

ICA COUNTRY REPORT

Estonia

1. Identification of strategic and operational goals

According to the Estonia Information Policy (adopted by the *Riigikogu* (Parliament) in May 1998) the information technology action plan must be annually approved by the Government. The information policy priorities for 2002/2003 are as follows:

- development of services for citizens, business sector and public administration, especially the elaboration of ID-card applications, proceeding also from the list of e-government services defined in the eEurope + Action Plan;
- improvement of skills and access of social groups in unequal position for using electronically provided services;
- elaboration and introduction of systems for digital document management and archival processing;
- development of the system and infrastructure of state registers, including the development of systems that ensure the maintenance of databases and the introduction of the data exchange layer (project "X-road") of information systems;
- better provision of schools with computers to achieve the ultimate goal – one computer per 20 students;
- launching of Tiger University program to support the development of information and communication technology (ICT) infrastructure and academic ICT staff, and the infrastructure for post-graduate training.

In 2002 the elaboration of a new version of information policy principles was started. The new version, which will soon be sent to the Government, includes supplements to previous principles, according to which:

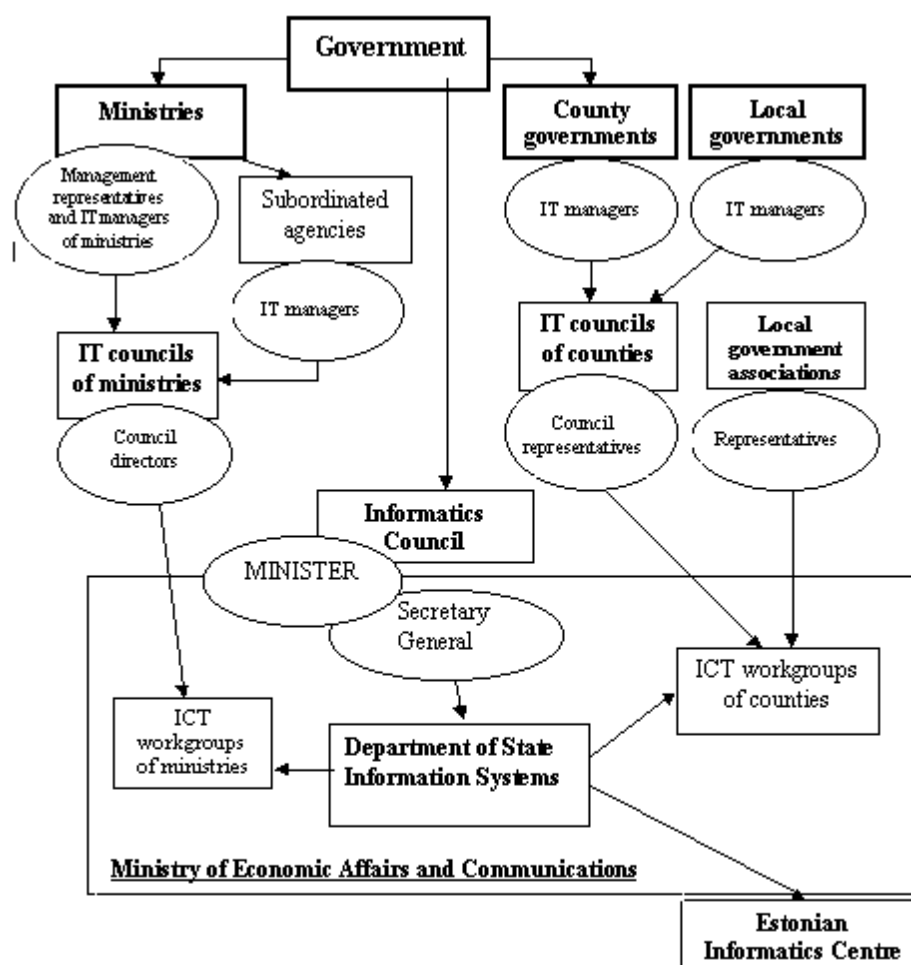
- development of information society proceeds from the coordinated activities and cooperation of the public authorities, private sector and the third sector;
- information society is created for all Estonian citizens and supports regional development and local initiatives;
- development of information society provides equal access to information for all citizens;
- development of information society ensures continuity of the Estonian language and culture;
- development of information society must not decrease the security of citizens;
- development of information society is related to national research and development activities;
- activities of information society development are brought out as separate elements in the state's education, culture and social policies;
- development of information society takes into account the information society building programs of the European Union;
- public authority has equal attitude towards different hardware and software platforms and solves the issue of compatibility by establishing general standards.

