Can eGovernment work in the Cloud?
Some examples from Digital Austria

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Topics

• Definition
  – general features

• Opportunities and risks
  – Legally
  – Structurally
  – Economically
  – Technically

• example: eID and cloud

• possible approach / requirements for Austria
Definition - general characteristics

• Cloud computing represents a (more) responsive and flexible deployment of IT resources.

• Cloud computing is not a technology but a business model for providing IT services – however this demands for new technologies/ privacy considerations/ resource management/ law enforcement considerations.

• The central feature is the consumption-based billing and the provision of IT services of shared resources (infrastructure, platforms, software, business processes/services).

• IT-requirements need to be decoupled from the IT infrastructure.

• Cloud computing (Public cloud) is a form of outsourcing of ICT infrastructure.
Opportunities and risks - Overview

• legal
  - Data protection issues, ...
  - Influence on contract, ...
  - Procurement law

• structural
  + faster service provisioning,
  + Flexible bandwidth, ...
  - LockIn effects and silo solutions
  - Compliance with governance rules, ...

• economical
  + standardization of IT infrastructure and services, ...
  - functional adaptation cost adjustments,
  +/- operating costs vs. investment costs

• technical
  + standardization, scalability, ...
  - Identity management, technical audit, ...
Legal aspects

- **Public Cloud:** processing of personal data largely excluded, no possibility of contractual adjustment
- **Virtual Private Cloud:** only minor customization options compared to public cloud model
- **Private Cloud:** offers the best conditions to meet data protection requirements
- non-personal or not ‘very’ sensitive data are an option for Cloud usage
- **Contractual issues and procurement law issues!**
Technical aspects 1/2

- **Standardization**
  + competition between providers
  - without standards depending on the CSP operators

- **Scalability**
  + almost unlimited resources by CSP
  - simultaneously load peaks in the worst case lead to a halt

- **Identity and rights management**
  - security concerns in the implementation of the CSP, especially the privileged user accounts (administrator)

- **Tenancy, security**
  + is a core structure requirement for CSP, and should therefore be carried out "state of the art"
Technical aspects 2/2

- **Cloud Management**
  + default management services are provided through web portals for convenient disposal
  - Integration of tools to CSPs in customer-specific processes not yet tested

- **Technical revision**
  - separation of customer-specific data (log files, ...) must be regulated by contract - currently, no standardized offers

- **Patch Management**
  + rapid roll out of standardized patch management patches through unified infrastructure
  - difficulty of testing the compatibility of patches, consideration of specific customer requirements
E-Government may be

• Informational processes
  – e.g. law information system
  – no immediate data protection dimension

• Transactional processes
  – Processing personal data
  – Authentication / quality eID plays a major role
eID and the cloud – is there something new?

• The cloud as such is not bringing excitingly new technologies
  – It is the combination
  – It is the scale
  – It is the commercial aspect
  – It is the standard – the conformity

• By this the cloud might reach the “break through point”
eID and the cloud – is there something new?

• It is changing some of the basic assumptions

• The one to one model CLIENT-SERVER is no more possible
  – it is CLIENT - CLOUD - SERVER
  – for legal considerations
  – for contractual considerations
  – for technology considerations
  – for data protection and privacy considerations

• Most users will not yet recognize this difference
eID and the cloud – is there something new?

- eID and security will bring highly impacting changes

- the cloud will show the need to react
  - eID and technological quality
  - security and crypto-based technologies
  - policies and standards

- yet there is a big difference
  - encryption and crypto-based confidentiality hardly possible
  - user control on the physical level non-existent
trusted identity

public data

reading manipulating Data

transaction integrity

privacy - access

authorizing the transaction

eID

eSig
eID and simplification

1. Enhance usability by using one method for qualified signatures and eID.
2. Enhance acceptance by using ubiquitous devices, e.g., standard mobile phones.
National strategy alone?
Digital Agenda for Europe

Propose by 2012 a Council and Parliament Decision to ensure mutual recognition of e-identification and e-authentication across the EU based on online 'authentication services' to be offered in all Member States (which may use the most appropriate official citizen documents – issued by the public or the private sector).

In 2011 propose a revision of the eSignature Directive with a view to provide a legal framework for cross-border recognition and interoperability of secure eAuthentication systems.
STORK on EU eID interoperability

- Interoperability framework on top of national eID infrastructure
- To a large extend relies on MS-to-MS trust
  - SP trusting MS PEPS
  - MS-to-MS protocol shielding IdPs
  - Different in “MW-model”
- How can a Cloud fit in?
the potential to extend cross border

1 2 3

• STORK has developed to be a most recognized eID project
• managing eID for several Member States and for ECAS
• the future shall include even more MS and non natural persons (MANDATES)
• being a mostly legal and liability challenge
coping with the dynamics of user devices

1 2 3

PDF → mobile phone or card → signed PDF
Impacts of Cloud Computing on eID

• new approaches (like eID) must be “cloud compatible”
  – from the point of view of security
  – from the point of view of privacy and intellectual property protection

• we might possibly need to twist on both ends
  – in the eID domain
  – in the cloud domain
  – to yield contractual, legal/regulatory, commercial and technical acceptance
Cloud - Chance and Risk

- CLOUD will enable and enforce broad usage of crypto-based services
  - eID and access control
  - storage and confidentiality of data
  - standard security for all

- at the same time knowledge and with this awareness will be lowered at the users side
possible approach / requirements for Austria (1)

- pilot and analyse cloud projects ('FRCC/BLSG')
  - exchange of information and experience
  - Studying and experimenting on cloud solutions e.g. eID SSO etc.
- 'Cloud-compliant application'
  - develop new applications cloud ready
  - establishment of criteria, what defines "cloud compliant"
- suitability criteria for cloud
  - definition of suitable criteria for applications for assessing which cloud model they fit
- Cloud standards
  - definition of standard requirements for Cloud Providers
  - definition of a standard process model in the implementation of cloud applications
possible approach / requirements for Austria (2)

- **Cloud assessment**
  - definition of criteria catalogue and development of models for assessment

- **Cloud sustainability and openness**
  - implement applications in the cloud so that migration is defined / assessed and / or service for alternative cloud is feasible (service runs at two different cloud providers)

- **Cloud in the administration**
  - evaluation and assessment of one / several government cloud(s) for Austria and across borders

- **Cloud – next steps:**
  - identify potential services, pilot them, learn, share, …
  - European Cloud Partnership (ECP)
Conclusions

- Cloud Computing on E-Government “radar”
  - Promises of cost reductions
  - Thus might assist getting efficiency gains
- Legal, technical, organizational issues
  - Citizen’s personal data in transactional services
  - May not interfere with citizen fundamental rights
  - Challenging with current public cloud contracts
- Quality eID in the Cloud to be addressed
Thank you!

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