e-Government Architecture and Digital Identity

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Agenda

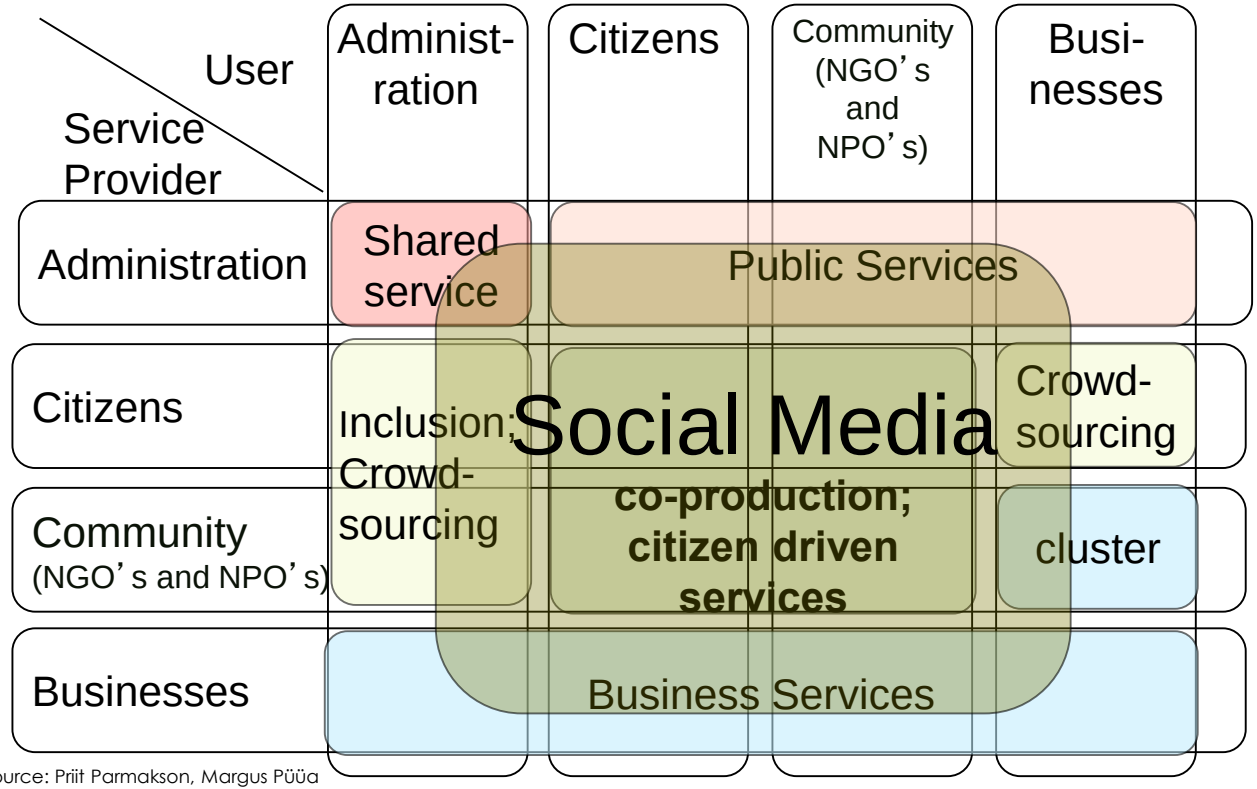
- What for e-Government
- E-Government development strategy
- What for e-Government Architecture
- Key elements of the e-Government architecture

In information society

- information is stored, changed and transferred in **universal digital form**
- **access** to digital information is ensured for all members of society **through data network**
- **routine** intellectual **work** is left for **machines**

