

Goals and challenges for public sector

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Semantic Days 2010

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- The Semicolon project
- The importance of interoperability
- Public service organisations, characteristics
- The importance of Information Governance, i.e. metadata and semantics
- Build an infrastructure for collaboration
- Future research

Background

Samfunnsperspektiv, legmanns syn

- Politisk spørsmål
 - Hvilket samfunn vil vi ha
 - Velorganisert offentlig sektor
 - Private tjenester
 - Offentlige tjenester
-
- Bedre tjenester til innbyggere og næringsliv
 - Flytte ressurser fra administrasjon til tjenesteyting

Societal perspective

- Political question
 - What kind of society do we want to have
 - Well organised public sector
 - Private services
 - Public services
-
- Better services to citizens and businesses
 - Move resources from administration to service provision

Nasjonalbudsjettet 2010

Regjeringen legger særlig vekt på:

- *Å fornye offentlig sektor.*
 - God kvalitet på offentlige tjenester er viktig for oppslutningen om fellesskapsløsningene.
 - Effektivisering av offentlig tjenesteproduksjon er nødvendig både på grunn av aldringen av befolkningen og for å møte økte krav og forventninger til offentlige tjenester.
- *Å legge til rette for innovasjon i næringslivet og offentlig sektor.*
- *Forenkling av offentlig regelverk.*
 - Forenklingstiltak og elektroniske tjenester bidrar til å redusere administrative kostnader, til større forutsigbarhet for brukerne og til mer effektiv gjennomføring av offentlige tiltak.

National budget 2010

The Government emphasises:

- *To modernise public sector*
 - Services of good quality are vital for the acceptance and support of public service solutions
 - Public service production needs to be more efficient due to ageing of the population and the ability to meet increased demands and expectations to public services
- To support innovation in businesses and public sector
- *Simplification of public law and regulations*
 - Simplification and electronic services contributes to the reduction of administrative costs, to increased predictability for the users and to more efficient execution of public activities

Goal for public sector

An important goal is to provide a public sector which is

- Open
- Transparent
- Accessible
- Accountable
- User-friendly
- Service-oriented
- Efficient and effective
- Innovative
- Adaptable to change
- Satisfies rule of law principles