In the background of these tasks the overall goal lies in the development and integration of the ICT infrastructures of the state and local governments into a common citizen-friendly service environment that would observe the principles and requirements of the development of democracy.

2. Organisational structure

In Estonia the Ministry of Economic Affairs and Communications is responsible for the general ICT coordination – more precisely the Department of State Information Systems. The tasks of the department include the coordination of state IT-policy actions and development plans in the field of state administrative information systems (IS): state IT budgets, IT legislation, coordination of IT projects, IT audits, standardisation, IT procurement procedures, and international cooperation in the field of state IS. The Estonian Informatics Centre, which is a subdivision of the ministry, is responsible for the coordination and implementation of the development of state registers, computer networks and data communication, standardisation, IT public procurement, monitoring Estonian IT situation, etc.

There are also IT councils of ministries and IT councils of counties. In addition, there is the Estonian Informatics Council, which is a government committee of experts and the implementing body in the general coordination of state information policy.



Organisational structure of ICT management in Estonia

3. Funding

The share of information technology costs has throughout years formed about 1% of the overall figure of costs in the state budget and it has increased in absolute value together with the increase of the overall figure of the state budget. The actual expenditures on IT in public administration are larger, as the expenditure item does not include the salary costs of ICT staff, expenditures on IT of these public sector agencies, which only receive grants from the state budget for developing their activities, training costs of ICT education, and expenditures

on ICT development and use in local government budgets. Compared to many other countries, where expenditure on IT is estimated to be 2.5-4% of the state budget, Estonia's expenditures have been quite modest.

In connection with the amendment of the State Budget Act the expenditure item for IT costs was removed from the state budget draft for 2003. Instead these costs have now been included in the articles "economic costs" and "obtainment and renovation of material and immaterial assets". However, the previous application forms for applying costs on ICT development were partly maintained and an expert committee, formed by the Ministry of Economic Affairs and Communications, presented its opinion on applied costs as well.

4. Changing laws, regulations and policies

The Estonian IT legislation has been elaborated to most extent (see also Table 1). One of the acts with significant influence on the development of public sector activities in the IT field has been the Public Information Act (Jan 2001), which was enacted to ensure that the public has the opportunity to access information intended for public use and to monitor the performance of public duties.

Table 1. List of most relevant acts related to information society in Estonia
Acts have been translated into English by the Estonian Legal Language Centre and are available in the Internet: <http://www.legaltex.tee/indexen.htm>

Name	Passed on:
Archives Act	25.03.1998
Broadcasting Act	19.05.1994
Copyright Act and Associated Acts Amendment Act	06.01.2000
Cable Distribution Act	31.05.2001
Citizenship Act	19.01.1995
Consumer Protection Act	15.12.1993
Contracts and Non-Contractual Obligations Act	26.01.2001
Databases Act	12.03.1997
Digital Signatures Act	08.03.2000
Official Statistics Act	11.07.1997
Personal Data Protection Act	12.06.1996
Population Register Act	31.05.2000
Principles of Estonian Information Policy	13.05.1998
Public Information Act	15.11.2000
Public Procurement Act	19.10.2000
Riigi Teataja Act (Riigi Teataja = State Gazette)	20.01.1999
Securities Market Act	17.10.2001
State Liability Act	02.05.2001
State Secrets Act	26.01.1999
Telecommunications Act	09.02.2000

Taking into account the rapid development of ICT field, we can, however, claim that the legislation valid at present will stay in the way of real life and needs further improvement. This applies, for example, to the Databases Act (1997), which includes restrictions of effective introduction of new trends in data processing. Thus, a new databases act is currently being revised.