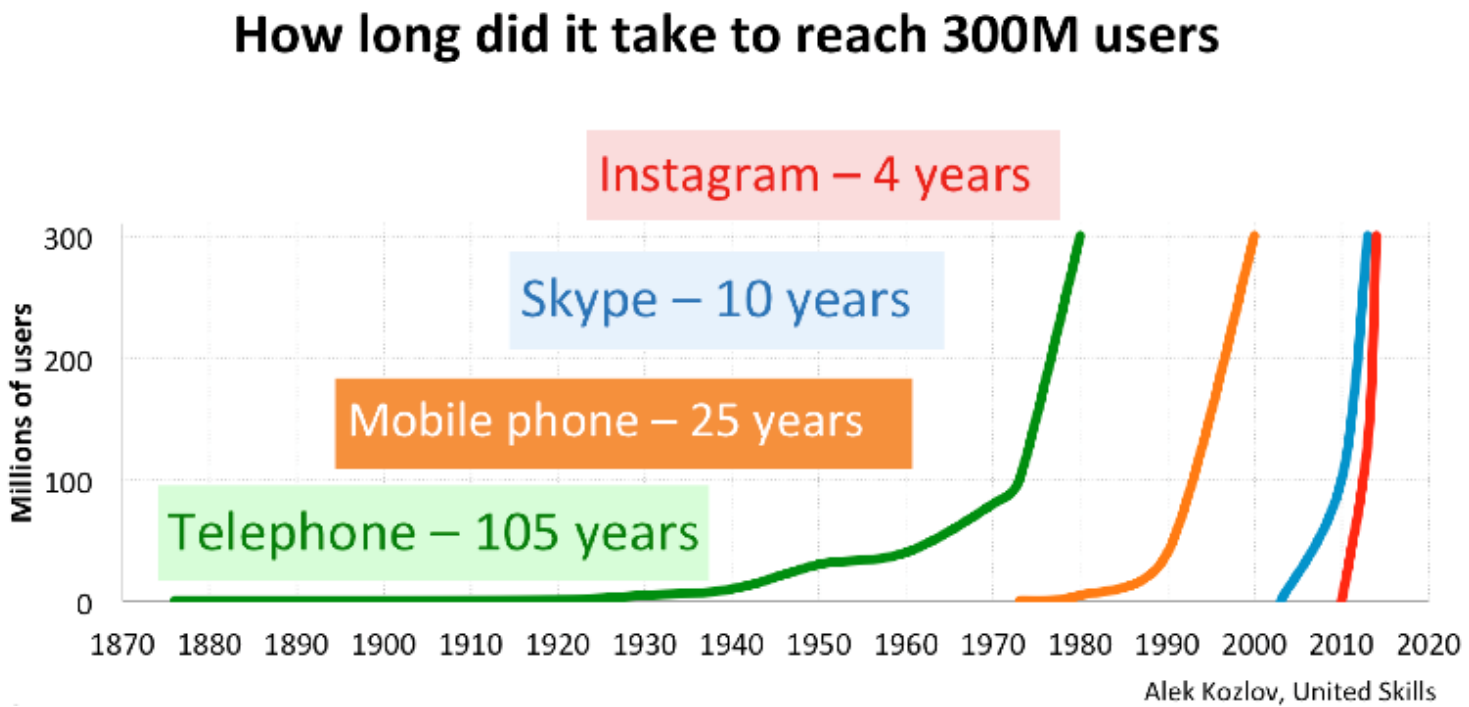
= the way of life is rational

Service model in information society

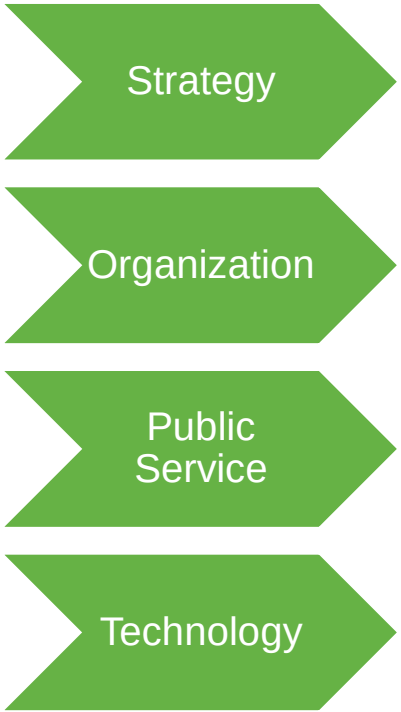


Source: Priit Parmakson, Margus Püüa

Rapid technological development



e-Government Development Framework

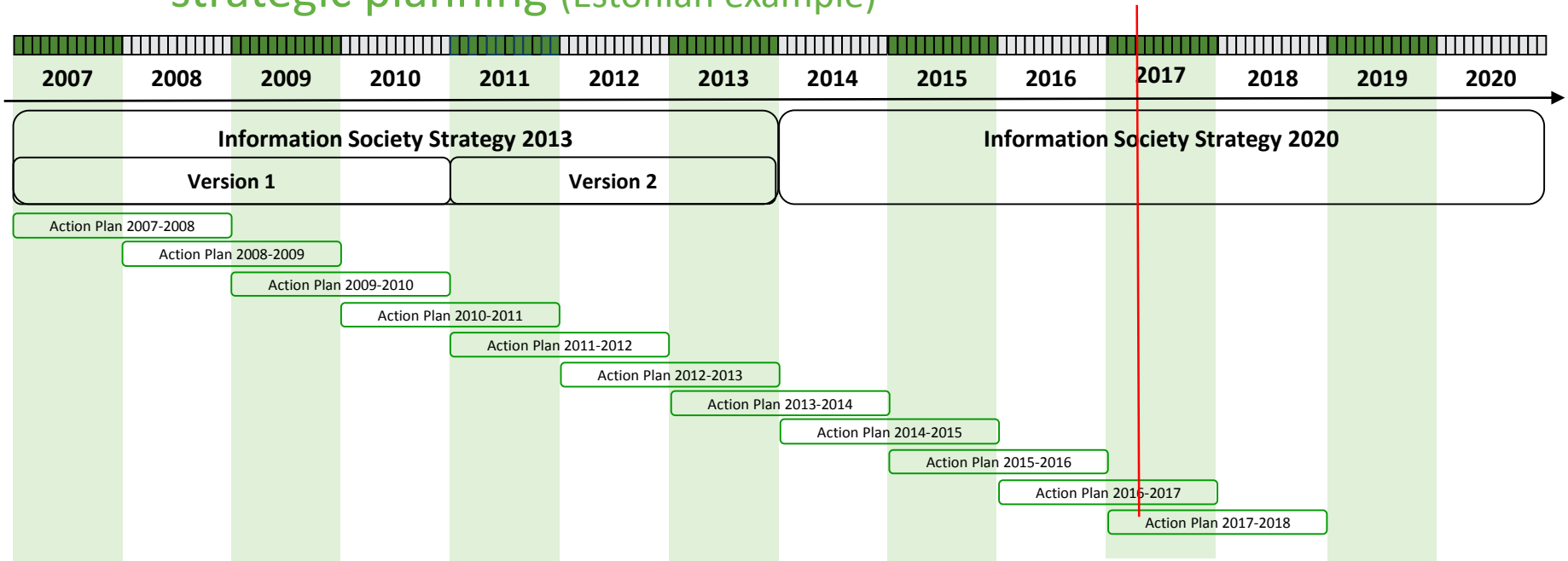


The framework should cover at least four in process

e-Government Development Framework (Stretegy)

Strategy → e-Gov. goals → Principles → Priorities' → Resources'

