouvements de marchandises aux frontières, le réseau du secteur de la justice pour l'échange d'informations et le réseau desservant les 1 660 bureaux de vérification et les 39 500 agents du budget du ministère des Finances). Elle doit maintenant continuer de développer des réseaux comme le Réseau d'information pour la santé, et déterminer comment inciter les organisations à participer au développement de ces services.
- La Turquie a lancé un grand nombre de projets majeurs pour la mise en commun des données et le développement des réseaux d'information.

L'Organisme de planification d'État a publié la version 1.0 de ses Lignes directrices cadres pour l'interopérabilité, en août 2005. Il s'agit là d'une étape importante dans la définition des structures de données et la fourniture de dictionnaires de données permettant de savoir où telle ou telle information publique peut être trouvée. La Turquie, toutefois, manque d'une architecture fédératrice pour le secteur public. Ce pourrait être un outil puissant pour normaliser les données et identifier les processus métiers communs ainsi que les possibilités de services partagés.

- La Turquie délègue des ressources et responsabilités de l'administration centrale aux collectivités locales. Les 16 plus grandes communes (notamment Istanbul, Ankara, Izmir et Bursa) ont les ressources pour développer leurs propres applications. Toutefois, les municipalités petites et moyennes manquent souvent des ressources et des compétences spécialisées pour mettre en œuvre des processus informatisés. Une collaboration dans le développement des bases de données, des services électroniques et – dans certains cas – de services communs constituerait une stratégie rentable pour les plus de 3 000 communes de Turquie.

Principales mesures proposées

- Le gouvernement devrait aussi envisager de poursuivre le développement de processus métier de nature similaire pour des pôles de services tels que l'Organisme d'assurance sociale, la Caisse de retraite des fonctionnaires et l'Agence d'assurance sociale pour les commerçants, artisans et indépendants, en vue d'une mise en commun des services.
- La Turquie devrait poursuivre la normalisation des données et des processus techniques afin de promouvoir l'échange de données et l'interopérabilité. Toutefois, il est important que le secteur public coopère avec le service privé pour faire en sorte que les normes de données soient compatibles avec celles élaborées dans le secteur privé. L'interopérabilité peut s'entendre simplement comme le fait de permettre l'échange de données, mais elle peut aussi s'inscrire dans un effort de normalisation et d'harmonisation des définitions de données, pour assurer l'interopérabilité dans l'ensemble du secteur public et avec l'UE.
- La collaboration pourrait également être facilitée par la mise en place d'un forum ou d'une organisation pour chaque niveau d'administration, où pourraient être examinés les obstacles, applications et pratiques exemplaires pour l'administration électronique.

Produits et résultats

L'UE a défini un ensemble de base de 20 services électroniques, de même qu'un indicateur qui mesure la part des services aux citoyens et aux entreprises qui sont pleinement interactifs (c'est-à-dire que l'utilisateur peut envoyer des formulaires et effectuer des paiements sur l'Internet). La proportion des services aux entreprises qui sont pleinement interactifs en Turquie est plus forte que dans les services aux citoyens. La proportion de services aux entreprises pleinement interactifs est presque aussi importante que la moyenne des pays de l'UE28 (comprenant la Norvège, l'Islande et la Suisse) et elle est plus élevée que celle des pays de l'UE10.

Proportion des 20 services retenus par l'UE qui sont pleinement interactifs (%)	Turquie	UE18	UE28	UE10
Services aux citoyens	25	37	36	33
Services aux entreprises	63	74	67	55

Source : Données de l'OCDE concernant la Turquie et Cap Gemini *Online Availability of Public Services : How is Europe Progressing?* (juin 2006).

Il s'agit désormais pour la Turquie d'améliorer sa prestation de services aux citoyens et de centrer les services davantage sur l'utilisateur, ce qui devrait faciliter leur adoption.

Évaluations essentielles

- En juillet 2006, le secteur public turc comptait 10 667 sites Internet, dont 3 812 dans l'administration centrale. Ce grand nombre de sites fait qu'il est difficile pour les utilisateurs de trouver des informations et des services. La Turquie met actuellement en place un portail national pour aider les utilisateurs à trouver l'information et accéder aux services; celui-ci comprendra également plusieurs services électroniques.
- Comme les études de cas sur les systèmes d'assurance sociale et de retraite le démontrent, un meilleur rapprochement des données procure des avantages significatifs. En vérifiant si une personne est habilitée à percevoir des prestations d'assurance maladie ou des prestations sociales dans des bases de données centralisant l'information sur les paiements de sécurité sociale, la Turquie a économisé jusqu'à USD 3 milliards par an.
- Pour calculer la rentabilité des investissements ou leur rapport coûts/avantages, les évaluations doivent faire partie des outils traditionnels de gestion de la réalisation des résultats. Bien que la Turquie exige des études de rentabilité préalables pour les grands investissements dans les TIC,

l'étude de l'OCDE montre que les enquêtes auprès des utilisateurs sur leurs besoins et leur taux de satisfaction avec les systèmes actuels ne font pas encore couramment partie des outils utilisés pour assurer un développement centré sur l'utilisateur.

Principales mesures proposées

- La Turquie devrait poursuivre le développement d'un portail gouvernemental national. Il s'agit d'élaborer un portail qui soit utile et utilisé, en consultant les utilisateurs pendant la phase de conception et en procédant à de fréquentes enquêtes de satisfaction pour s'assurer de l'adéquation aux besoins.
- La Turquie devrait continuer de développer l'utilisation de bases de données centralisées communes afin de réduire la fraude, d'élargir les bases d'imposition et de fournir des prestations à ceux qui y ont droit. Bien que la mise en place de projets d'identification des personnes physiques et morales soit une étape importante pour améliorer l'intégrité des programmes, le gouvernement devrait élaborer une approche commune pour l'introduction de l'authentification électronique de manière à renforcer la fiabilité des services électroniques.
- Comme de nombreuses retombées des services électroniques sont proportionnelles au nombre des utilisateurs, la Turquie devrait envisager de stimuler l'adoption par une stratégie incitative consistant à démontrer les avantages pour les utilisateurs potentiels, à offrir des services électroniques plus conviviaux et à imposer à certains utilisateurs l'utilisation du support électronique pour leurs échanges avec l'administration. Ainsi, compte tenu du taux élevé de diffusion d'Internet parmi les entreprises turques, le gouvernement pourrait réaliser des économies supplémentaires en imposant l'utilisation du support électronique pour les déclarations fiscales, les marchés publics électroniques et certaines prestations. Il devrait également envisager des incitations comme un service plus rapide, le versement plus prompt des prestations et une réduction du montant des droits à acquitter.
- Afin de mieux évaluer le gain pour l'usager lié à l'utilisation de services électroniques, les administrations devraient être encouragées à procéder à des enquêtes de satisfaction des usagers ainsi qu'à des évaluations des projets mis en œuvre. Des services d'assistance technique et de conseil devraient être mis en place pour garantir une approche normalisée et comparable entre les différents secteurs.

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Chapter 1

Introduction

Turkey is a large country. *It has a land area twice the size of Germany and a population of 72 million, where 30% of the population lives in rural areas.*

E-government has developed in phases. *The first phase (1996-2000) focused on studying and developing strategies with broad input from academics, NGOs, businesses and the public sector. The second phase (2000-2002) consisted of planning what was required to implement e-government. The current phase is focused on public sector modernisation using e-government as a tool.*

There are many e-government drivers in Turkey. *The major drivers are public sector modernisation and promoting the Information Society. Other drivers include improving the competitiveness of the private sector and increasing the quality of life of Turkish citizens.*

Turkey generally ranks in the middle of international benchmarking studies of e-government. *In a United Nations report Turkey ranked 60 out of 179 countries.*

Turkey has made progress in implementing e-government since 2002. *This has been the result of high-level political stewardship of the e-government agenda coupled with a focused approach aimed at increasing transparency through the provision of information, and investing in high-volume and high-value projects such as getting control of major cash flows like tax collection, customs and the payment of benefits.*

E-Government context

Turkey's implementation of e-government is shaped by many factors including its size, centralised governance structure, and e-government goals and drivers.

It is a large country with a land area twice the size of Germany and a population of 72 million, where 30% of the population lives in rural areas. These factors pose challenges for building an Internet broadband infrastructure and addressing the digital divide. However, Turkey has a dynamic telecom industry. Since 2000 the mobile phone market has grown to 46 million GSM subscribers, and the 2005 privatisation of Turk Telekom will allow for more competition in the fixed phone line market.

Figure 1.1. **Map of Turkey**



Turkey has two levels of government and several types of administrations (for further information, see Annex C):

- Central administration with ministries and agencies at the central government level and field offices in provinces and districts.
- Local governments that include: 3 225 *municipalities* in areas with dense populations and 81 *special provincial administrations* with jurisdiction beyond municipal boundaries.

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Compared with the EU countries, Turkey's local government level has fewer responsibilities and resources. Application of the European Union subsidiarity principle[1] will result in more power and resources being allocated to local government. E-Government can provide valuable tools to assist in developing local services and ensuring transparency and accountability.

E-Government development

Information and Communication Technology (ICT) has long been an important tool for modernising the public sector in Turkey. Following a pattern common in OECD countries, the development of e-government proceeded in distinct phases (see Annexes D, E and G for more information). During the 1970s and 1980s, the focus was mainly on automating back-office functions, such as processing of the census and taxes. Then, during the 1990s, there was a drive to stimulate the creation of an Information Society and a knowledge-based economy.[2] The emphasis was on promoting Information Society polices to increase Turkey's competitiveness, and on moving from labour-intensive production to higher-value-added production and from providing low-cost labour to a highly educated workforce in a knowledge-based economy. The focus was on innovation, science and technology, and on building ICT capabilities in Turkey. This second phase included broad input from academics, NGOs, businesses and the public sector.

The third phase (2000-2002) consisted of developing plans to implement e-government, but because of political instability little implementation was possible. The late 1990s and early 2000s were not conducive to long-term plans and investments. Minority governments succeeded each other; inflation was high and the economy in recession. While Turkey's government promoted studies of and plans for the Information Society, political and economic instability prevented most actual implementation from taking place.

The reform government elected towards the end of 2002 had a political agenda to modernise the public sector through e-government. This agenda was given high-level political leadership, as e-government implementation was charged to the Deputy Prime Minister together with the Minister of Transport and the Minister of Industry and Trade; they formed an Executive Board laying out the e-government vision and strategies. The State Planning Organization (SPO) became their secretariat, implementing e-government strategy through its review of investments in e-government initiatives. The SPO had a strategy of focusing on a limited number of big initiatives: common databases, high-volume/high-value e-services (primarily to control large cash flows such as collection of taxes and social security payments, and the distribution of social security, health and pension benefits), and addressing sector information concerns (such as e-justice and e-health), shared services

(e-procurement), and sector transformation (e-learning) and border crossings (customs and trade).

This agenda has been translated into the Short Term Action Plan (STAP)[3] for 2003-2004 and its successor, the Action Plan for 2005. These plans include a portfolio of national initiatives for creating a technical and legal infrastructure, developing ICT skills, implementing e-services, and addressing sector initiatives such as e-learning, e-health and e-trade.

Turkey has been successful with its start-up phase during the period 2003-2006. With success came new challenges. For the public sector it meant maintaining a focus on critical investments, developing an enterprise architecture to guide investments, and building the capacity to promote sharing of data and services. Developing the capacity in line ministries and agencies to invest wisely in e-government projects to ensure that investments pay off and to avoid the proliferation of isolated information systems and services with poor return on investment that has occurred in many OECD member countries is another challenge.

Participation in EU e-government programmes

The eEurope Initiative was launched in 1999 in Helsinki for the EU15 members. In parallel with the eEurope Initiative, eEurope+ was initiated in 2001 to involve EU candidate and accession countries including Turkey. An action plan for the eEurope+ Initiative was adopted in Gothenburg in June 2001; eEurope+ ended in 2003. A new version of the action plan, eEurope2005, was launched in 2002 to cover the period 2003-2005. In May 2004, 10 accession countries became members of the EU and consequently participants in the action plan. In the new eEurope2005 action plan, candidate countries, including Turkey, were given observer status.

Turkey joined the eEurope+ Initiative to harmonize its e-government efforts with EU initiatives and to further its national goals for an Information Society. These goals were to: implement laws and regulations needed for the Information Society (e-government and e-commerce); develop a cheaper, faster, more secure Internet; invest in human resource skills; and promote the development of e-commerce and government e-services. However, progress was slow because of economic and political instability.

Turkey also participated in the eEurope 2005 Initiative, where the central policy objectives were to encourage greater take-up of e-services and broadband, address the digital divide, and modernise public services. Specifically, the initiative focuses on: modern online public e-services, a secure information infrastructure and broadband infrastructure.

Box 1.1. **Milestones on Turkey's road to the EU**

- Applies for membership in the European Economic Community (EEC), 1959.
- Becomes associated with the EEC with possibility of membership, 1963.
- Applies for full membership in the European Communities, 1987.
- Enters customs union with the EU, 1996.
- Obtains status as candidate for membership in the EU, 1999.
- Accepts membership in eEurope+ Initiative, 2001.
- Adopts over 30 amendments to its constitution to meet Copenhagen criteria for EU membership, 2002.
- Approves a law allowing full participation in the Sixth Framework Programme on Research and Technological Development of the EU, 2003.
- Negotiations between the EU and Turkey begin, 2005.

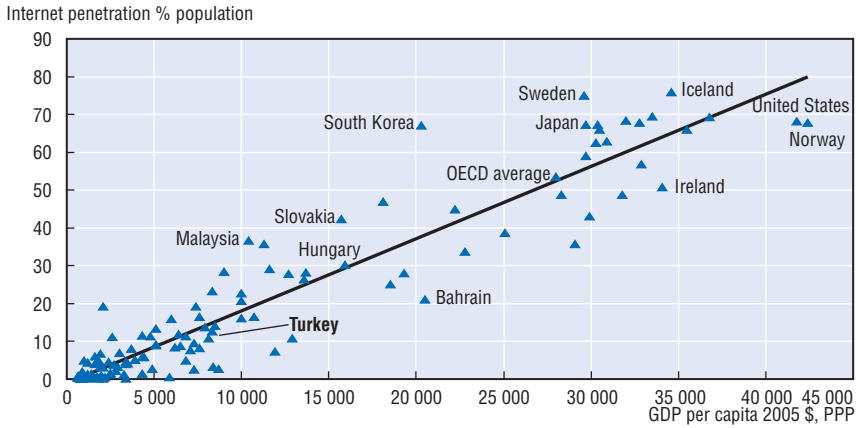
Turkey is participating as an observer in the latest EU initiative, called i2010.[4] This initiative focuses on three objectives:

1. A single, open and competitive European market for Information Society and media.
2. Innovation and investment in ICT research to promote growth, and more and better jobs.
3. An inclusive European Information Society promoting growth and jobs in a manner that is consistent with sustainable development and that prioritises better public services and quality of life.

E-Government development level

Turkey generally ranks in the middle of international benchmarking studies of e-government. In one report[5] Turkey ranked 60 out of 179 countries. In another report[6] Turkey placed 45 out of 65 countries. Analysis of data from the 30 OECD member countries shows a strong positive relationship between a country's income per capita and the share of its population using the Internet. In other words, the higher the per capita income, the larger the share of the population using the Internet. This result indicates that the share of the population using the Internet is not the result of a few causal factors but rather of many interacting factors. Turkey does not deviate from the estimated trend line (see Figure 1.2). The figure also indicates that some countries have a higher Internet penetration as a consequence of strategic choices, *e.g.* Korea's investment in broadband infrastructure.

Figure 1.2. **Per capita income and Internet use in OECD countries**



Source: OECD calculation: Internet penetration: Internet World Stats (2005) (*www.internetworldstats.com*); GDP per capita: CIA Fact Book (2005).

E-Government drivers

The major e-government drivers in Turkey are public sector modernisation, promoting the Information Society, improving the competitiveness of the private sector, and increasing the quality of life of Turkish citizens.

Public sector modernisation

A major driver of e-government is modernising and reforming the public sector. E-Government is regarded as an important tool for achieving the following public sector modernisation goals:

- Increase efficiency and effectiveness.
- Promote transparency and accountability.
- Increase tax revenues.
- Reduce corruption.
- Provide information and e-services.
- Become more user-focused.
- Break down "stove pipes" through increased data sharing and shared services.

Increasing efficiency and effectiveness is particularly important for Turkey because of its large public sector. The 2004 *OECD Economic Survey of Turkey* stated: "In the core public services which are particularly critical for growth, such as justice, education and infrastructure services, more proactive policies to rapidly improve service quality are required."[7] ICT provides a

Box 1.2. **E-Government strategic goals**

Turkey's draft Information Society Strategy* for 2010 presents the following strategic goals for e-government:

1. *Modernisation of the public administration:* Increase efficiency and level of citizen satisfaction with public services.
2. *Citizen-focused service transformation:* Increase number of e-services, and increase take-up of and satisfaction with services.
3. *Social transformation:* Increase computer and information literacy, increase computer ownership and access to the Internet, and provide distance learning for ICT skills.
4. *ICT in the business world:* Facilitate access to information, and assist businesses in using ICT and e-commerce.
5. *Competitive national ICT sector:* Promote a larger internal market in software and services and promote exports.
6. *Prevalent, affordable communication infrastructure:* Develop broadband infrastructure, reduce end-user cost, and ensure effective competitive environment for services and infrastructure.
7. *Adoption of R&D innovation:* Prioritise R&D facilities and support the generation of new products and services relevant to global market demands in the ICT sector.

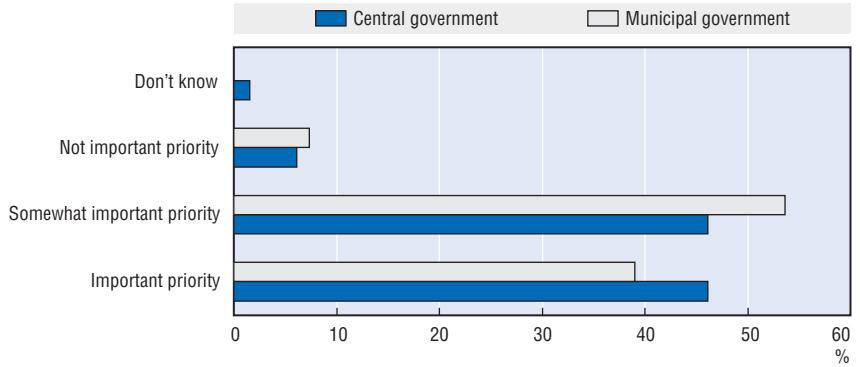
* State Planning Organisation Information Society Strategy Action Plan, temporary version 1.0 (2005).

channel for delivering information and e-services, connecting front- and back-office services and implementing data and services sharing among agencies and between levels of government.

E-Government will have a central role in the proposed structural reform (where responsibilities for providing services will be decentralised from Turkey's central government to regional and local levels, together with the necessary resources). E-Government can be an important tool to make this reform a success and allow increased transparency and accountability in how resources are used at all levels of government. ICT can also facilitate providing uniform information and e-services, and using distance learning to train local government civil servants, and will provide oversight tools allowing central government to manage some of the major risks associated with this reform.

E-Government is seen as an important initiative for Turkey's public sector. The OECD survey shows that a large majority of all respondents at all levels of government feel that e-government is important or somewhat

Figure 1.3. **E-Government priority at different levels of government**



Source: OECD, *E-Government Survey: Turkey*.

important. The share of respondents that feel that e-government is not an important priority is less than 10%.

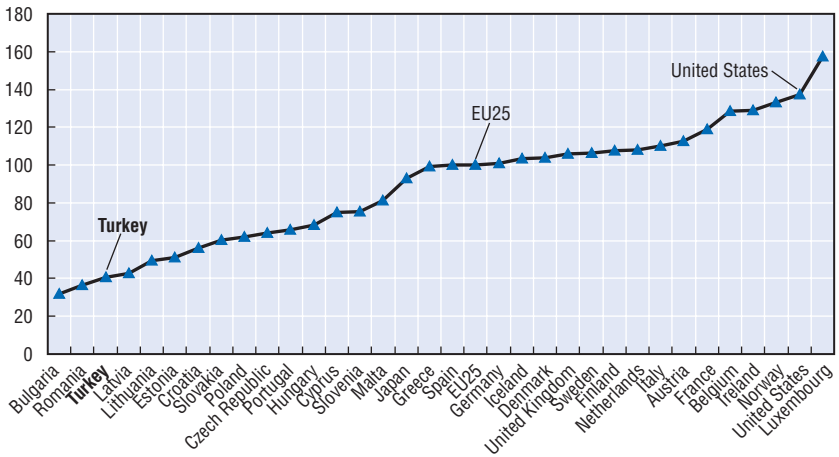
Improving the competitiveness of the private sector

One measure of a country's competitiveness is its Gross Domestic Product (GDP) per employed person.[8] Turkey has a value less than half of the EU25 average and less than one-third of that of the United States (see Figure 1.4). This indicates the need to increase labour productivity. Strategies for increasing labour productivity include developing the ICT sector, increasing the use of ICT in public government[9] and the private sector, promoting innovation, developing ICT skills, expanding Internet infrastructure, and improving government efficiency and effectiveness.

A strong ICT sector can be an important engine for economic growth.[10] Developing Turkey's ICT industry will provide much-needed services nationally, as well as contribute to exports. Turkey has in the past demonstrated its competitive capacity in producing consumer electronics and telecommunications equipment. However, the government needs to find ways to further promote and develop this sector, just as it did with the telecommunications industry.

ICT activities encompass telecommunications, and hardware and software products and services. The size of this market has been estimated at USD 11.4 billion (2003), or 2.2% of Turkey's GDP, with telecommunications responsible for 75% of this figure (see Table 1.1). About 30% of ICT products are imported, amounting to almost USD 3.5 billion. This would indicate the possibility of stimulating development of national ICT industries through import substitution strategies. Just as important is to stimulate the ICT sector through government procurement of domestically produced products and services.

Figure 1.4. **Labour productivity per employed person (relative to EU25)**



Source: Eurostat (2004).

Table 1.1. **ICT market, 2003 (in million USD)**

Information technology	Market size	Subtotal	Share
ICT hardware		1 540	
Software	393		
Services	847		
Consumer goods	90	**2 870**	25%
Communication technology			
Telecommunication equipment	1 263		
Carrier services	7 329	**8 592**	75%
TOTAL MARKET		**11 462**	100%

Source: Interpro.

E-commerce has been a major force driving the use of the Internet, educating citizens and businesses in the convenience of buying and selling on the Internet. In many countries businesses and citizens have begun to expect that the public sector should follow this example and increase its use of the Internet as a delivery channel for information and services.

However, e-commerce is not very well developed in Turkey. This may be due to factors such as:

- Large share of small and medium-sized enterprises (SMEs) selling in local markets with few resources to learn and develop a new marketing channel.
- Lack of the necessary legal framework (e-signatures, contracts, transaction security, etc.).
- Lack of universal high-speed access to the Internet.

Turkey has made strong progress in one area: Internet banking.

Table 1.2. **Internet banking in Turkey, 2005**

	EU15	EU25	Turkey
Percentage of individuals who used the Internet for financial services during the previous three months	41	38	13

Source: Eurostat (2005) and Turkish Statistical Institute (2005).

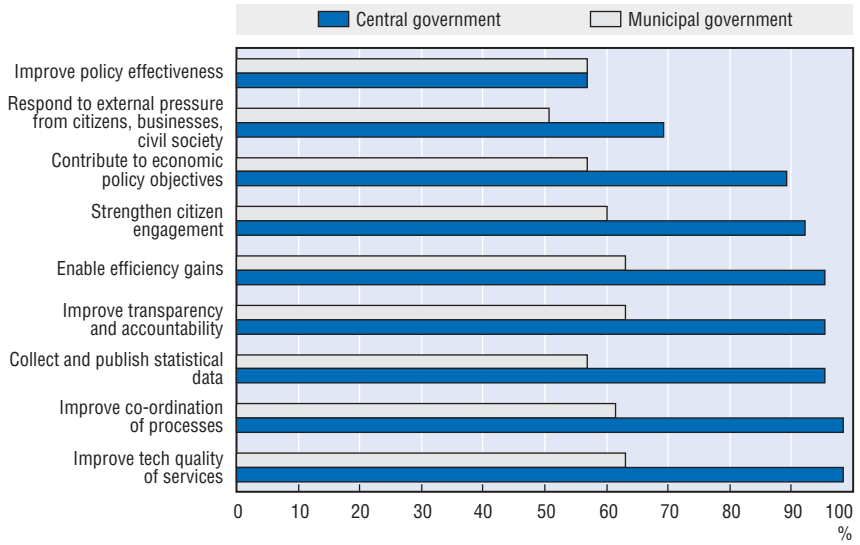
Given that e-commerce has been a very strong stimulus for economic growth and for increasing demand for e-services in many developed countries, *the government might consider means to stimulate this activity through infrastructure development, as well as providing content and e-services over the Internet through a one-stop business portal*. Requiring firms to interact electronically with the new national government e-procurement system should increase private sector use of the Internet.

Improving quality of life for citizens

Government Information Society policies can impact citizens' quality of life directly through the provision of information and e-services. Examples include Freedom of Information acts that guarantee citizens access to information, the wealth of information provided by government agencies making government more transparent and accountable, and the ability to interact with elected representatives and civil servants via e-mail. In fact, Freedom of Information Act requests from citizens represent one of the more voluminous e-services provided by the Turkish government.

The OECD survey asked government agencies to indicate the relative importance of a number of reasons for implementing e-government. The survey shows that more respondents from central government feel that e-government is important or somewhat important, as compared with respondents from municipalities. At the same time, however, central government respondents feel less strongly about the need to respond to external pressure from citizens, businesses and civil society (see Figure 1.5). This perhaps reflects the fact that central government is currently mainly focused on using e-government tools to improve public sector efficiency and does not have as much close contact with users as do municipal governments.

Figure 1.5. **Respondents identifying reasons for implementing e-government as "important" or "somewhat important"**



Source: OECD, *E-Government Survey: Turkey*.

Notes

1. The principle that government decisions should be taken by the smallest, or the lowest, competent authority. See *www.europa.eu/scadplus/glossary/subsidiarity_en.htm*.
2. Serdar, Sayan *et al.*, *Factors and Impacts in the Information Society: A Prospective Analysis in the Candidate Countries – Report on Turkey*, European Commission Technical Report EUR 21383 EN (2004), *http://fiste.jrc.es/download/EUR21383%20TURKEY%20FINALwithannex.pdf*.
3. See *www.bilgitoplumu.gov.tr/yayin/eDTRStap.pdf*.
4. Commission of the European Communities, "i2010 – A European Information Society for growth and employment", June 2005.
5. *http://unpan1.un.org/intradoc/groups/public/documents/un/unpan021888.pdf*.
6. Global Technology Forum (2006), *http://globaltechforum.eiu.com/index.asp?layout=rich_story&doc_id=6427*.
7. OECD (2004), *Economic Survey-Turkey*, Paris, October 2004.
8. Labour productivity per employed person, GDP in purchasing power standards (PPS) per employed person relative to EU25 (EU25 = 100), Eurostat.
9. IDABC eGovernment Observatory, *The impact of e-government on competitiveness, growth and jobs*, Research Paper, February 2005.
10. Reding, Viviane, *The information society: Europe's highway to growth and prosperity*, March 2006, *http://europa.eu.int/comm/commission_barroso/reding/docs/speeches/epc_20060306.pdf*.

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Chapter 2

E-Government Challenges

Assessments	Proposals for action
• **A comprehensive regulatory approach to electronic data and transactions is needed.** Turkey's public sector has a tradition of passing legislation rather than using secondary regulations to interpret basic legislation. The legislative approach to ensuring proper functioning, equity and fairness in the public sector is slower and more difficult to change – and thereby less responsive – than using a regulatory framework to guide e-government implementation in a context of technological and process change.	• Turkey should consider developing a common regulatory approach for electronic transactions, e-authentication, and personal data protection – and complement this with a "soft regulatory framework". That is, agreements and understandings on standards and guidelines among industry, citizens and businesses that can evolve over time as more experiences are gathered on challenges and solutions for electronic transactions and data. • Turkey should consider addressing the need for a comprehensive personal data protection law and ensure that the planned Personal Data Protection Institution is created.
• **Investments in e–government need to provide an appropriate return.** The government has prioritised funding high-volume/high-value central government e-services (especially services that collect revenue or disburse benefits), central key databases for citizen and business information, and sector information networks for justice, taxes, health and the school system. But the lack of cost and benefit data and consistent measurement of realised benefit/cost ratios will make ROI more difficult to demonstrate.	• The government should consider developing performance information on ICT systems that will allow for analysis of the return on ICT investments. Turkey should also accelerate its development of an enterprise architecture for the public sector, which could provide a strong tool to guide ICT investments. • To ensure more consistency in the review of ICT proposals the government should consider providing better guidance to line ministries on how to appraise e-government proposals with respect to return on investment, efficiency and effectiveness. Ministries will also need guidelines on technical issues such as data definition, security, privacy and enterprise architecture to ensure that investments follow existing standards.
• **Business cases have recently become mandatory** for large projects; however, they are not yet commonly used across agencies.	• The use of business cases to support the appraisal of ICT investments should be expanded.
• **The appraisal of new investments needs to be guided by an enterprise architecture** that can point to duplication and overlap with previous investments and the possibility of sharing applications, data and even services.	• Turkey should develop an enterprise architecture to provide an overview of ICT investments. As ICT expenditures is often the third largest administrative object class after salaries and rent, Turkey should consider making the review of all organisational ICT expenditures part of the budget process.
• **Only 14% of households have Internet access and 2% have broadband access.** Turkey's basic communications infrastructure is the telephone line network, reaching almost all 15 million households and providing potential access to the Internet via dial-up modem and DSL. Broadband availability and use is growing slowly.	• Waiting for growth in household demand for high-speed Internet access to encourage the development of broadband will take time. The public sector should consider taking a more pronounced role in stimulating the development of broadband infrastructure and using this capacity for modernising the public sector.