As a future EU member state Estonia is harmonising its legislation with that of the European Union. For instance, work is currently under way for transporting the European Union's new telecom package into Estonian legislation. Within the process, the Telecommunications Act from 2000 that was aimed at liberalising the telecommunication market will be changed into a law regulating liberalised telecom market. Besides, the EU's eCommerce directive (Directive 2000/31/EC on certain legal aspects of information society services, in particular electronic commerce, in the internal market) is being transposed into our law.

European Union policies and initiatives, in particular eEurope and its successor, eEurope 2005, are significant factors in our domestic policy-making in the field of IT.

5. Identifying and building additional critical infrastructure

ID-card

In 2001, the Parliament established ID-card as a compulsory identity document. The purpose of Estonian ID-program is to use nation-wide electronic identity and develop a new personal identification card that would be a generally acceptable identification document and contain both visually and electronically accessible information. The implementation of ID-card actually means establishing new nation-wide infrastructure in Estonia – ID-card is a component of the public key infrastructure. The structure includes certification service provider (certification centre and its subunits), who issues certificates, and catalogue service provider, who takes care of making these certificates available for everyone.

A free secure signing portal has been elaborated for ID-card owners. Provided a person has an ID-card and a computer with a properly adjusted ID-card reader, it is possible to upload a document, which will be digitally signed, in this portal. In addition to the person's own signature this document can be opened for signing by other people, provided they have an ID-card. It is also possible to search for persons in the catalogue. The parties can download the signed document from the portal to their computer and retain it. The portal technology is free for use by anyone.

By July 2003 nearly 255,000 ID-cards had been issued, which means that approximately 19% of the population has an ID-card.

At present, additional applications of the ID-card are under discussion. For instance, identification of a person with his/her ID-card in other countries (in customs, police, etc.); access to a person's medical data when abroad; submission of a letter of explanation to the police; submission of applications concerning a person's car to the Estonian Motor Vehicle Registration Centre; submission of applications concerning change of address, marriage, divorce, change of name, change of address, etc to name a few.

Backbone network PeaTee

The backbone network *PeaTee* (in English EEBone) provides state and local government agencies and other state-financed institutions with data communication services. The backbone network connects all Estonian ministries, county centres and several nodes in Tallinn. It has Internet connection and it uses TPC/IP technology and 16 Mbps bandwidth. At present there are around 11,000 users – about 95% of state agencies are connected to the network.

PeaTee is a public network, which any state agency can use though not obliged to do so. The use of the backbone network is financed centrally from the state budget and the use is free of charge for subscribed clients. The client has to pay only for access to the backbone network. Every end-user must look after the security of his/her own local network. If needed, the available technology allows to use services such as the establishment of virtual private

network, reservation of channel capacity for certain type of traffic or for traffic between certain computers.

PeaTee is also a cooperation network for the establishers, administrators and end-users of *PeaTee*.

6. Communicating and marketing to the public

The [Look@World](#) Foundation is a private sector initiative to contribute to the development of Information Society. The foundation aims to offer people more Internet access possibilities, raise the availability, simplicity and user-friendliness of public sector services in the Internet and to promote Internet as a channel for accessing information and using services, changing people's attitudes and organising Internet trainings. By April 2003 over 100,000 people had received free basic computer and Internet training.