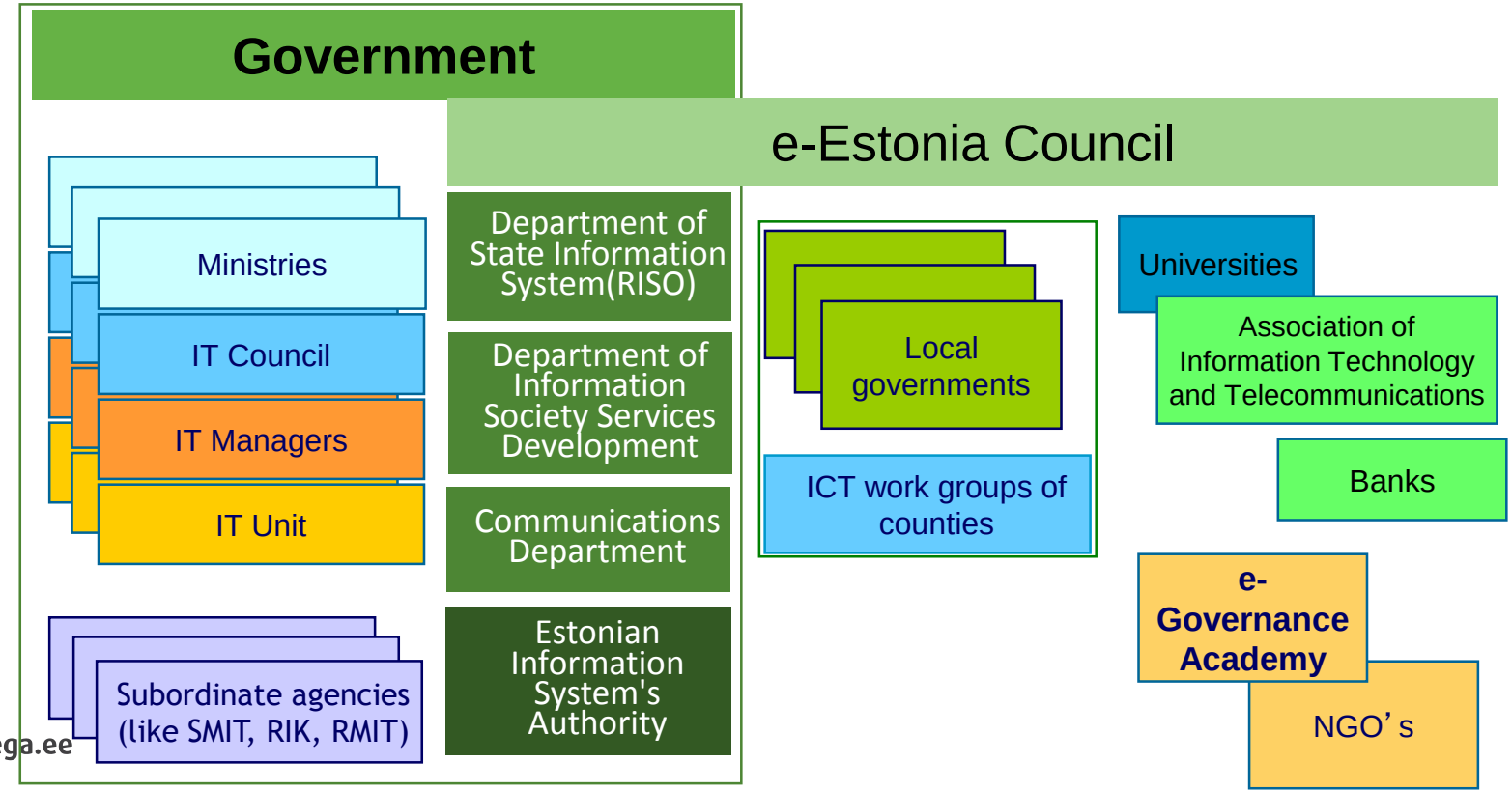
strategic planning (Estonian example)



e-Government Development Framework (Organization)

e-Government Organization

(Estonian example- coordination)