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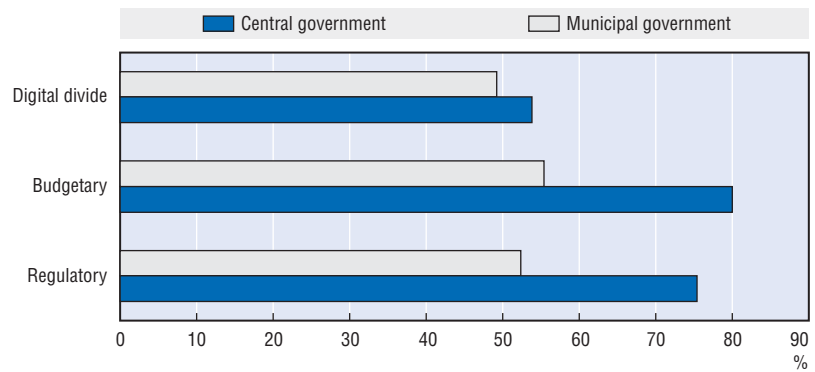
Assessments	Proposals for action
• **Internet access cost – measured as Internet subscription cost as share of average monthly income – is high.** Internet use will likely increase significantly if the cost of accessing the Internet can be reduced. As part of the need to augment the tax base during the economic crises of 2000-2001. Turkey raised taxes on telecommunication services. While these measures have increased tax revenues, they may be having a negative effect on e-services take-up.	• The government should consider ways to increase the affordability and thereby the use of e-services by reassessing telecommunication taxes.
• **Increased competition in providing Internet services and new technologies also holds promise of increased access and decreased costs.** Experiences in many OECD countries show that governments should leave the choice of technology and type of infrastructure expansion as much as possible to market forces, while promoting a level playing field for different technologies. Turkey is implementing such a policy through the privatisation of its incumbent telecom operator (55% was sold to the private sector in August 2005) and by implementing rules to provide competitors access to telephone lines.	• The Telecommunications Authority should continue to actively stimulate competition in the telecommunications sector to promote faster and more affordable Internet access in line with EU initiatives in this area. • Mobile phones can provide an alternative, less expensive channel for delivery of e-services to citizens and businesses. Given the high number of mobile subscribers in Turkey, the government should consider this channel to provide information and services.
• **There are many Initiatives to reduce the digital divide in Turkey.** These include expanding the number of computers and computer classes in primary and secondary schools, and providing increased access to the Internet through community use of school computers. Turkey's 12 000 Internet cafes have allowed a large number of individuals to access the Internet even if they do not own a computer. Some Internet cafes provide training and assistance. Other efforts to get citizens on line are directed at improving motivation, such as increasing content in Turkish and providing more high-value e-services.	• Stronger efforts are needed to increase computer and information literacy. The government should consider creating a legal incentive to increase the number of Internet cafes that provide training and assistance. Turkey's experience in developing distance learning programmes at all levels of education could be used to increase computer and information literacy. This would complement the more traditional education and training provided by schools and would allow anyone with access to the Internet to obtain training.

Turkey faces a number of challenges in implementing e-government

Like many OECD countries, Turkey faces a number of challenges in implementing e-government. These challenges include regulatory constraints, budgetary issues, access to the Internet, infrastructure, and ICT skills.

Central government representatives and those from municipal levels of government do not attribute the same level of importance to each of these challenges. More central government respondents rate regulatory and budgetary challenges as important or somewhat important than do local government respondents. Individuals from both levels of government rate the digital divide challenge as lower than the other two challenges. This perception is understandable, as e-government is in a start-up phase where regulatory and budgetary issues tend to dominate. As e-government matures, however, digital divide issues will likely to grow in importance in terms of equity and fairness and also in terms of ensuring take-up of e-services.

Figure 2.1. **Respondents identifying e-government challenges as "important" or "somewhat important"**



Source: OECD, *E-Government Survey: Turkey*.

Legislative and regulatory challenges

As shown by other OECD country experiences, the success of e-government initiatives and processes is dependent on the government

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ensuring a proper legal framework for their operation.[1] Electronic communication and transactions require revisions to Turkey's existing laws regulating paper-based signatures and transactions, as well as new laws to ensure privacy of electronic data. Table 2.1 indicates major laws needed to regulate electronic data and services in Turkey.[2] The EU Directives that cover telecommunications infrastructure and privatisation, e-invoicing, and e-procurement are also relevant (see Box 2.1). Most of Turkey's legal framework covering electronic transactions is in place, except for a comprehensive personal data protection law. The former is required by the EU *acquis communautaires*. The latter is expected to be enacted soon and will be enforced by the Personal Data Protection Institution envisaged in the law.

Table 2.1. **Laws required for electronic transactions**

Legal topic	Incorporated into Turkish law
E-signatures	Yes
E-contracts	Yes
Privacy of records	Yes
Security of electronic transactions	Yes
Intellectual property	Yes
Freedom of Information law	Yes
Universal Service law	Yes
Consumer protection	Yes
Personal data protection[1]	No
Internet service providers	Yes

1. Although secondary legislation regarding processing of personal data is consistent with EU Directive 2002/58/EC, legal procedures are still in progress for a more comprehensive personal data privacy act.

Source: OECD, *E-Government Survey: Turkey*.

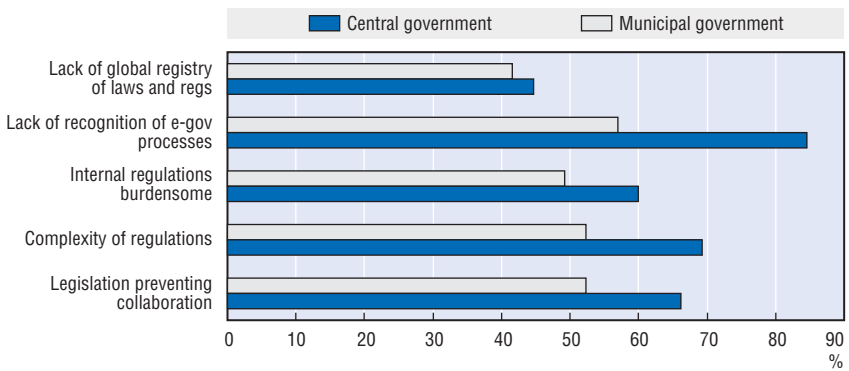
Turkey's public sector has a tradition of enacting legislation, where other countries might use a regulatory framework. This has a tendency to slow the rate of change, as Parliament becomes an important part of ensuring an appropriate legal/regulatory environment. Not surprisingly, over 80% of respondents to the OECD survey indicated that there is a lack of recognition of the need for additional legislation governing e-government processes.

The OECD survey asked respondents to rate the importance of specific legislative or regulatory barriers to e-government in their organisations. The figure below shows that more than 80% of the respondents from central government feel that the lack of recognition of the need to change laws to accommodate e-government processes is an important or somewhat important barrier. Between 40% and 50% of respondents emphasise such barriers as the complexity of regulations, legislation preventing collaboration and overly burdensome internal regulations.

Box 2.1. **EU directives relevant for e-government**

Legal topic	EU directive
E–procurement	EU directive on public procurement including article on e-procurement [2004/18/EC, Article 33].
Re-use of public data	EU directive on re-use of public data regulating the possibility of usage of public data [2003/98/EC].
E-commerce	EU e-commerce directive [2000/31/EC].
Telecommunications	Liberalisation of telecommunications markets. Five directives constituting the new EU regulatory framework for the liberalisation of the European telecommunications markets: the framework directive, the access directive, the universal services directive, the authorisation directive and the privacy directive.
E-signatures	EU directive on electronic signatures regulating the framework for recognised electronic signatures [1999/93/EC].
E-invoicing	VAT collection: EU directive on e-invoicing with regard to value-added tax collection regulating conditions for using e-invoicing within collection of value-added tax [2001/115/EC amending 77/388/EEC].
Privacy legislation	EU directive on privacy and electronic communications [Directive 2002/58/EC].
Data protection legislation	EU directive on data protection regulating protection of personal data [95/46/EC].

Figure 2.2. **Respondents identifying legislative and regulatory barriers as "important" or "somewhat important"**



Source: OECD, *E-Government Survey: Turkey*.

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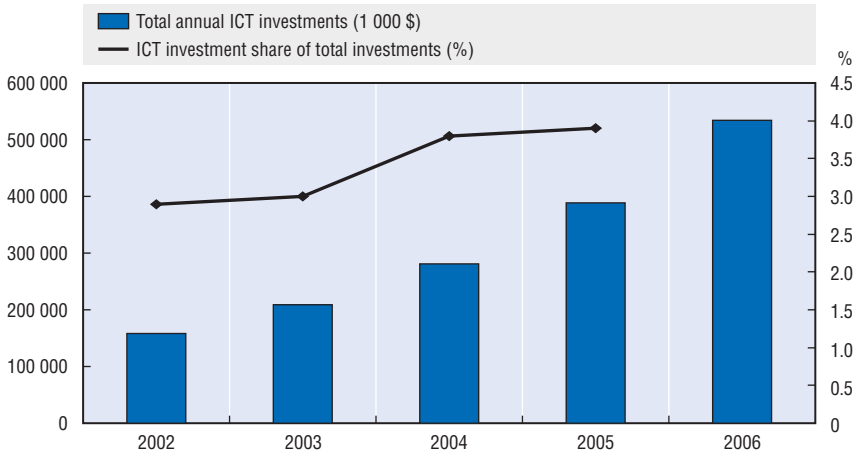
Budgetary challenges

The government budget process is where strategies and plans meet reality, and where the necessary resources are disbursed. Central government controls about 30% of gross domestic product. Sub-central governments only account for about 10% of total primary public spending, with little availability of funding for e-government.

Annual IT investments have risen sharply since 2002, as has the share of the total investment budget devoted to IT investment (see Figure 2.3).

In 2002 ICT public investment projects[3] consisted of 203 projects for a total commitment of USD 800 million, with an annual expenditure of USD 159 million. The corresponding numbers for 2005 were 200 projects, and USD 386 million allocated for central government projects. The total expenditure (*i.e.* investments and operational costs) for ICT in 2005 is unknown.

Figure 2.3. **Investment volume for ICT and as share of total investments**



Source: State Planning Organisation (2006).

In Turkey, the government budget process is the responsibility of the Ministry of Finance, with assistance from the line ministries and the State Planning Organisation (SPO), a central co-ordinating agency attached to the Prime Minister's Office. Whereas SPO reviews all public investment projects the Ministry of Finance disburses the funds to the line ministries. For projects with a time scale of one year line ministries can change details of the project without approval of the SPO within the limits of allocated project budget.

The government has prioritised funding high-volume/high-value central government e-services (especially services that collect revenue or disburse

benefits), central key databases for citizen and business information, and sector information networks for justice, taxes, health and the school system.

Civil servants working in Turkish agencies and ministries – including the Tax Administration, Ministry of Education, Public Procurement Agency, Ministry of Labour and Social Security, and the Turkish Statistical Institute – told the OECD that they do not lack resources for e-government projects. The opposite was true for non-priority areas such as e-services provided by the Ministry of Foreign Affairs and the Ministry of Environment and Forestry.

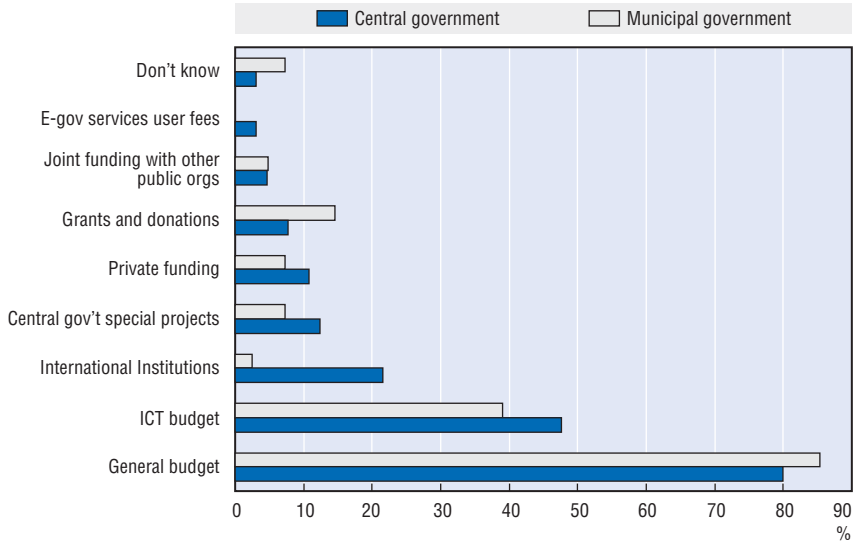
Increasingly, OECD countries are looking to e-government to provide a significant return on investment in terms of a more efficient public sector and benefits for users. Evaluations of ICT projects has shown that a little over 30% are completed on time, within scope and budget;[4] even fewer provide a positive return on investment,[5] *i.e.* contribute to the objectives of the organisation. An Australian study showed that of 24 e-government projects expecting a financial benefit, "the aggregate benefit to cost ratio was 92.5 per cent." Facts like these are motivating OECD countries to implement benefit realisation methodologies to ensure that e-government investments will generate a positive return on investment. These methodologies begin with a thorough analysis of the *ex ante* benefit and cost proposition with special attention paid to including all costs (such as training and change management), major benefits and risks. The *ex ante* review includes scrutiny of how the project will realise the promised benefits.

Some countries, such as the United States, review the whole stock of ICT implementations in terms of business lines (what the investment is used for) and the ICT technology (what technology is used). This information makes it possible to identify opportunities to develop optimal processes and software and then let many agencies use it, such as records management and e-authentication processes. A logical next step is to consider developing a shared service for similar business processes that agencies must use. The United States Office of Management and Budget has established e-government initiatives that develop shared services for back-office activities such as payroll, accounting, human resources, grant processing, training, and benefits.

E-Government projects in Turkey are financed from several different sources: agencies' general budgets, joint funding by several agencies, international institutions, and user fees. Figure 2.4 shows that over 80% of the central government respondents to the OECD survey financed e-government projects from their general budgets. Slightly over 20% of the central government respondents received financing from international organisations.

While SPO guidance specifies that a feasibility study (including a business case) should be used to determine benefits, costs and risks, such

Figure 2.4. **Specific sources of funding for e-government projects**



Source: : OECD, *E-Government Survey: Turkey*.

practices have yet to achieve widespread usage. Business cases provide an important tool for judging if a project should be funded and if changes need to be made to the project to increase benefits, lower costs or reduce risks. The OECD survey of central government agencies with major e-services documented that few agencies (4 of 23 responses) had developed business cases for their e-services projects.

Like many other countries, Turkey finances public expenditures through a general budget for operational costs and a capital budget for investments. Financing a project from the capital budget in practice makes the cost of capital to ministries and agencies equal to zero. Some countries have tried to increase the cost of project failure and promote good management by requiring that the responsible agency cover project cost overruns from its general budget. Another approach is used in Sweden, where agency investments for internal process are reviewed by the Ministry of Finance; once approved, the agency borrows the money from the state bank and amortizes the loan over a number of years. This approach tends to increase the quality of the analysis of project costs and benefits, as well as the need for re-engineering to ensure that the benefits will be significant.

The SPO has considered creating a special ICT fund for large projects. This is one way of addressing the financing of large ICT investments and shared services – in a sense, fencing off the money. Its success would depend on how Parliament wants to appropriate the resources. Some people

interviewed by the OECD felt that multi-year budgeting would facilitate planning and execution of multi-year e-government projects. Many countries use multi-year appropriations to fund long-term projects. The more serious issue is how to make sure that all ICT investments provide a return on investment.

Can SPO do this by itself or is there a growing role for the line ministries? SPO should consider piloting a special section in agency/ministry budget requests where ICT costs, benefits and milestones are made explicit and linked to agency performance. At the end of the year, ministries and agencies would account for expenditures and results, such as reaching targets and keeping spending within budget.

Currently, Turkey lacks information on all ICT spending in central government. It also lacks an enterprise architecture framework to analyse ICT investments in terms of business lines and type of technology. Enterprise architecture defines the overall structure of an organisation's processes, information systems, personnel and organisational sub-units with a view to aligning them with the organisations core goals and strategic direction.

Some countries complement the budget review of ICT investments with a formal review at certain milestones during implementation in order to check on progress and be able to change budgets, deliverables and timelines. This kind of review is used in the United Kingdom (the Gateway Process)[6] and in Canada (the Outcome Management Process).[7] These studies point to the need to complement the budget review at the beginning of large ICT projects with supplementary reviews during implementation.

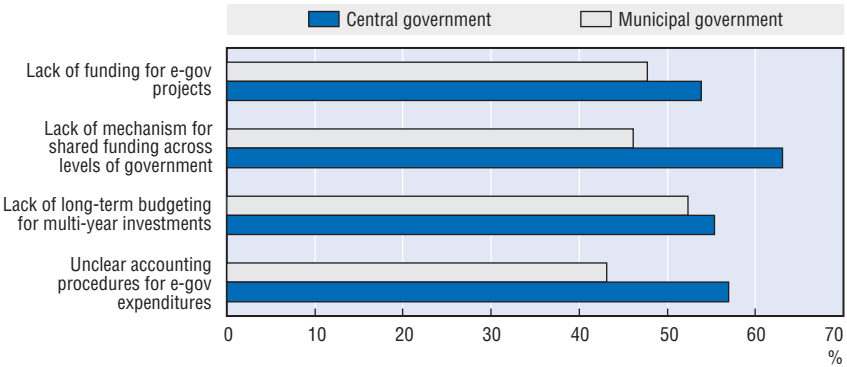
The OECD survey also asked about the importance of specific budgetary barriers (see Figure 2.5). There are no large differences between central and local government responses with respect to proposed budgetary issues. About 50% of respondents at both levels of government believe these barriers are important or somewhat important.

Many OECD member countries have pointed to the lack of mechanisms for shared funding across levels of government and among agencies at the same level of government. Some countries have one agency to provide a shared service (*e.g.* payroll) financed by a fee for service. Another alternative has been to establish a governmental unit providing a specific service to government agencies as a shared service, where costs are shared or fees charged according to an agreed formula. Turkey will need to address how the increasing number of central shared data registers will be financed.

Internet infrastructure

Turkey's basic infrastructure is the telephone line network, reaching almost all 15 million households connecting to the Internet via dial-up

Figure 2.5. **Respondents identifying budgetary barriers as "important" or "somewhat important"**



Source: OECD, *E-Government Survey: Turkey*.

modem or DSL and a small cable network. Turkey's fibre Internet backbone provides for high-speed connections,[8] but this has not translated to a high number of broadband users. There were 1.8 million DSL subscribers as of 31 March 2006.[9]

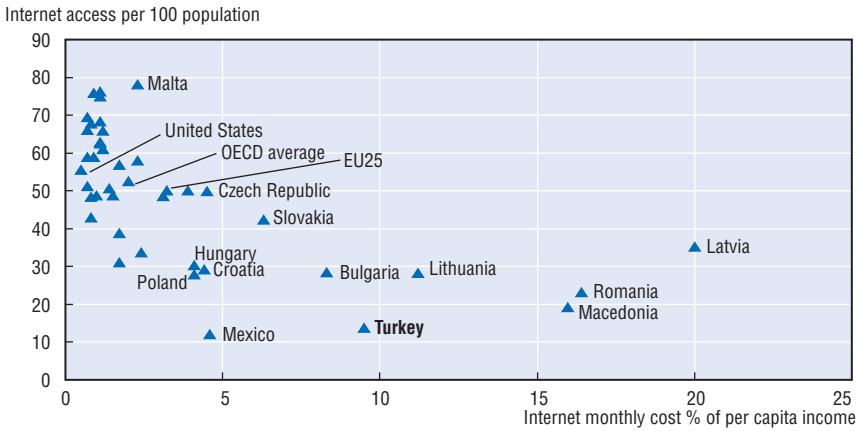
High-speed broadband has strategic importance and should be promoted.[10] Much as traffic expands to fill roadway capacity after the building of superhighways, having more broadband capacity will likely facilitate the delivery of government e-services, provide a foundation for e-government in whole sectors of government, and stimulate the development of e-business. Turkish universities have their own broadband network, as does the National Adjudication Network Project (UYAP). The e-health initiative is proposing to build its own network for exchanging data. However, there does not seem to be a government-wide strategic plan in place as to how broadband infrastructure will be implemented for private and public use.

Turkey's 46 million[11] cellular phones provide another means of potential access. Improved competition in providing Internet services, local loop unbundling, and the licensing of new technologies (such as Wi-MAX) should increase access and decrease costs.

Experiences in many OECD countries show that governments should leave the choice of technology and infrastructure expansion as much as possible to market forces while promoting a level playing field for different technologies. Turkey is implementing a policy of increased competition through the privatisation of its incumbent telecom operator (55% was sold to the private sector in August 2005) and implementing rules to increase competition such as providing competitors access to telephone lines.

Several OECD interviewees commented that the relatively high cost of accessing the Internet has slowed the growth of Internet use. Figure 2.6 displays Internet *affordability* (measured as monthly access costs divided by monthly average per capital income) plotted against Internet use (measured as Internet access per 100 population). One can expect that when Internet access requires a lower share of monthly per capita income, Internet usage rates increase, everything else being equal. The figure shows that Turkey has a relatively high cost of Internet access as share of average monthly income, compared with selected countries in 2003. The figure also indicates that Internet usage is higher in countries where the monthly cost (for 20 hours) of Internet access is less than about 6% of monthly per capita income.

Figure 2.6. **Cost of Internet access vs. users per 100 population**



Source: Internet tariff: (ITU, 2005); Internet access: (UN, *Global E-Government Readiness Report 2005*).

Users in Turkey access the Internet differently compared with those in EU25 countries. One difference is that home access to the Internet is lower in Turkey, another that Internet cafe use[12] is much higher and public libraries are not used at all. This finding shows that Internet access from home or workplace are not always the most revealing measures of actual individual Internet access for comparison between countries.

Internet access and use

Internet use is facilitated by nationwide, affordable access to the Internet. Many countries have seen Internet coverage and use by citizens and businesses as a strategic national goal for the development of an Information Society and have developed strategies using different technologies, licensing methods, and private public partnerships to promote rapid development.

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Table 2.2. **Location of Internet access**

Location of Internet access	Turkey 2005 (%)	EU25 2005 (%)
Home	28	78
Workplace	43	41
Place of education	9	16
Other person's home	7	19
Public library	0	7
Internet cafe	37	–
Other	2	14

Source: Eurostat, Turkish State Institute of Statistics.

A strong case can be made for governments promoting nationwide Internet access, as the Internet can be viewed as a public good and necessary for economic and social development as well as a more open, equitable and accessible society. A competitive private sector needs to develop the capability to use e-commerce. E-commerce will develop slowly if there are few Internet users, and users will not develop if charges for connections are high, coverage low, and the Internet provides negligible content and services.

This section discusses how the Internet is accessed, how individuals use the Internet and differences in usage as to gender, age, and where people live – the so-called digital divide. Turkey began to collect data on business use of the Internet in 2005 and published statistics for the first time in June 2006.

Internet access by household

Household Internet access is relatively low in Turkey. Of the country's 15 million households, 8.7%[13] had access to the Internet in 2005. Of these, 1.7% use broadband, 4.5% use modems and 3.2% use mobile phones. This relatively low share of Internet access represents a barrier to the take-up of government services provided over the Internet as well as the development of e-commerce.

Table 2.3. **Household Internet subscribers, by mode of Internet access (July 2005)**

%

Mode	Turkey 2005	EU25 2005
Using a modem connection	4.6	26
Using a DSL connection	1.7	17
Using a mobile phone connection	3.2	4
Using other connection, *e.g.* cable	0.1	6

Source: Turkey State Institute of Statistics, Eurostat.

Internet use by individuals

Statistics[14] show that Turkey has some way to go before reaching the same level of individual Internet use as the EU25 average. The proportion of individuals aged 16-74 using the Internet during a three-month period during 2005 (see Table 2.4) was considerably lower in Turkey (14%) than for the EU25 (43%). Similarly, the difference in the number of households in Turkey and in the EU25 with Internet connections at home was even bigger – 9% compared with 48%. The same large difference can be noted for ordering goods and services via the Internet – 5% and 44%, respectively. Consequently, it is important for the government to seek to increase the proportion of individuals using the Internet through better Internet geographical coverage and by reducing the cost of accessing and using the Internet.

Table 2.4. **Internet usage rates in Turkey and the EU25**

Usage indicator (based on a three-month period)	Turkey 2005 (%)	EU25 2005 (%)
Proportion of individuals (aged 16-74) using the Internet	14	51
Proportion of enterprises using the Internet[1]	80	89
Proportion of households with Internet connection	9	48
Proportion of households with broadband connection[2]	2	23
Proportion of enterprises (10 or more employees) with broadband connection	24	63
Proportion of Internet users using financial services on line	13	38
Proportion of Internet users who have ordered goods or services on line for private use	6	36

1. Turkish Statistical Institute (2006) *Use of ICT by Enterprises*, 2005. Survey carried out in January 2005.
2. Statistics provided by SPO, Turkey.

Source: Eurostat, Turkish Statistical Institute.

Governments can promote Internet use on both the supply and the demand sides. By using the Internet as a major delivery channel for information and e-services, and e-procurement, the public sector increases demand on the Internet network. In supplying information and e-services, governments provide valuable content that might encourage citizens and businesses to become Internet users.

Further, if Turkey wants to rapidly develop its Information Society, it needs to promote a high degree of broadband coverage using appropriate technologies, increasingly use cellular phones for access to the Internet, and promote competition among providers in innovative ways – for example by combining licenses for phone, data, and Internet; encouraging local governments to become backbone customers in an area to reduce risk to the private sector; and opening trunk lines for backhauling and connecting to other countries.

The digital divide refers to large differences in Internet use between different groups in a society. Turkey faces several digital divide gaps: urban/rural, gender and age. For example in Turkey in 2005, 19% of urban individuals had used the Internet *versus* 6% of rural individuals (see Table 2.5). It is important to note that a large share of the population (30%) lives in rural areas. As to gender, 19% of males used the Internet *versus* 9% of females. As in most OECD countries, there is an age divide as well. Twice as many individuals aged 16-24 years old use the Internet, compared with the same gender in the 16-74 age group.

Individual Internet usage changed little between 2004 and 2005, increasing from 13% to 14%. A number of government efforts are addressing digital divides, such as providing increased access to the Internet through community use of school resources and reducing access costs through increased competition and public private partnerships. Other efforts are directed at increasing the desire to access the Internet, such as providing more content in Turkish and more high-value e-services. However, the slow rate of change in Internet usage indicates that greater efforts to reduce the digital divide are needed.

Table 2.5. **Digital divide data**

Internet use (April-June)	Turkey 2005 (%)	EU25 2005 (%)
Proportion of individuals aged 16-74 using the Internet	14	51
Proportion of urban individuals aged 16-74 using the Internet	19	57
Proportion of rural individuals aged 16-74 using the Internet	6	46
Proportion of males aged 16-74 using the Internet	19	55
Proportion of females aged 16-74 using the Internet	9	47
Proportion of individuals aged 16-24 using the Internet	28	80

Source: Eurostat, Turkish Statistical Institute.

Internet access by businesses

The survey of business use of ICT[19] was carried out in January 2005. It showed that 89% of enterprises with more than nine employees used a computer, and 80% had access to the Internet. Of enterprises with Internet access, 63% used it to interact with public authorities. Almost half of enterprises, 48%, reported having a website. The main reasons given by enterprises for using the Internet were banking and financial services.

Table 2.6. **Share of enterprises with Internet access**

	2004	2005
EU25	89%	91%
Turkey	n.a.	80%

Source: Eurostat (2006), Turkish Statistical Institute.

User ICT competencies and skills

Several types of ICT skills are needed in the Information Society, and these skills differ for different groups of users such as citizens, workers, businesses, and civil servants.

Basic skills

Implementing the Information Society requires that citizens acquire the basic skills to access and use computers and the Internet. Turkey is implementing an ambitious programme, the E-Learning Initiative, to increase the number of persons with basic computer skills. The E-Learning Initiative reaches over 13 million students, teachers, and administrators.

The e-learning objectives are to:

- Ensure that primary education pupils, as well teachers and administrators, become computer literate.
- Increase the quality and productivity of education through efficient and effective use of information technologies.
- Connect all schools to the Internet.
- Use computer-aided education.
- Use ICT in school administration.
- Make school computer resources available to the public.

The original goal was for all schools to be connected to the Internet in 2005. This ambitious goal has not yet been reached. About 75% of secondary schools and almost 40% of primary schools are connected to the Internet (see Table 2.7). Turkey has made major progress in training 600 000 teachers and administrators in using computers in education and administration. However, there are challenges. Many schools have tight budgets and find it difficult to pay for Internet subscriptions and maintenance of computer hardware and software.

Most primary and secondary school students are getting instruction in computer use. However, the student-to-computer ratio is very high and the amount of basic computer instruction is on the order of two hours per week in primary schools. Consequently, it will take some time before computer

Table 2.7. **School and ICT statistics (2004-2005)**

Type of school	Schools	Schools with ADSL connection	Computers	Students	Students per computer
Primary education	35 581	13 410 (38%)	131 310	10 126 298	77
Secondary education	10 709	8 120 (76%)	90 542	2 650 266	29
Total	46 290	21 530 (47%)	221 852	12 776 564	58

Source: Turkey Ministry of National Education (2006).

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literacy is raised substantially. This situation is similar to that faced by many EU countries in the mid-1990s.

Advanced ICT skills

Turkey also needs people with advanced ICT skills to assist in developing an Information Society. Is Turkey producing enough people with advanced skills?

One way to answer this question is to determine the number of graduates with PhDs and Masters degrees in mathematics, science and technology, then determine the ratio of thousands of graduates per 1 000 population for Turkey and compare it with the EU25 and EU15. Table 2.8 shows that Turkey's output of these graduates per 1 000 population is 57% of the EU15 and 59% of the EU25 numbers. This indicates that Turkey needs more graduates in these areas in order to better achieve the Lisbon agenda of growth and jobs through ICT. In late 2005, Turkey addressed this issue when the government decided to improve the supply of persons with tertiary education (as well as ICT skills) by establishing 15 new universities and institutes.

Table 2.8. **Tertiary education graduates in mathematics, sciences and technology per 1 000 population**

	1999	2000	2001	2002	2003
EU25 graduates per 1 000 population	1.30	1.41	1.50	1.54	1.66
EU15 graduates per 1 000 population	1.40	1.49	1.59	1.62	1.73
Turkey graduates per 1 000 population	0.81	0.85	0.90	0.95	0.98
Turkey/EU25	**0.62**	**0.60**	**0.60**	**0.62**	**0.59**
Turkey/EU15	**0.57**	**0.57**	**0.57**	**0.58**	**0.57**

Source: Eurostat (2006).