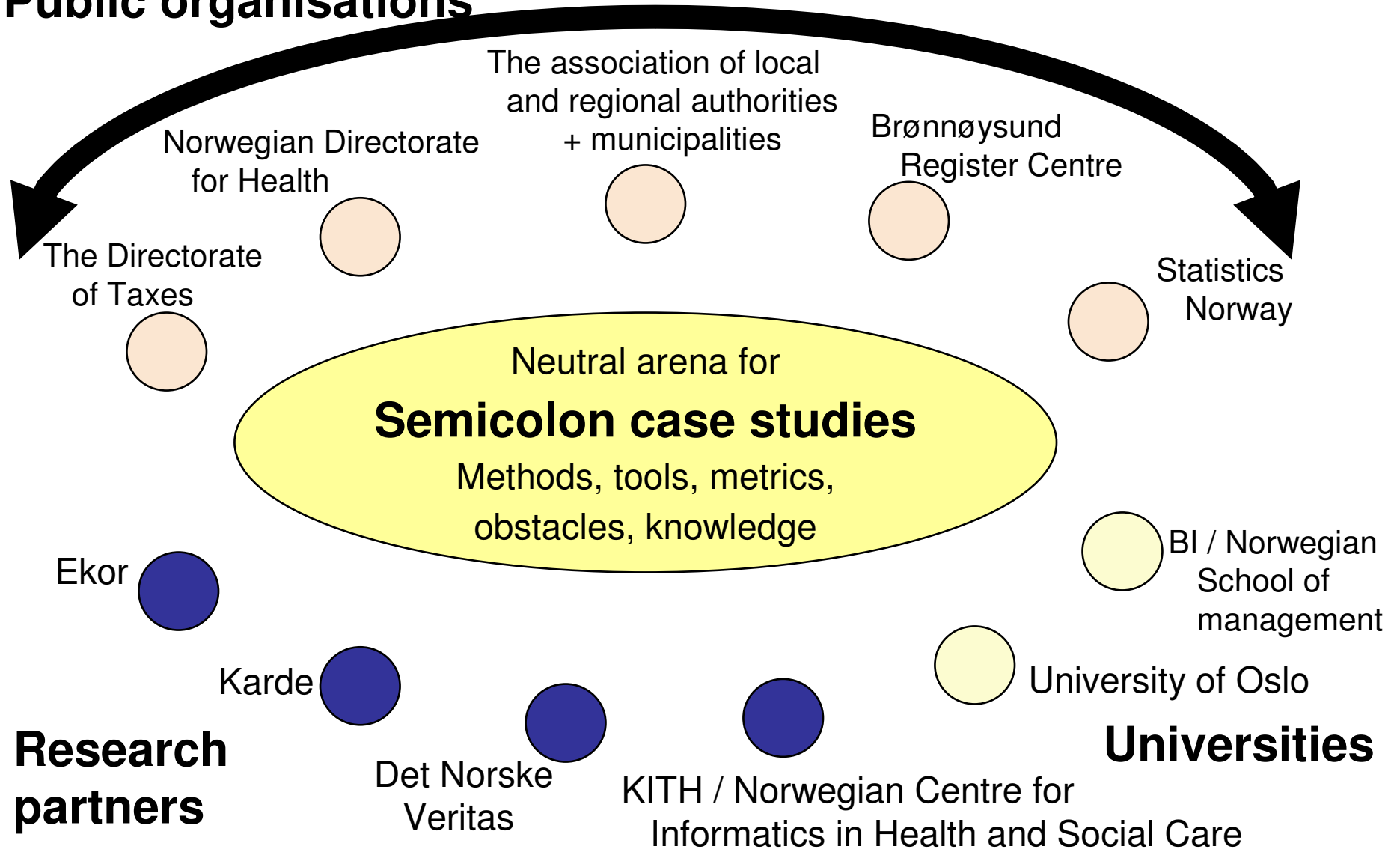
What is it all about

- Politics
 - Goals
 - National and international policies
- Implementation of policies
- The means allocated to implement the policy
- Actual implementation in practice
- Obstacles
 - Political
 - Law
 - Organisational
 - Semantic
 - Technological

Semicolon

Semicolon, participants

Public organisations



Goal of Semicolon

- Develop and test ICT-based **methods, tools and metrics** to obtain faster and cheaper semantic and organisational interoperability both with and within the public sector.
- Establish a set of useful recommendations for public sector as an aid to increase interoperability
 - To be maintained by The Agency for Public Management and eGovernment (DIFI) and the **Council of Public Sector Standards**

Facts

- **User directed innovation projects**
- **Verdikt-programme in the Norwegian Research Council**
- **Web-site: www.semicolon.no**
- **3 years, Oktober 2007 – December 2010**
- **3 postdoctors, 2 from UiO and 1 from BI**
- **Total budget: 7,5 mill euro (60 million NOK)**

- **Financing from Research Council: 2,25 mill euro (17,65 mill NOK - 35%)**
- **Contributions from public sector (money): 1,25 mill euro (9,8 mill NOK)**
- **Contributions from public sector (labour): 4 mill euro (18,4 mill NOK)**

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Videreføring i Verdikt: Semicolon II

- Oppfølgerprosjekt til Semicolon, innvilget 30.4.2010
 - 50 mill:
 - 10 mill fra NFR
 - 40 mill fra etatene i arbeid (29 mill) og penger (11 mill)
 - Varighet
 - Høsten 2010 – desember 2013
 - Tema
 - Politiske føringer, Jus, Semantikk, Samhandlingsplattformer, Organisasjon, Gevinstrealisering
 - Deltakere,
 - Skattedirektoratet, Brønnøysundregistrene, DIFI, KS, Helsedir
 - Karde, DNV, Computas, Norstella, KITH
 - SINTEF, Samfunns og næringslivsforskning (SNF)
 - UiO – Ifl, UiO – SERI/AFIN, BI, Universitetet i Agder

The importance of interoperability

Motivation, or snapshots of the “big picture”

- **IDABC: European Interoperability Framework:**

“RECOMMENDATION 3: Setting-up eGovernment services at a pan-European level requires the consideration of interoperability issues with regard to organisational, semantic and technical viewpoints.”

- **United Nations e-Government Survey 2008: From e-Government to Connected Governance:**

“Striking a new balance between hierarchy and flexibility, between vertical and horizontal dimensions of accountability is the nexus of technological and organizational interoperability and innovative leadership.”

- **Professor Jeremy Millard:**

“The promise of (e)governance: achieving balance: Interoperability (top-down) vs. innovation (bottom-up) is the most difficult balance of all; it is not just technical but much more organisational and political...” (e-Society, Barcelona, 2009)

Samfunnsperspektiv, off dokumenter

- EUs Lisboa-strategi påpeker at en velorganisert offentlig sektor er en konkurranse-fordel for nærings-livet
 - EUs Lisboa-strategi i et norsk perspektiv, av NHD 2007
- En effektiv og verdiskapende offentlig sektor er av avgjørende betydning for samfunnet
 - St.meld nr 19 (2008-2009) 'Ei forvaltning for demokrati og fellesskap'
- Ett virkemiddel er bedre elektronisk samhandling på tvers av sektorer og forvaltningsnivåer
 - St.meld. nr 17 (2006-2007) 'Eit informasjonssamfunn for alle'

Societal perspective, public documents

- EU's Lisbon-strategy claims that a well organised public sector represents a competitive advantage for businesses
 - EU's Lisbon-strategy in a Norwegian perspective, NHD 2007
- An efficient, effective and value adding public sector is of crucial importance for society
 - Report to the Storting, no 19 (2008-2009) 'A public administration for democracy and spirit of community'
- One element is better electronic collaboration across sectors and different levels of public administration
 - Report to the Storting, no 17 (2006-2007) 'An information society for all'