There are 570 public libraries in Estonia and together with branch libraries over 600. The network of public libraries covers Estonia evenly from the capital city of Tallinn to the remote areas of the country. Libraries, especially in rural areas where smaller post offices and banks, medical care centres, community centres, schools etc are being liquidated, have acquired an ever-increasing importance as public service providers. Therefore it is the public libraries that provide citizens with free access to public information and information resources of the whole world. Taking into consideration the Public Information Act, all public libraries should have Internet connection. The internetization of libraries is in process at the moment.

The *eCitizen* project discussed below is also aimed at communicating to the public.

7. Improving national portals

In 1998 within the project "*Vahetu Riik*" (in English "Direct Government") a common access point for Estonian government agencies and constitutional institutions was created through an Internet domain *riik.ee* (*gov.ee*) and the Virtual Estonian Web Centre was established for administering it. The "e-government" portal (<http://www.riik.ee/en/>) has been time and again changed and improved; new topics, databases, links etc. have been added. In addition to the role of being the state portal it has also acquired the role of an integrator and coordinator of national information systems. In 2000 the project went through several organisational changes and new development trends were prepared most of which have been realised by now.

Addresses like <http://tom.riik.ee%20> (portal "Today I Make Decisions; in Estonian), <http://ats.riik.ee/pub/%20> (public document system, in Estonian) etc. have been added to the domain. Several virtual servers and websites of state institutions and projects use the domain's resources. Although there have been only a few changes to the portal's content during the last year, the portal's administrative organisation has stabilized and the quality of the content has improved. At the same time it has served as a basis for several new projects.

The fact that the system has an average of over 100,000 visitors per day on weekdays proves the popularity of the portal. During peak hours there are over 5 visits per second, about 18% of them are made abroad. Besides Estonian the working languages of the portal are English (<http://www.riik.ee/en/>) and Russian (<http://www.riik.ee/ru/>); the data capacity of the two latter is, however, limited as compared to the former.

The e-government portal should not only be the receiver of data but it should also become a data store and an interactive cooperation tool for government agencies.

Thus, to facilitate compliance with the Public Information Act local governments have been provided with the option to disclose their documents in the common and integral server. The Ministry of Economic Affairs and Communications has provided a free server at <http://ats.riik.ee/pub/> (in Estonian only) for public sector agencies that have to meet the requirements of the Public Information Act yet who lack sufficient technology and finances.

Since the beginning of 2000 every state agency and local government has the option to use the modules of public services in the e-government server. The following modules are available: guest-book, voting, discussions, and questionnaires. All state and local government agencies can use these modules free of charge. These so-called communication modules can be used for organising discussions and polls on the web.

Service “Forms in the Internet”. The service has made document forms available for citizens to communicate with state agencies. Forms are in PDF-format and can be printed out (over 400) or filled in directly on the screen (ca 80). At present the citizen can personally submit forms obtained from the Internet or filled in on the screen or send them by mail to a respective state agency, which will then proceed with the forms. Thus the service saves time for the citizen. However, it is not yet possible to transmit documents directly to state agencies via the e-government portal due to the lack of secure and authenticating transmission system of digital documents. Presumably, there will be such an option after the implementation of records management program of government agencies and the realisation of eCitizen project.

The most popular online services provided by the state and government agencies include payments for services or goods/documents through Internet banking, obtainment of information from homepages, printing out documents (forms, applications), submission of information about oneself or one’s family, and expression of one’s opinion or participation in public debates. See Table 2.

Table 2. Usage of online services provided by state and government agencies (people aged 15-74).

	Number / %	Time
Payments for services or goods/documents through Internet banks	48%	June-July 2002
Obtainment of information from homepages	46%	June-July 2002
Printing of documents (forms, applications)	33%	June-July 2002
Submission of information about oneself or one’s family	31%	June-July 2002
Expression of one’s opinion or participation in public debates	10%	June-July 2002

Source: AS Emor.

Internet banking and e-TaxBoard services have within a short time become very popular with Estonians. There are approximately 740,000 (May 2003) Internet banking clients in Estonia (the whole population being 1.37 million). Since 2000 it is possible to fill online tax declarations. As of February 2002 ID-card owners can enter e-TaxBoard via the Tax Board’s website (<http://www.ma.ee>) by using the ID-card. In spring 2003 137,613 tax declarations were filled online.