Computer literacy skills among businesses

The private sector also needs improved ICT skills, to use the Internet and to adopt e-commerce solutions. This is being addressed by KOSGEB, the agency in charge of assisting small and medium-sized enterprises (SMEs) in manufacturing with technical and financial support and training. However, the agency's mandate does not include providing assistance to all SMEs.

KOSGEB's services should be extended to all SMEs in order to focus the responsibility for providing government programmes to the small-business sector and for e-commerce on one agency. KOSGEB has established 55 Internet cafes with instructors to assist SMEs in using the Internet. But this is not sufficient; much more could be accomplished by, for example, working with universities to provide courses in using the Internet, as well as providing counselling and training services in e-commerce to SMEs.

Another issue is that of a national portal for businesses. A portal (*www.kobi.org.tr*) has been launched in co-operation with many government agencies by TOBB (Union of Commerce and Commodity Exchanges of Turkey). This portal provides information and links to services provided by itself and government agencies. In the future, it could become a basis for seamless services to SMEs.

Notes

1. OECD (2003), *The E-Government Imperative*.
2. A more complete listing of laws and when they were enacted can be found in Annex F.
3. Akca, H., *Turkey's Transition to Information Society*, World Summit on Information Society Presentation, 2005.
4. The Standish Group (2003), *Chaos report project success rates*, *www.standishgroup.com/press/article.php?id=2*.
5. Australian Office for the Information Economy, NOIE (2003), *E-Government Benefits Study*.
6. Office of Government Computing (2005) *Successful delivery toolkit*, (*www.ogc.gov.uk/sdtoolkit/delivery/gateway/index.html*).
7. *Benefits realisation – Government of Canada approach*, (*www.olis.oecd.org/Comnet/pum/egovproweb.nsf/viewHtml/index/$FILE/expert_seminar.htm*).
8. Turkey has a total capacity of broadband infrastructure (ADSL and cable) of about 3.8 million subscriptions (2005).
9. DSL Forum, *www.dslforum.org/dslnews/pr.shtml*.
10. See Commission of the European Communities (2004), *Connecting Europe at High Speed: National Broadband Strategies* (SEC(2004) 599).
11. Telecommunication Authority, March 2006 statistics (*www.tk.gov.tr/Yayin/istatistikler/statistik/gsm_2006_mart.htm*).
12. There are more than 12 000 Internet cafes, most owned by private entrepreneurs.
13. Turkey State Institute of Statistics Bulletin #179, 16 Nov. 2005.
14. E-Government 2004: internet based interaction with European businesses and citizens, Eurostat, 23/2005.
15. Internet activities in the European Union, Eurostat, 40/2005.
16. The Digital Divide in Europe, Eurostat, 38/2005.
17. Internet usage by individuals and enterprises 2004, Eurostat, 18/2005.
18. Turkey State Institute of Statistics, News bulletin, Number 179, 16 Nov. 2005.
19. Turkish Statistical Institute Press Release No. 93, *Use of Information and Communications Technology (ICT) by Enterprises, 2005*, 7 June 2006.

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Chapter 3

E-Government Leadership

Assessments	Proposals for action
• **The e-Transformation Turkey Executive Board does not currently provide strong oversight of e-government progress.** This could result in the development of strategies and policies at the central and local government levels that are not consistently informed by overall progress in implementing e-government.	• To obtain a whole-of-government view of e-government implementation progress, the e-Transformation Turkey Executive Board should consider instituting oversight of major e-government projects and progress in order to provide more e-services, reduce the digital divide, and make government more responsive to citizens and businesses.
• **Leadership needs to be broadened to include the ministries.** The capacity of line ministries to develop and implement e-government within their respective sectors and in their subordinate agencies needs to be strengthened. This includes building capacity to allow line ministries to identify projects that will have high payoff, ensuring that projects follow an iterative incremental ICT development plan (instead of the traditional sequential approach), and ensuring that projects deliver benefits in terms of reduced costs and increased benefits.	• Line ministries need to assign high-level responsibility for developing e-government initiatives, as well as ensuring that they provide an adequate return on investment. The new strategic planning units in the line ministries could provide valuable input to sector-oriented e-government development.
• **Leadership needs to be developed in local government.** As the 3 225 local governments face the challenge of developing similar e-government applications, databases and services, a strong case can be made for co-operating rather than developing solutions in isolation.	• Instead of local governments developing e-government applications in a potentially duplicative and isolated manner, central government should assist in promulgating standards and guidelines that encourage local government to collaborate on developing e-services and sharing databases and services. • The central government might also consider creating incentives for collaboration in the development of e-government. An example is the local e-government fund provided by the UK central government to finance the development of best practices that might be used by other local governments and to promote the sharing and joint development of e-government solutions.

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Leadership is crucial

E-Government leadership is crucial to the use of e-government tools to modernise the public sector. There is no standard model, and every country has to develop structures and forms of leadership to fit its governance model and historical development.

Change in the public sector is a slow process, making it all the more important to have the right visions and strategies. Previous large-scale reforms such as automation, programme budgeting, and performance management have shown that it takes years to develop new processes and to make the public sector understand, accept and use them. In general, change is facilitated by strong political leadership, knowledgeable and committed ministries, appropriate marshalling of technical expertise, adequate resources, participation by civil society and the engagement of civil servants.

This section discusses the elements of leadership for successful public sector modernisation in terms of organisation, vision, strategies and plans, finding and allocating resources, and ensuring participation of government and civil society.

Box 3.1. **Why is leadership important?**

"Senior management is a scarce resource and ICT projects are often regarded as low-priority technical issues rather than essential to the success of the overall business plan. However, many OECD countries have found that sustained leadership is important at all levels of the e-government cycle. At the early stages of e-government implementation, leadership can articulate and promote acceptance of vision and strategy and set frameworks to facilitate electronic service delivery and structure implementation efficiently. As more complex transactional services are developed, leadership and support are needed to sustain momentum, particularly as benefits may take time to emerge. Leadership can broaden the support for a compelling vision of integrated services and more fundamental service transformation."

Source: OECD Observer, Checklist for E-Government Leaders (2003).

Leadership organisation

In Turkey, strong political leadership has created viable e-government strategies and organisational structures appropriate to an e-government start-up phase in a relatively short period of time (see Figure 3.1 and Box 3.2).

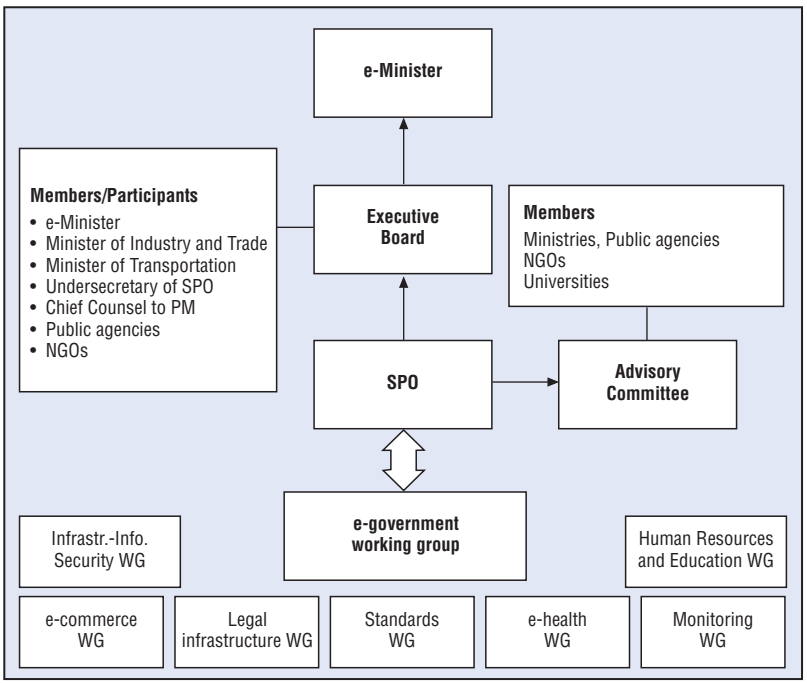
Turkey's leadership has shown its capability and capacity to formulate a vision and implement short-term plans. Early in 2003 it produced a short-term action plan (STAP) to guide e-government implementation for the next two years. Some of these actions were extended into 2005 while some were incorporated into the Action Plan for 2005. These plans included a number of specific studies to develop implementation plans and implement large projects such as the citizens' ID sharing system and e-declarations and tax collection; other efforts included networks for the justice and police systems, as well as passing legislation on e-signatures and privacy of personal data. The priority is on developing a few but important e-services providing information, high volume/high value to users, or better control over major cash flows.

E-Government leadership is provided by the Deputy Prime Minister (who is also a State Minister) and the e-Transformation Turkey Executive Board (see Box 3.3). This Board establishes e-government policies and strategies. The Board consists of 13 people: the Deputy Prime Minister, Minister of Transport, Minister of Industry and Trade, Undersecretary of SPO, and Chief Advisor to the Prime Minister who have voting rights, four participants from the public sector and four from NGOs, who do not have voting rights. It has an Advisory Board of 41 members from public institutions, NGOs, universities and businesses, ensuring high-level connections with civil society.

The e-Transformation Turkey Executive Board is served by the Information Society Department in the SPO. This department is responsible for providing support to policy making and overall co-ordination of e-government including interoperability, metadata and an e-government gateway. The department reviews public entities' project proposals regarding IT investments. The SPO works with eight associated working groups handling different issues: e-government, infrastructure security, e-commerce, legal infrastructure, standards, e-health, monitoring, and human resources and education. These work groups have collaborated with the SPO in developing action plans. The e-government working group is chaired by SPO and its membership consists of public agencies with significant e-government applications.

SPO's co-ordinating role is complemented by a number of other organisations with special functions. TUBITAK[1] is providing technical support on interconnectivity issues, smart cards, use of e-signatures, and web design guidelines. The Ministry of Interior is working with other agencies on the

Figure 3.1. **E-Government leadership organisation**



Source: SPO (2005), E-transformation Turkey Project: Turkish Case for E-Government.

Box 3.2. **Stages of e-government development**

Even though each country is unique in its leadership and governance, all face similar technical and organisational challenges in implementing e-government. Similar challenges also appear at the different major stages of e-government development:

Start-up phase: Establishing a legal and regulatory framework, implementing websites, providing information and developing basic e-services.

Expanding e-services: Developing more e-services and moving towards fully transactional services.

Integrating services: Integrating services vertically between levels of government and horizontally across different agencies or within a sector such as justice or education.

Transforming government: When the integration of services and processes has become more pervasive the government may change its stove-piped organisational structures into a more networked structure, transforming government.

rollout of an ID sharing system (KPS). The Ministry of Industry and Trade is developing a similar database for legal entities. The Telecom Authority establishes technical standards and is responsible for developing the regulations for the rollout of digital signatures.

Box 3.3. **Leadership models**

There are three general organisational models for driving a country's e-agenda.

1. **A dedicated organisation in the executive office.** This model is exemplified by UK (with e-government driven from the Cabinet Office), Japan and Italy.
2. **A unit in the Department of Treasury/Ministry of Finance.** Countries using this model include Denmark, the United States and Canada.
3. **A shared endeavour among several ministries.** These often include the Ministry of Finance, Ministry of Industry and Ministry of Interior. Countries using this model include Sweden and Germany.

Turkey's model closely resembles the dedicated organisation in the cabinet office. The e-Transformation Turkey Executive Board is a part of the Cabinet Office, with the affiliated State Planning Organisation as secretariat. It also achieves parts of the third model as the Ministers of Transport, and of Industry and Trade are members of the e-Transformation Turkey Executive Board.

As e-government matures and becomes more pervasive, additional organisational capabilities may be needed. The number and size of Information Society projects and needs for co-ordination have strained the capacity and the authority of the Information Society Department at the SPO. As a consequence, the government is considering changing the Information Society Department into a Directorate to increase its capacity to handle these responsibilities (draft law on State Planning Organisation's Establishment and duties 02/06/2005). According to this draft law, the Directorate will be in charge of:

- Identifying the strategy, targets and policies of the Information Society.
- Developing and improving the administrative, technical, legal and social infrastructure of the Information Society.
- Co-ordinating Information Society initiatives among public agencies, the private sector, and NGOs.
- Developing e-government projects in order to enhance efficiency, transparency, and participation, as well as co-ordinating e-government investments and applications.

- Contributing to government ICT policies.
- Conducting studies on widening the use of ICT to ensure information security, and establishing a secure communication infrastructure.
- Informing public opinion and raising awareness of the Information Society.
- Co-ordinating EU Information Society initiatives and programmes in Turkey.
- Negotiating with international organisations.

The capacity of ministries to provide e-government leadership within their respective working areas and to their subordinate agencies needs to be strengthened. Each line ministry should have a strategic planning unit that develops five-year strategic plans, as well as multi-year plans, for their sectors including public modernisation and e-government implementation. SPO could then use these plans as input to an all-of-government strategic plan.

Line ministries can strengthen their leadership in implementing e-government by creating a capacity for leadership in using information technology to modernise business processes in the ministry and its agencies, as well as co-ordinating the ministry's different ICT units. Some OECD countries have created the office of a Chief Information Officer (CIO) in each line ministry for this purpose.

Four major policy challenges

Turkey's leadership is facing four major e-government challenges: the digital divide, developing e-government in local government, promoting a stronger private sector and ensuring the participation of civil society.

The digital divide

The digital divide refers to discrepancies in citizens' computer and information literacy, as well as their physical access to the Internet. To achieve a more inclusive society and to increase take-up of e-services, the government should consider strategies with the objective of bringing e-government services to all citizens. Major efforts have been made in terms of increasing computer literacy in primary and secondary schools. Some schools are giving the community access to school computers. But more needs to be done in order to achieve an inclusive society. An innovative programme that helps teachers acquire computers might be extended to other work groups. Perhaps training programmes could be instituted through Internet cafes (similar to KOSGEB training for small business entrepreneurs) or through distance learning programmes. Partnerships might be created with NGOs and the private sector to provide training and access to the Internet.

Local government

E-Government is not only a concern for central government. Local governments also need to increase their capacity to deliver e-services, even though they have a relatively small role in the delivery of public goods and services compared to many EU25 countries. Sub-central government spending (special provincial administrations and municipalities) only amounts to 9.5% of total primary spending, or 3.5% of GDP.[2] This is likely to change in the future and represents a major e-government challenge as well as an opportunity. The laws 5215 and 5393 (enacted in 2005) devolve central authority to local governments and require that municipalities larger than 50 000 inhabitants prepare a strategic plan. The consequent changes in local government responsibilities and services could be facilitated by local government collaborating on developing standardised e-services and common business processes.

A recognised early application was the development of the Yerelnet (local government network) portal, which has received strong support from SPO. It establishes a platform where local governments can share information and build knowledge.

The United Nations Development Programme (UNDP) has financed and been a partner in several local government projects. In one project, Yalova became a pilot city for the eTurkey Initiative, which preceded the e-Transformation Turkey Project in 2002. The objectives of the project were:

- Improved efficiency and equity in the delivery of public services through e-government.
- Development of the "e-citizen" through education and e-learning.
- Increased public awareness of e-governance at the local and national levels.

The Turkish Agenda 21 project has sponsored a number of projects in cities throughout Turkey. A recent project began in 2005 with the objective of providing support for a local administration reform programme. It involved the UNDP, the Ministry of Interior, the Unions of Local Authorities and select local authorities. The objective was to increase the capacity of these organisations in the fields of local public services, investments and budgeting.

A number of projects have been carried out, but more needs to be done. It is time to develop a coherent strategy for how to implement e-government in sub-central governments. For example, with 3 225 municipalities collecting similar data and providing similar services, it would be productive to develop common standards for data and services, develop common software, and explore opportunities for developing software and sharing services. An example is e-signatures, where it might be a useful strategy to develop

standards and applications in a few municipalities and then offer them for implementation in the others.

OECD discussions with municipalities pointed to: a lack of resources and a lack of co-operation among local governments in implementing information websites and e-services; the need to develop standards for services; and the difficulty in hiring ICT workers. Many municipalities had focused on GIS systems rather than on citizen services. Some participants suggested that municipalities should take a greater role in collaborating with each other on e-services development. Others suggested that the Ministry of Interior's directorate for local government take a lead in developing municipal software for e-government, while yet others suggested that the directorate should develop guidelines and standards rather than a single software solution. The discussions showed that there is great interest in the municipalities in developing e-government; citizens are demanding more e-services from local government, and many municipalities are looking to the central government to provide guidance and support.

Promoting a more competitive private sector

Central government can promote a more competitive private sector through e-government-related activities. One important area is developing identity management processes (e-authentication) and using them for transactions between government and businesses. Change will be more rapid if KOSGEB trains and counsels businesses in using e-authentication, and the government standardises e-authentication processes and software for the public sector. The government can also facilitate change, for example promoting electronic transactions and payments by requiring that transactions (such as e-procurement) be carried out electronically. A third area is e-commerce. The government can promote e-commerce through its e-procurement initiative, where much of government buying will be done electronically. KOSGEB can train SMEs in e-commerce. A fourth area is in developing a one-stop portal – or a part of the national portal – exclusively for the business sector, or further developing the existing portals (*www.kobinet.tr* and *http://sanayi.tobb.org.tr*).

These portals could be patterned on similar portals (such as those in Canada and Australia) providing advice on: laws, rules and regulations; how to start and grow a business, as well as, go out of business; training and counselling; and information on relevant government programmes. A fifth area is using the Internet to improve information linkages between research in universities, development in institutes and businesses, and commercialisation.

Civil society participation

Information Society policy making is one of the areas with strong interactions between central government and private actors. Strong civil society organisations (CSOs) include the Informatics Association of Turkey and the Turkish Informatics Foundation. Private sector organisations such as TUSIAD (Turkish Industrialist's and Businessmen's Association) have been involved in discussing the development of the Information Society. NGOs are members of the e-Transformation Turkey Executive Board, the Advisory Board and working groups.

Interviews with academics, NGOs and business leaders as part of the peer review process showed, however, that consultation with civil society is less frequent now that e-government is being implemented than it was in the planning phase. The interviewees pointed out that it is arguably even more important to have civil society participation in the implementation phase to ensure that everybody is pulling in the same direction. In addition, the academic community's participation is crucial for providing computer literacy, advanced ICT skills and ICT R&D. The business sector needs to become more innovative and more competitive, as well as to participate in private public partnerships to improve infrastructures and further ICT adoption.

E-Government strategies and plans

The Short Term Action Plan (STAP)[3] and the Action Plan for 2005 were blueprints for the modernisation of the public sector. The different sections of the plan emphasise the broad scope of the modernisation agenda:

- Information Society Strategy
- Technical Infrastructure and Information Security
- Education and Human Resources
- Legal Infrastructure
- Standards
- E-Government
- E-health
- E-commerce

The very first action of the STAP was to develop an Information Society strategy. The strategy was completed in March 2006. A strategic plan for 2006-2010 was submitted to the High Planning Council in June 2006 and approved on 11 July 2006.

The plan also included a number of specific studies to develop implementation plans and accelerate large automation projects for citizen IDs and tax collection, and networks for the justice and police systems. It also

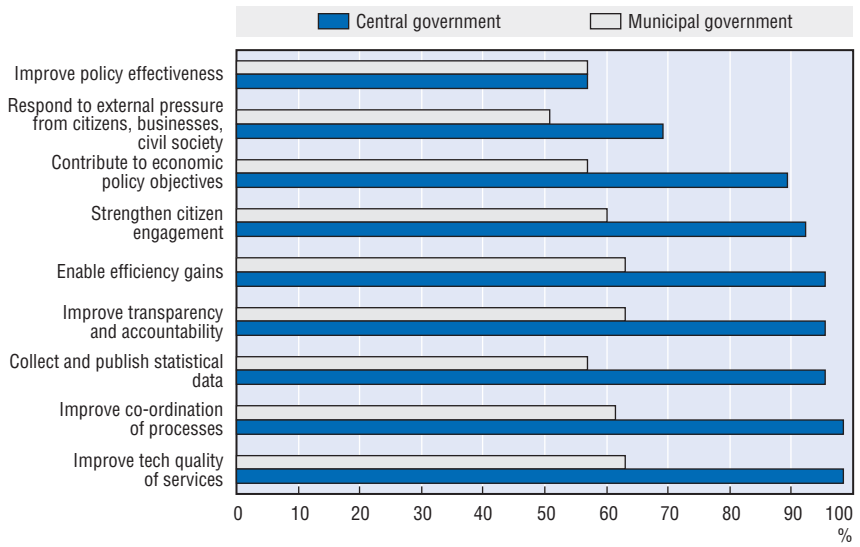
encouraged passage of legislation for e-signatures and privacy of data. Priorities were developing few but important e-services providing information, high volume/high value to users, or better control over major cash flows. The focus has been improving government internal efficiencies rather than customer service, and on providing value to government rather than benefits to customers.

The STAP and the Action Plan for 2005 provide very little information on project details. They specify which ministry or agency is responsible for implementation of a given project but provide almost no information on project goals, financing, timelines and expected results. Consequently it has been difficult to analyse the STAP project portfolio and performance.

How important are the different reasons for implementing e-government (see Figure 3.2)? In the OECD survey more central government respondents than municipal respondents rated the reasons as important or somewhat important. Few respondents in both groups rated external pressure from citizens, businesses and civil society as important or somewhat important. This shows that e-government is driven by government internal concerns such as achieving greater efficiency, transparency, and accountability.

What are agency e-government priority goals for the next three years? The OECD survey asked each respondent to assign a unique number 1 through 15 to each of 15 e-government goals. An average priority was then calculated

Figure 3.2. **Respondents identifying reasons for implementing e-government as "important" or "somewhat important"**



Source: OECD, *E-Government Survey: Turkey*.

for each goal. The result is shown in Table 3.1. The top priority goals are to improve quality of services and internal efficiency. This is followed by six goals – including increasing transparency, eliminating red tape, increasing customer satisfaction and generating savings – with roughly similar averages. Seven of the top eight goals deal with internal agency aspects of e-government. The goal of improving customer satisfaction is in fifth place, while encouraging public participation occupies ninth place. This reinforces earlier conclusions: at present e-government in Turkey is focused on achieving internal savings and more efficient services.

Table 3.1. **Priority rating of e-government goals**

Number	Goal	Average
1	Improve quality of services	11.8
2	Improve internal efficiency	11.5
3	Improve access to knowledge resources	10.9
4	Increase transparency	10.7
5	Improve customer satisfaction	10.7
6	Eliminate red tape	10.6
7	Improve decision-making process	10.5
8	Generate savings	10.4
9	Encourage public participation	9.7
10	Increase revenue	9.5
11	Achieve integration with other entities	9.1
12	Contribute to public management reform	8.6
13	Contribute to economic policies	8.2
14	Develop ICT/e-government leadership skills	8.1
15	Other	3.8

Source: OECD, *E-Government Survey: Turkey*.

Co-ordination of projects

The Information Society Department's role is not limited to providing support for policy making; it also includes the co-ordination of all ICT projects among public agencies and monitoring implementation.[4] The Information Society Department has provided a needed focus for planning, reviewing, co-ordinating and monitoring activities with regard to e-government projects. Co-ordination is to a large degree carried out through the eight working groups attached to the SPO for e-government issues.

As e-government investments become more complex and numerous, SPO's capacity, technical competence and knowledge of sector-specific opportunities for transformation is likely to become strained. In addition, there is the issue of who has the responsibility for co-ordinating existing systems with new investments. The line ministries could play an important

role in developing e-government projects, and ensuring that the investments are well documented and that implementation is proceeding as planned. The strategic planning units in the ministries, proposed earlier, could have an important role in identifying opportunities for transformational projects using ICT. A Chief Information Officer could have a significant role in making sure that technological capabilities are considered in improving public sector performance. As e-government matures it is only fitting that e-government project investment decisions are treated the same as any other investment decision and that ministries have a responsibility for co-ordinating e-government projects in their sectors.

Notes

1. The Scientific and Technological Research Council of Turkey. It acts as an advisory agency to the Turkish government on science and research issues, and is the secretariat of the Supreme Council of Science and Technology.
2. Reforming Turkey's Public Expenditure Management, OECD Economics Directorate Working Paper #418, February 2005.
3. E-Transformation Turkey Project, Short-Term Action Plan 2003-2004, October 2003.
4. E-Transformation Turkey Project: Turkish Case for E-government (2004), *www.bilgitoplumu.gov.tr/yayin/2004%20CoG%20Meeting-7-8%20October2004-Room%20Document-TURKEY.pdf*.

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Chapter 4

E-Government Implementation

Assessments	Proposals for action
• **Strong management and project oversight are essential to address the risk of failure of large, multi-year transformational e–government initiatives.** In an initial phase of e-government development, control of implementation can be maintained by ensuring that ICT investments are consistent with a strategic vision, and using cost-benefit analysis to select ICT portfolios. However, when the number of installed applications grows and initiatives embrace more integrated and transformative applications, additional management instruments for prioritising spending and managing implementation may be necessary to ensure higher rates of return on ICT investments.	• Turkey should consider assigning oversight of e-government implementation to officials within the line ministries who are at a sufficiently high level to ensure accountability.
• **Successful oversight and management of e-government projects requires timely information.** Data on costs, outputs, customer satisfaction and other benefits to users and government is largely lacking in Turkey.	• Ministries should develop e-government project information systems to track project costs and accomplishments, as well as benefits and costs to users. Turkey should consider requiring a benefits realisation plan for large ICT projects, improving oversight of project implementation, and mandating post-implementation evaluation.
• **Technical guidelines lack uniformity.** An OECD survey showed that – to a large extent – guidance for standards (*e.g.* XML and enterprise architecture), privacy, security, electronic networks, e-procurement and e-authentication came from inside each agency. This may hinder interoperability and the application of uniform approaches to privacy, security and data sharing.	• Ministries, agencies and local governments need to collaborate on e-government policies, standards, and privacy and security safeguards in a uniform manner.
• **Implementing e–transformation projects requires people who can both manage ICT projects and manage change.** A study by the Middle East Technical University documented that programme managers viewed ICT as an automation tool rather than a transformation instrument. Another study of public administration courses documented that only rudimentary ICT skills were taught. ICT-enabled process change requires people who can both manage change in processes and organisations, and understand ICT.	• The government should take steps to increase the project management, change management, business process engineering and ICT skills of managers in the public sector to ensure that the necessary professional skills are available for e-government implementation.
• **Having an ICT department in each agency might not be the best way to ensure capacity, competency and flexibility.** Many Turkish government agencies have small ICT departments that have difficulty developing ICT applications. One development strategy is to grow these departments over time. Another strategy is to consolidate small ICT departments and outsource some functions, thereby creating units with enough resources to develop and maintain advanced skills in privacy, security, networks and procurement.	• Turkey might consider consolidating ICT departments or even creating one centralised ICT capacity in each ministry. This would facilitate attracting and maintaining key competencies in building an enterprise architecture, business process re-engineering, procurement, and managing consultants. In addition, instead of developing and running applications in-house, the government could institute a policy of outsourcing that would stimulate development of the private-sector ICT industry, one of Turkey's long-term goals.

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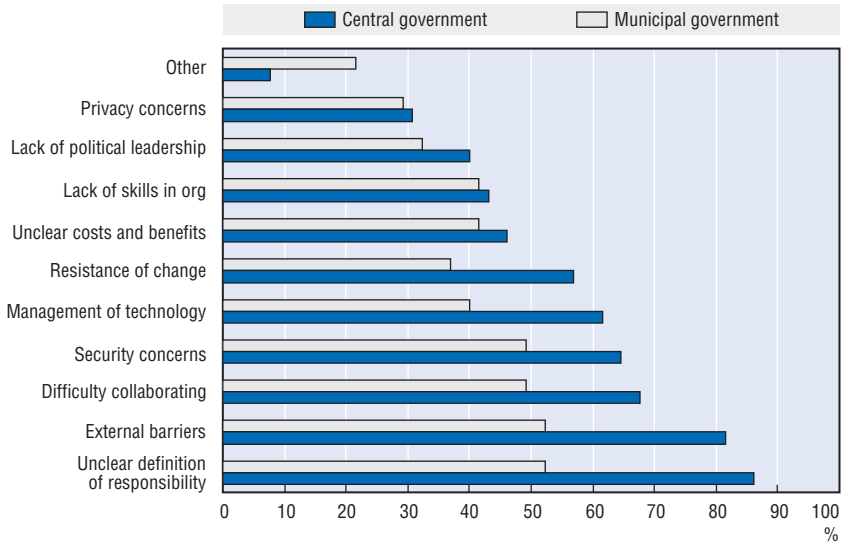
E-Government is about change

E-Government is essentially about change in the public sector. It is about government becoming more user-focused, transforming government through shared services and data, and promoting integration between levels of government. Implementing change in the public sector is difficult. The capacity to successfully implement change is a function of factors such as implementation management, organisational structures for implementation, and management and ICT competencies and skills.

Implementation challenges

What challenges do agencies face when implementing e-government? Respondents to the OECD survey were asked to rate the relative importance of a number of challenges. There is a big difference between central and local government in the perception of many challenges. External barriers – such as legislative, regulatory or budgetary barriers or the digital divide – are rated

Figure 4.1. **Respondents identifying challenges to e-government implementation as "important" or "somewhat important"**



Source: OECD, *E-Government Survey: Turkey*.

important or somewhat important by 80% of central government respondents. There is much less concern about skills and privacy. This might be expected in a highly centralised bureaucratic administrative environment when faced with technology-induced change. That management of technology is a major challenge is not surprising given the numerous large ICT projects being implemented (see Figure 4.1).

Implementation management

Strong project management and oversight are essential to reduce the risk of failure for large, multi-year transformational e-government initiatives.[1] While Turkey has strong leadership and a well-established process for reviewing ICT investments, its oversight, monitoring and evaluation of large e-government project implementation is less well developed. It is unclear who has the final responsibility for ensuring that benefits are realised and that investments pay off. One option might be to consider making a deputy undersecretary responsible for the implementation of e-government projects in each ministry.

Some countries complement the budget review of ICT investments with a formal review at certain milestones during implementation in order to check on progress and provide an opportunity to adjust budgets, deliverables and timelines. This kind of a review is used in the United Kingdom (the Gateway Process)[2] and in Canada (the Outcome Management Process)[3].