Betydning av Interoperabilitet

Kilde: FAOS

EFFEKT MÅL	Interoperabilitet	Tilgjengelighet	Sikkerhet	Åpenhet	Flexibilitet	Skalerbarhet	Enhetlig
Bedre kvalitet på saksbehandlingen	++++	++	++++	++	++	0	0
Bedre kvalitet på tjenestene	++++	++	+++	0	0	++	+
Økt tilgjengelighet til offentlig sektor	++	++++	+	++	0	+++	++
Økt automatisering av tjenesteytingen	++++	+	+	+	++	++	0
Økt robusthet	++	0	++	++	++++	++++	++
Reduserte livssyklus kostnader	+++	0	-	++	++++	++	+
Økt konkurranse	0	0	0	++++	++	0	++
Bedre forutsigbarhet i tjenestetilbudet	++++	+	0	0	+	+++	+++

Significance of Interoperability

Source: FAOS

EFFEKT MÅL	Interoperabilitet	Tilgjengelighet	Sikkerhet	Åpenhet	Flexibilitet	Skalerbarhet	Enhetlig
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Økt tilgjengelighet til offentlig sektor	++	++++	+	++	0	+++	++
Økt automatisering av tjenesteytingen	++++	+	+	+	++	++	0
Økt robusthet	++	0	++	++	++++	++++	++
Reduserte livssyklus kostnader	+++	0	-	++	++++	++	+
Økt konkurranse	0	0	0	++++	++	0	++
Bedre forutsigbarhet i tjenestetilbudet	++++	+	0	0	+	+++	+++

Riksrevisjonens hovedkonklusjoner 2008

- **Mangelfull oppfølging av IKT-satsingen i helsetjenesten - Dokument nr. 3:7 (2007-2008)**
- **Potensialet for elektronisk informasjonsutveksling i forvaltningen er dårlig utnyttet - Dokument nr. 3:12 (2007-2008)**
- Regjeringens arbeid har i liten grad har bidratt til utviklingen av tverrgående ikt-løsninger i forvaltningen

Auditor general main conclusions 2008

- **Insufficient follow up of the ICT-effort in the health services – Document no. 3:7 (2007-2008)**
- **The potential for electronic information exchange is poorly utilised - Document no. 3:12 (2007-2008)**
- **The efforts of the ministries have not, to a sufficient degree, contributed to the development of cross-sector solutions in public administration**

Interoperabilitet, en liten status

- Manglende samhandling medfører at IKT-løsninger og registre utvikles i hver etat, hvor det primært legges vekt på å ta hensyn til egne oppgaver og målsettinger. Registerkvaliteten blir ikke tilpasset andre etaters oppgaveløsning. Manglende informasjonsflyt medfører at oppgavefordelingen mellom etatene blir uklar, og **brukerne blir dermed ikke sikret en enhetlig behandling.**
 - Riksrevisjonens rapport om den årlige revisjon og kontroll for budsjettåret 2008, Dokument 1 (2009-2010)

Interoperability, short status

- The lack of collaboration implies that ICT-solutions and registers are being developed in each department, where the primary aim is to satisfy own needs. The functionality of the solutions/registers are not adapted to the needs of other departments. The lack of collaboration implies that the distribution of tasks between the departments becomes unclear, and the users are not ensured equal treatment.
 - Auditor general report on the yearly revision and control for the fiscal year 2008, doc 1 (2009-2010)

