e-Economy and e-Government in Estonia

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Ain Järv, CEO
Sertifitseerimiskeskus (SK)
Proposed Topics

- About e-Estonia
- Building blocks of e-Estonia
- ID-card project
- About e-Services

- Small video presentation about ID-card in Estonia (8 min.)
  (coffee break)

- ID-card and Digital Signatures

- Q&A
Estonia

Preconditions

- Good level of education and research
- Relatively young ICT systems
- Finnish, Swedish and German influence
- Good telecom infrastructure and high level of eBanking
- First guidelines for Estonian IT policy in 1994
- Flexibility of small country

Population: 1,356 M
Government’s positive attitude towards IT

Estonian Government Cabinet meeting
(using Ministers Session Information System)
Some statistics

- 52% of population uses Internet
- 35% have their own home computer
- 99% of public employees have computerized workplace with Internet connection
- 101% mobile phone subscriptions
- All gov. agencies have web pages
- More than 820,000 Internet-banking clients
- 95% of banking operations are carried out electronically
- About 883,000 ID-cards issued (02.01.06)
- Ca 86% tax declarations were filled online (2005)
Building e-Estonia
ICT management in Estonia

ICT-related developments in Estonia have been development driven rather than policy led, ensuring thus a good level of cooperation between the public and the private sector.

Nevertheless, the first IT policy, which was approved by the Estonian Parliament in 1998, was an important step in determining the principles of the information society development.

Principles of the Estonian Information Policy 2004-2006 – is a step further, aiming to strengthen the central IT co-ordination and increase consistency and collaboration in developing the information society.
Legislation

- Public Information Act (2001)
- Act on Intellectual Property (applicable also for state databases)
- Personal Data Protection Act (1996)
- 2005 a nation-wide information security policy prepared that specifies and coordinates the e-security related initiatives
Direct Government

In 1998 in the course of the project “Vahetu Riik” (“Direct Government”) a common access point for Estonian government agencies and constitutional institutions was created. (No Official Journal printed on paper).
Internetization of Governmental Institutions

EEBone – “main road”, opened 1. okt 1998, “village road” continues
Estonian Registers and Databases

- Population register
- Business register
- Cars database
- Driving licenses database
- Passports register
- Land register
- Buildings register
- Ships register
...

(more than 130 official registers)

Connecting registers together: X-Road

connecting national databases into a common public, service-rendering resource (started 2001). > 350 organizations joined.
Training and Motivation

Tiger Leap Foundation
Tiger Leap is a national target program with the overall objective to promote the educational system in Estonia with introduction of modern information and communication technology. On February 21, 1996 President Lennart Meri declared the Tiger Leap project officially open in his address on the national television. Projects for ICT equipment, training, educational software.

Look@World Foundation
About ID-card
Legal Basis of ID-card

Identity Documents Act
Passed 15 February 1999
Entered into force 1 January 2000

The Digital Signature Act
Passed 8 March 2000
Entered into force on December 15, 2000

Together amended on 12.06.2001
Identity Documents Act together with The Digital Signature Act

An Estonian citizen and an alien residing permanently in Estonia shall hold an identity card

A certificate which enables digital identification and a certificate which enables digital signing is entered on every identity card

The certificates entered in a document have no limitations on the scope of use and shall be recognised by all bodies - public and private
Public-Private Partnership

**Certification Service Provider:** Provides the services according to the Digital Signature Act.

**RA:** Identifies the person, hands over the card & instructions to the person.

**CA:** Generates and publishes the certificates, transfers certificates to TRÜB.

**Trüb:** Engraves the visual data to the card, generates the user keys and PIN codes, sends the personal data to the CA, writes certificates to the card, sends personalised card and PIN codes to RA.

**CMB:** Gets application from the citizen, verifies the data and sends the request for card personalisation to Trüb.

**CMB Regional Offices (15 sites):**

1. **Request for Personalisation**
2. **ID Card with Private Keys and Certificates**
3. **Request for Certificates**
4. **Certificates**
5. **ID Card with Private Keys and Certificates**
6. **PIN codes sent by courier**
7. **Personalised ID Card with Certificates and PIN envelope handed over**
Content of an ID-card

- **Personal Data File**
  - Copies the visual information
  - Can be read without any restriction

- **Certificate for Identification**
  - Identification in different infosystems
  - Signing and encrypting of e-mails

  name.surname@eesti.ee

- **Certificate for Digital Signatures**
  - No limitations in the scope of use
  - Equivalent to hand written signatures
About e-Services
Most popular e-Services – e-Banking, e-Taxes
E-Citizen Portal

One portal serves citizens as a gateway to the services of approximately 20 different databases www.eesti.ee
Information about the citizen
Who has asked information about me?
Consult data about their real estate possessions
First price for the best government agencies cooperation solution in 2004 - Parental Benefit Service