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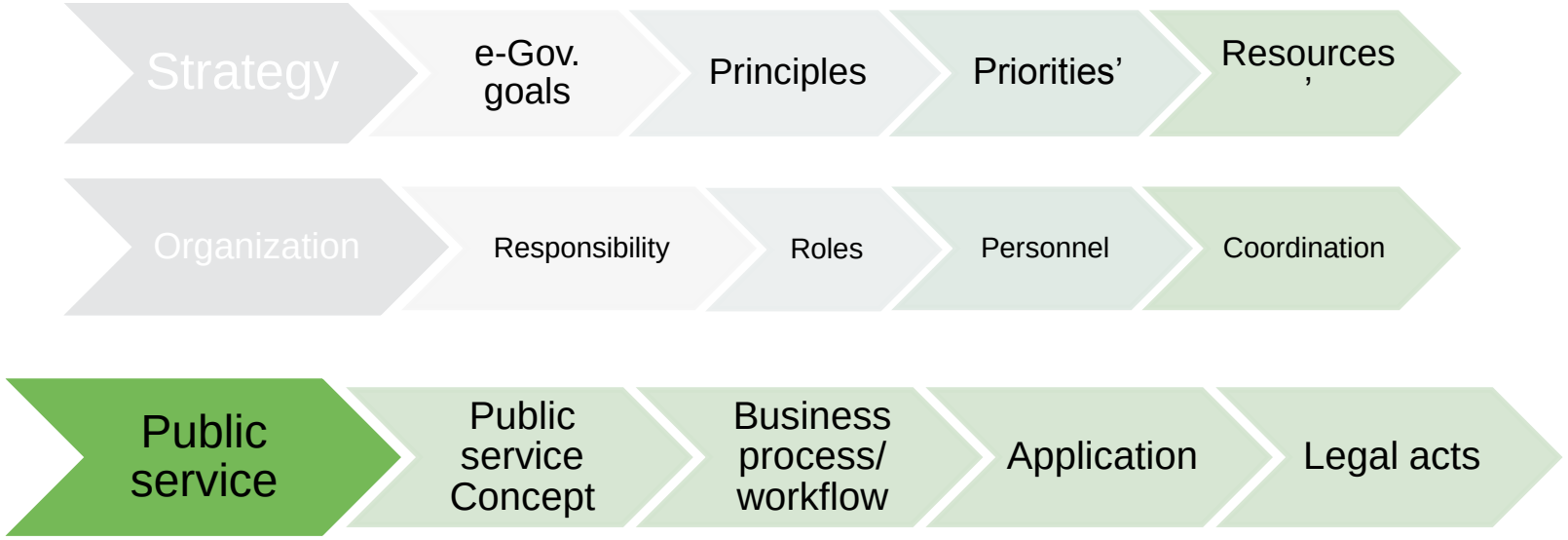
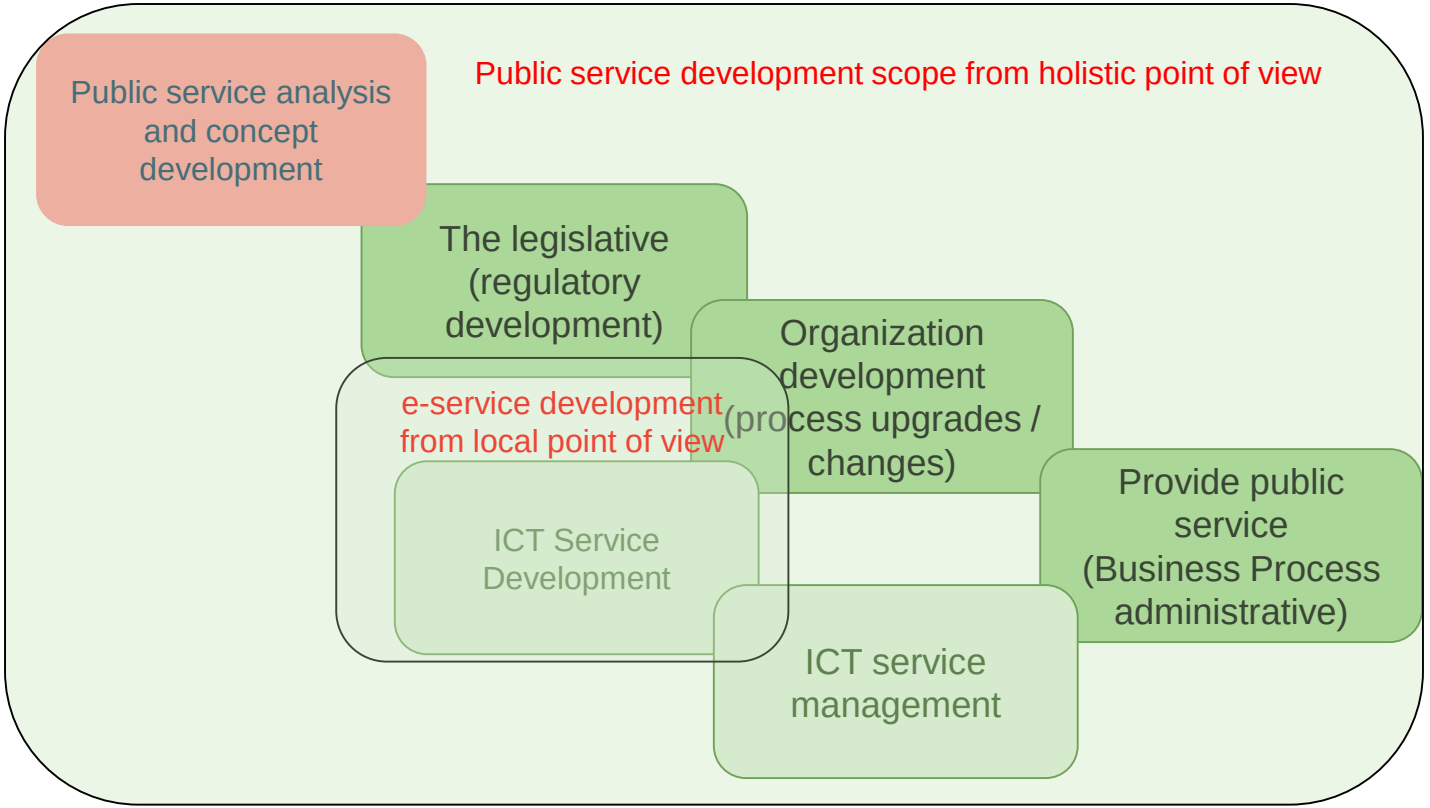
e-Government Development Framework
(Public service)