Public service organisations

Characteristics

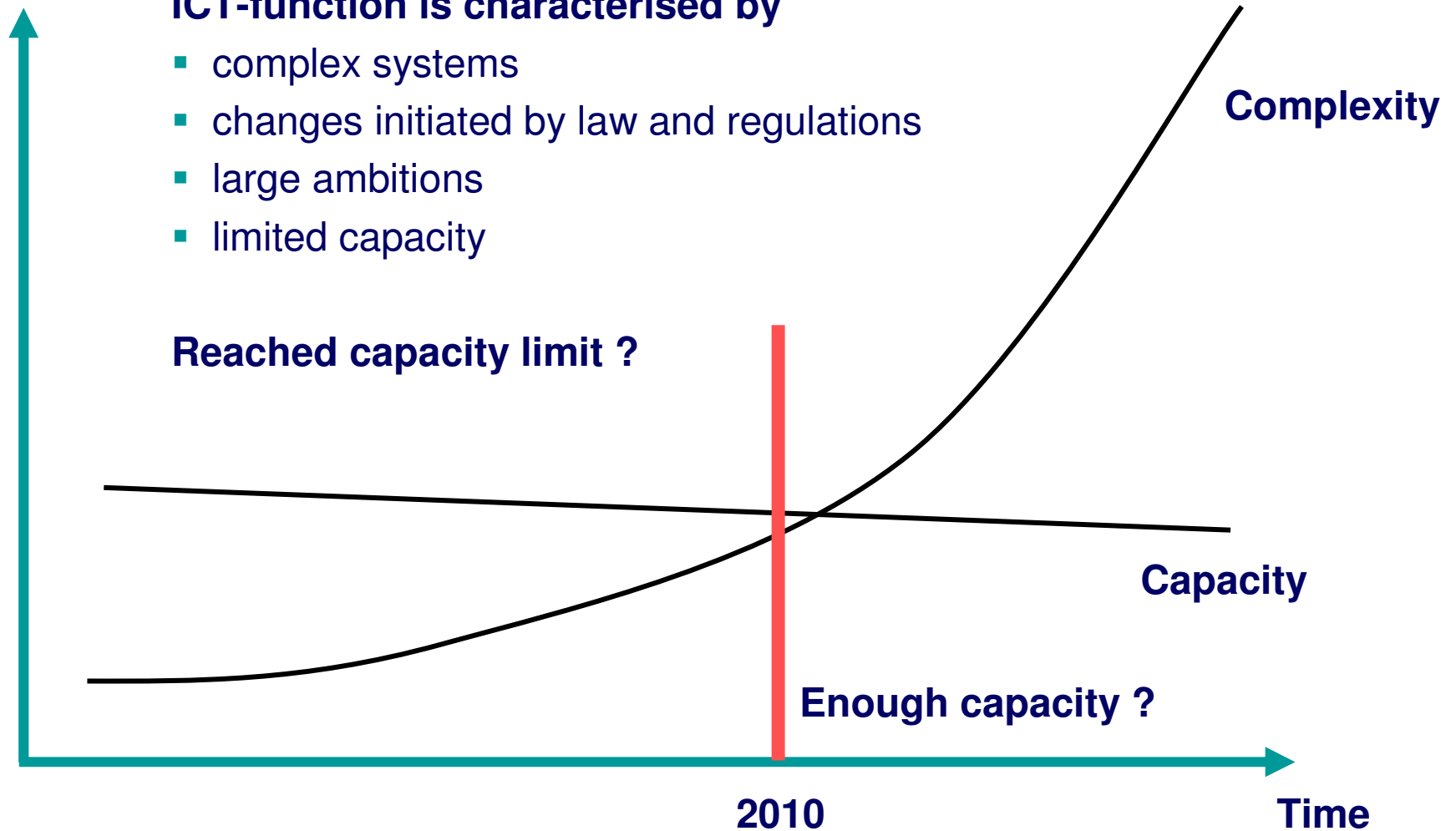
Characteristics of a public organisation

- Strategies are also about collaboration with others, national and international
- In practice – Rather poor collaboration with others
- Quality challenges in the production
- Capacity challenges (claim: ICT is under-staffed and under-financed)
- Not adequate overview of own systems and information
- Huge maintenance costs due to complicated systems
- Stove-pipes inside large public organisations and externally between organisations

