DİJİTAL DEVLET VE KURUMSAL MİMARİ

31 Mayıs 2016, Salı
Wyndham Ankara Oteli
National Reference Architecture for Digital Services

31.5.2016 Jari Kallela
Digital Government & Enterprise Architecture Event, Ankara, Turkey
Digitalization & Digital Services
Example of public service transformation:

Finnish Taxation Authority
Customer service in Taxation office in Helsinki 1989
Examples of e-services of Taxation Authority

- Tax Card -online
- Income Tax Return Correction -online
- Corporate Income Tax Return
- Tax Account service
- Ask online
- Tax.fi – information online
- social media

Kysy Yle-verosta

Chat

Chatterbox
Success story: Pre-filled tax return
Pre-filled Tax Return streamlined the process

Finnish Tax Administration

40 000 000 Annual Declarations

Businesses and enterprises
Employers, Pension Funds, Banks, Brokers
Dividend payers, Wood buyers

Citizens – income
Salary, Pension, Dividend, Sales of shares, sales of wood

Tax Return, prefilled 5 000 000

13 October 2015
Personnel in Taxation Authority 2003 - 2019

Number of employees dropped 23 %

13 October 2015
CASE: Finnish Healthcare ICT Standardization for Interoperability
The architecture for the national healthcare data repositories

- Public healthcare providers
  - Hospital districts (20)
  - Primary care org. (192)
  - Private healthcare providers (4000)
  - Pharmacies (~800)

- Health care professionals
  - Swedish ePSOS NCP
    - Connection closed after successful pilot

- Citizens (> 5 000 000)
  - Aged 18 and older

- Social care providers

Main standards
- HL7 V3: CDA R2 L3 and Medical Records
- HL7 FHIR DSTU2 (PHR)
- JSON, XHTML (PHR and social services)
- PDF/A (legacy data and social services)
- IHE ITI Profiles (Imaging and ePSOS)
- W3C XML DSig
- WS Addressing, WS-I
- TLS, X 509

Other national services
- National code server
- Code systems and terminologies
- Form structures
- Pharmacy register
- Organization register
- X-Road
- Certification services
- HCP and SCP register
The timeline of healthcare ICT standardization

- HL7 Finland founded
- ICD-10 adopted in Finland
- First national HL7 v2 profiles

- Experimental legislation on seamless service chains
- National health project starts
- Regional hospital information systems starting
- National core datasets defined

- Kela appointed as a national actor in national healthcare ICT services
- Legislation about the national Kanta system and supporting services

- Finnish IHE SIG founded
- ePrescription service production phase incl. My Kanta pages service for citizens

- Revised legislation on consent management and patient summary service
- Patient Data Repository production phase

- ePSOS work started in FIN
- IHE FI founded
- All public healthcare uses the Patient Data Repository

- All private healthcare uses the Patient Data Repository

- CDA R2 becomes ANSI standard
- Ministry decision on CDA R2 for national standard for structured dataset

- National Kanta architecture defined
- National pharmaceutical database founded

- KVARKKI national imaging architecture defined
- HL7 Medical records specifications for ePrescription and Patient Data Repository

- ePSOS national contact point in production

- Oral and dental healthcare structured documentation specifications

- First FHIR pilots

Prescriptions and deliveries by 30.4.2016
Usage
Enterprise Architecture Approach in Public Sector and experiences/lessons learned
### Finland in international rankings - overview

<table>
<thead>
<tr>
<th>Org</th>
<th>Year</th>
<th>Survey</th>
<th>Countries</th>
<th>Best country</th>
<th>Finland's position in</th>
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<td></td>
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<tr>
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<td>32</td>
<td>Denmark</td>
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<tr>
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8. Digitalisation, Experimentation and Deregulation

Ten year objective:
Finland has made a productive leap in public services and the private sector by grasping the opportunities offered by digitalisation, dismantling unnecessary regulation and cutting red tape. The flexible renewal of Finnish society is supported by a management culture based on trust, interaction and experimentation.

How to promote digital services?