Public services and ICT service development



e-Government Development Framework (Technology)

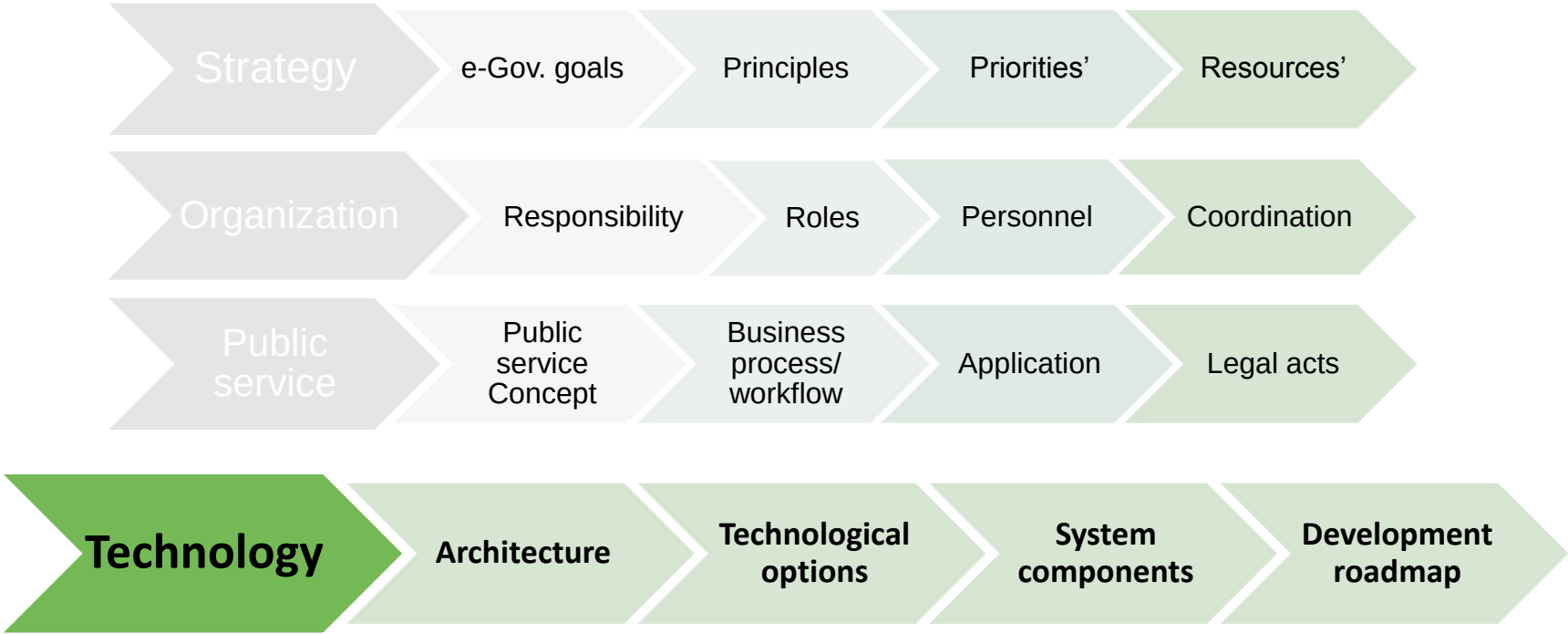
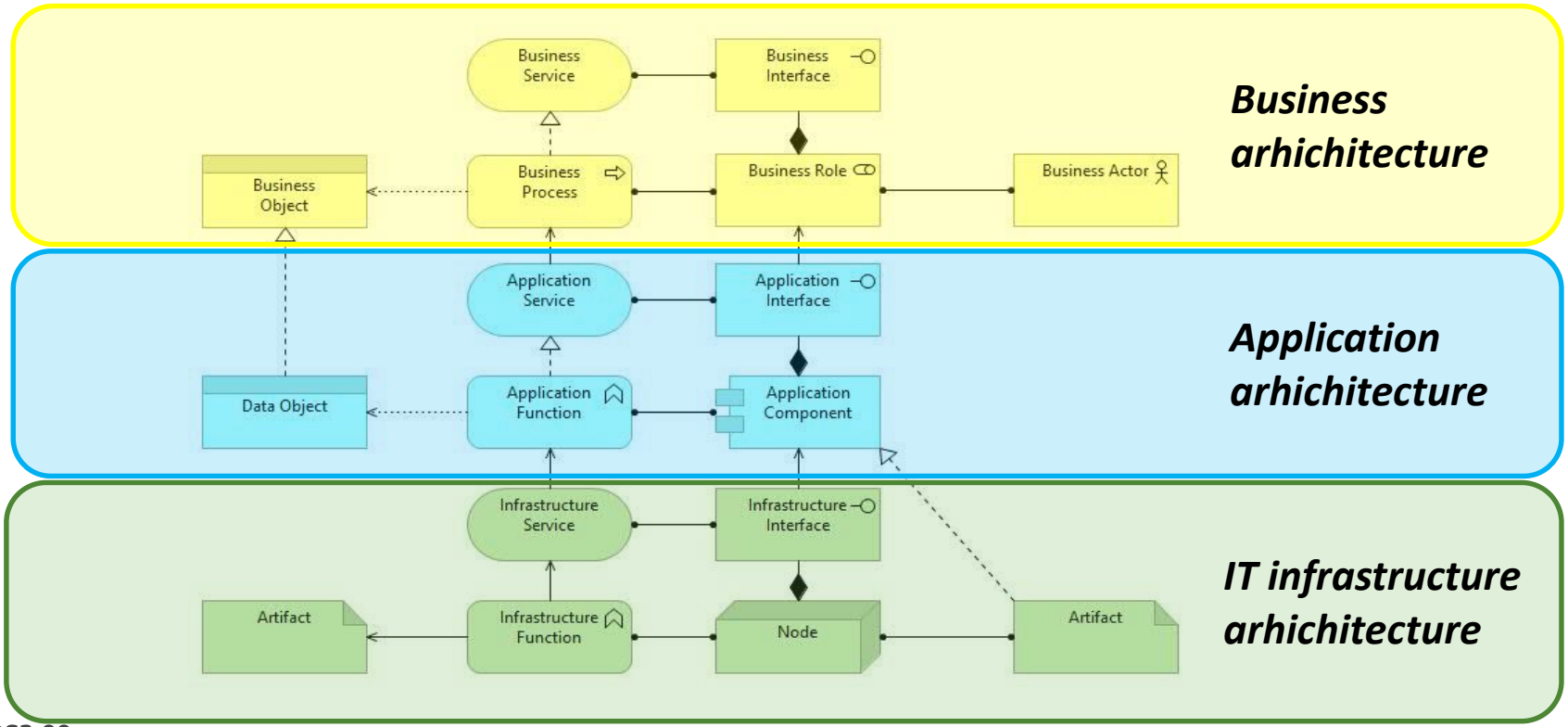