5 information systems interact the data (real time):
- Citizens’ portal
- Register of Social Insurance Board
- Population register
- Information system of Health Insurance Fund
- Information system of Tax and Customs Office
About Parental Benefit Service

The government decided to support young parents with parental benefit allowances in the amount of their average monthly salary from the beginning of year 2004

- Each year the government makes parental benefit payments in the amount of ~400 000 000 EEK (~26 000 000 EUR)
- Social Insurance Board was assigned for carrying out the payments
- Shortly before the new assignment the Social Insurance Board had suffered a layoff
- No new employees were recruited
- The development of parental benefit solution on the X-road took ~250 000 EEK (~16 000 EUR) from the states budget
- Processing has been reduced from weeks to seconds
ID-card is just a secure token for different purposes

You present your ID-card and your status is checked against the appropriate databases:

- e-Police
- e-Health
- e-Student
- e-Client
... 

whatever the person is entitled to

upon it one can build different services
Mobile Payments and Mobile Parking

- Allows to pay for a goods and services with a mobile phone from a personal bank account (P2B)
- Allows to pay to the bank account of the other person (P2P)
On-line Sales and Ticket Checks in Public Transportation

Person must possess and show an ID card when buying or verifying a ticket
Usage of ID tickets

Users:
• Regular, active users > 120,000
• Turnover > 10 MEUR / Year

Distribution channels:
• Internet banking 19.8 %
• Mobile and fixed phones 13.1 %
• Direct debit 2.8 %
• Ticket ATM 0.9 %
• City offices 11.8 %
• Other cash sales 51.6 %

More than 36 % of the users prefer electronic channels
eVoting – 2005 elections to the local government councils

Estonia is the first country in the World allowing for Internet-voting:

- country-wide,
- without prior registration,
- with binding results;

The Chairman of the National Electoral Committee Mr. Heiki Sibul is going to open the „e-ballot-box” on the first pilot in Tallinn
ID-card and Digital Signatures
How many services to build?

Even when we can count more than 1000 services provided through X-road …
One solution for any e-service for 20 EUR

Tool for a Digital Signature
Digital Signatures in Any Relation
Or just sign a document and exchange by e-mail
Common Document Format

• Based on XML-DSIG standard and contains subset of ETSI TS 101 903 extensions (XAdES)
• Includes validity confirmation of a certificate (OCSP) and a time-stamp (e-Notary)
• Long-term validity and integrity of a document is ensured
These are “Real Signatures”

Breakthrough in Estonia’s court practices:

Tallinn Administrative District Court ruled that digitally signed documents must be considered equivalent with handwritten ones in court proceedings (12.06.2003)

Andres Hallmägi, attorney-at-law
Pohla & Hallmägi Law Firm
About SK
SK (Sertifitseerimiskeskus AS)

SK was established as a Certification Centre of Estonia in February 2001 by two leading Estonian banks Hansapank and Eesti Ühispank and two telecom companies Elion and EMT.
SK - Accredited Service Provider

SK is an accredited service provider for certification and timestamping services in Estonia (supervised by the authorities).

SK has passed the compliance audits according to ETSI TS 101 456 (Policy requirements for certification authorities issuing qualified certificates) and the certificates issued by SK comply with the requirements for qualified certificates set out in Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on a Community framework for electronic signatures.

Accordingly we are accredited service provider in EU (and our certificates also trusted by Microsoft).
Certification Service Provider

CSP must be entered into a National Register of Certification Service Providers according to Estonian Digital Signatures Act

- requirements described in the decree of the Minister of Transport and Communications

Qualified Certificates in the sense of the EU-Directive

- ETSI TS 101 456 “Policy requirements for certification authorities issuing qualified certificates”
- ETSI TS 102 023 “Policy requirements for time-stamping authorities”

The relying party must be able to obtain all the information needed for the validation of the certificate (LDAP, CRL)

24 / 7 Help Desk for stopping the validity of a certificate
A) Certification and Timestamping Services

- Estonian ID cards (880 000 cards issued)
- Different tokens and devices (web, vpn, …)
- Tachograph cards (Estonia, Latvia, Lithuania)
- Pilots in WPKI solutions (Lithuania, …)
B) PKI Technology and Applications

Tools provided by SK allow our customers to adopt the PKI technology without significant pain

- CA and Timestamping Technology
- DigiDoc environment for providing digitally signed documents:
  WWW-portal
  Client programs
  Programming library
  Document format

- Based on XML-DSIG standard, compatible to ETSI TS 101 903
- Supports also Finnish and Belgium ID-cards (incl. WPKI testing)
Thank you!

ID-card issuing http://www.pass.ee
PKI & CA http://www.sk.ee
ID-card practices http://www.id.ee

Further information:
info@sk.ee
ain.jarv@sk.ee