8. Converging service channels

There are two main single access points – the national portal www.riik.ee, which is a unified access point for the state agencies, and www.eesti.ee, which is an information portal aimed at the citizens (at the moment in its application phase).

In addition to WWW services WAP, PDA and also other services are used.

9. Authentication procedures

Authentication can be carried out by using the ID-card. The authentication with an ID-card functions securely and it is convenient to use the card wherever user names, passwords, code cards, etc. have so far been used – whether it be Internet banking services, internal applications of a company, intranets or public portals. It is convenient mainly because the

system administrators need not deal with the administration of user names and passwords and people need not deal with the multiple passwords and password cards. In case the card is lost its usability can be blocked with one phone call. The application of the authentication function is quite easy – the user account based access to information systems has to be transferred to personal identification code based application (i.e. the personal identification code included in the certificate has to be connected to the user account). An application allowing ID-card based authentication in *Windows* computer workplaces has been completed as well.

ID-card is suitable wherever a person needs to be authenticated or when documents have to be digitally signed. The authentication with an ID-card functions securely as the card-owner is responsible for his/her ID-card and the usage of it. ID-card can be used also for signing and encrypting e-mails. Every authentication certificate includes the person's e-mail address forname.surname XXXX@eesti.ee (XXXX is the random number assigned to the person). The person can register his/her daily e-mail address in the mail server and respective e-mails will be forwarded to that address.

As for providing e-services of state information systems, it has been agreed that authentication is carried out with an ID-card or through Internet banking. The four major banks provide free authentication services of Internet banking. Some of the banks allow using the ID-card as an alternative option besides their authentication protocols. For example, the citizen's portal can be entered with the ID-card and the authentication mechanisms of the four commercial banks.

By July 2003 nearly 255,000 ID-cards had been issued, which means that approximately 19% of the population has an ID-card.

10. Development of Gateways

Project X-Road

The modernisation program of national databases (*Project X-Road*: <http://x-tee.riik.ee> – in Estonian only) enables civil servants, legal and natural persons to search data from national databases over the Internet, provided they are entitled to do so. The system ensures sufficient security for the treatment of inquiries made to databases and responses received.

The technical solution of the program does not lie in the transition of all databases to some larger data management system but in the creation of unified user interfaces for different databases. Communication between databases as well as between users and databases takes place via the centre – the data exchange layer of information systems. The data exchange layer enables the user to search data from national databases that have joined the system, provided the user is entitled to do so. Every citizen can enter the *X-Road* system via the citizen portal. Civil servants can enter through the information system of their agency to perform their duties. As an additional option for organisations, which have data security problems, a free standard Mini-InfoSystem Portal (MISP) has been developed, which functions as a secure system, and organisations can also use ASP services to use it.

The security servers of databases and information systems communicate over encrypted channels. All users must pass authentication and authorisation. It is excluded that a citizen could read the data of another citizen or that a civil servant could read data not related to his/her work tasks.

At present the *X-Road* environment provides around 50-60 services.

Project X-Road received an honorary award in the e-government conference at Como in July 2003.

Project e-Citizen

The project *e-Citizen* (also known as the citizen's IT environment (KIT) project: <http://www.eesti.ee> - only in Estonian) is a cooperation form between state institutions to help make the state more citizen-oriented by means of ICT and IT environment. In the citizen's IT environment every citizen has his/her own information system (office). It is equivalent to that of a ministry, city government or a bank. The citizen can communicate with all national information systems through his/her personal information system. All information systems will have the possibility and obligation to communicate with the citizen's office and reflect the performance of the citizen's "business" in his/her office. The citizen no longer needs to search for the service but has the opportunity and right to order the service and monitor its performance without leaving his/her office.