Monitoring, oversight and information

Leadership means laying out a vision and determining strategies. It also means staying abreast of what is being done, and being able to take proper action when needed. An ambitious public sector modernisation agenda needs to be complemented by high-level oversight of the progress of e-government and public modernisation initiatives.

Oversight, monitoring and evaluation require an organisational locus for the activity. The Information Society Department of SPO has the responsibility to oversee all ICT investments. The Department, as of 2006, requires agencies to submit a monitoring and evaluation performance report to show each project's progress. However, high-level oversight is also needed. The e-Transformation Turkey Executive Board's responsibilities should include quarterly oversight of larger e-government projects.[4] This would ensure a high-level focus on results. Ministries should regularly review project progress and performance of e-government projects in their policy areas. Some countries have found the need for a specific high-level monitoring and evaluation unit to carry out evaluations of e-strategies and large e-government projects.[5]

Oversight, monitoring and evaluation require information on costs, outputs, benefits, and customer satisfaction. This information is largely lacking at present. Agencies in central government need to improve their management information systems to provide better information on the costs of providing e-services, take-up, and user satisfaction. Accounting systems should be capable of capturing costs and revenues for e-services as well as paper-based services. Information systems should be able to show volume of services produced. This will enable estimation of unit costs for paper-based and electronic services, as well as the rate of take-up of e-services.

As part of the peer review, the OECD surveyed 23 agencies in Turkey that provide major central government e-services (see Table 4.1). The purpose of the survey was to document the availability of information about the e-services, such as average users per month, corresponding data for paper-based services, the total cost of running the e-service, sources of financing for the service, etc. The survey showed that only one agency of 23 collected information on the number of users and volume of paper-based and electronic services.

The organisations had great difficulty in answering questions about the volume of e-service transactions and the corresponding paper services, which would allow an estimate of take-up for the e-services. The statistics provided sometimes included total user interactions, for example downloading of information. The Tax Administration was able to provide statistics on tax returns, where 1.4 million were web based and 1.5 million were paper based in 2005. This illustrates a need for agencies to improve output statistics in order to have a good measure of what is produced, which can be divided by the cost of production to arrive at unit costs.

It is generally recognised that e-services should be user-focused and that users should be consulted on their needs and their satisfaction with information and e-services provided. The OECD survey sent to the 23 agencies showed that many of the agencies with major e-services provided opportunities for user feedback by allowing users to send e-mails with comments on sites and services. The survey also showed that few user surveys had been carried out.

Many countries are beginning to complement the *ex ante* and *ex post* review of e-government projects with procedures to assess progress in

Table 4.1. **Number of agencies with user consultations and surveys**

Question	Yes	No
Have users been consulted on their needs?	17	7
Have user surveys been carried out?	6	18

Source: OECD, *E-Government Survey: Turkey*.

achieving stated goals and realising promised benefits. These studies have been called benefit realisation studies (see Box 4.1). Countries including Canada, the United Kingdom and Australia are implementing different processes to regularly assess the progress of major projects and allow for mini-evaluations to be carried out to see if project plans need to be changed. Turkey might want to study this management technique[6] and begin implementing it on a pilot basis in order to further improve the rate of successful completion for major projects.

Box 4.1. **Benefits realisation**

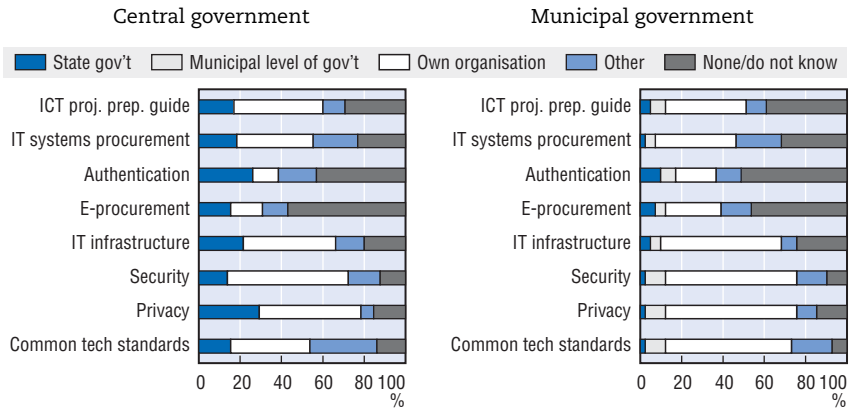
Benefits realisation is the ongoing assessment of benefits achieved during the implementation and followup of an ICT or e-government project. Such an assessment should be linked to the *ex ante* business case for the project in order to increase accountability and to create an incentive to develop robust, realistic and achievable business cases. The systematic usage of benefits realisation methodologies is expected to assist in the approval, planning, implementation and post-implementation stages of ICT projects. Benefits realisation is expected to:

- Assist in the evaluation and prioritisation of proposed projects by defining quantifiable benefits.
- Help secure ongoing operational and production funding for services.
- Improve the quality and robustness of business cases.
- Influence decisions on further investments through periodic assessments of the benefits being realised.
- Ensure that benefits are understood and realised from large, complex and expensive software investments.
- Improve understanding, management and realisation of benefits from major business process re-engineering programmes.
- Provide a focus on results to guide major organisational change programmes.

A common challenge in implementing e-government projects is the availability of guidance in areas such as ICT project preparation, ICT systems procurement, authentication, e-procurement, common ICT infrastructure, security, privacy and common technical standards. The OECD survey asked respondents to state where guidance came from for a number of areas of e-government implementation. The OECD survey responses strongly suggest that most guidance is generated internally (except for authentication in central government agencies).

A surprisingly high number of respondents did not know where guidance could be found for such important issues as authentication and procurement; additionally, few respondents indicated that they knew of central government guidance on e-procurement, a process that is run by the state Procurement Authority. This result is reinforced by many of the interviews with civil servants who attested to the lack of guidance in carrying out the new procurement process. Also surprising is that guidance comes from within organisations – rather than from SPO or a technical organisation such as TUBITAK – for such important government concerns as privacy, security, technical standards and common infrastructure. This would seem to indicate that more effort needs to be devoted to guidance and perhaps that a council or committee made up of the heads of ICT departments (a CIO Council) should be established to serve as a conduit for this kind of guidance as well as training and discussions.

Figure 4.2. **Source of guidance for e-government development**



Source: OECD, *E-Government Survey: Turkey*.

Organisational structures

Many organisations make contributions to the development of e-government – from the e-Transformation Turkey Executive Board, to SPO, to ministries and private sector organisations through outsourcing. While the e-Transformation Turkey Executive Board has the overall responsibility for leadership and oversight, SPO has an important role as the secretariat to the Board and as a reviewing and co-ordination body for ICT investments and implementation. However, the rapid growth of multi-year e-government projects appears to have placed a significant strain on the capacity of the SPO, and its Information Society Department in particular.

Ministries do not seem to have assigned clear roles in the oversight of ICT investments and e-government projects. In interviews, senior civil servants suggested that undersecretaries or other high-level civil servants in line ministries might be given a role in the oversight of projects in their sectors. Turkey might consider enlarging the earlier proposed strategic planning units in the ministries with resources to carry out high-level monitoring and evaluation of major initiatives. This would relieve the SPO of some monitoring efforts and emphasise that ministries are responsible for projects in their sector.

Local government collaboration

There are a large number of local governments in Turkey. Large municipalities like Istanbul and Ankara have the resources to develop their own e-government applications. However, it is unrealistic to expect smaller municipalities to develop portals and e-services on their own. It is more realistic to seek to implement the strategy "develop once – use many times" or consider the strategy of shared services.

Turkey should consider developing a co-ordinating mechanism, an NGO, or council for local e-government that can define user needs, develop common software, design hardware systems and provide training. This kind of mechanism would permit more efficient development of e-government at the local government level.

Centre of competence

Too often the public sector uses ICT investments to automate existing processes and simply move existing services on line. In other words, they use increasingly sophisticated technology to do exactly the same thing they have always done. A successful e-government transformation strategy goes well beyond putting information or an e-service in cyberspace, and focuses on the customer and breaking down barriers between organisations. A successful implementation of e-government services often requires business process re-engineering – a solid implementation or change strategy, led by a determined and executive leadership, with clearly set goals, performance assessment metrics, and accountability measures (such as rewards for high service providers *versus* penalties for low service providers), as well as consideration of privacy and security.

Most government agencies in Turkey, as in many other countries, have not yet acquired the competence and skills to manage ICT projects, create user-focused e-services, develop shared data and services, and manage change in organisations and processes.

Many countries have seen a need for a centre of competence that can assist ministries and agencies in studying and identifying opportunities for data and services sharing across agencies and ministries and levels of government, and that can assist agencies in implementing e-government and training people. There are many models for developing centres of competence. Some have placed this capability in the Prime Minister's Office, others have a Ministry of Administrative Development, while yet others have an Office of Administrative Development as part of a ministry. Some countries have created NGOs that provide a competence centre as a shared service. A possible alternative way of addressing this issue has been developed in the Netherlands, where the Ministry of Interior and Kingdom Relations established an organisation called ICTU[7] in 2001 to assist in all phases of implementing e-government, including providing central government employees with both basic courses in administration and customised courses for management in order to increase civil servants' knowledge of the possibilities of ICT (see Box 4.2).

Box 4.2. **The Dutch ICTU as a centre of excellence**

The ICTU foundation is the Dutch organisation for information and communication technology in the public sector. ICTU's goal is to contribute to the structural development of e-government. ICTU has responsibilities in many areas, including:

- Managing the national portal site *www.overheid.nl*, the central access point to all information about government organisations in the Netherlands. Assisting public organisations in developing their websites.
- Supporting development of information management architecture.
- Promoting the Dutch e-citizen programme by involving citizens, advising government organisations, and monitoring progress.
- Supporting local government in using information technology, such as developing shared services.
- Supporting the Ministry of the Interior in developing the electronic Dutch identity card.
- Assisting Dutch provincial government in developing electronic products and services.
- Maintaining the Public Key Infrastructure regulations.
- Providing a Computer Emergency Response Team to support the Dutch government in preventing and dealing with ICT-related security incidents.

Source: ICTU (2006), *www.ictu.nl/profile_c.html*.

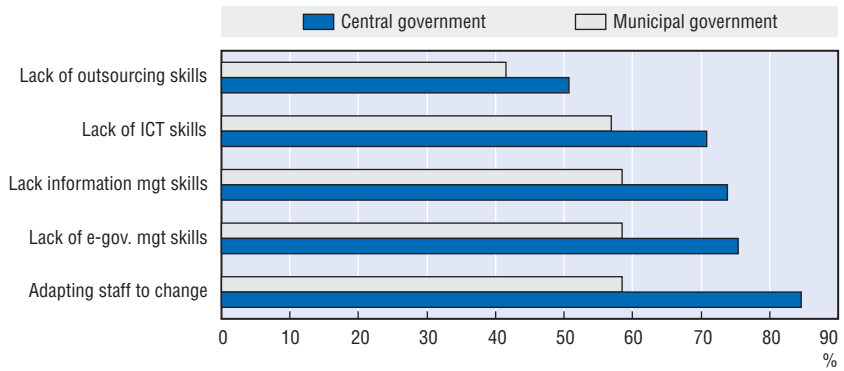
Turkey might consider developing one or more centres of competence to assist ministries and agencies in implementing e-government. As a complementary measure, a Chief Information Officers' Council could be established and charged with assisting in developing guidance, training personnel and promoting best practices.

ICT and management skills

Do civil servants have the appropriate skills and competencies to lead and participate in enabling government services through ICT and managing change?

The OECD survey found that over 70% of respondents from central government and about 60% from municipal government believe that several skills barriers are important or somewhat important (see Figure 4.3). Somewhat surprising is how many respondents from central government (80%) felt that adapting staff to change is a challenge. This indicates that, in order to implement e-government, Turkey may need to increase its efforts to motivate and train government staff to embrace change.

Figure 4.3. **Respondents from central government identifying skills barriers as "important" or "somewhat important"**



Source: OECD, *E-Government Survey: Turkey*.

A recent study[8] of Turkey recommends that managers be trained in ICT and the management of change. The study reported that in 2003, only 27 of 75 universities (public and private) had a public administration department, and that these departments offered basic computer literacy ICT-related classes but few courses in management and transformation of organisations and processes. A conclusion of the study is: "ICT use in public administration is seen more like an automation issue; thus, the role of the future public managers using technology is seen as a passive one. There is a need for

increasing the awareness that ICT use in public administration is more than just automation."

Another study looked at the knowledge and expectations of e-government by citizens who were Internet users, compared with managers in provincial government.[9] The findings were:

- Both groups (315 Internet users were interviewed and 306 provincial managers answered a questionnaire) share the opinion that e-government can improve service performance and effectiveness of the public sector. They also share the same views of the possible negative outcomes of e-government: revelation of secret public information, replacement of human-to-human interaction with machines, digital divide problems, misuse of private knowledge by public officials, and invasion of privacy.
- A large majority of provincial managers do not know fundamental concepts and tools of e-government and need courses and seminars on ICT and its implementation.
- Provincial managers are frustrated by budgetary constraints and lack of skilled human resources.
- Citizens are more positive about how e-government can facilitate public service than are provincial managers.

If advanced ICT skills are a bottleneck both for development of e-government in the public sector and growth of an ICT sector in the economy, the government needs to address this issue (see Box 4.3). Government can increase the supply of persons with advanced ICT skills from universities and institutes, it can provide in-house training programmes, and it can reconsider the need for skilled ICT people in government. The need for skilled people in the public sector can be probably be reduced by consolidating ICT departments into bigger units in a ministry or in a shared services organisation. Creating larger ICT departments would allow ministries to create key competencies in

Box 4.3. **The lack of ICT skills in the public sector**

A fundamental reason for the lack of IT skills is the difficulty of recruiting well-qualified talent. Lower wages, loss of prestige and mundane duties associated with public service have led many young graduates, as well as senior officials, to seek a career in the private sector instead. Against the background of a very tight IT labour market and an ever-increasing demand for high-qualified staff, the competitiveness of the public employer has to be visibly strengthened.*

* OECD (2001) *The Hidden Threat to E-Government*, Avoiding large government IT failures, PUMA Policy Brief No. 8.

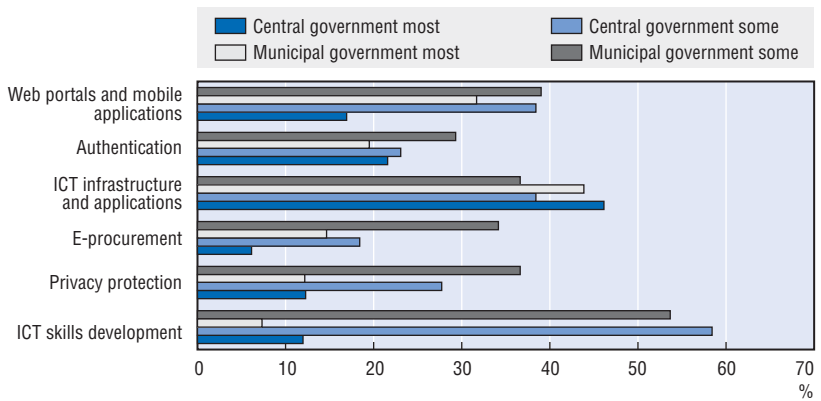
enterprise architecture, privacy, security, procurement and managing consultants, and allow the government to buy some services from the private sector. Other trends are to use COTS (customised off-the-shelf) software instead of developing in-house applications, and to use shared services. Another strategy is to outsource projects demanding advanced ICT skills to provide impetus for the development of an ICT services sector. Both of these strategies have become prevalent in many OECD countries.

Outsourcing

Outsourcing is one way that the public sector can use the capabilities of the private sector and the world-wide competence of multinational firms. The OECD survey asked respondents to indicate if their organisation had outsourced any efforts in specific areas (see Figure 4.4). The most significant finding is that almost half of respondents at both levels of government are outsourcing activities.

E-Government is about using the Internet and developing networks, so it is not surprising that most organisations (80%) responded that they had outsourced developmental efforts to the private sector. Local governments are outsourcing web portals, as they are still mainly in the information providing phase of e-government development. Perhaps more surprising is the relatively low use of outsourcing for privacy protection and authentication, given the importance of these areas to e-government development and the common technical difficulties in implementing applications.

Figure 4.4. **Outsourcing in specific ICT areas**



Source: OECD, *E-Government Survey: Turkey*.

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Notes

1. Only 34% of large ICT projects in the United States successful in terms of achieving scope within budget and time limits. See Standish report (see *www.softwaremag.com/L.cfm?Doc=newsletter/2004-01-15/Standish* and *www.softwaremag.com/archive/2001feb/CollaborativeMgt.html*).
2. Office of Government Computing (2005), *Successful delivery toolkit*, *www.ogc.gov.uk/sdtoolkit/delivery/gateway/index.html*.
3. Benefits realisation – Government of Canada approach, *www.olis.oecd.org/Comnet/pum/egovproweb.nsf/viewHtml/index/$FILE/expert_seminar.htm*.
4. For example, in the United States federal government, the President's Management Council reviews all 24 federal cross-agency initiatives and the status of e-government implementation in each of the 24 departments and independent agencies.
5. See World Bank (2005), *E-Strategies Monitoring and Evaluation Toolkit*.
6. See materials from the OECD Expert Seminar on Cost and Benefit Analysis of E-Government, February 2006, *http://webdomino1.oecd.org/COMNET/PUM/egovproweb.nsf/viewHtml/index/$FILE/expert_seminar.htm*.
7. See *www.ictu.nl/profile.html*.
8. Bengsghir, Turksel, and Mete Yildiz, *Coverage of Information and Communication Technology Penetration into Turkish Public Administration Education Programmes*, Paper presented at the 26th Teaching PA Conference on 8 February 2003 in Dayton, Ohio, USA.
9. Bensghir, Turksel *et al*. "Expectations of Turkish Citizens and Provincial Managers", *Building E-Governance: Challenges and Opportunities for Democracy, Administration and Law* (2004), International Institute of Administrative Sciences, Belgium.

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Chapter 5

Collaboration Frameworks

Assessments	Proposals for action
• **Turkey needs to continue to develop networks and shared services and encourage organisations to use them.** Turkey has implemented many collaborative programmes in data sharing, information networks, shared services and sector initiatives, and has recognised the benefits that these initiatives can provide. It has established or is in the process of establishing many of the essential building blocks (*e.g.* registry of persons and legal entities) and networks (*e.g.* electronic exchange of information to facilitate the movement of goods across borders, the justice sector network for information exchange, and the network serving the Ministry of Finance's 1 660 auditing branches and 39 500 budget offices). It now needs to continue to develop networks such as the Health Information Network, and to determine how to provide incentives for organisations to participate in developing such services.	• The government should continue to consider the benefits that can accrue from developing additional shared databases, services and business processes. In particular it should consider further developing the similar business processes of the Social Insurance Organisation, the Government Employees Retirement Fund, and the Social Insurance Agency of Merchants, Artisans and Self-Employed towards shared services.
• **More work is needed on data and technical standards.** Interoperability can mean simply enabling the exchange of data, but can also be part of an effort to standardise and harmonize data definitions, achieving interoperability across government and with the EU. SPO published the Interoperability Framework Guidelines version 1.0 in August 2005. This is an important step in terms of defining data structures and providing data dictionaries that identify where in government specific information can be found. An interoperability framework is crucial for integration and use of data in the public sector.	• Turkey should continue to develop data and technical standards to promote data exchange and interoperability. It is important for the public sector to co-operate with the private sector to ensure that data standards will be compatible with standards developed in the private sector.
• **Collaboration in developing databases, e-services and – in some instances – shared services would be a cost–effective strategy for Turkey's over 3 000 municipalities.** Turkey is devolving resources and responsibilities from central to local government. The 16 largest municipalities (including Istanbul, Ankara, Izmir and Bursa) have the resources to develop their own applications. However, medium and small municipalities often lack the resources and specialised skills to implement ICT-enabled processes.	• Local governments should be encouraged to collaborate on developing and implementing e-government. Collaboration could be facilitated by a forum or organisation where e-government challenges, applications, and best practices can be discussed.

Collaboration for significant increases in efficiency and effectiveness

A major e-government challenge is achieving *orders of magnitude increases in public sector efficiency and effectiveness*. This can be achieved by replacing the agency-by-agency approach to implementing ICT in government with a joined-up government approach[1] where agencies share data, services, portals, back-office processes and even organisations. Another way is to engage in partnerships with the private sector.

Shared data and processes

It is easy to understand the logic of building shared databases for data concerning citizen IDs, addresses, enterprises, land use, and cars. Sharing databases avoids costs of duplication, users need only update information in one place, and data quality will most likely increase. Another form of data sharing arises in serial production processes, where agencies hand off a case or a user to another agency or production unit. In such cases, there is often a need to let data accompany the case or user to the next step in the process. Examples include justice and health information systems. Sharing data or creating connected information systems are promising, cost-efficient approaches that should most likely lead to improved data quality. Sharing data, however, presupposes that user privacy and data security is assured.

Shared services are more difficult to build than stand-alone applications, as agreement is necessary on what data is to be collected and how a joint process will function. Turkey's e-procurement initiative is a good example of this, as agency-specific systems are replaced with one system for the whole central government and local government procurement process, financed by the general budget.

Turkey's e-government portfolio includes many collaborative initiatives – data sharing, information networks, shared services, and sector initiatives – all of which contribute to the transformation of a whole sector of government:

- *Data sharing:* The **MERNIS** project in the General Directorate of Census and Citizenship developed a unique citizen identification number and built a central registry of citizen information that is accessed electronically by all 923 census offices and authorised central agencies, obviating the need for paper-based systems. The **Customs** project brings together the Undersecretariat of Customs with The Union of Chambers and Commodity

Exchanges of Turkey (TOBB), the Ministry of Finance, the Exporter's Union, and the Undersecretariat of Foreign Trade to use electronic documents to facilitate the movement of goods across borders. The land registry and Cadastral Information Systems (TAKBIS) aims at storing land ownership and cadastre data and providing a web portal for large scale maps, supplying appropriate land-related information to all its users – both private and public, municipalities in particular – and the automation of all activities of The General Directorate of Land Registry and Cadastre.

- *Information networks:* The **National Adjudication Network** project has established an information network serving the Ministry of Justice, courts, public prosecutor's offices, prisons, forensic medicine and enforcement departments; it provides electronic information exchange and decision support systems. The goals are to shorten trial periods, enable citizens to obtain dossier information through the Internet and allow lawyers to file and follow up lawsuits from their offices, pay charges, submit petitions and have access to court files. **Say2000i** is a Ministry of Finance project establishing communication and data transfer for a network of over 6 000 users in 1 660 auditing branches and 39 500 budget offices throughout the country. **E-health** is studying how a network for health records information can be established to serve all parts of the health sector (see Annex H).
- *Shared services:* **E-procurement** will replace the existing decentralised procurement systems with an all-electronic system. The total procurement volume is about USD 40 billion and it is estimated that the new system will save 20% in costs and increase effectiveness, transparency and accountability.
- *Sector initiatives:* **E-learning** is an ambitious project to use ICT in the primary and secondary school systems with the goal of increasing computer literacy, promoting the use of ICT in teaching, and training teachers to use ICT. This initiative affects 13 million students and close to 650 000 teachers in almost 50 000 public and private schools at the primary and secondary levels.[2]

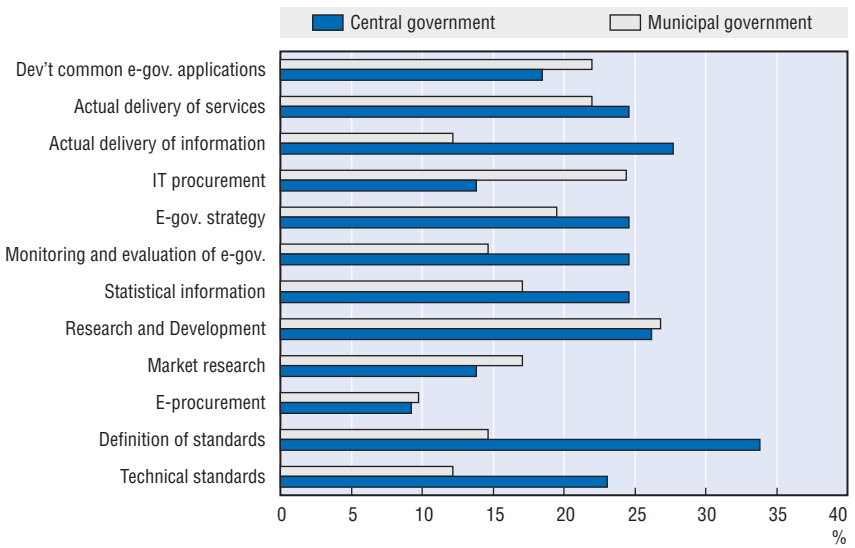
Interviews documented that the Undersecretariat of Foreign Trade has been a leader in developing the use of e-signatures by civil servants and import/export firms. This experience could be shared with other government agencies. KOSGEB has a database of its member firms (40% of SMEs in Turkey) that is not linked to either TOBB or the Ministry of Industry and Trade's enterprise databases, resulting in unnecessary duplication and overlap. The TAKBIS project, which deals with the establishment of a GIS database for land registry and cadastre data, does not a include all major agencies with strong interest in these data such as the Ministry of Environment and Forestry, Ministry of Agriculture and Rural Affairs and municipalities.

Turkey has developed a Public Key Infrastructure (PKI) e-authentication system with four organisations (one public and three private) authorised to

produce certificates. All agencies face similar problems with implementing e-signatures in their business processes. It might therefore be advisable to centrally develop guidelines and standardised components that can be used by all agencies to implement this capability. This is a good example of the "develop once – use many times" principle. As most agencies face similar problems in developing the capacity for using e-signatures, it might be advisable to develop guidelines and standardised e-signature software components that many agencies can use.

The most common form of collaboration in *central government* (see Figure 5.1) is in definition of standards, R&D, actual delivery of information and services, monitoring and evaluation and collecting statistical data. For *municipal government* the main areas of collaboration are in R&D, ICT procurement and the development of common e-government applications. However, only about 10-25% of the respondents to the OECD survey from both levels of government say that they are working together. As e-government is in a start-up phase in Turkey, this is to be expected. Over time more collaboration is likely and there will be a need to develop models for collaboration including the financing of joint activities.

Figure 5.1. **Areas of collaboration with other government organisations**

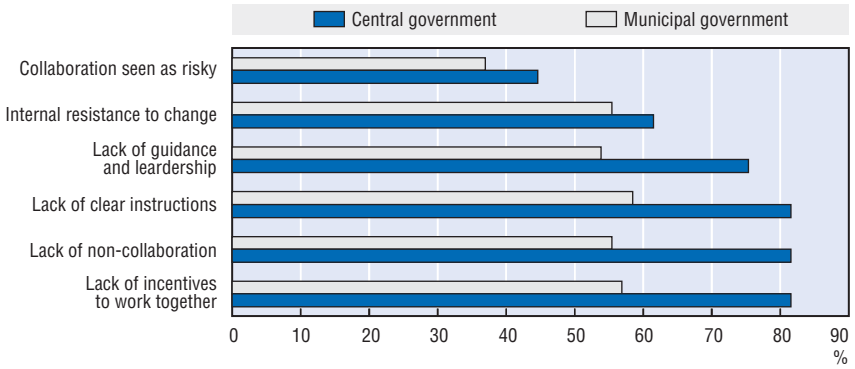


Source: OECD, *E-Government Survey: Turkey*.

When asked about obstacles to collaboration, more central government respondents than local government respondents identified lack of incentives, habit of non-collaboration and lack of clear instructions (see Figure 5.2). Only

a few rated the risks of collaboration as an obstacle. This indicates that collaboration may be more of a cultural issue in Turkey than a legal or technical issue.

Figure 5.2. **Respondents identifying obstacles to collaboration as "important" or "somewhat important"**



Source: OECD, *E-Government Survey: Turkey*.

While central government can oblige its own agencies to participate in collaborative projects, it has no such authority over local governments. However, collaborative approaches to e-government at the local level make sense for three reasons: 1) local governments will need to develop similar databases and e-services; 2) joint development will reduce development costs for each local government; and 3) high potential benefits of pooling capacity and know-how.

Local governments could collaborate on standardising data and processes (simplification), developing best practices and using them in different jurisdictions ("develop once – use many times"), or creating common organisational structures to provide back-office services. Sharing databases and processes implies some type of organisational structure to facilitate collaboration. Representatives of the Ministry of Interior, which has local government in its portfolio, indicated to the OECD that the Ministry would be ready to assist in building and maintaining local government databases. However, it is not clear what the collaborative framework might look like.

Connectivity and interoperability

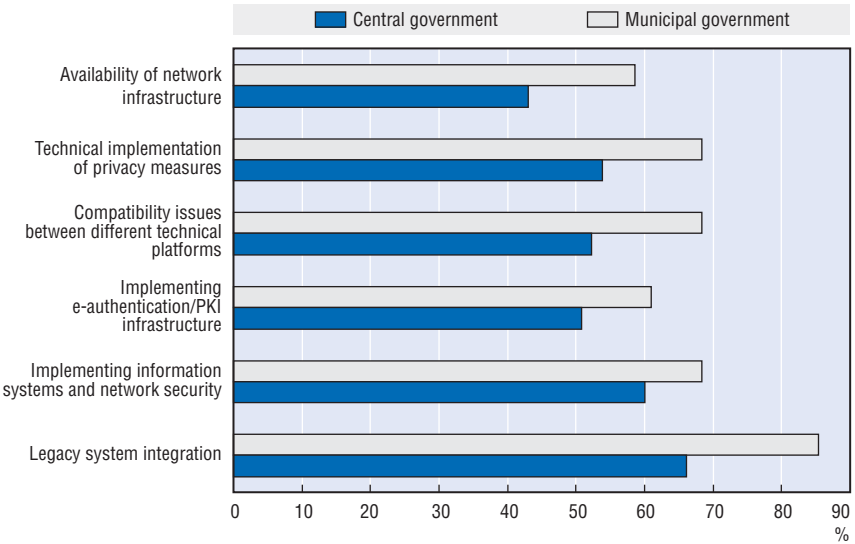
As paper-based data and workflows become electronic there is more opportunity for data sharing and developing common processes. Exchanging data requires: 1) data standards, usually in the form of XML schemas that define data structures; 2) data dictionaries that are a collection of XML

schemas and that identify where in government specific information can be found; and 3) an enterprise architecture that identifies business lines, functional applications, and data throughout government.