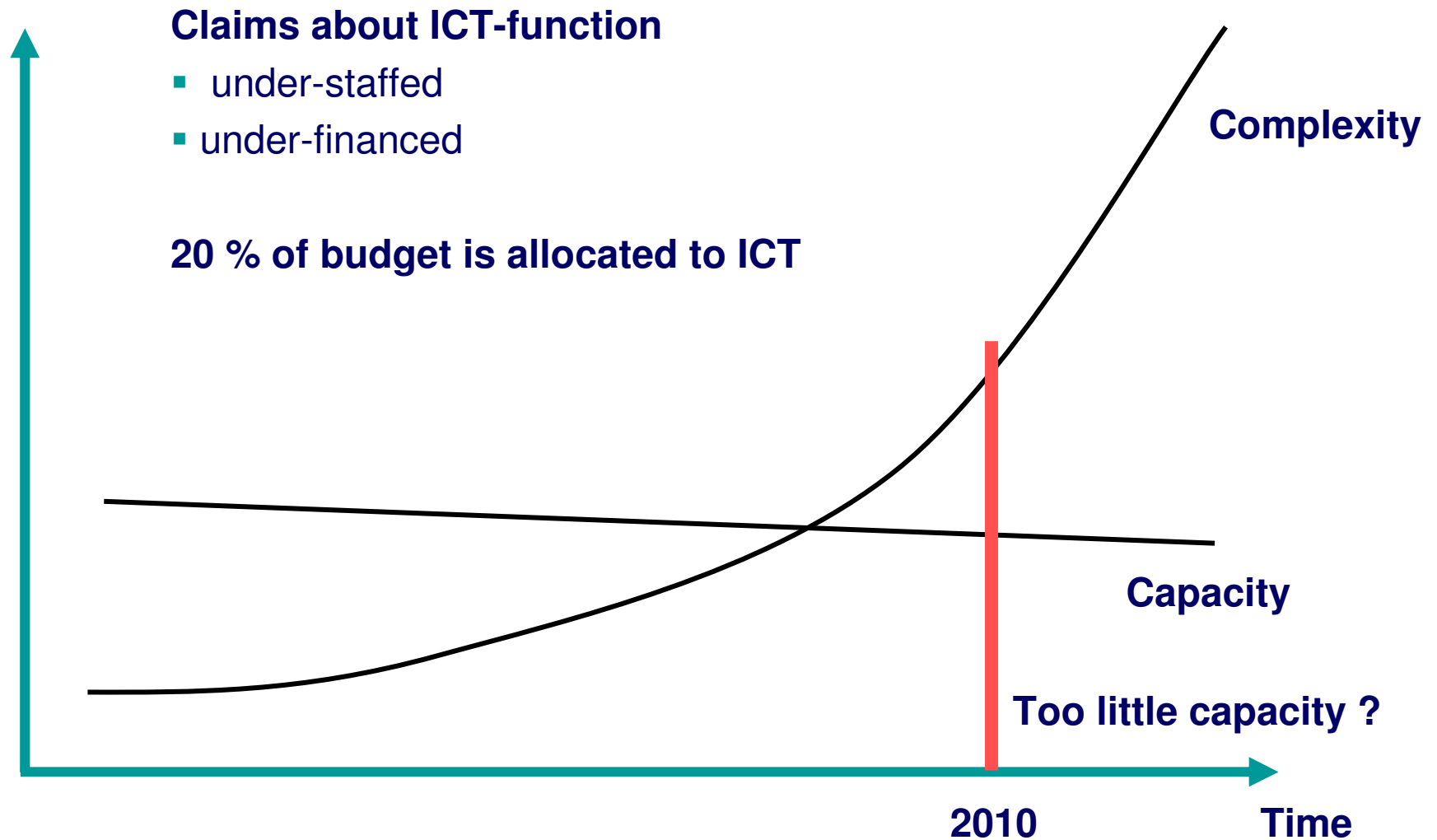
Complexity and capacity

ICT-function is characterised by

- complex systems
- changes initiated by law and regulations
- large ambitions
- limited capacity



Complexity and capacity



Necessary improvements

- Overview is necessary to implement changes decided by laws and regulations inside given time limits
- Keep order in own house
 - Enterprise models
 - Strategies for information governance
 - Better overview of processes, systems, information, responsibilities
 - Competence development
- Prepare for improvements in the present way of working
- Efficient and effective service development
- Exploitation of local and national metadata register for
 - Service development
 - Systems development
 - Systems modernisation
- Work smarter; more effective and efficient

The importance of Information Governance

i.e.

metadata and semantics

Hvorfor er metadata og semantikk viktig

- God informasjonsforvaltning (Information Governance) er en kritisk suksessfaktor for offentlig sektor.
- God informasjonsforvaltning forenkler utvikling av offentlige tjenester på tvers av offentlig sektor
- God informasjonsforvaltning er en nødvendig forutsetning for å legge til rette for gjenbruk av offentlige data
 - The re-use of Public Sector Information, e.g. Review of Directive 2003/98/EC – [COM(2009) 212 final]
 - PSI represents a commercial value of 27 billion euro per year in the EU
- Systematisk arbeid med metadata og semantikk er en forutsetning for god informasjonsforvaltning
- Nasjonale og internasjonale metadatastrategier støtter opp under systematisk arbeid
- Må kunne predikere effekter, kvantitative og kvalitative

Why is metadata and semantics important

- Good or excellent Information Governance is a critical success factor for public administration
 - Simplifies the development of cross-sector public services
 - Necessary requirement for the reuse of Public Service Information
 - The re-use of Public Sector Information, e.g. Review of Directive 2003/98/EC – [COM(2009) 212 final]
 - PSI represents a commercial value of 27 billion euro per year in the EU
- Systematic work with metadata and semantics is a prerequisite for good information governance
- Local, national and international metadata strategies supports systematic work
- There is a need to be able to predict effects, both quantitative and qualitative

Noen poenger

- Kontroll på metadata og semantikk er ikke det eneste svaret på alle utfordringer
- Det er vanskelig å tenke seg gode og rasjonelle løsninger uten et bevisst forhold til metadata og semantikk.
- Andre viktige forhold:
 - Virksomhetsmodell for beskrivelse av produksjonsprosesser (gjerne på tvers av administrative enheter), ansvarsforhold, hvilke systemer som understøtter prosessene
 - Metadata og semantikk definerer hvilken informasjon prosessene opererer på
 - Kompetansebygging
 - Involvering av fagmiljøet
 - Gode tjenesteutviklingsverktøy og tilhørende metoder
- Men kontroll på metadata og semantikk er en nødvendig forutsetning for å oppnå ønskede forbedringer i henhold til effektiv tjenesteutvikling og skreddersydd produksjon av tjenester

Some additional points

- Control of metadata and semantics is not the only answer to all the challenges
- However, it is difficult to imagine good and rational solutions without a conscious relation to metadata and semantics
- Other important issues:
 - Enterprise model for the description of production processes, which systems supports which processes, the relation to laws and regulations, and responsibilities
 - Metadata and semantics defines the information on which the processes operates
 - Competence development
 - Involvement of business
 - Adequate service development tools and methods

Interoperability rely on metadata and semantics

- Metadata and semantics are important topics for the implementation of a collaborative, effective and efficient e-government.
- One problem, however, is that these topics, and the necessity to handle them in a structured way, are scarcely understood by the management with decisive power.
- The semantics are often hidden in source code, in systems, in laws and regulations, in the organisational structure and in the tacit understanding between colleagues and collaborating partners.
- Semantic problems have traditionally been satisfactorily dealt with by bi-lateral agreements between the ICT-staffs of the collaborating parties.