Illustration levels of enterprise architecture



Interoperability framework

Interoperability = the ability of ICT systems and the business processes they support to exchange data and enable the sharing of information and knowledge

An interoperability framework = a set of standards and guidelines that describes the way in which organizations have agreed, or should agree to interact with each other.

The following principles should be in place:

Main architectural principles

- XML and concept of basic data
- Protection of data not channels
- Separation of back-end and front-end systems. Service only through front-end
- SOA (Service-Oriented Architecture) and room of services/ internet of services
- Services described by WSDL

The following principles should be in place:

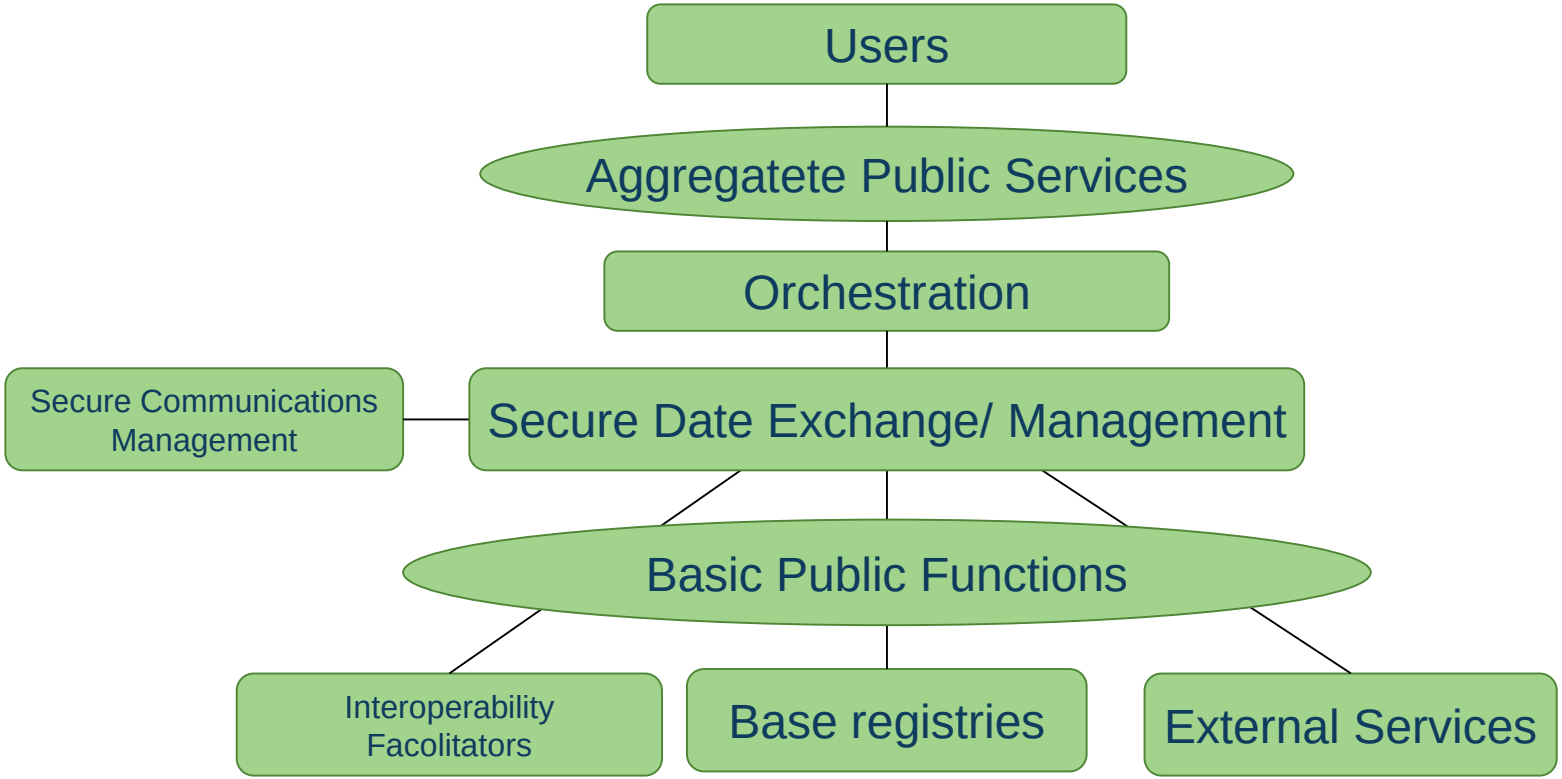
Main data processing principles

- „Once only“
- Unique data, avoiding duplication
- Evidentiary value of data
- High availability of data
- Confidentiality of data

Standardization requirements

- Unified legal framework
- Unified security measures
- Unified interface – all applications must be able to access all state registries in a similar way
- Unified installation and management – all installations should look alike

Public Services Conceptual Model (EU example)



Source: https://joinup.ec.europa.eu/sites/default/files/5e/db/a3/isa_annex_ii_eif_en.pdf

Main interoperability solutions

- Secure data exchange solution: (X-Road – Estonian example)
- Register of registers, catalogue of services
- PKI (Public Key Infrastructure): eID, digital signature trust services
- Citizen portal(s), entrepreneur portal(s), civil servant portal(s)
- Open Data portal
- Geoinformation systems
- System of address details
- Security measures system

Secure Data Exchange Layer

Register of registres, catalog of services

eID, digitaal trust services

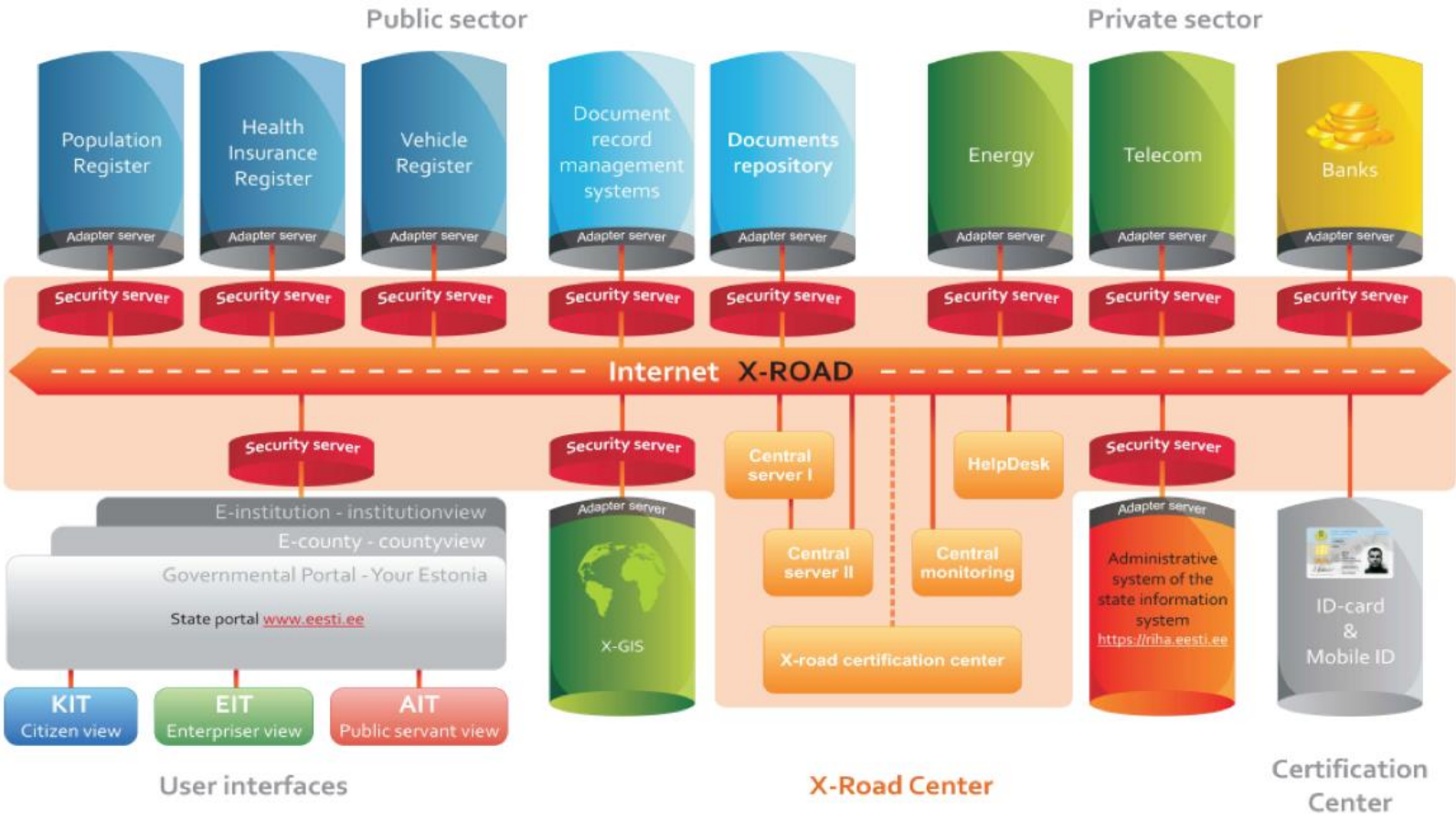
Estonian experience

Secure Data Exchange Layer **X-Road**

(Estonian Example)

What is X-Road?

- X-Road is a distributed, secure and standardized data exchange solution.
- Public and private sector organizations are welcome to use this environment.
- X-Road can be used for offering, combining and using e-services in many different fields.