This is an essential area for e-government development. Turkey is addressing these issues through many major projects involving data sharing and developing information networks. SPO published the *Interoperability Framework Guidelines* version 1.0 in August 2005. The 2005 Action Plan includes the Data Sharing for Interoperability initiative, which identifies e-government metadata standards, where data is kept, who can access the information and how to do so. An enterprise architecture can provide a framework and a powerful tool by standardising data, and identifying the need for interoperability and the opportunities for common business processes.

Respondents to the OECD survey were asked to indicate the importance of different technological challenges (see Figure 5.3). Generally, more municipal respondents rated these challenges as important or somewhat important than did central government respondents.

Figure 5.3. **Respondents identifying technical challenges as "important" or "somewhat important"**



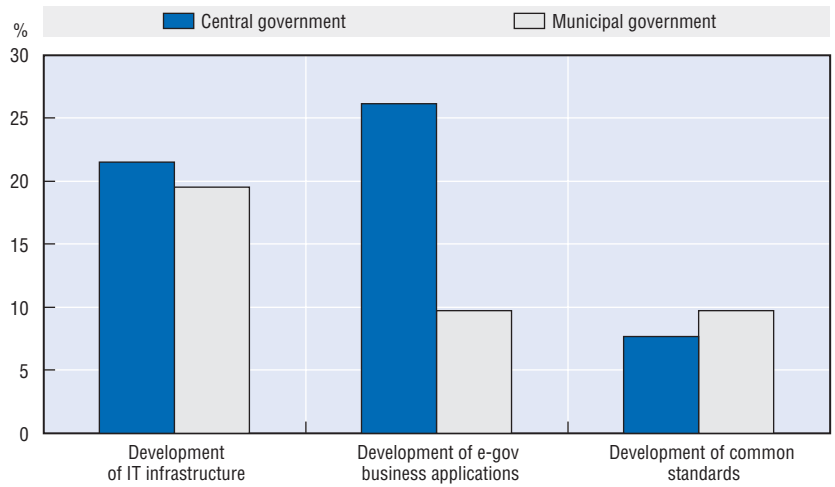
Source: OECD, *E-Government Survey: Turkey*.

Partnerships with the private sector

Partnerships between the private and public (PPP) sector are a special form of collaboration. PPPs can be defined as arrangements where governments contractually engage with private sector suppliers, sharing

work, risks and rewards to provide goods and services. The OECD asked respondents if there were past, current or planned partnerships in three specified areas. The results are shown in Figure 5.4. Almost one-quarter of the central government respondents reported having current PPPs for developing ICT infrastructure and e-government business applications. Twice as many municipal respondents indicated that they had planned PPPs in developing e-government business applications compared to current PPPs. This would seem to indicate that Turkey is using PPPs and that municipalities are increasingly using PPPs to develop e-government business applications. The question remains: Are these municipal PPPs taking place in a collaborative framework with other municipalities in the sense of developing an application once and using it in other jurisdictions as well?

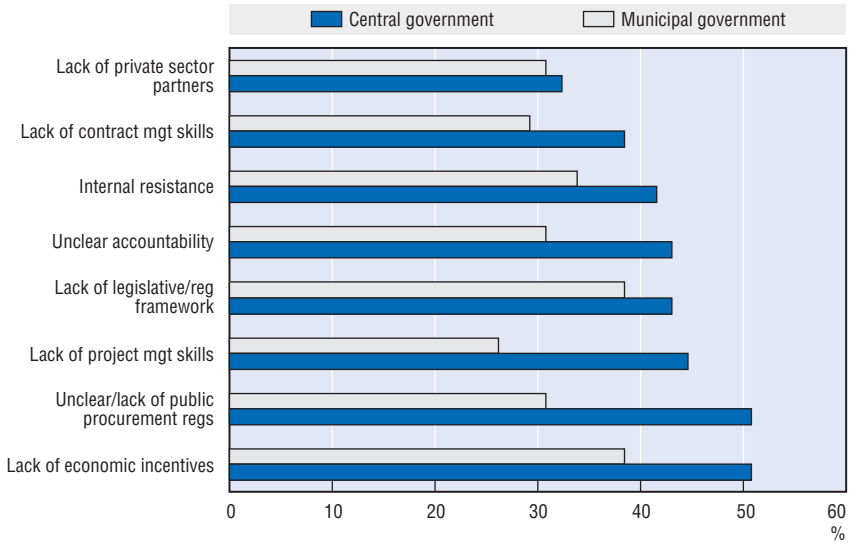
Figure 5.4. **Current public private partnerships**



Source: OECD, *E-Government Survey: Turkey*.

The OECD survey also asked respondents to identify obstacles to partnering with the private sector and their importance. Lack of economic incentives and unclear procurement regulations are rated important or somewhat important by central government. The latter is understandable, as new procurement rules and processes were being implemented at the time of the survey. Municipal respondents rate the obstacles similarly except for "Lack of project management skills", which they rate as less of an obstacle. These results indicate that there might be a need for central and municipal guidance on how to partner with the private sector.

Figure 5.5. **Respondents identifying obstacles to partnering with the private sector as "important" or "somewhat important"**



Source: OECD, *E-Government Survey: Turkey*.

Notes

1. OECD (2005), *E–Government for Better Government*. The report discusses approaches to common business processes and their value in making government more user-focused and more efficient. The "Business Case for E-Government" chapter shows that transformational services offer more value than informational or transactional services.
2. 34 990 primary schools, 7 435 secondary schools, 3 406 general high schools, and 4 029 vocational and technical schools for a total of 49 860 schools. Source: *www.meb.gov.tr/english/indexeng/htm*.

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Chapter 6

Outputs and Outcomes

Assessments	Proposals for Action
• **A national portal is needed.** In July 2006, Turkey's public sector had 10 667 websites, 3 812 of which were in central government. This large number of sites makes it more difficult for users to find information and services. Turkey is currently building a national portal to help users find information and access services; it will also include several e-services.	• Turkey should continue the development of the national government portal. The challenge is designing a portal that it is useful and used, which includes interactions with users in the design phase and frequent user satisfaction surveys to ensure that the portal is user-focused.
• **Take-up of e-services is a critical success factor.** Because many benefits from e-services are proportional to the number of persons using them, Turkey should consider stimulating take-up.	• Turkey should consider stimulating take-up using a carrot-and-stick approach: *e.g.* demonstrating advantages to potential users and offering more user-friendly e-services (carrot), and requiring that some users interact electronically with government (stick). For example, the high Internet penetration rate for businesses in Turkey could allow the government to achieve further savings by mandating electronic interaction for tax declarations, e-procurement and certain benefits. The government should also consider providing inducements such as quicker service, faster payment of benefits and reduction in fees.
• **Citizen e-services need to be developed and made fully transactional.** The share of Turkey's citizen services that is fully transactional is lower than for its business services, while the share of its business services that are fully transactional is almost as large as the average for the EU28 countries (including Norway, Iceland and Switzerland) and greater than for the EU10 countries.	• Turkey's challenge is to increase the number of high-value/high-volume e-services, provide more fully transactional services and to make e-services more user-focused.
• **Shared data and services can have large returns on investment.** As the case studies on the social insurance and retirement systems demonstrate, there are significant benefits from increased data matching. By checking if a person is eligible for health or social services against databases with information on social security payments, Turkey has saved up to USD 3 billion annually.	• Turkey should continue to expand the use of shared central databases to reduce fraud, increase the tax base and provide benefits to those who are entitled to them. The government should also develop a common approach for e-authentication to further promote the reliability of e-services.
• **Determining returns on investment in terms of ROI or benefit/cost ratios needs to become standard practice *ex ante* and *ex post*.** These estimates are needed for project appraisal *ex ante*, as well as *ex post*, to provide transparency and accountability and to guide organisational learning.	• The government should consider requiring *ex post* impact analyses.
• **User-friendly e-services can only be developed by consulting users about their needs and how satisfied they are with current services.** An OECD survey indicated that surveys of user needs and satisfaction with current services are not yet commonly used to ensure user-focused development.	• To better assess the user value achieved through the use of e-services, agencies should be encouraged to carry out customer satisfaction surveys and evaluations of implemented projects. Technical assistance and guidance should be provided to ensure a standard and comparable approach across sectors.

Websites and the e-government gateway

E-government development often goes through distinct phases, such as the initial development of websites and portals followed by a growing number of e-services and later development of more integrated transformation of processes and organisations.

Many agencies have begun their e-government development by creating websites providing information. Turkey had 10 677 government websites as of 12 July 2006. Of these, 3 812 (36%) were in central government, 1 353 (13%) in local government and 5 144 (48%) in the educational sector.[1] In the United States, for instance, by 2003 the federal government had over 35 million web pages at over 22 000 websites. This huge volume made it difficult for users to find information and services. By launching a national portal with a strong search engine capability and multiple navigational tools, the American federal government became more accessible and transparent. Many other countries have had the same experience.

Most countries are consolidating many websites in portals to make it easier for users to search and navigate government sites. National portals differ greatly in terms of their design. Some countries have created many one-stop portals for navigation of the government's online space, while others have created a single gateway to all government information and services. Some countries want one national portal for everybody, while others propose having a national portal for each major user segment: citizens, businesses, and government.

In Turkey the central administration has many websites but no national portal. This has been a distinct drawback for the development of customer-focused e-government, as users are required to know where to go to find what they want. The Short Term Action Plan included a project to develop the foundations and initial content for an e-government portal. In late 2005, Turkey contracted to build a one-stop gateway where Turkish citizens and businesses will be able to interact and transact with their government.

An important lesson in building national portals is that developers should interact with users in building the site, as well as conduct frequent user surveys after the portal is up and running. Another lesson is the necessity to quickly demonstrate to users the value of using the site and not wait until e-authentication and major services have been rolled out. A third lesson is the value of partnering with the private sector in marketing the portal, as well as providing some of the content.

E-services

The EU has defined an initial set of 20 e-services; it assesses the existence and maturity of these services in member countries. Many countries prioritise putting in place these services. Some countries have set the goal that all governmental services that do not require providing services to individuals in person (such as getting married), should be provided electronically. Other countries have prioritised the development of e-services and focused on those with high volume and with promise of providing high value to customers or significant cost savings to government. Turkey belongs in the latter group.

The EU publishes an annual report[2] on the existence and maturity level of the 20 selected EU services. The EU report assigns scores to each service as shown in Table 6.1. If more than one provider or level of government provides the service at different levels of sophistication, weighted averages are calculated for the service. For some services, 3 is the highest level can be achieved (as indicated in Table 6.2).

Table 6.1. **Maturity level of e-services**

Maturity level	Score
No website or irrelevant website	0
Information	1
One-way interaction	2
Two-way interaction	3
Full electronic case handling	4

Source: Cap Gemini report *Online Availability of Public Services: How is Europe Progressing?* (June 2006).

As an EU candidate country, Turkey is not part of the report. OECD scored the maturity level of Turkey's 20 basic services and compared them with the corresponding EU18 and EU28 metrics, and EU1) countries.[3] The results are shown in Table 6.2.

There are two metrics: the average level of maturity for the citizen- and business-oriented services, and the citizen and business services that are fully transactional expressed as a percentage of the 12 citizen and 8 business services.

The table shows that Turkey's services for businesses are more mature than those for citizens, and that business services are slightly more mature than the average for the EU10 countries. The same conclusions are supported by the share of fully transactional services. However, the table also demonstrates that Turkey needs to increase the maturity of its e-services for citizens.

How does Turkey place with regard to average maturity level of 20 services prioritised by the EU compared with all 25 countries in the

Table 6.2. **Maturity in Turkey of 20 e-services prioritised by the EU**

E-service for citizens	Score	E-service for businesses	Score
1. Income taxes	4	13. Social contribution for employees	4
2. Job search	2 of 3	14. Corporate tax	4
3. Social security benefits: unemployment	2	15. V.A.T.	4
child allowances	2	16. Registration of a new company	2
medical costs	2	17.Submission of statistical data	3 of 3
student grants	2	18. Customs declaration	4
4. Personal documents: passport	3 of 3	19. Environmental permit	2
driver's license	1	20. Public procurement	3
5. Car registration	1		
6. Application for building permission	1		
7. Declaration to the police	3 of 3		
8. Public libraries	3 of 3		
9. Birth and marriage certificates	2 of 3		
10. Enrollment in higher education	2		
11. Announcement of moving	0		
12. Health-related services	1		

Source: OECD estimates.

Table 6.3. **Maturity and share of services that are fully transactional, 20 e-services prioritised by the EU**

	Turkey	EU18	EU28	EU10
Average service maturity (100%)				
All 20 services	66	78	75	69
12 citizen services	55	71	68	62
8 business services	84	88	86	81
Share of services that are fully transactional (100%)				
12 citizen services	25	37	36	33
8 business services	63	74	67	55

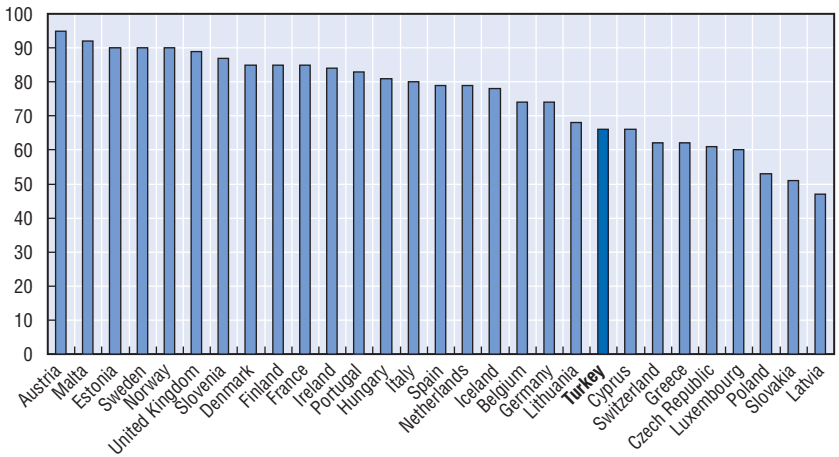
Source: Turkey OECD data and Cap Gemini *Online Availability of Public Services: How is Europe Progressing?* (June 2006).

European Union plus Norway, Iceland and Switzerland? Figure 6.1 shows that Turkey is number 20 of the 28 countries.

Allowing businesses to submit monthly tax and social welfare declarations via the Internet should save both companies and the government time and money. However, data is lacking on take-up and unit costs of e-services in comparison to paper-based services.

It is clear that being able to submit information electronically instead of submitting paper copies at tax offices has been a success, as has the opportunity to make tax payments electronically. For example, the Revenue Administration has estimated that electronic submission of tax declarations

Figure 6.1. **Average maturity for all 20 e-services prioritised by the EU**



Source: Turkey, OECD calculation, Cap Gemini (2006) *Online Availability of Public Services: How is Europe Progressing?*

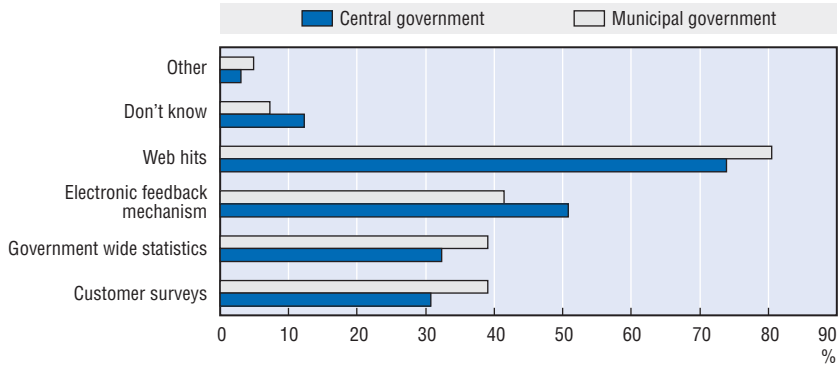
has saved taxpayers 1.5 million working days annually. Replacing manual processes with revenue collection through Internet banks has reduced the cost of collecting tax payments from USD 2 to USD 0.35. Implementation of electronic social security declarations and payments have been equally successful; estimated savings from increased efficiencies and reduced fraud are on the order of USD 1 billion per year, made possible by common databases that allow officials to check on citizen eligibility for different benefits. Electronic payment systems for pharmaceuticals have also reduced fraud and enabled faster payments of benefits.

Turkey has achieved a relatively high maturity score for the EU benchmark services for businesses. However, most OECD countries are now looking at creating more fully transactional e-services, and Turkey needs to do the same. Turkey's focus on primarily addressing high-volume transactions providing high value to both government and users should be maintained. The goal of as many e-services as possible is not a viable objective.

To realise benefits from e-government, e-services need to be used and the provision of paper-based services reduced in volume. This requires that government develop easy-to-use services, demonstrate to users the benefits of using them, and actively promote e-service use. So far, Turkey has not provided special inducements to encourage users to change from paper to electronic services.

E-services become more effective if they have high take-up, which in turn is promoted by customer-focused services. How do central and municipal

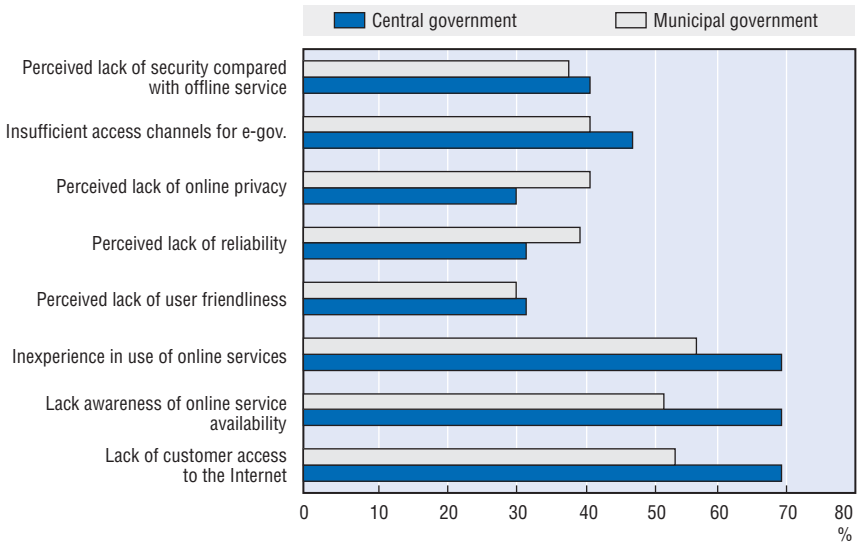
Figure 6.2. **How is demand for online services determined?**



Source: OECD, *E-Government Survey: Turkey*.

government find out about the demand for online services? The OECD survey shows that counting web hits is the most frequent way of judging demand. Somewhat surprising is that both levels of government seem to determine demand similarly and mainly by counting web hits. The survey documents that only about 30% of responding organisations use customer surveys. This is too low to guarantee that e-services will be customer-focused.

Figure 6.3. **Respondents identifying factors constraining demand for e-services as "important" or "somewhat important"**



Source: OECD, *E-Government Survey: Turkey*.

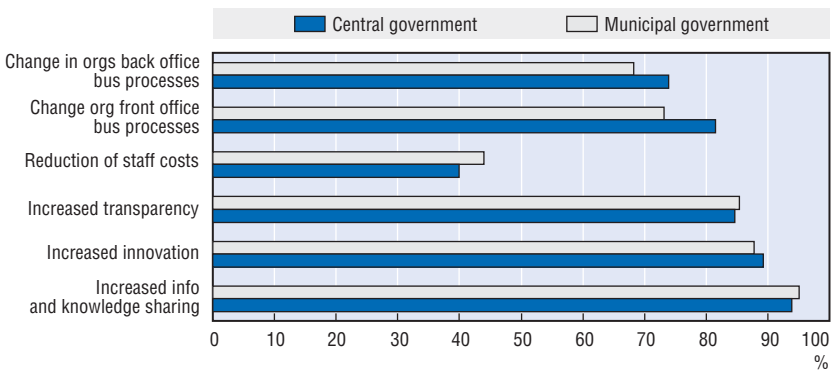
Internet access and computer literacy are important factors affecting demand for e-services. The OECD survey showed that lack of customer access to the Internet and lack of awareness of online service availability are rated as important constraints affecting demand. At the municipal level, over 30% of government respondents felt that citizens' inexperience using online services was an important constraint.

What kind of impact has e-government had on government organisations? The OECD survey asked respondents to indicate if there had been a positive, neutral, or negative change as a consequence of the implementation of e-government.

Figure 6.4 shows the proportion of respondents that indicated a positive impact. Representatives of the two levels of government provided similar answers. Almost all respondents answered that there has been increased information and knowledge sharing and increased innovation. Only 40% indicated that staff costs have been reduced. This indicates that Turkey will need to determine how it is going to make investments in e-government pay off in terms of efficiency. Major cost reductions to government come from transferring part of government's workload to users (such as letting users find information and services, and having users enter data electronically). If there is little reduction in staff, it is hard to see where the monetary payoff to government will emerge. In addition, government also needs to consider benefits to users such as better access to information, faster service and time saved by not standing in line to submit tax declarations.

What impact has e-government had on public sector services? The respondents to the OECD survey were asked if the impact of e-government was positive, neutral or negative in terms of service attributes (see Figure 6.5).

Figure 6.4. **Respondents identifying changes to their organisations as "important" or "somewhat important"**

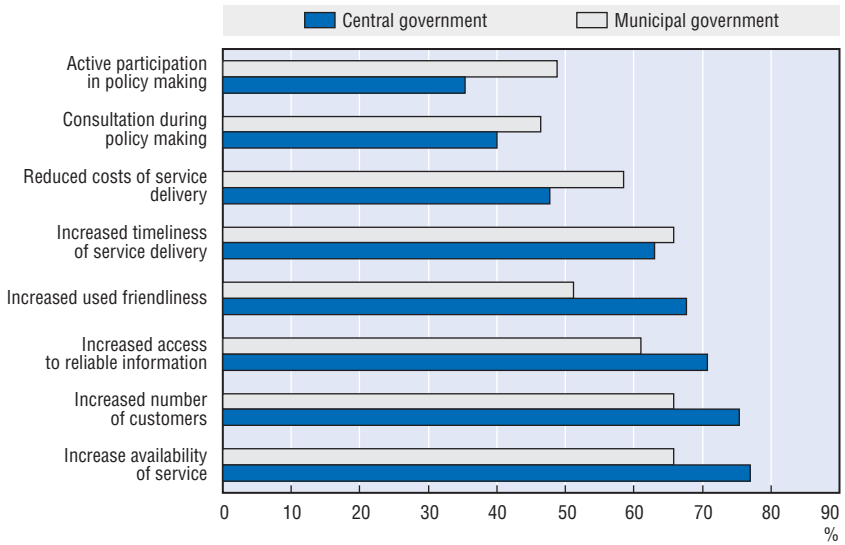


Source: OECD, *E-Government Survey: Turkey*.

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About half of the respondents report improvements, such as increased availability of services, increased number of customers, increased access to reliable information, more user friendliness, and reduced costs of delivery. More respondents at the municipal level see positive impacts in terms of participation in policy making, consultations and reduced costs for service delivery than do central government respondents.

Figure 6.5. **Respondents identifying e-government impact on services as "important" or "somewhat important"**



Source: OECD, *E-Government Survey: Turkey*.

Management information

E-Government seeks to create a more efficient and effective public sector, as well as provide a payoff on investments in technology and new processes and services. Performance information is needed to guide the implementation of e-government to ensure that it has a positive impact on efficiency and effectiveness. However, most agencies do not collect the information to determine e-government payoffs. A large number of respondents to the OECD survey from central and local government did not know if there was an impact on services. The smaller OECD survey of 23 agencies with major e-services showed that almost all of these agencies had no data on e-service volume, take-up, costs, and benefits.

Notes

1. Source: *www.nic.tr*.
2. Cap Gemini, *Online Availability of Public Services: How is Europe Progressing?* (June 2006), *www.capgemini.com/resources/thought_leaership/online_availability_of_public_services*.
3. EU18 includes the EU15 and Norway, Iceland and Switzerland. The three same countries are added to the EU25 to get the EU28. The EU10 are the ten new countries that joined the EU in 2004.

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ANNEX A

Proposals for Action

1. Turkey should consider developing a common regulatory approach for electronic transactions, e-authentication, and personal data protection – and complement this with a "soft regulatory framework". That is, agreements and understandings on standards and guidelines among industry, citizens and businesses that can evolve over time as more experiences are gathered on challenges and solutions for electronic transactions and data.
2. Turkey should consider addressing the need for a comprehensive personal data protection law and ensure that the planned Personal Data Protection Institution is created.
3. The government should consider developing performance information on ICT systems that will allow for analysis of the return on ICT investments. Turkey should also accelerate its development of an enterprise architecture for the public sector, which could provide a strong tool to guide ICT investments.
4. To ensure more consistency in the review of ICT proposals the government should consider providing better guidance to line ministries on how to appraise e-government proposals with respect to return on investment, efficiency and effectiveness. Ministries will also need guidelines on technical issues such as data definition, security, privacy and enterprise architecture to ensure that investments follow existing standards.
5. The use of business cases to support the appraisal of ICT investments should be expanded.
6. Turkey should develop an enterprise architecture to provide an overview of ICT investments. As ICT expenditures is often the third largest administrative object class after salaries and rent, Turkey should consider making the review of all ICT expenditures in an organisations part of the budget process.

7. Waiting for growth in household demand for high-speed Internet access to encourage the development of broadband will take time. The public sector should consider taking a more pronounced role in stimulating the development of broadband infrastructure and using this capacity for modernising the public sector.
8. The government should consider ways to increase the affordability and thereby the use of e-services through reassessing telecommunication taxes.
9. The Telecommunications Authority should continue to actively stimulate competition in the telecommunications sector to promote faster and more affordable Internet access in line with EU initiatives in this area.
10. Mobile phones can provide an alternative, less expensive channel for delivery of e-services to citizens and businesses. Given the high number of mobile subscribers in Turkey, the government should consider this channel to provide information and services.
11. Stronger efforts are needed to increase computer and information literacy. The government should consider creating a legal incentive to increase the number of Internet cafes that provide training and assistance. Turkey's experience in developing distance learning programmes at all levels of education could be used to increase computer and information literacy. This would complement the more traditional education and training provided by schools and would allow anyone with access to the Internet to obtain training.
12. To obtain a whole-of-government view of e-government implementation progress, the e-Transformation Turkey Executive Board should consider instituting oversight of major e-government projects and progress in order to provide more e-services, reduce the digital divide, and make government more responsive to citizens and businesses.
13. Line ministries need to assign high-level responsibility for developing e-government initiatives, as well as ensuring that they provide an adequate return on investment. The new strategic planning units in the line ministries could provide valuable input to sector-oriented e-government development.
14. Instead of local governments developing e-government applications in a potentially duplicative and isolated manner, central government should assist in promulgating standards and guidelines that encourage local government to collaborate on developing e-services and sharing databases and services.
15. The central government might also consider creating incentives for collaboration in the development of e-government. An example is the local

e-government fund provided by the UK central government to finance the development of best practices that might be used by other local governments and to promote the sharing and joint development of e-government solutions.

16. Turkey should consider assigning oversight of e-government implementation to officials within the line ministries who are at a sufficiently high level to ensure accountability.
17. Ministries should develop e-government project information systems to track project costs and accomplishments, as well as benefits and costs to users. Turkey should consider requiring a benefits realisation plan for large ICT projects, improving oversight of project implementation and mandating post-implementation evaluation.
18. Ministries, agencies and local governments need to collaborate on e-government policies, standards, and privacy and security safeguards in a uniform manner.
19. The government should take steps to increase the project management, change management, business process engineering and ICT skills of managers in the public sector to ensure that the necessary professional skills are available for e-government implementation.
20. Turkey might consider consolidating ICT departments or even creating one centralised ICT capacity in each ministry. This would facilitate attracting and maintaining key competencies in building an enterprise architecture, business process re-engineering, procurement, and managing consultants. In addition, instead of developing and running applications in-house, the government could institute a policy of outsourcing that would stimulate development of the private-sector ICT industry, one of Turkey's long-term goals.
21. The government should continue to consider the benefits that can accrue from developing additional shared databases, services and business processes. In particular it should consider further developing the similar business processes of the Social Insurance Organisation, the Government Employees Retirement Fund, and the Social Insurance Agency of Merchants, Artisans and Self-Employed towards shared services.
22. Turkey should continue to develop data and technical standards to promote data exchange and interoperability. It is important for the public sector to co-operate with the private sector to ensure that data standards will be compatible with standards developed in the private sector.
23. Local governments should be encouraged to collaborate on developing and implementing e-government. Collaboration could be facilitated by a forum

or organisation where e-government challenges, applications, and best practices can be discussed.

24. Turkey should continue the development of the national government portal. The challenge is designing a portal that it is useful and used, which includes interactions with users in the design phase and frequent user satisfaction surveys to ensure that the portal is user-focused.
25. Turkey should consider stimulating take-up using a carrot-and-stick approach: *e.g.* demonstrating advantages to potential users and offering more user-friendly e-services (carrot), and requiring that some users interact electronically with government (stick). For example, the high Internet penetration rate for businesses in Turkey could allow the government to achieve further savings by mandating electronic interaction for tax declarations, e-procurement and certain benefits. The government should also consider providing inducements such as quicker service, faster payment of benefits and reduction in fees.
26. Turkey's challenge is to increase the number of high-value/high-volume e-services, provide more fully transactional services and to make e-services more user-focused.
27. Turkey should continue to expand the use of shared central databases to reduce fraud, increase the tax base and provide benefits to those who are entitled to them. The government should also develop a common approach for e-authentication to further promote the reliability of e-services.
28. The government should consider requiring *ex post* impact analyses.
29. To better assess the user value achieved through the use of e-services, agencies should be encouraged to carry out customer satisfaction surveys and evaluations of implemented projects. Technical assistance and guidance should be provided to ensure a standard and comparable approach across sectors.