Development trends

- In most countries, it is an important goal to provide an open, transparent, accessible, accountable, user-friendly, service-oriented, efficient, effective, innovative public sector which is adaptable to change and at the same time satisfies rule of law principles.
- A crucial requirement to obtain this is better collaboration between public entities, and more seamless solutions between businesses, citizens and the public sector.
- As a consequence, more information exchange, or access to common data, becomes necessary.
- Bi-lateral agreements become unmanageable when the number of collaborative cross-sector efforts increases.
- A new paradigm is called for.

Norwegian initiatives

- Altinn (www.altinn.no/en) is a service through which citizens and businesses can report information to public authorities.
- MyPage (www.norge.no/minside) is a portal through which services from different public bodies are made available to the citizens.
- SERES is a service in development run by the Brønnøysund Register Centre, the goal of which is to provide a national metadata register and repository.

Norwegian initiatives

- eDialogues is a concept for the implementation of cross-sector services to citizens and businesses.
- Statistics Norway has for several years worked systematically with metadata and obtained several gains. Top management adopted a metadata strategy early 2005.
- Two preliminary efforts to provide requirements for a national metadata strategy.
- Ongoing work to define a national metadata strategy.

Public sector strategies

- **About Openness:**
 - The organisation should be the preferred source for information; The organisation must protect privacy.
- **About Innovation:**
 - The organisation should provide Better services for citizens and businesses.
- **About a User friendly public sector:**
 - The organisation must take the initiative and take part in cross-sector service development
 - The organisation should contribute to service developments in other sectors.

Public sector strategies

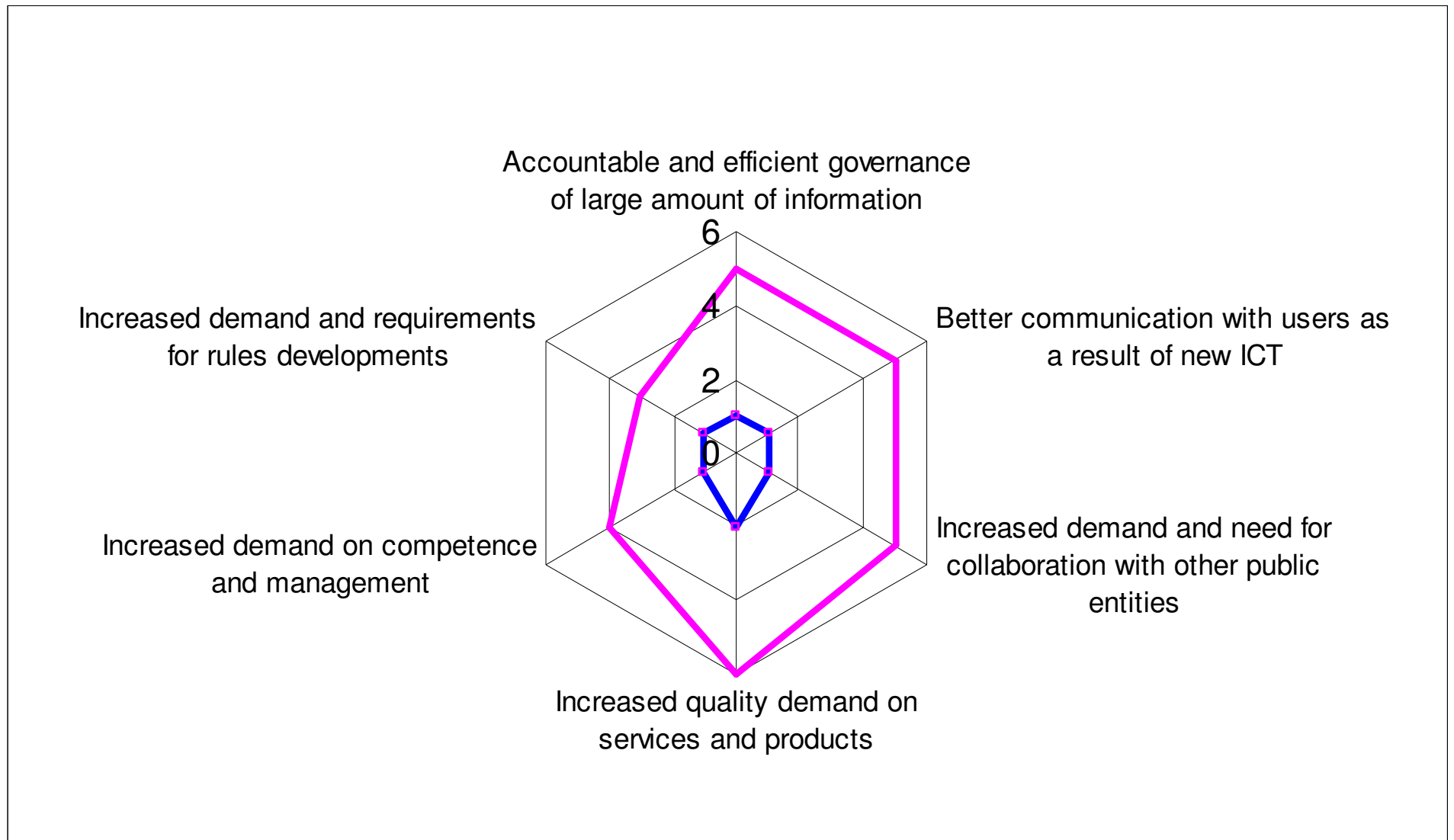
- About **Quality culture**:
 - The organisation should improve existing services
 - The organisation should work more effective and efficient.
- About **Competence culture**:
 - The organisation should develop competence in a systematic way
 - The organisation should transform individual knowledge to common knowledge
 - The organisation should build, use and share knowledge