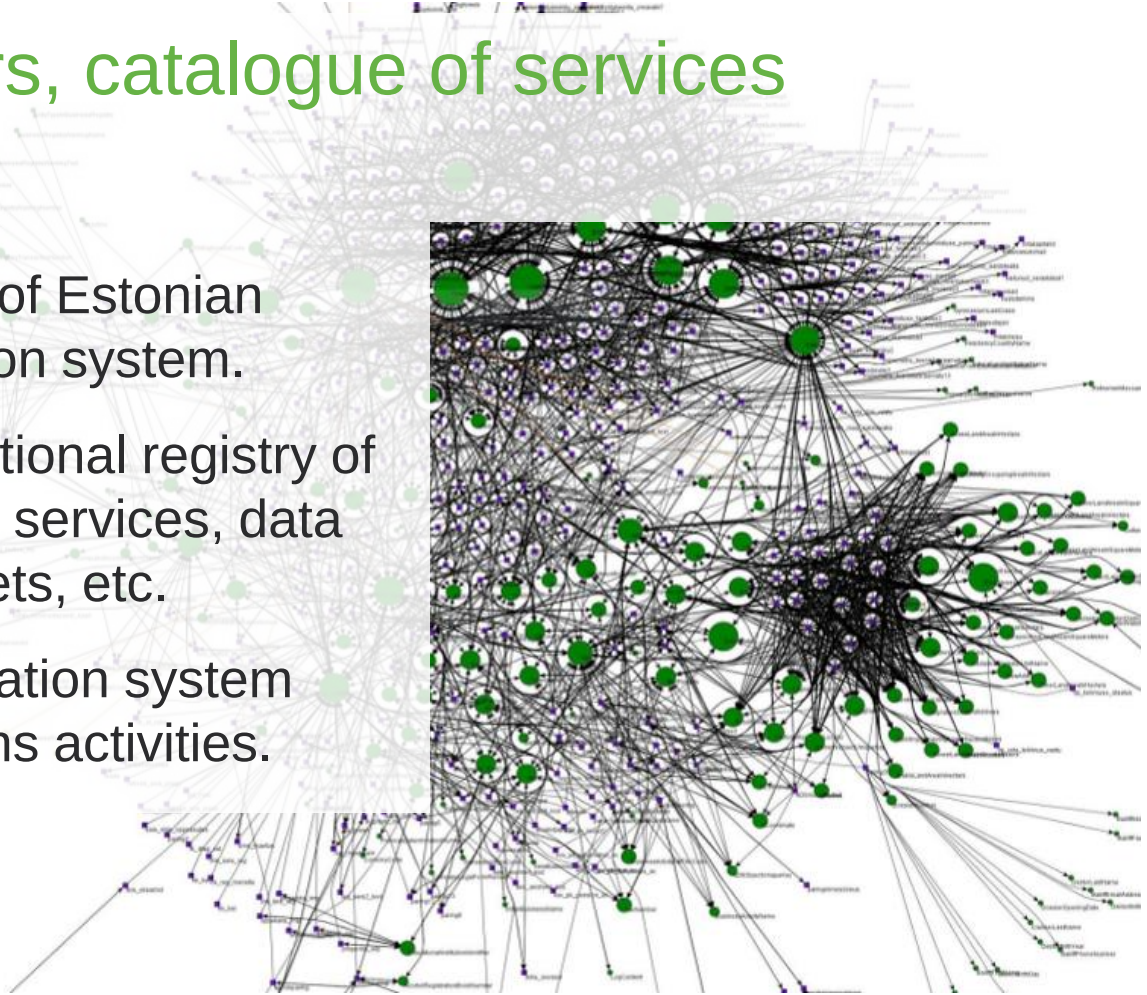


https://vimeo.com/170920523

Register of registers, catalogue of services

RIHA

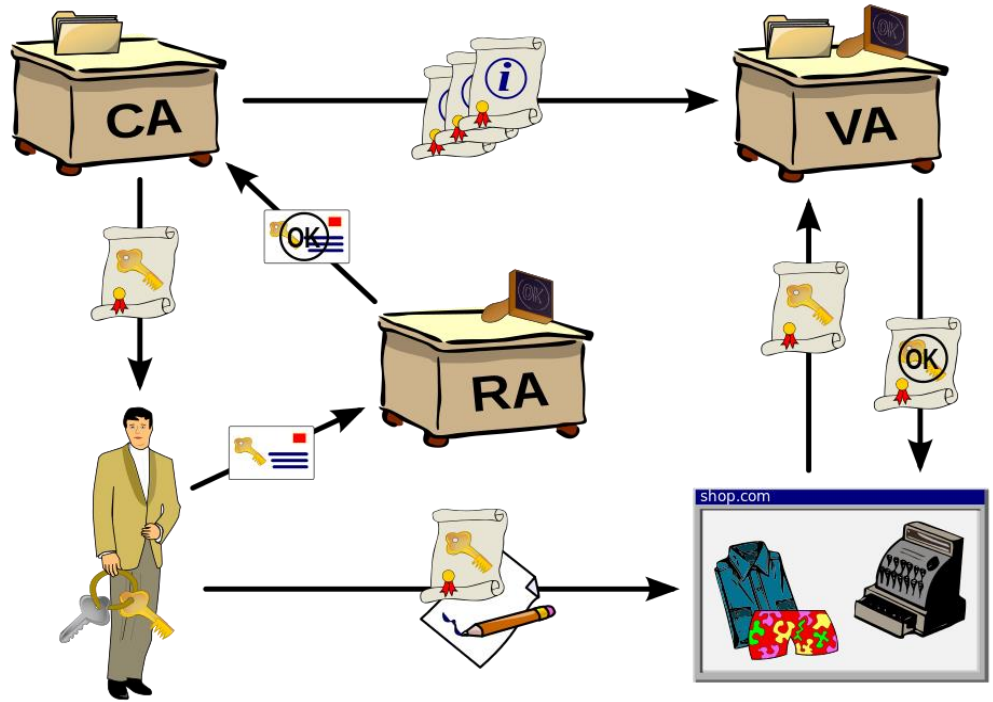
- RIHA is the catalogue of Estonian public sector information system.
- RIHA serves as the national registry of systems, components, services, data models, semantic assets, etc.
- RIHA facilitates information system planning and operations activities.