ANNEX B

Turkey E-Government Indicators

Indicators: 2005	Turkey	EU25
General indicators		
Population (million)	72	461
GNI per capita (USD, current prices and PPP) (OECD Factbook 2006)	7 659[1]	28 638[1, 4]
GDP growth (%)	5	2
Number of households (million)	15	n.a.
Number of telephone subscriptions (fixed line) per 100 inhabitants	26	n.a.
Mobile phone subscriptions per 100 inhabitants (2005, Turkish Statistical Office)	64	n.a.
Broadband subscriptions per 100 inhabitants (OECD, June 2006)	3.0	n.a.
Internet access (Indicators taken from Eurostat, at EUROPA\European Commission\ Eurostat home page\Data navigation tree\Information Society Indicators, updated on July 2006)		
Internet penetration rate (regular individual use of Internet as percentage of population)	14	50
Enterprises with access to the Internet	80	91
Enterprises with access to a broadband connection	52	63
Internet access at home (% of households with internet access)	9	48
Internet access at work (percentage of individuals with Internet access)	43	41
Internet access at place of education (percentage of individuals with Internet access)	9	8
Internet access at public libraries (percentage of individuals with Internet access)	0	7
Individuals with Internet access at Internet cafes (percentage of individuals with Internet access)	37	7
Affordability of access (cost of 20 hours of Internet access per month, as a percentage of average monthly income) (ITU, *Measuring Digital Opportunity 2005*)	9.5	n.a.
Internet usage (in the last three months) (Indicators taken from Eurostat, at EUROPA\European Commission\Eurostat home page\Data navigation tree\Information society statistics Policy indicators \Computers and the Internet in households and enterprises\Individual Internet use, frequency of use and place of use, updated on July 2006)		
Individuals (aged 16-74) regularly using the Internet[5] (%)	14	51
Individuals (aged 16-74) using the Internet, urban (%)	19	57
Individuals (aged 16-74) using the Internet, rural (%)	6	46
Individuals (aged 16-74) using the Internet, male (%)	19	55
Individuals (aged 16-74) using the Internet, female (%)	9	47

Indicators: 2005	Turkey	EU25
E-Government usage		
E-Government online availability[5] availability[6] (supply side) (composite index) (2006 for EU25)	40	50
E-Government usage by individuals – share of individuals using the Internet to interact with public authorities (*i.e.* obtaining information, obtaining forms, returning filled-in forms) (%)	6[1]	23
E-Government usage by enterprises – share of enterprises using the Internet to interact with public authorities (*i.e.* obtaining information, obtaining forms, returning filled-in forms) (%)	50	57
Average maturity level of EU12 citizens' e-services (OECD and Cap Gemini) (%)	55	68[7]
Average maturity level of EU8 businesses' e-services(OECD and Cap Gemini) (%)	84	86[7]
Rate of electronic submission of annual tax declarations by citizens (% of total tax declarations)	55	n.a.
Rate of electronic submission of annual tax declarations by businesses (% of total tax declarations)	69	n.a.
ICT investments in the public sector		
ICT budget in the public sector (as a % of total public sector budget, in USD)	n.a.	n.a.
Information technology expenditures as a % of GDP	n.a.	3
E-commerce		
Individuals who have ordered/bought goods or services for private use over the Internet (%)	3[1]	18
Enterprises' total turnover from e-commerce (% of turnover)	n.a.	2
Percentage of enterprises that have received orders online	n.a.	12
E-procurement and e-purchasing in the public sector		
Fully electronic procurement (% of turnover in USD of public procurement done through e-procurement portals)	n.a.	n.a.
Electronic billing (% of public sector institutions)	n.a.	n.a.
Skills and competencies		
Schools (primary and lower secondary education) with broadband (>= 2 Mbit/sec.) connections (%)	48[2]	n.a.
Number of pupils per computer in schools (primary and lower secondary education)	57	n.a.

1. Data for 2004.
2. Any kind of Internet connection.
3. Maturity is the level of technical sophistication of service (information = 1, download form = 2, submit forms = 3, fully transactional = 4).
4. Number refers to EU15.
5. Percentage of individuals who used the Internet in the last 3 months.
6. The indicator is defined for each member state as the percentage of each of the 20 services that are fully available (transactional) on line.
7. Number refers to EU28.

Source: Eurostat.

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ANNEX C

Turkey's Political and Administrative System

Turkey is a republic with a multi-party parliamentary democracy. The country's government administration is highly centralised compared to most other OECD member countries. The President of the Republic, who has broad powers of appointment and supervision, is chosen by Parliament for a term of seven years and cannot be re-elected. The Prime Minister administers the government. The Prime Minister and the Council of Ministers are responsible to Parliament. The Prime Minister is appointed by the President of the Republic from among the members of the Turkish Grand National Assembly; the ministers are nominated by the Prime Ministry and appointed by the President of the Republic from among the members of the Turkish Grand National Assembly or from among those eligible for election as deputies. The Prime Minister and his ministers assume duty after a vote of confidence by the Turkish Grand National Assembly.

Structural reform efforts

The current government, which came to power in 2002, has prepared a comprehensive public administration reform package. Several of these reforms have implications for e-government. One major effort aims to redefine the functions of central and local administrations and accordingly redistribute powers, responsibilities and resources among the levels of government. Another initiative has been development of the Urgent Action Plan, a reform package for the public administration including initiatives to promote an Information Society and e-government and to establish the Information Society Department in the State Planning Organization to lead the e-Transformation Turkey Project.

As the administrative structure is large and undergoing change, a short description of the different government layers follows. Administrative institutions in Turkey can be divided into:

- *Central government:* This level has two branches – central bodies, consisting of ministries and agencies, and field offices that are comprised of provinces and districts headed by provincial and district governors.
- *Local government:*
  - *Special provincial administrations:* These 81 bodies have jurisdiction to provide public services beyond municipal boundaries, within their respective provinces.
  - *Municipalities:* There are 3 225 municipalities in areas with dense populations. The Ministry of Interior has limited supervision and co-ordinating power over local government.
  - *Villages:* Villages are traditional settlements providing services similar to municipal administrations.
- *Other institutions and organisations:* This level includes decentralised agencies, independent regulatory agencies, and public professional organisations.

ANNEX D

E-Government Reports, Strategies, Decision and Acts

- The *Turkey: Informatics and Economic Modernization* report was prepared by the World Bank in 1993.
- The Minister of Transportation began work on the *National Informatics Infrastructure Main Plan* report (TUENA) in 1997 and published the report in 1998, followed by an updated version in October 1999 (in Turkish). The plan aimed at developing policy actions and strategies for enabling transition to an Information Society. An extensive summary of this report was published as the *Information Society 2010* report in January 2000 (in Turkish).
- To increase co-ordination among ministries and agencies, the Public-Net Council was established within the Prime Ministry in February 1998. It was dissolved in 2002 by merging with the e-Turkey Initiative.
- The Internet Advisory Council was established by the Minister of Transportation in 1998 to foster development of Internet-related activities and to provide advice to the Minister. Council members are representatives of public institutions and non-profit organisations.
- The E-Commerce Coordination Council was established under the auspices of the Undersecretary of Foreign Trade in 1998 to promote development of e-business-related activities and regulations.
- The Telecommunications Authority was established in August 2000 as an independent body to regulate the telecommunications sector.
- The Turkish Industrialists' and Businessmen's Association (TUSIAD) prepared and published the *Information Society* and *eTurkey Towards European Union* reports in July 2001.

- Turkey joined the eEurope+ Initiative, together with other EU candidate countries, in June 2001. Soon after, Turkey started the eTurkey Initiative, which includes the same goals as eEurope+.
- The eTurkey Initiative established (13) Working Groups to increase participation in the programme and foster co-ordination among institutions. Working Group members came from public institutions, non-profit organisations and universities. These working groups have since been dissolved.
- An informatics convention was organised under the eTurkey Initiative in May 2002 with the aim to formulate strategies and develop action plans for creation of an Information Society and dissemination of ICT. The Turkish Informatics Working Group prepared a report (in Turkish) based on the informatics convention proceedings. Attendees included representatives of public institutions, the private sector, non-profit organisations, and universities. *Source: http://2002.bilisimsurasi.org.tr*.
- The eTurkey Working Groups prepared the eTurkey Initiative Action Plan, released in August 2002.
- A new government took office on 18 November 2002. The government was elected on a reform platform that included modernisation of the public sector. The Urgent Action Plan (UAP) was developed. This plan included the foundation of the e-Transformation Turkey Project.
- The UAP's Public Management Reform Section declared Information Society issues one of the most significant projects. The State Planning Organization (SPO) was assigned to co-ordinate the e-Transformation Turkey Project (e-DTr).
- The e-Transformation Turkey Project was established in December 2002 through the creation of the Urgent Action Plan. A Prime Minister's Circular, issued on 27 February 2003, clarified the objectives and principles of the e-Transformation Turkey Project.
- To realise the stated objectives and to ensure the success of e-DTr, a new co-ordination unit, the Information Society Department, was established in SPO in March 2003.
- To increase participation and the level of success, an Advisory Council with 41 members was established in February 2003; participants came from public institutions, NGOs and universities (see Chapter 3).
- The e-Transformation Turkey Project was established in 2003.
- The first Short Term Action Plan (STAP) covering 2003-2004 was approved by the government and published with a Prime Minister's Circular on 4 December 2003. It includes 73 action items under eight sections.

- The Turkish Informatics Working Group produced a report based on the proceedings of a second informatics convention, held in May 2004 in collaboration with NGOs and other stakeholders (*www.bilisimsurasi.org.tr*).
- The *Turkey: Knowledge Economy Assessment Study* report was published by the World Bank in March 2004.
- The STAP was replaced by the 2005 Action Plan, approved by the government and published in the Official Gazette in May 2005. There are 50 action items.
- After a tendering process in November 2005. OYAK Technology (OYTEK) won the contract for the E-Government Gateway (main portal foundation) to provide content and services at a cost of EUR 19 million.
- The first action of STAP was determination of an Information Society Strategy. A consulting firm (Peppers and Rodgers) completed a final draft Information Society strategic plan in March 2006. The SPO then produced the official strategy document after consulting with relevant stakeholders. A High Planning Council decision regarding adoption of strategy was taken on 11 July 2006.

ANNEX E

Synopsis of History and Key Decisions

In the 1980s and 1990s, Europe was focused on market-based approaches to increased competition in telecommunications; Turkey shared the same priority.

In the 1990s, Turkey emphasised promoting Information Society polices to increase Turkey's competitiveness, moving from labour-intensive production to higher-value-added production, from providing low-cost labour to a highly educated workforce for a knowledge-based economy (see Box E.1). Consequently, the emphasis of policy was on innovation, science and technology as means to achieve these goals. Efforts were focused on building ICT capabilities in Turkey. Appropriately, the Supreme Council of Science and Technology (SCST) called for preparation of the National Information Infrastructure Master Plan, with the following goals:

- Maximise socio-economic benefits of improvements to the national information infrastructure within a sustainable development perspective.
- Increase the share of domestic value added in ICT products.
- Increase the share of Turkish companies in the global informatics market and become a regional leader in the area.

While Turkey's government promoted studies of and plans for the Information Society, little was actually implemented because of political and economic instability. The late 1990s, in general, were not a period for long-term plans and investments in Turkey. However, in 2000, the Telecommunications Authority was established to develop a regulatory environment and prepare legislation to facilitate privatisation.

Also at that time, the European Union was launching a new policy initiative at the Lisbon summit with the goal of making Europe "the most competitive and dynamic knowledge-based economy in the world". Now the emphasis was on innovation and jobs. The goals were:

- To prepare the transition to a knowledge-based economy and society by creating better policies for the Information Society and R&D, as well as by

stepping up the process of structural reform for competitiveness and innovation, and by completing the internal market.

- To modernise the European social model, investing in people and combating social exclusion.
- To sustain a healthy economic outlook and favourable growth prospects by applying an appropriate macro-economic policy mix.

The Lisbon Initiative fit Turkey's plan for becoming more competitive. Consequently, in 2001 Turkey signed up for the eEurope+ Initiative, which copied the original eEurope Initiative for the central European candidate countries and Malta, Cyprus and Turkey as participants. The Turkish implementation of eEurope+ was called the eTurkey Initiative. As Turkey plans to join the European Union, many believed that it was necessary to participate in this initiative or face being left behind as Europe moved towards the Information Society.

However, Turkey faced economic crises and political instability in 2000 and 2001, preventing much significant progress in implementing the eTurkey Initiative. However, the government did initiate 13 project groups to assess the existing situation, projects and initiatives, and to conduct policy studies. Turkey agreed to use the same indicators to assess progress against Information Society goals as the EU15 countries.

In November 2002, a reform government was voted into office with a majority in Parliament. The reform agenda focused on many issues, including economic stability and public sector modernisation through e-government. The new government developed the Urgent Action Plan, which was announced in November 2002. The e-Transformation Turkey Project was a

Box E.1. **Information Society Programmes**

1990-1994	Focused on Information Society (IS) actions in education, science and technology.
1996-2000	Further emphasis placed on science and technology, for example by including "Impetus in Science and Technology" as one of the Fundamental Structural Transformation projects. Preparation of the National Informatics Infrastructure Master Plan, establishment of National Informatics Technologies Council, development of Internet cafes for public use.
2001-2005	Emphasis on knowledge as the most important factor for Information Society and Turkey's EU candidature. An important opportunity for implementing the Information Society.
2003-2004	Short Term Action Plan (4 December 2003) with 73 action items.
2005	2005 Action Plan (launched April 2005) with 50 action items.
2006	Information Society Strategy (2006-2010) approved by High Planning Council 11 July 2006.

major part of the public management reform agenda. The State Planning Organisation was put in charge of the initiative and prepared a detailed Short Term Action Plan for 2003-2004 (in accordance with the Urgent Action Plan) and later the 2005 Action Plan.

In December 2003, the e-Transformation Turkey Executive Board was created. It included five members: the Minister of State and Deputy Prime Minister, the Minister of Transport, the Minister of Industry and Trade, the Undersecretary of SPO, and the Chief Counsellor to the Prime Minister. In addition, four public and four NGO representatives are part of the Board. An e-transformation Advisory Council with 41 members was also created. (See Chapter 3 for more details.)

ANNEX F

Legislative Framework for the Information Society

Type and name of regulation	Date	Number
E-Commerce Coordination Council (decision made by High Council for Science and Technology).	25 August 1997	
Prime Ministry Circular on public-net.	13 March 1998	1 998/13
Amendments to the Law on Intellectual Property: This measure redresses legal gaps in legislation protecting intellectual properties in electronic media, and re-regulates the duties of municipalities in this area.	3 March 2001	4 630
The Law on Technology Development Regions: This law aims to strengthen Turkey's competitiveness in high-tech sectors, encouraging the establishment of Technology Development Regions.	26 June 2001	4 691
Prime Ministry Circular on eTurkey Initiative (annuals previous Circulars).	19 June 2002	2 002/20
Unification of different public citizen numbers under one ID number.	20 June 2002	2 002/22
Prime Ministry Circular on the Urgent Action Plan: This circular provided the political basis for the reform policies of the new government.	30 November 2002	2 002/55
Prime Ministry Circular on Acceptance of OECD Guidelines for Security Culture: This circular stipulated that every public agency should take into account the OECD guidelines for securing their information systems and networks.	17 February 2003	2 003/10
Prime Ministry Circular on e-Transformation Turkey Project: With this Circular, the e-Transformation Turkey Project was announced to the public, and SPO was charged with its co-ordination and monitoring.	27 February 2003	2 003/12
Prime Ministry Circular on STAP of e-Transformation Turkey: This circular introduced the Short Term Action Plan, identifying responsibilities of public agencies and providing deadlines for the period 2003-2004.	3 December 2003	2 003/48
Amendments to the Law on Consumer Protection: This law includes services and goods used in electronic media in the scope of consumer protection, and closed a legal gap in remote contracts.	6 March 2003	4 822
Bylaw on Implementation Principles and Procedures of Remote Contracts: Based on the Law of Consumer Protection, this bylaw regulates contracts pertaining to electronic media and the Internet.	13 June 2003	
Amendments to the Law on Tax Procedure: With this amendment, the Ministry of Finance gained the authority to determine principles and procedures for submitting electronic tax returns.	7 August 2003	4 962
The Law on the Right to Access Information: This law stipulates that every public agency must have a website so that citizens and foreigners living in Turkey can obtain information and forms electronically.	9 October 2003	4 982

Type and name of regulation	Date	Number
Amendments to the Laws on VAT, Stamp Tax, and Expenditure Tax, and Technology Development Regions: This regulation stipulates that companies developing software in technology development regions shall be exempted from income, corporate and value-added taxes. It also entitled the Council of Ministers to reduce fees for tax returns submitted electronically.	2 January 2004	5 035
The Law on Electronic Signatures: The purpose of this law is to regulate the use of e-signatures by determining legal and technical principles.	23 January 2004	5 070
Amendment to the Social Security Law: This amendment entitled the Board of Social Security to regulate submissions of employee declarations electronically.	28 January 2004	5 073
Second amendment to Intellectual Property Rights law.	12 March 2004	5 101
Bylaw on the Implementation of the Law on Right to Access Information: This bylaw determines the procedures and guidelines for access to information by citizens and legal persons. It supplements the 2003 law on the Right to Access Information.	19 April 2004	2 004/7189
Amendments to the Law on Income Tax: This amendment allowed taxpayers to submit their tax returns electronically.	31 July 2004	5 228
The Law on Metropolitan Municipality: This law stipulates that greater metropolitan municipalities should establish “Geographical/Land Information Systems”.	23 July 2004	5 216,
Prime Ministry Circular on Establishing a Public Certification Centre: This Circular envisaged the establishment of a public certification centre for public agencies to ensure interoperability of electronic signature applications and meet certification needs.	6 September 2004	2 004/21
Turkish Penal Code: The new penal code has identified new crimes and punishments regarding information and network systems, such as illegal recording, obtaining, or disclosing of personal data. It also addresses illegal access to and violation of information systems.	12 October 2004	5 237
Bylaw on Principles and Procedures in Correspondence: This bylaw sets out regulatory principles and procedures for the use of electronic media and electronic signatures in correspondence.	18 October 2004	2 004/8125
Law 5272 requires all municipalities to establish geographical/land information systems.	24 December 2004	5 272
Bylaw on the Implementation of the Electronic Signature Law: This bylaw defines the procedures and principles for the legal and technical aspects, and implementation of e-signatures.	6 January 2005	
Council of Ministers’ Decree on Establishment of E-Government Portal: This decree entitled Turk Telekom, then incumbent public operator in the telecommunications sector, to establish the technical infrastructure of an e-government portal, which will provide public services from single point of entry.	25 January 2005	2 005/8409
Prime Ministry Circular on Establishing SMEnet: Within the framework of promoting a better investment environment in Turkey, the Union of Chambers and Bars of Turkey (TOBB) has been charged with establishing and maintaining a website providing information and documents regarding the establishment and operation of a small or medium-sized company (SME).	3 February 2005	2 005/2
Universal Service Law: This measure determines the scope of universal service in the telecommunications sector and sets out implementation principles that allow all segments of society to benefit from the Information Society.	25 June 2005	5 369
Municipality Law: This law requires all municipalities to establish geographical/land information system. It abolishes the previous law 5272.	13 July 2005	5 393
Prime Ministry Circular on interoperability framework.	5 August 2005	2 005/20
Cabinet decree transferring ownership of e-government portal to Turksat.	20 April 2006	2 006/10 316
Amendment to Census Act regarding Central Address Database.	29 April 2006	5 490
Approved Information Society Strategy for 2006-2010.	11 July 2006	

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ANNEX G

Major E-Government Initiatives

Turkey has launched several e-government initiatives that involve several agencies or one sector of government. The following are discussed in this section: e-learning, e-procurement, e-taxes, e-justice, and social security e-applications.

E-learning initiative

The e-learning initiative is a large, multi-year, ambitious, transformational initiative that addresses the whole public education sector (primary and secondary levels). Its goal is to increase computer literacy, promote the use of ICT to change how students are taught, and use school equipment to benefit the community. This initiative affects 13 million students and close to 650 000 teachers in 46 000 public and private schools at the primary and secondary levels.

Ministry of National Education (MONE) representatives designed this ambitious and comprehensive approach to e-learning to include training of teachers and changing school curricula and teaching methods, with a focus on how ICT will be used by students. They believe this tactic will be more effective than simply distributing computers to schools.

The goals of the e-learning initiative* include:

- Increase and develop co-operation among schools, teachers and pupils, and allow schools to serve as a resource for society.
- Improve the quality of education by enriching the learning environment with educational software, electronic reference materials, application software and educational games.
- Integrate ICT training into all levels of primary education, from first through eighth grades.

* Dus Yapim, *The Turkish ICT Education Experience*, *www.emokykla.lt/admin/file.php.ID=38*.

- Provide each student with access to ICT equipment and to information on how to use it.
- Endow students with the skills they need to appropriately use ICT to solve problems.
- Encourage teachers to take advantage of ICT opportunities for developing curricula, evaluating students, updating their teaching methods, etc.
- Enable school administrations to use ICT for administrative tasks.

MONE has developed the following major projects to address these goals:

1. *Connect all schools to the Internet*. There are about 46 000 schools in Turkey, and by the end of 2006, 90% of Turkish students will be connected to the Internet. As of late 2005, 21 500 schools had DSL Internet connections with at least a 256 Mb capacity. Small schools, with between 10 and 20 students, will use satellite or dial-up modems for Internet access.
2. *Provide all schools with PCs*. Since 2002, the European Development Bank and the World Bank have provided funds to equip schools with PCs and computer laboratories. Each school will have at least one PC. Thus far, 65 000 computers have been purchased for students, and 5 000 for teachers and administrators.
3. *Set up ICT laboratories*. With financing from the World Bank, Turkey has created 22 computer laboratories for more advanced ICT instruction.
4. *Develop an education portal*. This Internet gateway will provide parents with information and support, and provide students with assistance with their homework.
5. *Integrate ICT into the curriculum*. ICT has been integrated into the coursework in primary schools and is being integrated into secondary school curricula.
6. *Train teachers to effectively use ICT*. Much school-based ICT training in Turkey uses the "train the trainers" model; 460 master teachers trained 7 000 teacher trainers who, in turn, trained 560 000 teachers to use computers and integrate ICT into the curriculum. By the end of 2005, 100 000 teachers will have been trained on ICT via distance learning. The Ministry of Education has also partnered with the private sector to provide specialised training for teachers. For example, Microsoft is involved through providing distance learning for teachers.
7. *Help teachers to purchase computers*. The Teacher Notebook Project provides bank loans with favorable conditions to teachers to buy computers.

Turkey's e-learning initiative has made remarkable progress. It has resulted in near universal enrollment in basic education, and a new and modernised curriculum. Teachers have been trained in using computers and

incorporating ICT tools in the classroom, and students and their parents can access useful information online through the education portal.

However, as the report *The Turkish ICT Education Experience* points out, schools are experiencing some difficulties:

1. Too few computers.
2. Too few teachers trained to teach in ICT laboratories.
3. Lack of resources for Internet connections, computer and network maintenance and technical support.
4. Lack of reference and educational materials.

Some of the challenges that schools face are similar to those that would be experienced by any large organisation. Common obstacles are: replacing obsolete computers, maintaining hardware and software, and providing technical support. Some organisations have moved towards buying "computer performance" rather than hardware and software by signing performance contracts with the private sector. In fact, a case might be made for MONE to become a single procurer of computers, connection fees and services to obtain real economies of scale and reduce prices; MONE could also consider using performance contracts rather than buying hardware and software.

Another obstacle is that it takes time to change the culture of schools, and the goal is that teachers and administrators view computers as tools rather than as a subject to be is taught. In the longer-term, MONE faces a big challenge in moving from teaching computer literacy, to having enough computers to make computers part of course work, to eventually having such a high rate of computer availability and Internet capacity that students use the computer as a tool to get information and obtain knowledge.

As to educational material, MONE is building the education portal with (and translating) internationally recognised course material such as *Global Gateway*, *Skoool,* and *Think.com* for use in Turkish schools.

MONE is committed to evaluating the results of its e-learning initiative after the initial three years of operation.

Turkey has embarked on an ambitious initiative to use ICT in schools and increase computer and information literacy. The holistic nature of the initiative increases the probability of success.

E-procurement

Central government procurement amounts to 12 000 transactions per year for about USD 40 billion. It is estimated that the electronic procurement system will represent savings of more than 20% of this amount through increased transparency, accountability and participation by the private sector in tendering.

The benefits of e-procurement include:

- Increased transparency.
- Reduced corruption and improved competition benefits, estimated at about 20% of total procurement volume (USD 8-10 billion).
- Reduced administrative costs.
- Reduced administrative burden for firms. Under the old system, firms spent about six days to collate information for bidding; this will be significantly reduced through e-procurement, as much of the required information will already be in the database.
- Reduced "cycle time" to complete a procurement process.

Launching a new e-procurement system is a huge undertaking. In addition to establishing the database of firms qualified to become bidders, the effort includes new electronic formats for e-tenders, e-offerings and e-contracts, as well as electronic processes for selecting providers.

The Public Procurement Agency has been working for three years to analyse and evaluate the government e-procurement system. Comparing Turkey's case against benchmarks of what other countries are doing, the agency concluded that each country needs its own e-procurement strategy. However, the initiative is patterned on Korea's e-procurement system and was developed as part of a "twinning" project with Italy. The initiative has three major parts: regulatory framework, ICT framework, and transformation/ implementation.

The objectives are to:

- Include the entire procurement process, from tender notices to result notices.
- Publish planned procurements, open tenders and result notices on line.
- Provide procurement regulations, make budget forecasts, control Public Procurement Authority revenues, analyse procurement and compose management reports.
- Extract categorised price indices.
- Build supplier catalogues.
- Facilitate tracking and publishing of firms banned from tenders, and check firms providing tenders against the existing blacklist.
- Develop standard electronic procurement forms.

The agency has developed a database of suppliers that includes: registration name, information on debt, outstanding tax and social security payments, and financial and technical qualifications. There will be a total of 90 000 firms in the database, 40 000 of which are construction firms. The

database will be accessed through a web portal, where firms and government agencies will be able to look at data and update information according to established and enforced criteria. The first phase will include:

1. Pre-registration of firms.
2. Participation criteria (Regulatory Framework).
3. Qualification of firms.

A total of 19 000 suppliers of goods and services will use the new e-procurement system initially. The first phase of e-procurement implementation will be a pilot programme in two sectors – health and IT. The system will then expand to encompass all public sectors. Pharmaceutical purchases represent 30% of public procurement, or USD 13 billion, and ICT about USD 2.5 billion. The system will cover procurement by central government and municipalities.

Challenges to reforming procurement include changes in procurement law, and implementing e-signatures for an electronic process that eliminates the need for "sealed envelopes". Turkey's government has given the e-procurement project a very high priority because of its anti-corruption and cost savings potentials. Consequently, financing has been less of an issue than for some other e-government projects. In addition, Italy has provided assistance in implementing the e-purchasing system through a twinning project. The cost of the initial system will be USD 10 million, with some financing coming from the EU.

National Judicial Network Project

The National Judicial Network Project (UYAP) creates a computer network that includes the Ministry of Justice, the courts, public prosecutors' offices, prisons, forensic medicine laboratories and enforcement departments, as well as high judicial institutions. The objective is to improve information flow and access to information in order to:

- Increase transparency in trial procedures.
- Prevent procedural errors during legal proceedings.
- Increase public trust in the justice system.
- Shorten trial periods.
- Enable citizens to obtain dossier information through the Internet.
- Enable lawyers to file and follow up lawsuits, pay charges, submit petitions, and access court files on line.
- Allow the justice system to easily respond to information requests from external units.

The network will automate the following sub-systems: personnel, financial, supply, procurement management, training, convict-detainee management, document management, and verdict support.

UYAP began in 2000. The first phase consisted of automating Ministry of Justice administrative functions such as personnel, budget, health and finance, and developing a document management system. This phase was completed in 2001. Phase two consisted of extending network capabilities to the provinces. As of October 2005, 54 provinces were served. A citizen portal allows citizens to follow cases and legal processes. The network continues to be extended to other parts of the judicial system.

The establishment of the network included acquisition of hardware, including 18 000 desktop computers, 8 000 laptops, 9 000 printers and 450 scanners. A large part of the project has been to educate judges, prosecutors and other personnel to use computers. In all, 13 000 courthouse personnel (including 8 000 judges and prosecutors) were trained.

It is expected that, by the end of 2006, all prisons, regional administrative courts and judicial units will have become part of the network and will therefore be able to exchange data through the UYAP system.

Important accomplishments of the project are:

- All procedures conducted at courts, administrative judicial proceedings, and public prosecutors' offices are automated; therefore, all stages of trial procedures are performed in the electronic environment.
- Decision support systems are in place to prevent procedural errors.
- Some decisions and parts of decisions are prepared for users by the system.
- The system includes access to central data banks such as MERNIS (citizen information) and the police database.
- Data is entered only once and then re-used as cases move through the system.
- Lawyers have full access to the system.

The total cost of UYAP has been estimated at USD 160 million, with an estimated annual savings of USD 64 million.

E-taxes

The Tax Office Automation Project (VEDOP) began as a pilot project in 1995. The first phase, from 1998 to 2001, had a budget of USD 75 million. The second phase of the VEDOP project began in 2004 with a budget of USD 64 million. The responsible agency is Turkey's Revenue Administration (RA), a semi-autonomous agency in the Ministry of Finance with 44 000 personnel and 599 tax offices.

The Turkish tax system includes a variety of different tax types with different periods of collection. A typical business is required to prepare more than 30 tax returns and declaration forms annually and visit tax offices to submit tax returns almost three times per month. This paper-based system is wasteful of taxpayers' time, as well as an inefficient use of tax office personnel.

The tax office automation projects have three goals: ensuring a more equitable distribution of the tax burden, making tax collections more efficient and providing better services to citizens and businesses.

The project aims to develop:

- *A network*: Allow high-speed communication between all tax offices.
- *E-declarations*: Receive all tax returns electronically.
- *Improved service*: Increase the quality of service to taxpayers.
- *E-tax collection*: Promote electronic tax revenue collection (through banks).
- *Data warehouse*: Generate information to improve tax policies and audit strategies, and detect non-declared taxes.
- *Taxpayer call centre*: Answer questions and assist taxpayers.
- *Internet tax office*: Online tax office.

