The Estonian Journey to e-governance

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The Estonian Journey to e-governance

(with emphasis on electronic health records)

Key steps:

1994 Information Policy passed

1996 Personal Data Protection Act

First internet bank in Estonia

Tiger Leap project created

1999 Data Protection Department created

2000 Digital Signatures Act

Digital Signatures are effective and universal for secure online identification. The act paved the way to secure e-services in Estonia, including i-voting, filing taxes online, DigiDoc and e-health. When a website offers the digital signature option:

1. *The user has entered the information to be signed (tax declaration, ballot choices contracts, etc.).*
2. *The site asks the user if they would like to digitally sign the information.*
3. *If the user clicks 'yes', a window from a third-party Certificate Center pops up, asking for the PIN codes connected to the user's electronic ID Card.*
4. *The Certificate Center verifies the codes and sends a confirmation back to the website. (More information: https://e-estonia.com/?component=digital-signature)*

(2000) e-Tax filing begins

Mobile parking introduced

e-Cabinet introduced

Population Registry Law passed

2001 Introduction of X-Road

X-road is the backbone of e-Estonia. X-road allows databases to interact making integrated e-services possible. Institutions are not locked into any one type of database or software provider. Databases are decentralised – every government agency or business can choose the software/hardware product that is right for them. All of the Estonian e-solutions that use multiple databases use X-Road. All outgoing data from the X-road is digitally signed and encrypted. All incoming data is authenticated and logged. (More information: https://e-estonia.com/?component=x-road)

Population Registry opens

Health Services Organization Act

2002 ID Card introduced

National ID cards are mandatory in Estonia, giving digital access to all of Estonia's secure e-services. The embedded chip on the card uses 2048-bit public key encryption, making it a secure and definitive proof of ID in an e-environment.

The ID card is regularly used in Estonia, e.g.:

- As a national ID card for legal travel within the EU for Estonian citizens
- As the national health insurance card
- As proof of identification when logging into bank accounts from a home computer
- As a pre-paid public transport ticket in Tallinn and Tartu
- For digital signatures
- For i-voting
- For accessing government databases to check one's medical records, file taxes, etc.
- For picking up e-Prescriptions

(More information: https://e-estonia.com/?component=electronic-id-card)

(2002) Law on e-Election passed

e-School project comes on line

2003 Launch of ID bus ticket

State Portal launched

e-Vehicle registry opens

Public Information Act

2005 First i-Elections

e-Police system comes on line

2007 First Mobile-ID system comes on line

2008 Launch of e-Health system

The Electronic Health Record is a nationwide system that integrates data from Estonia's different healthcare providers to create a common record for each patient. Using the data exchange layer X-road the EHR retrieves information from various systems, and presents it in a standard format. In an emergency situation a doctor can use a patient's ID card to read time-critical information such as blood type, allergies, recent treatments, ongoing medication, or pregnancy. The system also compiles data for national statistics, so the relevant ministry can measure health trends, track epidemics, and make sure that its health resources are being spent wisely.

Patients have access to their own records, as well as those of their children. By logging into the Patient Portal with an electronic ID Card, the patient can review their past doctor visits and current prescriptions, control which doctors have access to their files, and even receive general health advice. (More information: https://e-estonia.com/?component=electronic-health-record)

2010 e-Prescription introduced

e-Prescription is a centralized, paperless system for issuing and handling medical prescriptions. Prescriptions are given electronically, and the prescriptions are picked up by presenting the electronic ID card at any pharmacy. Because the e-Prescription system draws on data from the national health insurance fund, any state medical subsidies that the patient is entitled to also appear on a screen, and the medicine is discounted accordingly.

Another major advantage of the system is that doctor visits are no longer needed for routine refills. A patient can contact the doctor by e-mail, Skype or phone, and the doctors can issue

refills with just a couple clicks of a mouse. This frees up time for both the patient and the doctor, and reduces administrative strain on the hospital.

In 2013, 95% of all prescriptions in the country were being issued electronically.

(More information: https://e-estonia.com/?component=e-prescription)

2011 Smart Grid introduced in Energy Sector

Some Do's and Don'ts based on Estonia's experience:

- **Do** – Create a decentralized, distributed system so that all existing components can be linked and new ones can be added, no matter what platform they use
- Don't – Try to force everyone to use a centralized database or system, which won't meet their needs and will be seen as a burden rather than a benefit
- **Do** – Be a smart purchaser, buying the most appropriate systems developed by the private sector
- Don't – Waste millions contracting large, slow development projects that result in inflexible systems
- **Do** – Find systems that are already working, allowing for faster implementation
- Don't – Rely on pie-in-the-sky solutions that take time to develop and may not work