



Trust in Governmental e-Services

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Introduction



- Research
 - part of the InterPARES Trust project
"Comparative Analysis of Implemented Governmental e-Services"
 - 15 January to 15 July 2014
- Trust in governmental e-services
 - IT solutions change
 - cloud solutions emerge
 - legislative changes needed

Introduction ...



- Types of e-services: G2C, G2B, B2B, B2C, C2C
- e-government services analysis adopted the "representative basket of 20 services" from:

*Digitizing Public Services in Europe:
Putting ambition into action,*
European Commission,
9th Benchmark Measurement,
December 2010

- Focus on two main groups
 - e-Services for Citizens (12 services) – G2C
 - e-Services for Businesses (8 services) – G2B



Introduction ...



e-Services for Citizens

1. Income taxes
2. Job search
3. Social security benefits
4. Personal documents
5. Car registration
6. Application for building permission
7. Declaration to the police
8. Public libraries
9. Birth and marriage certificates
10. Enrolment in higher education
11. Announcement of moving
12. Health-related services

e-Services for Businesses

1. Social contribution for employees
2. Corporate tax
3. VAT (Value Added Tax)
4. Registration of a new company
5. Submission of data to the statistical office
6. Custom declaration
7. Environment-related permits
8. Public procurement

Research methodology



- Four stages of research
 1. Identification
 2. Data acquisition
 3. Analysis
 4. Interpretation

Identification

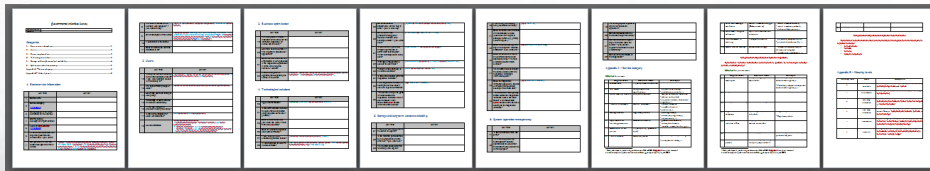


- Literary review
- Environmental scan
- Research focused on eight European countries: Belgium, Croatia, Denmark, Estonia, Germany, Lithuania, Sweden and United Kingdom
 - choice based on online availability of the materials needed for the research

Questionnaire



- Development of a governmental e-service questionnaire
- 52 questions divided into 6 categories
 1. Basic service information (*11 questions*)
 2. Users (*7 questions*)
 3. Business optimization (*4 questions*)
 4. Technological solutions (*14 questions*)
 5. Storage and long-term content availability (*10 questions*)
 6. System operation transparency (*6 questions*)



Questionnaire ...



- Maturity level ranking

Maturity level	Level	Description
0	No information available	No online information
1	Information	Service information (description)
2	One-way interaction	Downloadable forms
3	Two-way interaction	Interactive forms, authentication, form submission initiates a service
4	Transaction	Complete service available online – interactive forms, authentication, payment, service completion



Data acquisition

- Online search for answers to
 - 52 questions for
 - 20 e-services in
 - 8 countries } 160 e-services
- ⇒ 8,320 answers
were (tried to be) answered!



Analysis



- Filled in questionnaires on governmental e-services were analyzed
 - by country
 - comparatively by e-service (12+8) across countries (8)



Interpretation / research results



- Aggregated comparative results by the 6 categories

1. Basic service information

- e-services of the same type initiated in the last 15 years
- the most developed – maturity level 5
- earlier adoption of e-service concepts does not necessarily mean the highest maturity level



Interpretation / research results ...



2. Users

- two types of users of e-services noticed
 - external – citizens or businesses as the designated communities (e.g. citizens as patients)
 - internal – employees who use e-services as a part of their everyday business activities and who process, analyse and store the e-services' data (e.g. doctors as health care workers)
- 67% of investigated e-services could be used by users with disabilities (text resizing, sign language...)



Interpretation / research results ...



2. Users ...

- e-services
 - generally not obligatory
 - alternative way of service realization
- only five services identified as obligatory
 - G2C
 - Sweden (Social security benefits, 5)
 - Estonia (Application for building permission, 3)
 - Estonia (Health-related services, 4)
 - G2B
 - Belgium and Croatia (Social contribution for employees, 3)



Interpretation / research results ...



3. Business optimization

- hard to find, but some services reported a decrease in time required to process user applications
 - health-related services (Denmark) save 50 minutes daily by using e-services and thus can process 10% more patients
 - UK – yearly decrease – 4,500 patients' visits to the doctors and around 8,000 phone calls less
 - Croatia – time to process applications of pension insurance is shortened from 7 days to 24 hours
 - positive effect related to the statistical reporting to the national bureaus of statistics



Interpretation / research results ...