The new systems support integration and data exchanges with other institutions, organisations, banks and external systems using XML; facilitate interoperability between tax offices; and provide taxpayers with more uniform services countrywide. The project allows taxpayers to submit declarations electronically for several different types of taxes including income tax and corporate tax, value-added tax, special consumption tax, stamp tax and banking transaction tax.

Taxpayers can submit their declarations directly, or through a financial consultant who will be required to file electronically. The goal is to make electronic filing of tax returns for businesses obligatory in the future – as soon as all tax offices have been connected to the network and digital signatures have been implemented.

Results

The new system allows taxpayers to submit declarations electronically for several different types of taxes including value-added tax, income and corporate tax, special consumption tax, stamp tax and banking transaction tax.

In 2004, 688 574 e-declarations were submitted by taxpayers; this represents 23% of total declarations that were received by tax offices for the three revenue streams shown in Table G.1. In 2005, the number of electronic

tax declarations had doubled and represented 48% of total declarations for the three tax revenue streams.

Table G.1. **Tax declarations**

	2004		2005	
	E-declarations	Total declarations	E-declarations	Total declarations
Annual Citizens Income Tax Declaration	375 202 (22%)	1 675 500	937 935 (55%)	1 706 674
Income From Immovable Property	12 350 (2%)	622 837	56 521 (9%)	631 967
Annual Corporate Income Tax Declaration	301 022 (53%)	570 450	415 668 (69%)	598 447
TOTAL	**688 574 (23%)**	**2 962 665**	**1 410 125 (48%)**	**2 937 088**

Source: Ministry of Finance.

By June 2006, 469 of 599 tax offices (78%) have been connected to the network. This initiative has resulted in:

- Taxpayers received improved quality and availability of services.
- Individuals reduced the time they spent in queues at tax offices through e-declarations. The Revenue Administration has estimated savings of 1 485 000 working days per year for users.
- In 2005, 32 659 accountants and financial consultants of 36 858 (or 89%) had passwords for submitting e-declarations
- Costs for tax revenue collection were reduced. The unit cost for tax revenue collection through tax offices was USD 2, compared to USD 0.35 per return when collection was done through banks. In 2005, 65% of tax revenue collection was carried out through banks.
- More than USD 3 million per year was saved in office supply expenses (computer equipment, paper, cartridges).
- The space needed to archive declarations has been reduced, as they are now electronic.

Turkey has been successful in creating a network for its tax and revenue offices, developing e-declarations and collecting tax revenue through banks. This has reduced costs for transferring paper-based declarations to electronic media and reduced the cost of revenue collection.

Enterprise take-up of e-declarations and payment of taxes through banks by businesses has been rapid. However, the same cannot be said for citizens. Turkey will need to consider improving the citizen focus of the system by providing user-friendly web interfaces, smart forms for filing tax declarations,

and taxpayer assistance via the web, and to promote the availability of tax preparation software (either by the government or by the private sector).

Social security system e-applications

In 2003, Turkey reformed its social security and health insurance systems. There are three separate agencies, each serving one group of clients: civil servants, workers, artisans/self-employed individuals. In addition, the Ministry of Finance provides funds for indigent clients (Green Card clients). The organisations are:

- **Government Employees Retirement Fund** (Emekli Sandigi), covering retired civil servants employed under Personnel Law No. 657 and persons retired from State Economic Enterprises, widow and orphan wage earners, their dependents, and active civil servants (white-collar public employees) employed under Personnel Law No. 657 and their dependants, covered by social health insurance.
- **Social Insurance Organization** (SSK), covering persons working under a service contract and their dependents (blue-collar workers).
- **The Social Insurance Agency of Merchants, Artisans and the Self-Employed** (Bag-Kur), covering merchants, artisans and other self-employed persons and their dependants.

The **Green Cardsystem** was created in 1992 to finance health care for citizens who are not covered by existing social health security schemes and unable to pay for care. It covers inpatient care and the costs associated with surgeries.

The three organisations are in the same line of business and provide very similar services. Consequently, it makes sense for them to co-operate on developing software and contemplate shared services. This collaboration is likely to take place; in 2006, the government enacted laws (Law No. 5489 and Law No. 5487) to unite the four social security systems and established a new General Health Insurance covering all citizens, non-citizens, and refugees who live in Turkey for more than one year. This should increase accountability and transparency and reduce costs through shared data and services.

Prior to these new legislative measures, however, each agency embarked on its own e-government programme, particularly during the period 2003-2006.

Government Employees Retirement Fund (Emekli Sandigi)

Rapid annual increases in health expenditures led the Government Employees Retirement Fund to launch the *Health Expenditures Control Project* in 1994; the programme was intended to decrease the agency's workload and

prevent financial losses through more effective monitoring. The project introduced a pilot smart card project, which aims to ensure the correct functioning of the control mechanism, in 2002.

The Health Expenditures Control Project has been designed to facilitate processes in all public institutions and organisations, including the other social security institutions; it is interoperable with the other two agencies' systems. A total of USD 26.5 million was invested in the project between 1994 and 2005. The project includes the following basic goals:

- Facilitate savings in health expenditures.
- Monitor operations at the individual beneficiary level.
- Identify expenditure items and gather statistical information.
- Standardise medical treatments.
- Apply European Union and World Health Organization standards to health care in Turkey.
- Ensure consistency in patient care management.
- Reduce paperwork and prevent human errors.

The Health Expenditures Control Project includes the following subprojects:

- *Digitalisation of information on patients and medical devices:* Health certificates for 2 million patients – along with information regarding medical, optical and dental equipment – have been computerised. Since this information became available electronically, all steps in providing health services, from registration of documents to payment for services, are carried out via computer; service can therefore be provided from any location without the use of personal files. Medical equipment has been coded, and firms and vendors are being classified by computer. As of March 2006, 17 447 of 102 000 pharmacies, 2 231 of 11 400 opticians, 525 private health institutions, and five university hospitals are working on line with the Fund.
- *Smart Cards*: In 2002, a pilot smart card project was conducted with the participation of a university hospital and the Fund's clinic. All transactions with the hospital and drugstore operations, and diagnostic investigations of 2 000 beneficiaries, were carried out using smart cards.

The Health Expenditures Control Project has shown other major benefits, in reducing fraud and personnel costs. Thus far, 139 690 invalid health certificates have been detected and cancelled. Savings from prescriptions alone amount to USD 3 million, and another USD 8.3 million has been saved in foundation hospital applications. A savings of USD 1.5 million in optical equipment has been achieved. In terms of staff savings USD 1 million has been achieved.

Before the Project, 35 000 prescriptions could be checked monthly; currently, this sum has reached between 65 000 and 70 000 prescriptions monthly.

Table G.2. **Financial benefits of Government Employees Retirement Fund e-government programmes**

In USD

	Financial benefits
Estimated investment	26.5 million
Estimated benefits	
drugs	60 million
optical equipment	1.5 million
personnel expenditures	1 million
fraud reduction	11.3 million
hospital expenditures	8.3 million
Total estimated financial benefits	**82.1 million**

Source: Government Employees Retirement Fund.

The Health Expenditures Control Project demonstrates that there are real benefits to implementing e-services to collect social security payments, and to pay for health care and pensions. As the three social security organisations have e-services with similar functions, it would make sense to share the development of software or even consider shared services.

Social Insurance Organisation

The Social Insurance Organisation (SIO) serves 41 million people, of a total population of 72 million. The agency opened the Social Security E-Declaration Project portal on 1 May 2004. It enables employers to calculate premiums to be paid online, to pay the premiums electronically, to monitor declared premiums to be paid, and to determine payments made and outstanding debts without going to the local insurance management office and without paying fees. The goals of the project include:

- Improve the quality of service by using ICT.
- Reduce administrative and personnel costs.
- Enable employers to calculate their social security premiums and make payments electronically.
- Shorten the time between applying for pension benefits and receiving them.
- Enable citizens to obtain service and premium statistics through the Internet.

- Integrate the systems of the three social security organisations.

Previously, the over 900 000 firms registered with SIO prepared quarterly written payroll declarations for 7 million workers. These written declarations were given to Insurance Directorates, who estimated payments. Employers then went to their banks to pay their premiums. Banks were often slow in transferring the collected premiums to the SIO. The employers were also required to give the same information to Regional Work Offices, resulting in a duplication of processes and multiple collections of data by different public institutions.

This multiple and manual collection of data by the SIO branches left room for errors and required many human and financial resources. This process caused other problems, such as retired persons having to wait up to a year for their pensions, and individuals presenting fake identification or fraudulently claiming to be part of the other social insurance systems.

The Social Security E-Declaration Project has been successful, in the sense that 800 000 firms (of 950 000 firms, or 84%) actively use the e-declaration site. It has generated major benefits for both government and businesses:

- The number of staff needed to enter data into the system, was reduced by 2 000 amounting to USD 650 million in savings.
- Less space is needed to archive documents, which is now done electronically.
- A savings on office supply expenses (computer equipment, paper, cartridges) of USD 500 000 per year has been achieved.
- Using the e-declaration system, 100 000 fake health records and false cards were identified and cancelled, resulting in savings of USD 133 million. By combining electronic citizen ID documentation with e-declaration information, 33 000 "fake" retired persons were identified; their pensions were cancelled, amounting to savings of USD 80 million.
- Beneficiaries waited between 180 and 240 days to receive their payments under the paper-based system. The e-declaration process has shortened this timeframe to between three and five days.
- E-declaration allows various public institutions to use the same database, and to check the current status of workers.
- There has been an increase in social insurance premiums of almost USD 3 million annually. This is partly due to an improving economy, but probably also to a decrease in the informal economy. The previous quarterly declaration and payment cycle has been changed to a monthly cycle, improving the cash flow to government. Premiums have increased from USD 12.5 billion in 2003 to USD 17.9 billion in 2005.

SIO has implemented other e-government programmes aimed at improving citizen services and creating efficiency.

The E-Reporting Project provides up to 50 000 citizens per day with easier and more efficient SIO services, in the form of an electronic portal enabling employees to determine if their employer has paid insurance premiums for them. Previously, employees wishing to obtain this information had to go to SIO directorates and wait in long queues. The system also allows users to determine how many days they have worked and how many days they need to work before retirement.

The Checking Insurance Eligibility Project allows health providers to check if a person seeking treatment is covered by health insurance. Estimated savings amount to USD 250 million for the first three months of operation, and the application is estimated to save USD 1 billion annually when fully operational. The savings come from cutting into the 17% of patients who fraudulently receive medical services they are not qualified to obtain.

The Online Collection of Insurance Premiums Project came into effect on 1 January 2005. This sub-project of the e-declaration initiative allows online collection of premiums. Implemented in conjunction with 26 Turkish banks that provide Internet banking, this programme eliminates the necessity to collect premiums at Insurance Directorates or at banks. SIO collects USD 17 billion annually on line, through Internet banking. Introduction of the system contributed to a 200% increase in Internet banking.

The E-Payment Project works with 20 000 pharmacies using 70 000 terminals. This pilot project allows 300 hospitals to receive online payments from SIO. The system allows invoices to be checked on line, and payments to pharmacies and hospitals are approved and transferred to their bank accounts electronically. This results in an estimated annual savings of USD 1.5 million.

The No Debt Certification Project provides certificates attesting that firms have no outstanding obligations for insurance premiums to the Public Procurement Agency. Previously, companies waited three to ten days after applying to receive such certification. With this new system, it takes just three seconds. Due to the fact that approximately 10 000 transactions occur each day, the potential savings by using this application is USD 1 million per year.

Turkey has implemented a number of important e-government projects in the social security area. Investments of about USD 2.4 million have generated estimated future savings of USD 1.2 billion.

Social Insurance Agency of Merchants, Artisans and the Self-Employed (Bag-Kur)

Bag-Kur, one of the social security institutions in Turkey providing services to employers, has several e-government projects; these initiatives

Table G.3. **Financial benefits of SIO e-government programmes**

In USD

	Financial benefits
Estimated investment	**2.4 million**
Estimated benefits	
e-declaration	800 million
eligibility checking	1 billion
no debt certification	1 million
Total estimated financial benefits	**1.8 billion**

Source: SIO.

automate transactions with pharmacies, health institutions and financial institutions. The agency covers 16 million people out of a total population of 73 million.

The Bag-Kur Pharmacy Automation System (BEOS) established an online prescription process between Bag-Kur and pharmacies. All authorised pharmacies can use this application to determine if persons are insured, enter data for prescriptions, and carry out online invoicing for medicines. The transaction volume with the old paper-based system was 240 000. With the new online system the number of transactions has been reduced to 130 000. The project aims to:

- Improve the quality of service to patients.
- Provide time and labour benefits.
- Increase premium incomes.
- Control and monitor health expenditures.
- Oversee prescriptions and patient records.
- Supply statistics for future projections.
- Allow online transfers of premiums from banks.

The system implements a tripartite control system among pharmacies, hospitals and insured people. It allows healthcare workers to check patients' debts, health report cards, previously used medications, and health records. It also prevents individuals from purchasing medicines for other people using their own health cards. Expensive drugs can be easily identified, and the mechanism controlling debts of the insured has helped to increase the collection of premiums. The Pharmacy Automation System became operational in 2002.

Implementation of this project has brought about clear benefits.

- Less space is needed to archive documents, as archives are now maintained electronically.
- The previous paper-based process produced 240 000 prescription transactions per day; with the new system, this figure has dropped by 50% resulting in a savings of USD 1.2 billion.
- The BEOS system identified 200 000 fake health records and false cards; their cancellation resulted in a savings of USD 213 million.
- Pharmacies can quickly check whether drugs they prescribe will be paid by Bag-Kur, and can update drug prices.
- Through the e-declaration system, other public institutions can access the shared database and check the current status of insured individuals.
- Greater insurance premium collection, reduced fraud and reduced errors have increased cash flow.
- The average cost of health cards for health expenditures has decreased by 30% since 2002.
- Administrative costs have been reduced.
- Insurance holders report enhanced customer service and improved user satisfaction.

Bag-Kur has implemented other e-government programmes aimed at improving citizen services and creating efficiency.

The Medical Automation System Project provides electronic health certificates for 6 million health beneficiaries, along with information regarding medical, optical and dental equipment. This system enabled a savings of USD 2.7 million.

The Online Collection of Insurance Premiums Project came into effect on 1 September 2003. This sub-project of the BEOS project allows online collection of premiums. Implemented in conjunction with Turkish banks that provide Internet banking, this programme eliminates the necessity to collect premiums at Bag-Kur branches or at banks. Bag-Kur's use of Internet banking to collect premiums online has resulted in a savings of USD 1.4 million.

The Opticians Automation System Project uses online prescription and invoice controls to reduce fraud. Integration with MERNIS and the VEDOP project enables opticians to identify potential insurance beneficiaries. This system resulted in a savings of USD 2.7 million in optical prescriptions.

Table G.4. **Financial benefits of Bag-Kur e-government programmes**

In USD

	Financial benefits
Estimated investment	**3.2 million**
Estimated benefits	
pharmacy automation system	1.5 billion
medical automation system	2.7 million
opticians automation system	1.3 million
online collection of insurance premiums	1.4 million
Total estimated financial benefits	**1.5 billion**

Source: Bag-Kur estimates.

ANNEX H

E-Health in Turkey

Turkey has embarked on an ambitious e-health strategy, described in its August 2005 Health Transformation Plan. Reviewing e-health initiatives in other OECD countries demonstrates successful policy implementation strategies.[1]

E-health drivers

Examining the driving forces behind e-health is an important preliminary step because it allows government policy makers to assess the relevance of the country's existing health care policies. Turkey, like almost all countries that have actively embarked on ambitious e-health initiatives, cites the following three drivers:

1. ***Ageing population:*** The most frequently cited reason for e-health is population ageing, which will put a heavy strain on countries' healthcare systems.
2. ***Rising citizen expectations:*** Turkish health authorities justify e-health, citing the need to "address new health threats and build early warning systems". Pandemic diseases are not new, but in light of the latest threats (SARS, avian flu) citizens are now expecting their governments to act swiftly. E-health, because of its capability to process huge amounts of information, can constitute a powerful tool for enabling public administrations to become more proactive and to foster public trust.
3. ***Rising healthcare costs:*** Health expenditures are growing *faster* than countries' Gross Domestic Products (GDP) (see Figure H.2). According to the OECD, in 2003, health expenditures accounted for 8.6% of a country's GDP on average.

Unlike in other developed countries[2] (such as Denmark or the Netherlands), none of these factors seem particularly pressing in the case of Turkey. Over the next two decades, Turkey's population will remain one of the

youngest in the OECD. Furthermore, although they are rising, health expenditures are among the lowest in the OECD and fall below the OECD average. Additionally, the use of ICT to manage knowledge or build online epidemiologic warning systems, while worthwhile, is probably far off, given the level of Internet penetration in Turkey (one of the lowest among the OECD countries at about 14%).

Two health issues in particular could become drivers of e-health in Turkey – infant mortality and drug spending. Infant mortality in Turkey, with a rate of 40 deaths per 1 000 live births, is the highest in Europe and about six times the OECD average of 6.3. With regard to drug expenditures as a percentage of total health expenditures, Turkey (25%)[3] stands well above other OECD countries such as Denmark (9.8%), the Netherlands (11.4%), or the United States (12.9%).

In June 2004, the European Commission[4] declared that "e-health can help deliver better care for less money…" All countries make similar claims and share the same goal: achieving better and more efficient healthcare services through the use of information technologies. However, such goals and their solutions are broad, making it difficult for policy makers and citizens to see the value in e-health.

When asked to spell out their overarching e-health goals, Turkish health authorities cited the following:

1. Enabling citizens to access better healthcare services.
2. Building interoperable systems for instant access to patient healthcare data to save lives.
3. Organising, delivering and controlling healthcare services in an effective, productive and equal way.

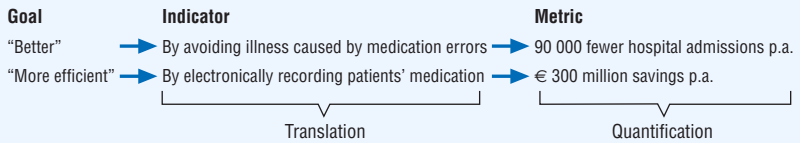
These answers are consistent with Turkey's August 2005 Health Transformation Plan. However, the link between ICT and "better healthcare" is vague; there are many ways in which information technologies can improve healthcare services. Also, goals such as "save lives" and "effective, productive, and equal way" are not quantified, which makes it impossible to decide whether e-health investments are worth pursuing.

E-health initiatives must contribute to public health. When that link is unclear, it weakens public support. If governments frame their policies in broad terms, people will not understand the potential impact and thus will not feel concerned. Worse, they may interpret goals such as "more efficient healthcare" as meaning that their local maternity unit will be shut down, or that the price of medical consultations will rise (see Box H.1).

Turkey should create an effective e-health policy by developing business case scenarios to estimate the expected costs and benefits of each potential

Box H.1. **E-Health goals and measurement in the Netherlands**

The Dutch government has chosen to translate the broad goals ("better", "more efficient") into a very clear and concise vision: a nationwide electronic medication system by 2006. More specifically, from an analytical viewpoint, it is specified in terms of Goals, Indicators and Metrics:



This application will allow health professionals to view patients' medication history in real time from their computers. Benefits are twofold: the system will allow for more accurate diagnoses and it will reduce the number of hospital admissions caused by medication errors.

This strategy is buttressed by a business case, which estimates that 90 000 hospitalisations could be avoided every year, representing an annual savings of EUR 300 million.*

* National ICT Institute in de Zorg (2004), "Better Care Thanks to Better Information".

programme. For example, if Turkey decides to focus on drug spending, its e-health strategy could aim to save a predetermined amount each year by targeting a drug spending ratio (drug expenditures divided by total health expenditures) of, *e.g.* 15% by 2015.

The business case should provide some (rough) cost estimates, allowing the government to check whether the expected benefits (*i.e.* savings) clearly outweigh the anticipated costs.

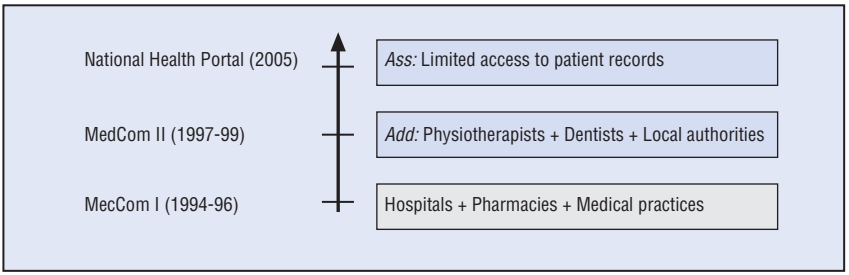
Turkey's e-health should be framed around core public values that garner wide public support. For example, Turkish health authorities may state that the objective of its e-health programme is to save the lives of a target number of infants per year through an e-immunisation system, and to reduce the country's infant mortality rate by a certain per cent by 2010.

E-health boundaries

Countries that have successfully implemented e-health strategies have done so by carefully delineating project boundaries, both in terms of processes and stakeholders.

A good example is Denmark. Its e-health project (called MedCom) evolved over three stages, each involving a growing number of stakeholders. This is illustrated below:

Figure H.1. **Evolution of the MedCom project boundaries (Denmark)**



Denmark started to offer online services to its citizens only when Internet use in the country was widespread (Stage III).

In general, the size of a country's e-health community (stakeholders) must be commensurate with its ICT maturity level. A country's maturity level can be defined by the following three indicators:

- Internet usage.
- Level of online interaction with public administration.
- Number of people who have access to broadband Internet connections.

With respect to these three indicators, Turkey has a low ICT maturity level. Therefore, Turkey's e-health strategy should involve only a very limited number of health stakeholders. These may include the Ministry of Health, the 81 provincial health authorities, and the nation's hospitals (Stage I).

Turkey should plan the national rollout of its e-health strategy over stages (see Figure H.1 for the Danish example). Each stage should include a growing number of stakeholders, and should typically span two to three years to allow the government to measure the progress accomplished at the end of each stage.

Project boundaries should be commensurate with Turkey's ICT infrastructure expansion. This will require a concerted collaborative effort between agencies planning e-health and those in charge of expanding Turkey's ICT infrastructure. For example, this may entail close co-operation with the Ministry of Transport (which is in charge of broadband access) to ensure that all hospitals are on line by the end of Stage I.

E-health applications

E-health applications are the ICT processes through which a country's e-health vision becomes reality. Choosing the right application is paramount to turn policy goals into reality.

There are many e-health applications, and governments making a choice should consider two dimensions: the technical nature of the application (interactive, remote, etc.) and the domain area of the application (administrative and financial, education, consumer health, research, etc.).

The technical nature of e-health applications

From an evolutionary standpoint, the adoption of e-health tends to follow a pattern of increasing technical complexity according to four distinct levels:

- **Information:** Hungary has developed a health information website for its citizens.
- **File Transfer:** Both Denmark and the Netherlands have fully operational health data networks for their e-prescription systems.
- **Interactive:** Only Denmark offers limited interactive online services to citizens at present.
- **Remote:** Remote applications are not yet operational in most countries.

The United States National Research Council identified five key technical capabilities required to support e-health applications. These are:

- **Bandwidth:** the network's transmission capacity.
- **Latency:** time required for a message to be acknowledged.
- **Availability:** likelihood that the network will be up and running.
- **Security:** a network's capacity to ensure confidentiality and integrity of data transmitted.
- **Ubiquity:** level of access to the Internet.

Being aware of these technical requirements for e-health allows policy makers to formulate ambitious, but achievable, strategies.

The domain area of e-health applications

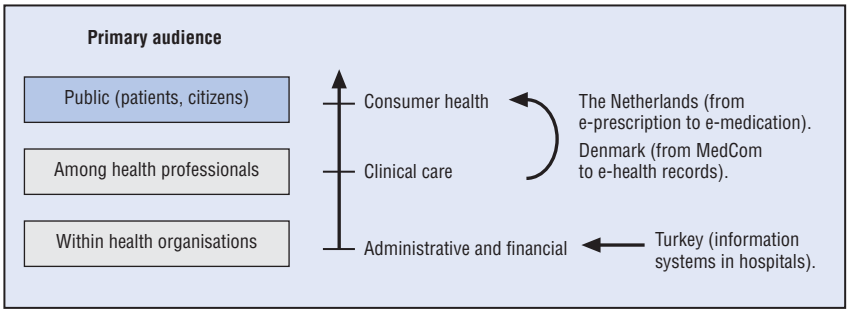
Typically, e-health applications encompass six different domain areas:

- **Consumer health:** health websites, etc.
- **Clinical care:** online access, file transfer, etc.
- **Administrative and financial:** information management systems, etc.
- **Public health:** online epidemiological alerts.
- **Education:** e-learning.

- **Research:** online collaboration on projects.

A careful review of how other countries have successfully built their e-health systems underscores the existence of a migration path. The key lesson is that e-health applications build upon each other. This incremental progression is illustrated in Figure H.2.

Figure H.2. **Domain area evolution**



Turkey's action plan, E-Transformation in Health, envisions the development of five key applications:

1. **Core Health Resources Management:** A series of software modules (human resources, financial management, etc.) to be used by the 81 Provincial Health Directorates. The human resources module is already operational and keeps track of personnel movements. One of the goals is to allow the Ministry of Health (MOH) to collect accurate data.
2. **Accounting Information System:** Software application developed by the Ministry of Health for hospitals.
3. **Family Medicine Information:** Electronic health records system. The goal is for doctors to have access to their patients' health data on line. A trial involving 104 physicians is currently underway in the province of Duzce.
4. **Electronic Patient Record:** Application for Ministry of Health staff only. It is used as a pilot system to develop the requirements of the Family Medicine Information System.
5. **Medical Device and Material Recording System:** Assigns unique identifiers to medical devices and manufacturers. When completed, this database will serve as a surveillance tool for the medical products market.

It is not productive to aim for e-health applications that a country's existing ICT infrastructure cannot support. The criteria addressed in this section constitute a useful checklist for deciding which applications to implement. Turkey should revisit its national e-health strategy in light of these

five technical requirements and discard applications it cannot support given the country's ICT infrastructure currently and in the foreseeable future.

Turkey is currently considering five major e-health applications. Yet, an important lesson to draw from the Danish and Dutch experiences is that it is always better to start with one application and once it is fully operational, to move to the next. This type of strategy is sometimes described as "freeze-unfreeze-freeze". It helps policy makers to plan and sequence their efforts. This is even more important for Turkey, as its budget is rather limited (USD 9 million). Choosing – which implies prioritising – and deploying one application would allow Turkey to make the most of its limited resources.

The rollout of e-health should follow an incremental path as follows:

- Turkey is currently testing Electronic Health Record (EHR) systems. Pilot projects are useful because they allow experiences to be gathered firsthand. When it comes to rolling out e-health nationally, however, the Dutch and Danish experiences have shown that it is wiser to start with information only (like a health website) or file-transfer applications (like e-prescriptions), which involve fewer stakeholders.
- Developing clinical care applications, which involve data exchange among health professionals, should be the second step. Although it might be tempting to bypass this step and proceed directly to consumer applications, such as EHR, experiences in other countries (*e.g.* the Netherlands, France, Denmark) have shown that this is a necessary intermediary stage.
- This finding reinforces the previous recommendation suggesting that Turkey should consider file-transfer applications (like e-prescription) before engaging directly in the nationwide deployment of patients' electronic health records.

Health identifiers

As soon as an application involves an electronic exchange (*e.g.* between two health professionals or between doctors and patients), the two parties need to be unambiguously identified. Identifiers also serve to authorise transactions (access rights to patients' e-records), ensure their confidentiality (encryption), and, in some instances, allow for their non-repudiation (electronic signatures).

Governments must be aware of the magnitude of the efforts and costs involved in establishing and administering identifiers. For that reason, new projects should start with applications that either do not require identifiers, or that only rely on professional identifiers (because their number is much more limited).

Additionally, as soon as patient identifiers are introduced, the issue of personal data usage, storage, and protection will inevitably arise. Governments must proactively address this question before data are misused; any misuse might severely undermine public trust and damage the government's efforts to promote e-health.

They must also put in place the necessary regulatory framework *before* patient identifiers are actually used. A key step is to establish a national data protection body. This agency could not only play a key role in establishing the necessary safeguards and ensuring compliance with EU regulations, but also empower citizens by giving them greater control over their health records.

Turkey should focus on applications that do not require identifiers (health websites, such as in Hungary) or require only professional identifiers (doctors' cards). The Netherlands, for example, introduced e-prescription (which does not require any patient identifiers), before launching its e-medication system (which does require patient identifiers).

In its reply to the OECD e-health questionnaire, Turkey recognised that these legal aspects require further investigation. Respondents also mentioned that a national data protection agency would be set up. Turkey should pursue this institutional effort and aim to establish this agency before it starts deploying health identifiers.

E-health is about seamless transmission of electronic data. As a result, interoperable standards and data dictionaries constitute two vital building blocks of any e-health enterprise. Not surprisingly, most countries implementing e-health are actively engaged in standardisation and codification of health information.

Turkey's standardisation efforts should include quick adoption of a set of interoperable standards that can then be formally promulgated. In the meantime, Turkish health authorities should reach out to the health industry (*e.g.* issue an EU-wide request for proposals) to develop prototypes based on Turkish standards. This will allow policy makers to check whether standards are appropriate and whether the market is large enough to ensure multi-sourcing in the future.

Crafting ambitious e-health policies is one thing; implementing them is another. Those rolling out e-health are typically confronted with two types of tensions: conflict and confusion. Conflicts arise due to uncertainty as to who will benefit from e-health. The Dutch "ICT and Society – Yearbook 2005" report concluded that "healthcare programmes can help make hospitals more efficient, but such improvement is often obstructed by the conflicting interests of the various parties involved." In short, there are plenty of reasons why e-health stakeholders may not want to co-operate.

Confusion arises because e-health policies are generally accompanied by profound structural reforms. Denmark experienced this situation. This will also be the case for Turkey, which has embarked on an ambitious reform of its health sector at the same it is moving ahead with e-health.

Success depends on each country's tradition and institutional structure. A highly centralised country like Turkey can afford a relatively high level of conflict because its government has greater leverage over the health actors.

Turkey should strive to clarify its e-health policy by focusing on one specific e-health application and by communicating its vision to the parties involved. A good example is the Netherlands: in order to convince its citizens of the merits of the e-medication system, the government published a report titled *The Price of Mistakes*, which highlighted the human and financial consequences of medication errors. This drew the attention from the media, facilitating the government's task. It also distributed easy-to-understand fact sheets explaining how the new system would work from each stakeholder's perspective (patients, doctors, nurses, etc.).