- Common service providers
  - Valtori

- Legal basis
  - Act on Information Management Governance in Public Administration (634/2011)

- Enterprise Architecture

- Development projects
  - National architecture for digital services
Act on Information Management Governance in Public Administration (634/2011)

- **Objective**
  - Improve the efficiency in public administration
  - Improve public services and their availability

- **Means**
  - Promote and ensure the interoperability of information systems using enterprise architecture
  - Ministry of Finance reviews ICT projects and purchases over 5 MEUR
  - Ministries have statutory power on information management governance over the whole public administration
Achieving interoperability

- Public authorities have to define as-is and to-be architectures as part of the strategy work
- Ministries define requirements and common architectures for interoperability
  - Which can be made legally binding
- Development projects must comply and realize these requirements
- Gradually, systems are transformed and integrated
Enterprise architecture supports the management

- Architecture development is governed by organisation’s vision, strategy and other functional objectives.
- **Enterprise architecture helps in creating and managing the big picture and developing the organisation as a whole.**
- Architecture is one tool amongst others in managing the organisation and developing and planning organisation’s functions and resources.
- Architecture management must be connected to organisation’s management and decision making structures.
Results: Enterprise Architecture in the public sector

- Over 1000 civil servants trained in EA method
- Common framework and method
- EA Governance structure
- Set of reference architectures
- Common tool for EA modeling
- **Gradual adoption of EA: EA is not a straight forward procedure, it is more like a slow learning process**

Enterprise Architecture Maturity

CMM Scale:
5 – Optimized
4 - Measured
3 – Managed
2 – Partial
1 – Initial

<table>
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<tr>
<th>Year</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
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Results and achievements

- Enterprise architecture is widely used
  - All large and medium size public sector organizations are working on the enterprise architecture.

- Focus on interoperability
  - Definitions and instructions to interoperability has been published as reference architectures [1] and JHS Recommendations [2]

- Common ICT services delivered
  - Government ICT Centre Valtori started in March 2014 and it provides sector-independent ICT services (like workstations, networks, data centers) for the central government administration
  - Common secure and high availability network for the security officials under construction.

- No binding regulation on ICT solutions yet.

European Interoperability Framework: Concept
Suomi.fi Services

Digitalizing Finland
Suomi.fi Services

For Citizens / Companies / Authorities
- Single identity, many roles
- Strong authentication
- Services targeted for life events
- Authorizations
- Interaction and messaging

Suomi.fi

For service providers:
- Data Exchange Layer
- Digital Authorizations
- E-Identification
- Finnish Service Catalogue
- Messaging
- Service Views

Me
- As a citizen
- Representing a company
- As an official

Private services
Public services
My data
My messages
Digital Service Platform

Service providers
Service market on a certain field, e.g. social services

Digital Single Market

Users (user groups)
E.g. parents
E.g. the unemployed

Connectors / APIs / data
Integration Catalogue

User experience / User interface
Digital service – Suomi.fi / Yrityssuomi.fi

Data registers

Data Exchange Layer
e-identification
Digital Authorizations
Electronic signature
Electronic letter of attorney

Finnish Service Catalogue

Event logs and analytics engine

... creates norms and enables transactions between service providers and users
National Architecture for Digital Services

Data Reserves
Governmental Services
Municipal Services
Private Services

Integration Layer
Integration Layer
Integration Layer

Suomi.fi Data Exchange Layer

Internet

Citizen
Company
Public Official
Service Data Repository
eID
Authorizations
Integration Catalogue
Administrative Information Security Reporting Logs

Service Views
The common meta data architecture will serve as a means to get all the semantic interoperability pieces (different ontologies, meta data registers, XML-schemes, classifications and so on) into place to form a coherent whole.
Conclusions
The services are transforming around us – what about public sector?

- Digitalisation
- Governing the big picture
- Citizen engagement
- Partnerships with the private and the 3rd sector
- Customer oriented approach

Centralised sector based administration
- Target and task oriented
- Input based

Decentralised service oriented sector administration
- Target oriented
- Vertical productivity and efficiency
- Service orientation

Administration in a networked society
- Horizontal efficiency
- Communality
- Phenomenon based

Administration in a user oriented welfare society
- Sustainable growth
- Customer Insight
- Engagement
- Co-design

Information society

Post industrial society


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Where to go? Key decisions

- ICT development
  - Made (own development) \(\rightarrow\) Buy (off the shelf)
- ICT governance structure
  - Centralized \(\leftrightarrow\) Distributed
- Service delivery
  - Public \(\leftrightarrow\) Private
- ICT regulation
  - Laws and rules \(\leftrightarrow\) Instructions and guidelines
- Open data
  - Open by default \(\leftrightarrow\) Disclosed by default

Underlying problem. How to have economy of scale and central control while at the same time keep agility and business orientation?