



REPUBLIC OF ESTONIA
INFORMATION SYSTEM AUTHORITY

Estonian e-government

The big picture

Andres Kütt

Information System Authority, architect

July 11, 2015

In this session

- Importance of the topic
- What does Estonian digital infrastructure consist of?
 - How we think about our solutions
 - What solutions exist and why
- Holistic view of the digital government

Goal: frame the following sessions

How we developed our solutions is more interesting than the solutions themselves

Solutions to complex problems are usually much harder to transplant than the ways of approaching them

We should talk about digital-embracing government, not e-government

E-government implies a separation between the “e” and the government while the point is to embed digital into all aspects of governance

**Why is e-government important
for Estonia?**

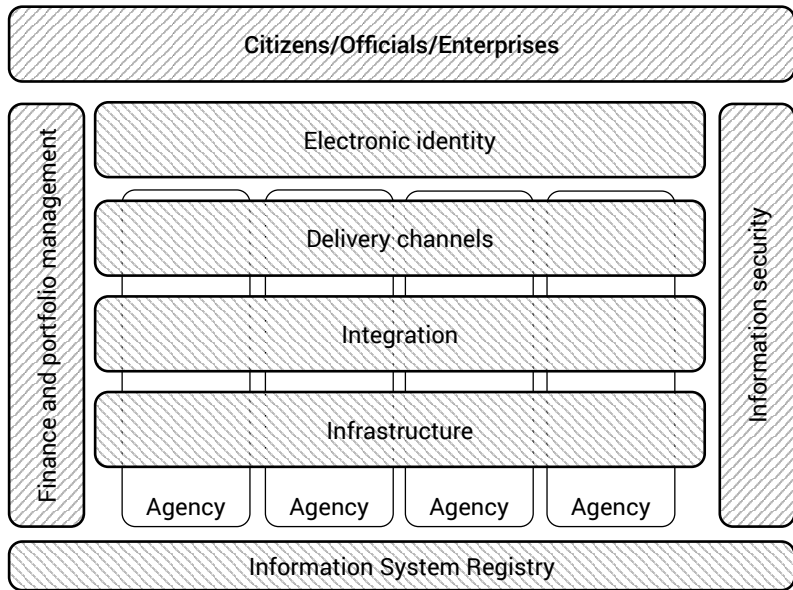
Digital government is useful

- It makes plain old economic sense
 - Provided it is used as a change enabler rather than a bolt-on
 - Corporations have been doing kaizen, six- σ and lean for decades, why not governments?
 - In Estonia we are seeing tangible, substantial and sustainable profitability of digital government
- It makes social sense
 - Faster feedback enabled by technology allows for more flexible and agile society
 - Emerging social structures are highly efficient and clearly valuable

Digital government is unavoidable

- Estonia **cannot** afford not to gain the benefits described
 - Too high prime minister per capita ratio
 - Geographic location on the edge of everything
 - All the demographic ailments of the western world
- Few options but to embrace digital change
 - Provide the services or face someone else providing them for you
 - Globalisation and technology are inexorably shifting the concepts of “state” and “government”
 - To have a chance, Estonia must change the game

Estonian digital infrastructure



Electronic identity

- Implemented using PKI, CA service provided externally
- The certificates live on a chip (smart card or SIM)
- Digital signature legally equivalent to a physical one
- Depends on the personal id-code of the citizen for much of the usefulness, the chip does not contain much
- A bank-driven federated identification scheme widely adopted by stakeholders

Channels

- Central service portal eesti.ee with 800+ services accessible
 - Relies on services from the next layer
 - In addition, hundreds of direct contact points with authorities
- Main challenges
 - simultaneously maintaining service ownership and central coordination
 - making people think in terms of customers
- No central UI/UX guidelines although a recommended web site template exists
- Mobile is very small but growing

Integration

- Distributed service bus called x-road
 - all communication happens peer to peer
 - no central authority with access to traffic
 - no central development/operations bottleneck
- x-road provides standardised
 - channel crypto
 - access/identity control
 - service discovery
 - audit logging
 - protocol support
- Massive deployment, 1000+ usable services
- Constantly developed, version 6 getting ready to roll
- De facto enables once-only and privacy policies

Infrastructure

- Being expanded aggressively
 - currently mainly consolidated network access
 - government cloud in the works
 - PaaS as a vision
- Government cloud is a combination of
 - private cloud
 - public cloud
 - data embassies
- Security and service availability major drivers: we no longer can run this country without e-services
- Scalability and cost are also becoming an issue

Holistic view of the digital government

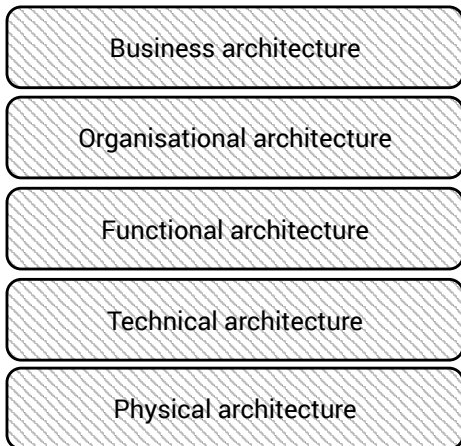
The described model is lacking

No technical solution exists in a vacuum

- A democracy needs different tools from a theocracy
- Structure of the government and the legislation has a strong impact
- What registries and other systems exist in a legal sense?
- What are the physical constraints?

How to build a governance model encompassing all of these aspects while making technical sense?

Enterprise Architecture view of the government



Conclusion

Main conclusions from

- “Digital” rather than “e”-government
 - it must not be a separate thing on top of “usual” practices and processes
 - technology is only as useful as the business change it drives
- Holistic approach is required to
 - understand success and failure
 - drive change
- Benefits stem from the ecosystem not from individual systems
 - Building a website is simple, getting people to use it is not
 - For traction, all stakeholders must benefit



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Thank you!

Andres Kütt

andres.kutt@ria.ee