Conflict intensity can be mitigated by reducing the number of parties involved, that is, by shrinking project boundaries.

Turkey may also seek to make its e-health initiative more visible by heightening the accountability of its sponsors. For example, in the Netherlands, the Minister of Health is personally responsible for overseeing the deployment of e-health. He is also asked to submit quarterly progress reports to Parliament, highlighting progress made in implementing the government's e-health strategy.

The role of the private sector

E-health is never the exclusive province of public administrations. Private actors are always present, as healthcare providers (*e.g.* private clinics), product suppliers (*e.g.* pharmaceutical firms), system operators (*e.g.* management of health data networks), financial partners (*e.g.* health insurers), or researchers (*e.g.* private health R&D).

There is no way to define the roles that public and private actors should play; this depends on countries' government traditions. However, the objective of policy makers should be to align the incentives of public and private actors as much as possible. Governments tend to play the following roles: planning, establishing the legal and regulatory framework, and funding (at least partial).

The role of the private sector varies from country to country. For example, health networks can be publicly operated (Saglik in Turkey), privately run (as in the Netherlands), or jointly managed (public-private partnership in France).

The use of a single identification number

As countries move towards interactive applications, health identifiers become necessary. Many governmental agencies already use citizen identifiers (*e.g.* tax numbers, social security numbers). This raises the question: why not a single citizen number?

Several countries are implementing citizen numbers. Turkey has developed a unique citizen number through the MERNIS system. According to Turkish authorities: "MERNIS numbers will be used as a unique identifier in all sectors."

The downside is the risk that this unique number may entail in terms of privacy. What if patients are denied healthcare because they have not paid their taxes? There are many ways to address this type of concern: legal (enactment of special laws), institutional (creation of a Data Protection Agency), and operational (passwords, access levels, etc.), but none is perfect.

There is one way to determine whether or not one single number is advisable; each government must make the best decision for its country. It is important is to ensure that this decision stems from an informed public debate, and the role of governments is to foster such discussion.

Privacy

E-health can save lives, but if it is misused, it can undermine public trust and reduce government legitimacy. Therefore, one of the major challenges facing countries implementing electronic health records lies with data storage. Where should patient records be stored to ensure maximum protection? There are basically four options:

1. *Central:* on a national database.
2. *Portable*: on a smart card that belongs to the patient.
3. *Local:* at the point of treatment (hospital information systems, doctor's computer, etc.).
4. *Distributed:* combination of central, portable and local.

No solution is fail proof. A national database opens the risk that the entire population's data might be stolen. A smart card may not include sufficient storage space, which could be problematic, especially if the objective is to store large biomedical files such as MRIs. Local storage puts an additional burden onto primary healthcare providers, who may not be prepared or willing to undertake this extra task. As a result, most countries lean towards a combination approach.

As toll motorway and credit card companies know, internal fraud can cause more problems than external threats. It is therefore important to focus

on this type of fraud right from the onset of conceiving the e-health system. For example, it is important to ask: what if someone, duly accredited, downloads and sells the information contained in the health database?

The more exhaustive databases are, the more valuable they will become, and the greater the risks of hacking. This means that such risks may only materialise when e-health is widely used, by which time it may be too late to re-design the system architecture. Turkish project sponsors must consequently take time to forecast the likely threats their systems may face in the future. ICT fraud is constantly evolving and governments need to decide which party is best at handling this task: public administrations, independent agencies, or the private sector.

The digital divide

Allowing people to consult with their doctors on line can save time and money, but what if these services only benefit those who are already on line?

Offering online services prematurely can exacerbate the gap between those who have access to the Internet and those who do not. In that regard, global Internet usage indicators can be misleading. Internet usage in Turkey is about 14% and a large majority of these users access the Internet from cyber cafes (37%) or from work (43%).[5] These are not ideal locations for an online consultation with a doctor.

E-health can yield benefits without necessarily requiring personalised online services. An application like e-prescription can significantly improve healthcare (fewer medical errors), without entailing a direct interface with patients. In other words, being patient-focused does not necessarily mean offering direct online services.

Information technologies can greatly empower citizens by giving them greater access to health information and by offering them individualised services. On the other hand, extensive use of electronic transactions means that patients have less and less control over the flow of the information that concerns them most.

E-health architects should be aware of the tension between the reliance on ICT and individual autonomy, and aim to strike a balance.

Notes

1. This Annex has been contributed by Mr. Benoit Rossi as part of his Masters Thesis at the John F. Kennedy School of Public Management at Harvard University, in co-operation with the OECD.
2. In particular, comparisons are made with Denmark, the Netherlands and Hungary, countries that have been peer reviewed by the OECD E-Government Project.

3. OECD 2005.

4. Commission of the European Communities, "E-Health, Making healthcare for European Citizens: An Action Plan for a European E-Health Area", 30 April 2004, *http://ec.europa.eu/information_society/doc/qualif/health/COM_2004_0356_F_EN_ACTE.pdf*.

5. Turkish Statistical Institute.

ANNEX I

Methodology

Analytical framework

The methodology used for this peer review was developed by the OECD over the period from 2002 to 2004. The methodology is based on the OECD framework for examining e-government that was developed in *The E-Government Imperative* (OECD 2003), and takes into account the work that went into the OECD publication *E–Government for Better Government* (OECD 2005). The methodology was tested in a pilot review of e-government in Finland, which led to the publication of the report *OECD E-Government Studies: Finland* (OECD 2003). In 2004, the OECD E-Government Project adopted the OECD methodology for its peer reviews, following the protocols laid out in *Peer Review: An OECD Tool for Co-operation and Change* (OECD 2003). Using this analytical framework, the OECD has conducted reviews of Mexico, Norway, Denmark, the Netherlands and Hungary.

The development of the OECD e-government peer review methodology is an ongoing process, but the general framework will be preserved to allow for comparability among countries. The OECD will continue to ensure that the methodology used is updated and as relevant as possible for OECD countries.

In the development of the methodology, the OECD has kept in mind that:

- The OECD should assign great importance to statistical rigour and quality when measuring and describing variables.
- Comparable descriptive characteristics of variables are necessary for building an international classification of e-government experiences.
- The OECD E-Government Project should compare its approach to those of other OECD directorates, and collect lessons learned for future reference and sharing with other directorates.

As the first step in a country review, the OECD Secretariat develops an agreement with the country authorities concerning the objectives, analytical framework and timeline of the study. The terms of reference set out and

structure the areas to be studied to provide an overarching view of e-government implementation and impacts.

The review is structured around the notion of a policy cycle in which e-government goals, strategies and initiatives are developed and diffused centrally, and individual e-government projects are initiated and implemented at the agency level. How these elements interact leads to a focus on issues of co-ordination in the development and implementation of e-government across the public sector – a recurring issue in the OECD's discussions with e-government officials and experts.

Inputs

The Turkey study is primarily qualitative in nature, presenting a combination of observations, analysis and judgements gleaned from reports and official documents, survey responses and interviews. The study has four main inputs:

- Reports and official documents.
- The OECD e-government survey, as well as complementary surveys on major e-services and businesses' views of e-government and e-services.
- Interviews with government officials.
- Peer review meeting with OECD members.

Reports and official documents

The study brought together a wide range of documents from various government sectors and functions, which provided insights into the way that public management and e-government polices, strategies and initiatives are planned, co-ordinated and implemented in Turkey. Information was also drawn from recent relevant OECD reports and reviews of Turkey (*e.g.* OECD Territorial Reviews: Istanbul, SIGMA Review of Turkey, OECD Economic Surveys: Turkey). The study also drew on academic research and journal articles on public management reform, e-government and the Information Society in Turkey. This approach was based on the notion that e-government cannot be addressed in isolation, but should be observed from a wider public management perspective.

OECD survey of e-government in Turkey

The OECD survey on e-government was originally developed in 2002 and revised in 2003 based on the experience of the Finland review. A revised version of the survey was presented to the OECD Steering Group on the Complementary Areas of Work on E-Government at a meeting in Paris in December 2003. Comments from the Steering Group were incorporated into

the final version of the survey. The survey has been adapted to reflect the Turkish institutional and administrative framework.

In July 2005, the OECD conducted the survey with Turkish state and local government organisations. The survey was targeted to officials with responsibilities relevant to e-government, who were asked to present their organisations' responses to the survey, rather than respond in their capacity as individuals. The survey sample was jointly selected by the OECD and the Turkish Government (through the State Planning Organisation Department of Information Society) (see Table I.1).

Table I.1. **Responses to the OECD survey**

	Total government units	OECD sample	Responses	Response rate %
State government ministries (including subordinate departments, agencies, etc.)	151	105	65	62
Governorships, provincial, and municipal agencies	3 306	160	80	50
Total	**3 457**	**265**	**145**	**55**

The survey asked state and local government organisations for their opinions regarding e-government challenges, barriers and priorities. It should be kept in mind that the data results are qualitative and subjective, implying no possibility of performing tests of significance from which definitive conclusions can be drawn.

Second survey of agencies with major e-services

The Peer Review of Turkey included a special survey of major e-service providers. These services were identified with assistance from the State Planning Organisation. The objective was to obtain information on take-up of services and funding of e-services and their development, to determine if business cases have been developed, if users have been consulted in developing the service, and if there have been customer surveys.

While this sample is not representative of all agencies implementing e-services in the Turkish government, it does give a picture of the 23 organisations with major e-services responding to the survey (see Table I.2).

The organisations had great difficulty in answering questions about the total number of transactions for different e-services and the corresponding paper services, which prohibited estimating the take-up of services. The statistics provided sometimes included total user interactions, for example downloading of information. However, the tax administration was able to provide statistics on tax returns – 1.4 million were web-based and 1.5 million

Table I.2. **Organisations responding to the survey**

Prime Minister's Office	Customs Office
Ministry of Justice	GD of Police Security
Ministry of Foreign Affairs	Capital Markets Board
Ministry of Agriculture	Procurement Agency
Ministry of Health	Yalova Municipality
Ministry of Education	State Supply Office
Ministry of Interior	Pension Fund for the Self-Employed
Ministry of Industry and Trade	Pension Fund for Government
Ministry of Environment and Forestry	KOSGEB
Tax Administration	Turkish Statistical Institute
Undersecretariat of Foreign Trade	Treasury
	TUBITAK

were paper-based in 2005. This illustrates a need for agencies to improve output statistics in order to have a good measure of what is produced, which can be divided by the cost of production to arrive at unit costs.

The responses also show that most organisations had great difficulty providing estimates of the cost for providing different e-services; this is not surprising, as it would entail an accounting system able to capture expenditures by activity or programme. In order to be able to determine unit costs and estimate savings achieved through using Internet-based delivery channels, Turkey will need to improve its systems for capturing data on expenditures for e-services and paper-based systems.

Interviews with government officials

The review team conducted two sets of interviews with Turkish government officials and other commentators from relevant interest bodies, industry associations and the Turkish ICT industry. All interviews were scheduled by the State Planning Organisation with approval from the OECD. The mix of organisations and interviewees was selected to show a broad and representative insight into the main issues and problems regarding e-government in Turkey.

The first set of interviews, which took place in July 2005, involved exploratory discussions designed to help the OECD understand the key elements of e-government in Turkey. The OECD team met with 10 senior officials and their staffs. These exploratory interviews were not meant to be comprehensive, but to assist the OECD in developing an understanding of areas that merited further research.

The second set of interviews took place in October 2005. These in-depth interviews were carried out by three members of the OECD Secretariat and three peer reviewers from OECD member governments: Dr. Chang Kil Lee

(Korea), Mr. Sergio Mendoza (Mexico) and Dr. Bruno Lanvin (World Bank). The interview team undertook a total of 23 interviews. Four focus group sessions involving several participants from county and municipal government organisations, academic institutions, and businesses were also held.

All interviews, which were strictly confidential, followed a structured set of questions, covering each of the main themes of the report. The interviews focused on the more informal issues that could not be captured with the written survey.

Peer review meeting

In the assessment phase of an OECD Peer Review, the main findings of the review are discussed in a plenary meeting of the body responsible for the review. The examiners lead the discussion, but the whole body is encouraged to participate extensively. Following discussions, and in some case negotiations, among the members of the body, including the reviewed country, the final report is adopted, or just noted by the whole body. Generally, approval of the final report is by consensus, unless the procedures of the particular peer review specify otherwise ("Peer Review: An OECD Tool for Co-operation and Change," OECD 2003).

Independence, neutrality and verification of inputs

Within a framework agreed with the Turkish Government, the OECD conducted this study with its own staff and independent peer reviewers. The study was conducted with guidance and financing from the Turkish State Planning Organisation affiliated with the Prime Minister's Office, which did not bias the study or influence the final conclusions in any way.

The report was drafted by the OECD Secretariat with the input of the three peer reviewers from Korea, Mexico and the World Bank. The OECD regularly briefed the SPO on the progress of the review. The text also benefited from fact-checking, consideration and feedback by the SPO and other relevant organisations that participated in the survey and interviews.

ANNEX J

Glossary

This glossary was compiled for the purpose of this study, and describes how the following terms are used in this report.

AUTHENTICATION: A security measure for checking users' identities before they are allowed access to an online information system or application.

BACK OFFICE: The internal operations of an organisation that support its business processes and are not accessible or visible to the general public.

ENTERPRISE ARCHITECTURE: A definition of the overall structure of an organisation's processes, information systems, personnel and organisational sub-units, with a view to aligning them with the organisation's core goals and strategic direction.

EXTERNAL BARRIERS: Obstacles to e-government that require specific actions (*e.g.* modification of laws by legislature) in order to be overcome. They often concern breakdowns, missing components or lack of flexibility in the government-wide frameworks that enable e-government. The result is often the inability to achieve effective e-government implementation.

CHANNELS: Means of accessing government services, such as the Internet, telephone, or a visit to a government office. Different types of customers use different service access channels.

E-GOVERNMENT: The use of information and communication technologies (ICTs), and particularly the Internet, as a tool to achieve better government.

FRONT-OFFICE: "Government as its constituents see it" – the information and service providers, and the interaction between government and both citizens and businesses.

INFORMATION AND COMMUNICATION TECHNOLOGY (ICT): Any equipment or interconnected system (or sub-system) of equipment that includes all forms of technology used to create, store, manipulate, manage, move, display, switch, interchange, transmit or receive information in its

various forms. Such forms can include: business data; voice conversations; still images; motion pictures; multimedia presentations and others not yet conceived. Communication refers to a system of shared symbols and meanings that binds people together into a group, a community, or a culture. The word communication was added to ICT to make a network of the usage of Information Technology. ICT refers to both computer and communication technology.

INFORMATION MANAGEMENT (IM): Operations which develop and maintain the information resources and processes of an organisation.

INFORMATION NETWORK: A system of ICT, hardware and services which provides users with delivery and retrieval services for a given set of information (*e.g.* electronic mail, directories and video services).

INFORMATION NETWORK INFRASTRUCTURE: The whole system of transmission links, access procedures, legal and general frameworks, and the basic and supportive services of the information network.

INFORMATION SOCIETY (IS): A society which makes extensive use of information networks and ICT, produces large quantities of information and communications products and services, and has a diversified content industry.

INFORMATION TECHNOLOGY (IT): The hardware, software and methods used for electronic processing and transfer of data.

INTEROPERABILITY: Organisations' ability to share information systems and/or data, generally based on using common standards.

MIDDLEWARE: Software that integrates services and distributed applications across the Internet or local area networks, and may provide a set of services such as authentication, messaging, transactions, etc. Middleware allows government organisations to share data between front-office service delivery channels and back-office applications and processes, both within and across organisations; it is increasingly perceived as a technology for delivery of joined-up e-government services.

ONLINE GOVERNMENT SERVICES: Services provided by, but not necessarily supplied by, the public administration to citizens, businesses and organisations (including other government organisations) through information networks.

PORTAL: A website that co-ordinates and presents information and services from a variety of providers, with the content presented in accordance with criteria related to users' needs.

PUBLIC KEY INFRASTRUCTURE (PKI): A method for authenticating a message sender or receiver and/or encrypting a message. PKI enables users of an insecure public network, such as the Internet, to securely and privately

exchange data through the use of a cryptographic key pair obtained and shared through a trusted authority. It provides for use of digital certificates that can identify an individual or an organisation, and directory services that can store, verify and, when necessary, revoke the certificates.

ANNEX K

Bibliography

Abramson, M. *et al.* (2003), *Four Trends Transforming Government*, IBM Center for The Business of Government, *www.businessofgovernment.org*.

Accenture (2006), *Leadership in Customer Service: Building the Trust*, *www.accenture.com/Countries/Canada/Research_And_Insights/LeadershipDelivery.htm*.

Akca, H.I. (2004), *The Country Perspective: Turkey*, State Planning Organisation, *http://lnweb18.worldbank.org/ECA/ecspfExt.nsf/Attached/Agenda2/$FILE/08%20Halil%20Ibrahim%20Akca%20SPO.ppt*.

Aldeniz, Y. (2003), *Internet Governance: Towards the Modernisation of the Policy Making Process in Turkey*, *www.policy.hu/akdeniz/osi_ya_final_pp.pdf*.

Asian Development Bank (2004), *Strategic Electronic Government Procurement*, *http://whitepapers.zdnet.co.uk/0,39025945,60135150p-39001109q,00.htm*.

Bensghir, T.K. and Y. Mete (2002), "Perceptions of E-Government in Turkey", *Turkish Public Administration Annual*, Vol. 27-28, 2001-2002.

Bengsghir, T. and Y. Mete (2003), *Coverage of Information and Communication Technology Penetration into Turkish Public Administration Education Programmes*, Paper presented at the 26th Teaching PA Conference on 8 February 2003, in Dayton, Ohio, USA.

Bensghir, T. *et al.* (2004), "Expectations of Turkish Citizens and Provincial Managers", *Building E-Governance: Challenges and Opportunities for Democracy, Administration and Law* International Institute of Administrative Sciences, Belgium.

Booz Allen Hamilton (2005), Beyond e-Government The world's most successful technology-enabled transformations, *www.boozallen.com/home/Industries/industries_article/884216?lpid=660262*.

(2002), *The World's Most Effective Policies for the e-Economy*, *www.itis.gov.se/publikationer/eng/ukreport.pdf*.

Cap Gemini (2006), Online Availability of Public Services: How is Europe Progressing?, *www.capgemini.com/thought_leaership/online_availability_of_public_services*.

(2004), *Architecture for delivering pan-European e-Government services*, *http://ec.europa.eu/idabc/servlets/Doc?id=18944*.

Center for Digital Government (2005), *Going Beyond ERP: A Roadmap for Transforming Government Enterprises*, *www.centerdigitalgov.com*.

Center for Digital Government (2006), Today's Data Integration Imperative and a New Platform for Governing: Building Trust in 21st Century Government, *www.centerdigitalgov.com*.

Center for Digital Government (2006), Service-Oriented Architecture: Making Collaborative Government Work, *www.centerdigitalgov.com*.

Christensen, M. (2006), "EU Candidacy and Information Society Policies in Turkey: A Reality Check", *Global Media Journal Mediterranean Edition*, Spring 2006 issue.

Commission of the European Communities (2004), Connecting Europe at High Speed: National Broadband Strategies (SEC(2004) 599).

Danish Technological Institute (2004), *Reorganisation of Government Back Offices for Better Electronic Public Services, http://europa.eu.int/information_society/activities/egovernment_research/doc/back_office_reorganisation_volume1_mainreport.pdf*.

Deloitte (2004), Citizen Advantage: Enhancing Economic Competitiveness through E-Government, *www.deloitte.com/dtt/newsletter/0,2307, sid%253D1012%2526cid%253D26079,00.html*.

Doete, L. and R. Weehuizen (2003), "The Economics of E-Government: A Birds's Eye View", *International Journal of Communications Law and Policy*, Issue 8, Winter 2003/2004.

Economist Intelligence Unit (2004), *E-Government in Central Europe: Rethinking public administration*, *www.eiu.com*.

Economist Intelligence Unit (2004), *The 2004 E-Readiness Rankings*, *www.eiu.com*.

Economist Intelligence Unit (2005), *The 2005 E-Readiness Rankings*, *www.eiu.com*.

Economist Intelligence Unit (2006), *The 2006 E-Readiness Rankings*, *www.eiu.com*.

Eggers W. and S. Goldsmith (2004), government by Network The New Public Management Imperative, *www.deloitte.com/dtt/article/0,1002,sid%253D37085%2526cid%253D60672,00.html*.

EU DG for Information Society and Media (2004), *Online Availability of Public Services: How is Europe Progressing?, www.eu.int/information_society/soccul/egov/egov_benchmarking_2005.pdf*.

EU (2002), *eEurope 2005: An information society for all*, *http://europa.eu.int/information_society/eeurope/2005/index_en.htm*.

EU (2004), *The European Union and its E-Government Development Policy following the Lisbon Strategy Objectives*, *http://europa.eu.int/idabc/en/document/3822/5671* – 42k.

EU (2005), *The European e-Business Report (2005)*, *www.ebusiness-watch.org/resources/documents/eBusiness-Report-2005.pdf*.

General Accountability Office USA (2006), Information Technology Agencies and OMB should strengthen Processes for Identifying and Overseeing High Risk Projects, (GAO-06-647).

General Accountability Office (2004), Information Technology Investment Management A Framework for Assessing and Improving Process Maturity, (GAO-04-394G).

General Accountability Office (1998), Measuring Performance and Demonstrating Results of Information Technology Investments (GAO/AIMD-98-89).

General Services Administration (2003), High Payoff in Electronic Government Measuring the Return on E-Government Investments, *www.gsa.gov/gsa/cm_attachments/GSA_DOCUMENT/High%20Payoff_R2F-aQX_0Z5RDZ-i34K-pR.pdf*.

Gershon, P. (2004), *Releasing Resources to the Front Line – Independent Review of Public Sector Efficiency*, *www.hm-treasury.gov.uk/media/B2C/11/efficiency_review120704.pdf*.

Government of Canada (2006), Government On-LineLessons Learned, *www.gol-ged.gc.ca/lessons-lecons/lessons-leconspr_e.asp?format=print*.

IDABC eGovernment Observatory (2005), *The impact of e-government on competitiveness, growth and jobs*, *http://europa.eu.int/idabc/egovo*.

Idikat, T. (2004), *Evaluation of Readiness of Turkey for E-Government*, *http://etd.lib.metu.edu.tr/upload/12604969/index.pdf*.

IKED (2004), *Strengthening Innovation and Technology Policies for SME Development in Turkey*, *www.iked.org/default.asp?id=30&mnu=27*.

Lehr William *et al.* (2006), Measuring Broadband's Economic Impact, *http://cfp.mit.edu/groups/broadband/docs/2005/MeasuringBB_EconImpact.pdf*.

Mandil, S. (2004), *Turkey eHealth Strategy*, *www.saglik.gov.tr/eng/turkeyehealth_bu.pdf*.

Millard, J. *et al* (2004), *Reorganisation of Government Back Offices for Better Electronic Public Services – European Good Practices*, Danish Technological Institute, *http://ec.europa.eu/information_society/activities/egovernment_research/doc/back_office_reorganisation_volume1_mainreport.pdf*.

National Office for the Information Economy (NOIE) (2003), E-Government Benefits Study, *www.agimo.gov.au/__data/assets/file/16032/benefits.pdf*.

OECD (2003), *Checklist for E-Government Leaders*, *www.oecd.org/dataoecd/62/58/11923037.pdf*.

OECD (2004a), *The Economic Impact of ICT Measurement, Evidence, and Implications*, *www.oecd.org/document/51/0,2340,en_ 2649_34449_30927091_1_1_1_1,00.html*.

OECD (2004b), *Small and Medium-Sized Enterprises in Turkey: Issues and Policies*, *www.oecd.org/dataoecd/5/11/31932173.pdf*.

OECD (2005), *Good Practice Paper on ICTs for Economic Growth and Poverty Reduction*, *www.oecd.org/dataoecd/2/46/35284979.pdf*.

Ozcivelek, R. and Z. Haluk (2004), *Insights into the ICT Industry in Turkey*, European Commission Joint Research Centre Technical Report EUR 21392 EN.

Pak, N.K. (2002), "Participation in the EU-RTD programs as a leverage for membership", paper presented at the EU-IST Program Information Day, 22 January 2002, TUBITAK, *www.srdc.metu.edu.tr/webpage/projects/hermesProject/documents/namik-IST-DAY-son.doc*.

Peppers and Rodgers Group (2005), *Turkish Information Society Strategy Project Approach and Goal Scenarios*, *www.bilgitoplumu.gov.tr/dbtz/dbtz/Turkish_Information_Society.pdf*.

PriceWaterhouseCoopers (2004), *Rethinking the European ICT Agenda*, *www.pwc.com/Extweb/pwcpublications.nsf/docid/EC6DE73A846581CE80256EFD002E41FB*.

Prisma (2003), *eServices for all – treating all users equally*, *www.prisma-eu.net*.

Sayan, S. *et al.* (2004), *Factors and Impacts in the Information Society: A Prospective Analysis in the Candidate Countries: Report on Turkey*, European Commission Joint Research Centre Technical Report EUR 21383.

Satola, D. (2004), *Legal Framework for e-Development: Best Practices and Lessons Learned*, World Bank, *h2o.law.harvard.edu/ViewProject.do?projectID=168* – 40k.

SPO (2003a), E-*Transformation Turkey Project Short-term Action Plan*, *www.bilgitoplumu.gov.tr/yayin/eDTRStap.pdf*.

SPO (2003b), *eEurope+ Interim Report*, *www.bilgitoplumu.gov.tr/yayin/eEurope2003_Interim_Report_TURKEY.pdf*.

SPO (2003c), *OECD ICT Policy Questionnaire for Turkey*, *www.bilgitoplumu.gov.tr/yayin/OECD_IT_policy_questionnnaire_Turkey.pdf*.

SPO (2004a), *eEurope+ Progress Report*, *www.bilgitoplumu.gov.tr/yayin/eEurope2003_Progress_Report_TURKEY_20040212pdf*.

SPO (2004b), *E-Transformation Turkey Project: Turkish Case for E-Government*, *www.bilgitoplumu.gov.tr/eng/docs/OECD%20Room%20Document-TURKEY.pdf*.

SPO (2005), *E-Transformation Turkey Project*, *www.bilgitoplumu.gov.tr/duyuru/bicer_ws/20050317_eTranformation_SPO.ppt*.

SPO Information Society Department, *www.bilgitoplumu.gov.tr/eng/default.asp*.

TUSIAD (2001), *Information Society and eTurkey: Towards European Union*, Publication No. T/2001-07/304, *www.tusiad.org/english/rapor/eturk/eturk1.pdf*.

UK Cabinet Office (2005a), *Transformational Government Implementation Plan*, *www.cabinetoffice. gov.uk/e-government*.

UK Cabinet Office (2005b), *eAccessibility of public sector services in the European Union*, *www.cabinetoffice.gov.uk/e-government/resources/eaccessibility*.

E-Government Unit, Cabinet Office UK (2006), UK Approach to Benefits Realisation, *http://webdomino1.oecd.org/COMNET/PUM/egovproweb.nsf/viewHtml/index/$FILE/UK%20Benefits%20Realilsation%20Report%20v0.10.doc*.

UN World (2003), *Public Sector Report: E-Government at the Crossroads*, *http://unpan1.un.org/intradoc/groups/public/documents/UN/UNPAN012733.pdf*.

UN (2005), *Global E-Government Readiness Report 2005*, *http://unpan1.un.org/intradoc/groups/public/documents/un/unpan021888.pdf*.

UN (2005), *Information Economy Report*, *www.unctad.org/Templates/WebFlyer.asp?intItemID=3591&lang=1*.

UN ICT Task Force (2005), *Connected for Development: Information Kiosks and Sustainability*, *www.epol-net.org/pport/pdf/515742283.pdf*.

US General Accountability Office (2004), *Information Technology Investment Management: A Framework for Assessing and Improving Process Maturity*, GAO-04-394G.

W2i (2003), *The Wireless Internet Opportunity for Developing Countries*, *www.w2i.org*.

World Bank (2004), *Turkey Knowledge Economy Assessment Study*, *http://siteresources.worldbank.org/EXTECAREGTOPKNOECO/Resources/WB_KEAS_Turkey.pdf*.

World Bank (2005a), *E-Development: From excitement to effectiveness*, *www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2005/11/08/000090341_20051108163202/Rendered/PDF/341470EDevelopment.pdf*

World Bank (2005b), *Delivering on the Promises of E-Government, Monitoring and Evaluation in Perspective*, *www.google.fr/search?q=Lanvin+world+bank+meter+toolkit&hl=fr*.

Yildiz, M. (2003), *Peeking into the Black Box of E-Government Policy-Making: Evidence from Turkey*, *www.pmranet.org/conferences/georgetownpapers/Yildiz.pdf*.

Yildiz, M., T.K. Bensghir and A. Cankaya (2003), *Using Internet Cafes as an Alternative Means of Combatting the Digital Divide*, paper presented.

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TURKEY

Turkey's e-government efforts received new emphasis in the last three years. The election of a new government brought forward an agenda including public sector modernisation using e-government. Turkey has since made considerable progress with e-government. This is a consequence of strong political leadership, focused investment in high volume/high value e-services (such as collecting taxes and customs, and paying benefits), shared data and services (*e.g.* e-procurement), and sectoral e-government applications.

The review identifies several strategic opportunities. One opportunity is to stimulate the provision of e-services and e-commerce by increasing access to high-speed Internet throughout the country. A second opportunity is to skip the initial stages of e-government applications – characterised by isolated islands of development – and instead promote a more "joined up" government. A third opportunity is to use the existing base of 46 million mobile telephones as a communication channel between the government and its citizens.

The review also identifies several major challenges. One challenge is bridging the digital divide between urban and rural populations, men and women, and young and old. This requires innovative approaches to increasing computer and information literacy, facilitating access to the Internet, and demonstrating to citizens and businesses the value of using the Internet. A second challenge is public sector modernisation in terms of increased transparency and accountability, user-focused e-services, and increased efficiency and effectiveness. This challenge includes the development of e-government in local government and increased interactions between levels of government, as well as among agencies. A third challenge is making sure that investments in e-government are valuable, *i.e.* that benefits are larger than costs.

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