The broader goal of establishing KIT is to allow all people to obtain information about their rights and obligations, and to actively participate in the public life at national, regional and local level. KIT consists of the citizen's portal, kernel tools for services, and the information portal. In the citizen's portal every citizen can directly use the citizen's records management system, electronic forwardable mailbox, and a secure environment for accessing services, including digital signing. The rules and kernel tools will be elaborated to realise and easily access citizen-oriented e-services of the information systems of agencies. The information portal is a web with free access for the preventive notification of people about their rights and obligations; it is also the citizen's gate to e-services.

Project DigiDoc

In order to make the implementation of digital signature easier, the *DigiDoc* project (<http://digidoc.sk.ee>) was initiated. This project comprises agreed file formats as well as program libraries and applications for handling them. The program libraries are meant for everyone to use, whether as a direct library or as samples of a useful code. This helps to follow the common format in the applications of all parties. For example, a certificate issued by a bank must be suitable for submission and use in the Tax Board and vice versa.

DigiDoc-Client applications allow to sign documents and check signatures in the workplace computer. The documents need not be printed out for signing – it can be done directly in the computer. These documents can be forwarded by e-mail and loaded in records management systems. The *DigiDoc*-portal and the *DigiDoc-Client* are freely applied in whatever relations – whether the party being a state agency, a company or a private person. The party must only have an ID-card and a computer with a card reader (in order to sign). In addition, the message gate of *DigiDoc*-portal has been launched. Through the message gate it is possible to digitally sign also faxes and calls. The gate enables to save fax or voice messages in the *DigiDoc*-portal and afterwards it is possible to sign them with the ID-card.

11. Development of government-wide architecture and standards

The development of government-wide architecture and standards is based on the elaboration of recommendations. For example, there exist recommendations for several fields, such as organisation of Internet resources in state agencies; information security in state agencies; IT development plan for agencies; establishment of IT councils in ministries and counties; usage of Open Source Software, etc.

All major e-projects are based on XML-technology and recommendations for the usage of Open Source Software are taken into account.

Estonian standard EVS 8:2000 "Requirements on information technology in Estonian language and cultural environment" (<http://www.eki.ee/itstandard/contents.html>) and the User's Guide to EVS 8:2000 have been elaborated.

The government-wide architecture is actually defined in the initial tasks of the major projects, such as X-Road (modernisation program of national databases), e-Citizen, ID-card program, etc. All these and also the Open Source Software and XML usage principles constitute the Government Without Boundaries initiatives that are used both in the public and private sector.

12. Training senior managers and policy officials

Different ICT related courses are provided regularly for senior managers and policy officials.

Another important initiative is the establishment of the Regional e-Governance Learning Centre or e-Governance Academy (see also <http://www.ega.ee>) in Estonia. In 2002 a Memorandum of Understanding between the Government of the Republic of Estonia, United Nations Development Program (UNDP) and Information Program of Open Society Institute (OSI) was signed. The purpose of the academy is to create a basis for contemporary studies in ICT by providing training courses for high-ranking ICT officials of the former Soviet Union countries, Central and Eastern Europe and Asia. The topics cover development strategies of e-governance, ICT industry and education, problems of judicial regulation and global issues concerning ICT development. The trainings are carried out by Estonian top specialists and international EU experts. The trainings also involve group work where the experiences and problems of different countries are discussed. So far trainings for the IT officials of Kirgystan, Azerbaijan, Tajikistan, Sri Lanka, Albania and Bulgaria have been successfully carried out. Within three years about 400 people should receive training.