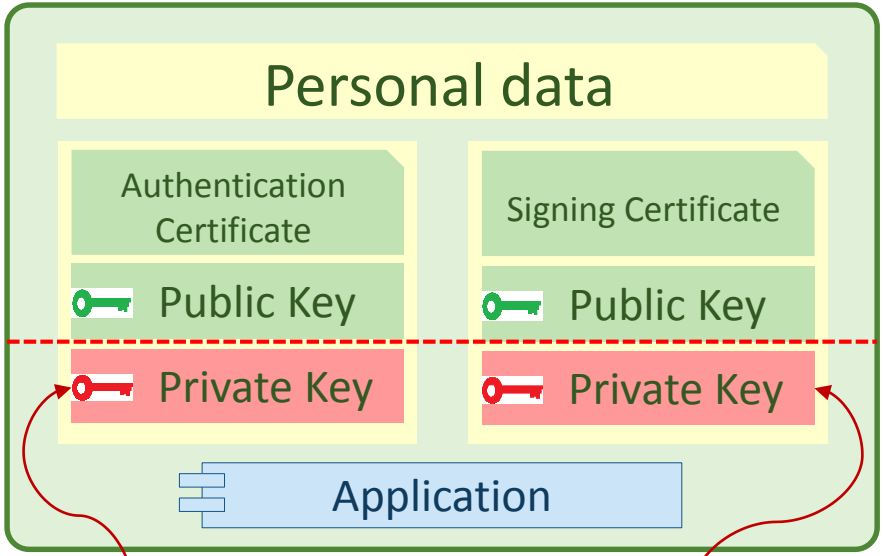
PKI (Public Key Infrastructure) ecosystem:

- Means for e-identification
- Electronic signature services
- Electronic seals services
- Time stamping services
- Website authentication

How it’s works



ID-Card



1234

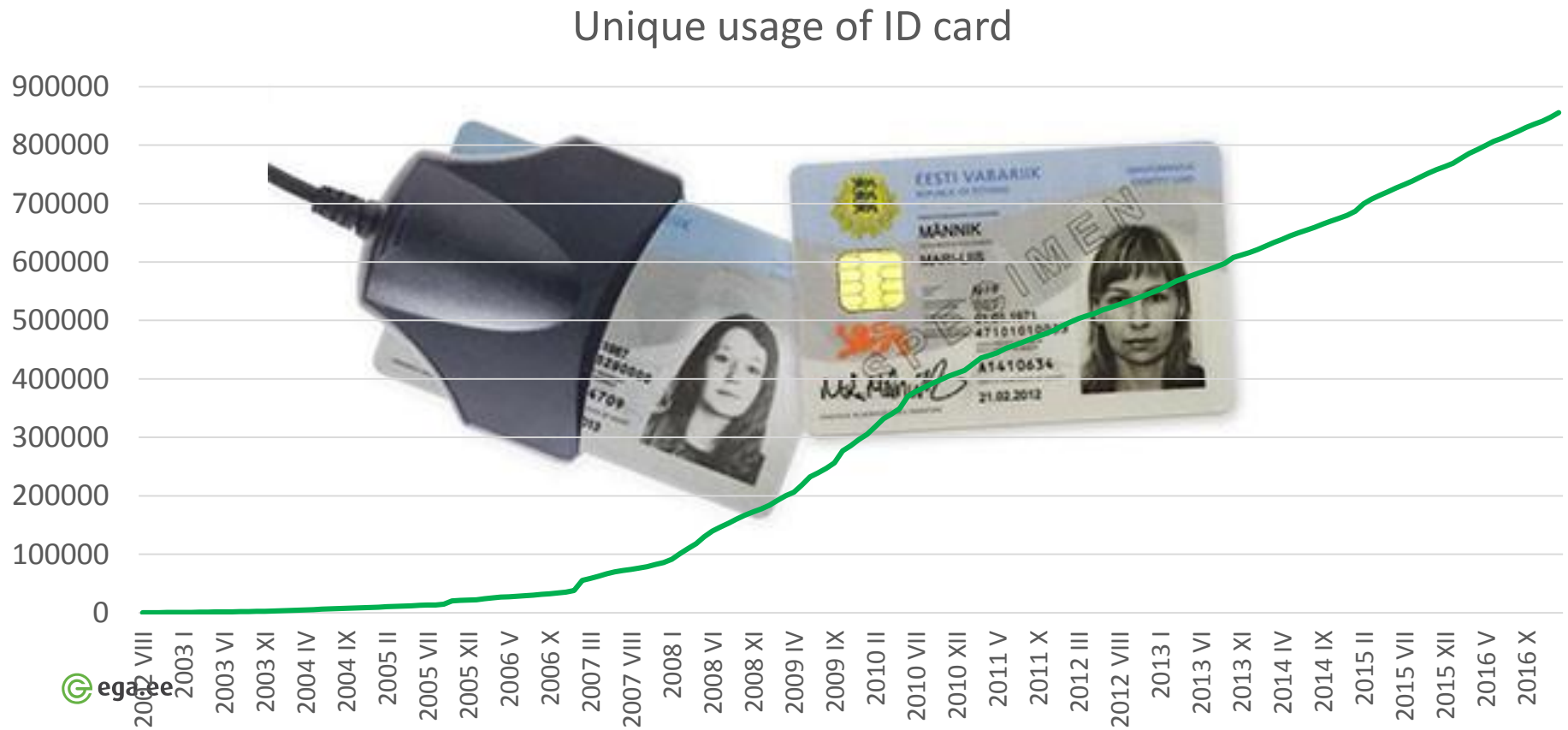
56789

ID-Card & mobil-ID

ID Card is Regularly Used:

- As national ID card for legal travel within the EU and Schengen Area
- As proof of identification when logging into bank accounts from home computer
- For digital signature
- for i-Voting
- As a national health insurance card
- For accessing government databases to check one’s medical records, to file taxes, etc.
- For picking up e-Prescriptions
- Mobile-ID is a service that allows to use your mobile phone as from of secure electronic ID

ID-Card usage (2017 II – 855 344)



2000 Digital Signature Act: 03, 2000

2001 X-Road implemented: dec.2001

2002 First ID card issued: Jan 28, 2002

Million services use every year: 2003

2004

Million services use every month: 2005

2006 1 000 000th card issued: 10 2006

MobileID: May 2007

2009 First binding cross border service: 2009

2010 Digi-ID launched: 10,2010

2014 e-residency Digi-ID launched: 11,2014

2017 ***Finland and Estonia set up a joint institute to develop X-Road technology: 03,2017***

1 280 387 ID-card users today
67% use it frequently electronically

- 246 databases
- 975 organisations
- 1789 services are available
- Over 50 million services use every month,

Thank You!

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