3. Business optimization ...

- scarcely any information was found on the influence of the development of e-services to the organization of work processes
 - Croatian bureau of statistics – employees were redistributed to other workplaces within the organization



Interpretation / research results ...



4. Technological solutions

- users of e-services are usually authenticated by
 - Smart Cards or e-ID cards
 - username and passwords
 - digital certificates
- communication between the server and client station is almost everywhere encrypted by using SSL or HTTPS protocols
- XAdES is the dominant format of electronic signatures, XMLDSig is also used



Interpretation / research results ...



4. Technological solutions ...

- communication – usually by web forms
 - sometimes attachments are allowed (formats: .pdf, .jpg., iXBRL – Inline Extensible Business Reporting Language – income tax applications in the UK)
- we did not find
 - e-service developed by using open-source or commercial technologies?
 - where the e-services are hosted?
 - only social security benefits in Belgium – e-service is hosted within the responsible institution



Interpretation / research results ...



4. Technological solutions ...

- only three e-services provided information about conformance to the ISO standards
 - IT Security is based on ISO 27001
- no information whether
 - e-services are using cloud solutions
 - hosting data centers are located in the same country
- (plenty information on the place where the received data are stored – discussed later)

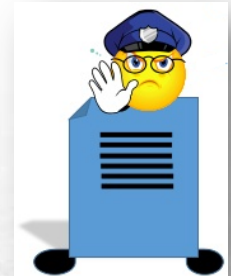


Interpretation / research results ...



5. Storage and long-term content availability

- retention periods for the data stored in the system of e-services differ based on
 - the type of data being held
 - type of institution responsible for the data
 - Germany and United Kingdom – higher education and universities are required to keep the data for the period of studying +3 years
 - the legal regulations
 - Croatia and Sweden require the health care and social security records to be preserved for at least 30 years



Interpretation / research results ...



5. Storage and long-term content availability ...

- in only 7 e-services
 - after the retention period expires the data are deleted or destroyed
- Denmark – declarations to the police
 - the data are deleted after 30 days
 - in the case of the sensitive data – immediately



Interpretation / research results ...



5. Storage and long-term content availability ...

- information on the preferred long-term preservation formats was found in case of only one e-service
 - Lithuania – e-service for social contribution for employees – uses PDF/A and XAdES-A stored in the central EAIS
- materialization – a relict from the analogue paradigm
 - UK (category of personal documents) – users have to print the documents
 - Denmark (declarations to the police) – e-mails are printed and then deleted from the system



Interpretation / research results ...



5. Storage and long-term content availability ...

- where the received data are stored
 - within the responsible institutions
 - job search, HE enrolment, submission of data to statistical offices
 - outside of the IS of the responsible institutions
 - in the specially protected locations with authorized access only
 - declarations to the police (Denmark, Germany)
 - centralized, national database
 - health-related services; all hospitals can access (Denmark, Estonia)



Interpretation / research results ...



5. Storage and long-term content availability ...

- Are e-services using cloud solutions?
- Are the hosting data centres located in the same country?
- Usage of cloud solutions for storing the data
 - category of social contribution for employees (Croatia, Estonia, Germany and Lithuania)



Interpretation / research results ...



6. System operation transparency

- majority of e-services have service use policies available online
 - G2C – less than 50%
 - G2B – around 80%
- proclaimed technological measures guaranteeing the users that their data are only used for the defined purpose
 - 12 e-services, most of them in the UK



Interpretation / research results ...



6. System operation transparency ...

- information about non-disclosure measurements
 - in health-related e-services (UK)
 - in statistical e-services (everywhere, governed by the law)
- in most cases users can access personal data stored in e-services
 - corrections and changes – only upon request
- possibility to monitor the status of application
 - G2C – around 50%, G2B – majority
 - depends on the type of e-service and the need for it



Conclusion



- Comparative Analysis of Implemented Governmental e-Services – 12 G2C, 8 G2B in 8 countries
- Very little information was found on the hosting of e-services
 - are there any contingency plans developed?
 - are there any long-term service continuity plans?
- Policies giving information on storage and preservation methods are virtually non-existent (or they are not available online)

Conclusion ...



- Can users judge if the service will be able to preserve the stored data for the legally required period of time (health-care & social security records – 30 years)?
- No information found on the long-term preservation (plans) of e-signed records / transactions
 - e-service providers able to handle this? aware? addressing?
- Lack of information on the use of clients' data → influence system operation transparency
- No additional services
 - e.g. electronic document safe service



Recommendations

- Use of questionnaire
 - by the users of e-services as guidance for establishing trust in an e-service they (intend to) use
 - by e-service providers as guidelines
 - the systematized set of questions they should provide answers (proofs) online if they want to become a trusted e-service provider
 - help increase operation transparency
- Room for improvement in terms of trust in e-services (established or planned)



THANK YOU!

InterPARES
Trust



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