13. Organisation and management of information for sharing across the government

In order to organise and manage information for sharing across the government the State Chancellery started the Records Management Program (RMP) of government agencies in 1999 for transition to inter-agency digital records management. So far the following RMP activities have reached the application stage:

- a) Legal environment for records management. In order to apply the Digital Signatures Act and the Public Information Act a document called “Common Bases for Records Management Procedure” was elaborated, which regulates the proceeding of paper documents and digital records management of state and local government agencies and legal persons in public law, and principles of public disclosure of public information. An important implementing provision was also the archival rules and the obligation for agencies to draw records schedules. The records schedule is a classification scheme based on functions of an organisation and lists series of records under every function. It also consists of the retention period to every series, gives their topography and if records series is in digital form, gives information about the preservation medium. Such a document classification is a necessary precondition for the elaboration of records management systems.
- b) Standardisation of records management. The three most important standardisation activities included:
 - translation of international standards of records management into Estonian
 - standardisation of documents
 - adaptation of international standards and records management legislation with respect to the functionality requirements of RMP.

Taking into account the recommendations of international standardisation organisations and the specificity of information systems used in Estonia, the XML format based on open systems principle was chosen as the digital document format in Estonian records management systems. The first draft standards have been tested; the problem with introduction lies in finding a text redactor, which would enable to create documents with complicated structure and which would be expedient for use in state agencies. The use of

simpler kinds of documents, primarily forms to be filled in directly in the Internet, has already been introduced in many agencies.

- c) Development of information systems.
 - eCounty: the sample records schedules of county governments, as well as the general requirements of records management system to public information portal, functionality of document proceeding and common standards for different kinds of documents have been tested and introduced.
- d) Development of an integral information system of legislation. The following stages have been completed:
 - Electronic coordination system of draft legislation (eJustice)
 - Electronic information system of the State Gazette has been launched. In addition to the publication system of legislation, the system includes the functionality of electronic submission of data.
 - As to the Government of Ministers Session Information System the number of users has been increased, an inquiry system and an XML-based import-export module of documents have been created.
- e) Knowledge management and training. RMP has elaborated and gathered know-how and recommendations, an analysis of related regulations and practical experiences, which have all been systematized and an information management system eCounsellor has been created. The Counsellor or electronic records management is an Internet-based electronic know-how base to advise state agencies on the transition to digital records management. A set of training materials has been elaborated as well.

14. Measuring results

Results are being measured mainly through the eEurope+ 2003 information society indicators. Further on it will be carried out on the basis of the eEurope 2005.

As for the Information Society indicators of Estonia, please see also <http://www.ria.ee/atp/eng/index.html?id=424>.

On the whole, it is difficult to measure the results of e-government investments, i.e. the public value obtained from implementing different e-applications. Success is too often measured on the basis of the uptake of online services or hits on a website, whereas real success should lie in reduced transactions, through IT and process redesign.

15. Feedback from the public

Feedback from the public is not gathered centrally. Every agency has organised it in the way most suitable for the agency.

One source of feedback is, however, the e-democracy portal TOM (*Täna Otsustan Mina* – in English “Today I Make Decisions”). The aim of this website (<http://tom.riik.ee>) is to enhance the population’s participation in the state’s decision-making processes. One can submit ideas, guidelines, and thoughts and comment on draft legislation submitted by others or elaborated by ministries during the creation phase. Ideas that have found support among users will be submitted by Prime Minister’s resolution to respective agencies to be executed. The public can constantly monitor what happens to the idea. In order to submit, comment, vote and sign ideas prior registration is required. Everyone can read the ideas and comments.

The fact that in January 2003 372 ideas that had been submitted in TOM were in legislative proceeding in different government agencies, 5 acts based on submitted ideas were in the

signing stage and 10 draft legislations were under elaboration in the ministries proves the popularity of TOM.

16. E-governance including e-voting and obtaining comments on proposed laws and regulations

The e-democracy portal TOM (see above) is a way to enhance the population's participation in the state's decision-making processes.

According to the Coalition Agreement between Union for the Republic — Res Publica, Estonian Reform Party and Estonian Peoples Union for the years 2003–2007 a greater weight to a citizen's vote is considered to be important. The coalition aims at creating the conditions for electronic elections for the local government elections of 2005.