Connecting the Customs Estonian Case

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Cybernetica

Data-Centric Organization

▶▶ Customs authorities are communication hubs

- Traders
- Private organizations (banks, ports, ...)
- Other governmental agencies
- International organizations
- Other customs agencies
- ...

Communication Diversity

▶▶ Many different protocols, defined by

- International organizations

- Industry standards

- National legislation

- National frameworks

- ...

▶▶ Many partners, with very different capabilities

- International companies

- ...

- Physical persons

Communication Changes

▶▶ All communication channels evolve
- Business processes are changing
- New protocols are introduced
- Partners demand to use modern technologies

▶▶ Customs processes require high availability of the communication channels

▶▶ Managing the change can be very costly

▶▶ Not managing the change is even costlier

Handling the Complexity

▶▶ Separate functions

- Layered protocols

▶▶ Reuse existing solutions

- Not just within customs

▶▶ Use modern, efficient technologies

▶▶ Select protocols that match the partner capabilities

Estonian Case

▶▶ Estonian Tax and Customs Board is running a very well connected customs information system that is communicating with

- Traders
- Banks
- Ports
- Other governmental agencies
- International organizations (IRU)
- DG TAXUD
- ...

National Domain

▶▶ Less standardized

▶▶ More choices

▶▶ More innovation

▶▶ Traders

▶▶ Governmental agencies

▶▶ Private organizations

Communication Layers

▶▶ Transport
- Internet

▶▶ Security
- X-Road
- ID-card

▶▶ Application
- interactive web
- web-services

▶▶ Documents
- many are based on DG TAXUD specifications

Security Layer

▶▶ Estonian e-Government has two pillars

- National ID-card and PKI infrastructure for digital signature and authentication of the residents

- X-Road infrastructure for secure inter-organization communication

▶▶ Both are mature mechanisms, more than ten years old, very secure and reliable

ID-card

▶▶ National ID-card is compulsory for all residents, has authentication and digital signature capabilities

▶▶ Widely used

- Primary means of authentication for all public and private sector (including all banks) web-sites
- Used by more than 500 000 people
- Supplemented by Mobile-ID solution

X-Road

▶▶ Backbone of the Estonian government

▶▶ 10 years of active duty, no downtime

▶▶ Over 1500 services

▶▶ More than 600 connected organizations, public registers and databases

▶▶ Over 250 mil. transactions per year

▶▶ Based on web-services

▶▶ Steady growth of usage

X-Road Highlights

▶▶ National middleware that provides **unified** way of communication for government and businesses

▶▶ Based on collaboration, not on centralization

▶▶ Existing organizational and functional structure of the state is maintained

▶▶ Uses web services as underlying technology

▶▶ Ties together the business processes of the different organizations to provide maximum efficiency and automation

Application Layer

▶▶ Estonian Tax and Customs Board has standardized two external interfaces

- Interactive web-based access using ID-card and Mobile-ID authentication
- Web-services based access using X-Road infrastructure

▶▶ Many applications are available through both channels

Freedom of Choice

▶▶ Interactive web-based access is vastly popular

- Small companies can perform all customs operations directly, using just a browser and ID-card
- Small governmental agencies can communicate with customs without the burden of extra IT development

▶▶ Web-services are used by big traders to achieve complete automation and efficiency

Results

▶▶ Modern, easily accessible, integrated and automated customs information system has made customs procedures fast, simple and cheap

▶▶ World Bank has ranked Estonia third in countries where trading across borders is easy

Thank you!

▶▶ http://www.cyber.ee/