Letter of instruction

Typical requirements to a public service organisation

- It must provide accountable and efficient governance of large amount of information.
- It must provide better communication with users as a result of new ICT.
- It must position itself to support increased demand and need for collaboration with other public entities.
- It must position itself to increased quality demands on services and products.
- It must position itself to increased demand on competence and management.
- It must position itself to increased demand and requirements for rules developments.

The need for metadata and semantics



Methodology for communication

- We need to convey a convincing, trustworthy and understandable message in order to get the necessary management attention and financial support for metadata and semantic exercises.
- The effects of systematic use of metadata across the public sector must be expressed in a language understood by top management, with qualitative and quantitative measures.
- The effects, which are both internal and external for the public organizations, have to be clearly documented.

Internal effects

1. By working with Information governance in a structured manner, business becomes deeply involved in the definition of concepts. This in turn leads to better alignment between the business processes and the ICT-solutions and the ability for businesses to develop services with lower degree of ICT.
2. Individual knowledge is transformed to common knowledge. This is due to better documentation, i.e., overview of information, systems and processes.
3. Due to better documentation, the organization becomes more independent of specific resources and more robust to the exchange of personell.
4. Less production errors, this, as a side effect, implies less negative attention in media.
5. More efficient service development, more efficient systems development and maintenance, easier adaptation of systems to new rules and legal constraints.
6. As a consequence of all effects, the competence and capacity in staff increases without employing more people. The ability for innovation increases.

External effects

1. The publication of own information in such ways that it can be reused both for cross-sector services and for commercial services.
2. Avoidance of double reporting obligations for citizens and businesses.
3. More effective and efficient cross-sector service development.
4. Improved implementation of rule of law principles.
5. Improved interoperability.

Necessary improvements and questions

- Why will better metadata and better documentation lead to
 - better control
 - better services
 - more efficient cross sector collaboration
 - reduced costs
 - etc
- More quantitative information
 - What is the cost for double reporting?
 - To what degree will double reporting be reduced
 - What is the cost for production errors?
 - Why is less production errors a consequence of metadata under control
 - To what percentage will production errors be reduced – 10-20-50%?
 - What is the cost for training a new employee?
 - To what percentage will this cost be reduced if the systems are well documented?
 - What is the cost of negative press?
 - To what degree can system development and maintenance costs be reduced.
 - To what degree will service development costs, be reduced
 - Internal services
 - Cross border services

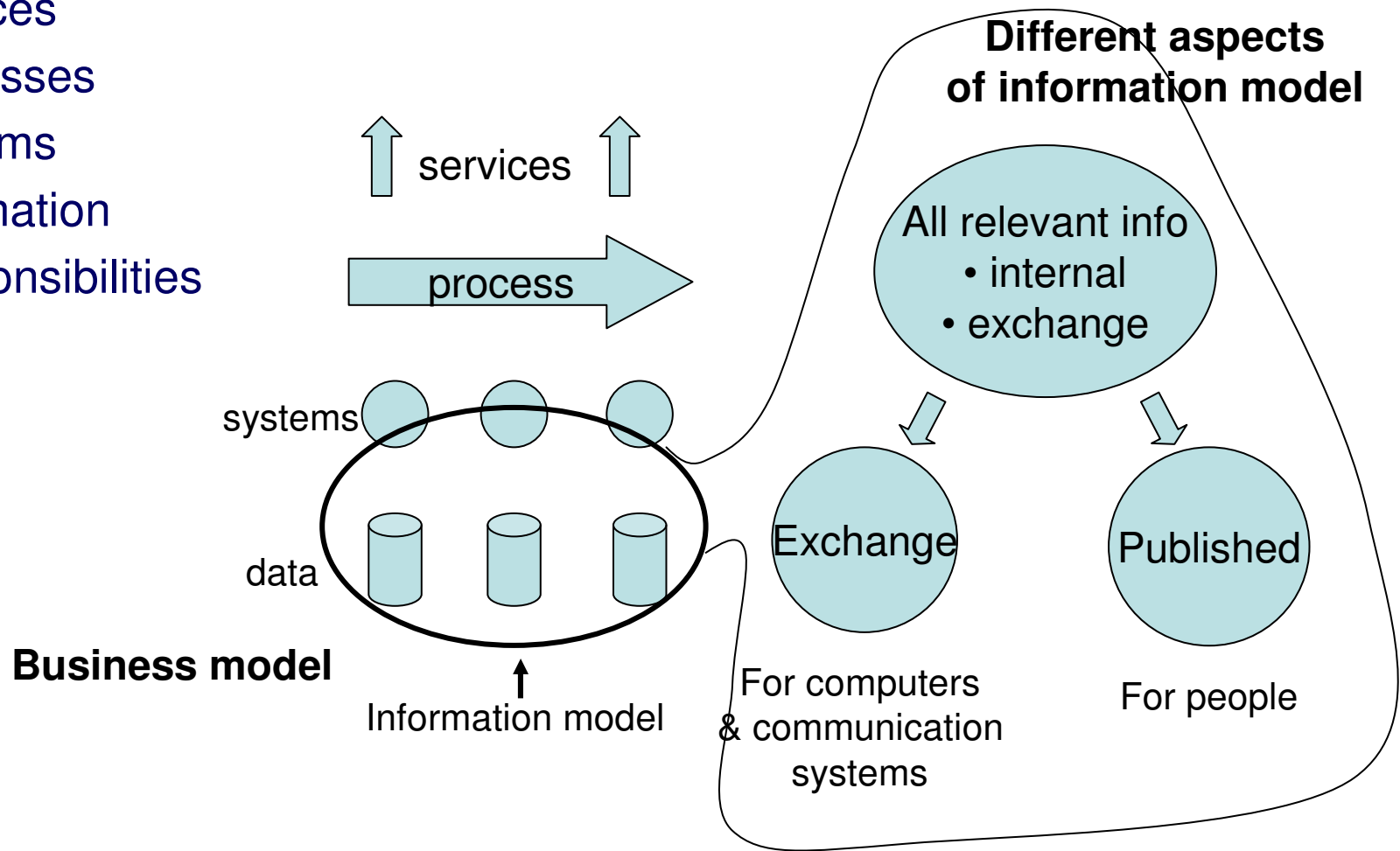
Build an infrastructure for collaboration

Metadata building stones

- National metadata strategy
- National metadata repository
- Metadata model for public sector organisations
 - The use of meta data for internal and external purposes
 - Establishment and use of a common component for semantics for service development, systems development and modernisation of systems
- Open data and metadata in eGovernment
- Reuse of PSI (Public Service Information)
 - Which organisations in Public sector has what information
 - To ensure the reuse of Public Service Information (PSI), both for internal cross sector purposes, but also for commercial purposes
 - Market value of PSI in Europe is €27 billion

Business model building stones

- Business models for public sector organisations
 - Rational: to know yourself and publish yourself to others
 - Services
 - Processes
 - Systems
 - Information
 - Responsibilities



Cross sector services building stones

- **Long lasting cross sector services to citizens and businesses**
 - E.g. in life cycle situations for persons
 - Birth, death, move to another country, the never ending taxing regime
 - E.g. in life cycle situations for companies
 - Foundation of a new company, the never ending taxing regime
 - Important: user in control of the service process
 - Interconnection of services from different organisations
 - No predefined sequence of services
- Tools and methods to build cross sector services
 - A forum to discuss
 - Harmonised budgets at the same time
 - Ownership and maintenance of the service
 - Harmonised metadata

Other building stones

- Electronic identification
- Automatic services
 - In many instances public sector has enough knowledge
- Universal design of Public services
- Measurements and metrics
 - Measure the effect of several dimensions of services
 - What you measure can be improved

Other elements

- Politics
- Legal aspects
- Social networks

Future research

Necessary enabling foci

Social sciences, politics and macro economy

- The development of society as a function of the development of public sector or vice versa
- The identification and impact of key enablers on the development of public sector and society as a whole

Legal aspects

- The emphasis of laws and regulations on interoperability inside public sector and interoperability between public and private sector. There is a need for tools support to increase the ability to make a coherent set of laws and regulations.

Measurements and metrics

- Develop measurement indicators and measure different effects of cross sector and cross national services.

Necessary enabling foci

Organisational issues

- The importance of organisational aspects, governance, competence and understanding, strategies and leadership, since organizational interoperability can be seen as an important enabler of all interoperability, semantic as well as technical. Common goals and practical agreements have to be in place before any collaboration can take place.

Obstacles and drivers

- Analyses of organizational, semantic and legal obstacles to interoperability in order to improve methodologies for interoperability.

New social media

- The role of new social media such as Google wave, Twitter, Facebook, Youtube, LinkedIn (Web 2.0) etc. for professional use, and in this context arising interoperability issues.

Thank you for your attention.