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Digitalisation of the Real Property Rights – Towards Spatially enabled E-Government

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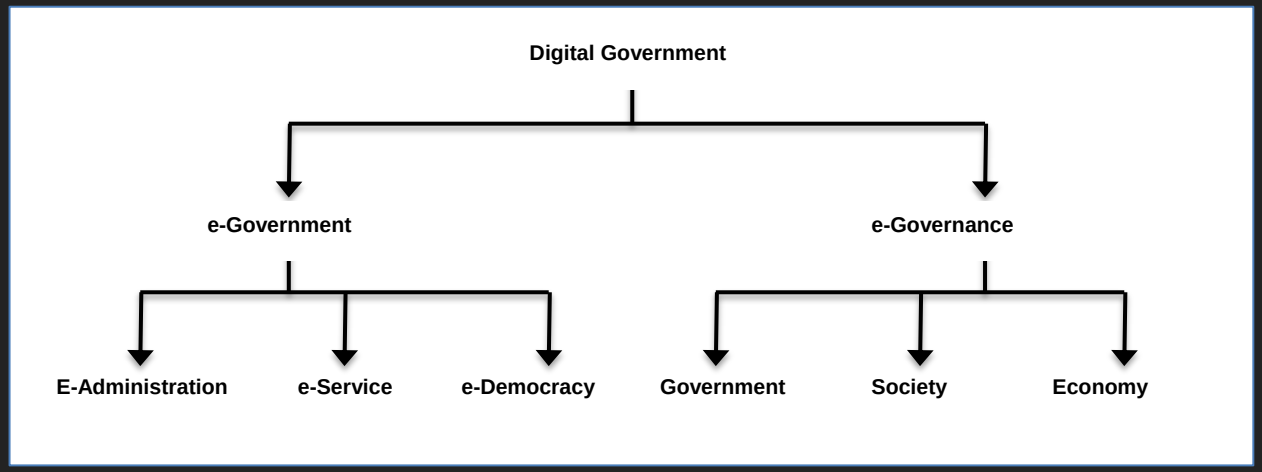
Overview

- Introduction
- The Danish Spatial Data Infrastructure context
- Digitalisation of the real property rights
- Towards the spatially enabled society
- Conclusions and final remarks

Introduction



E-Government understood as the “the use of ICT in government” includes:

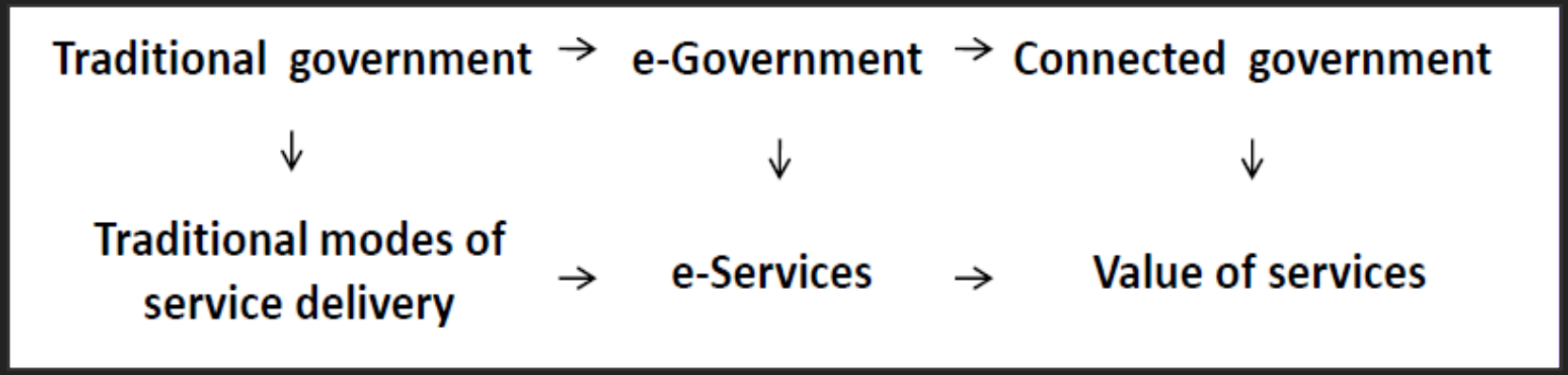
- e-Administration – understood as the internal use of ICT
- e-Service – subsuming the external use of ICT
- e-Democracy – activities and the use of ICT within the field of public participation

E-Governance refers to the more qualitative aspects categorised as matters relating to government, society and economy

Digital Government (Schellong, 2010)

Introduction

Connected government:



UN e-Government Survey from 2008 - From E-Government to Connected Governance (United Nations 2008)

Introduction

1. Infrastructure: Creating an information infrastructure both within the public sector and across society at large based upon reliable and affordable Internet connectivity for citizens, business and all stakeholders in a given jurisdiction.

2. Integration: Leveraging this new infrastructure within the public sector and across society in order to share information and bundle, integrate, and deliver services through more efficient and citizen-centric governance models encompassing multiple delivery channels.

3. Transformation: Pursuing service innovation and e-Government across a broader prism of community and democratic development through more networked governance patterns within government, across various government levels and amongst all sectors in a particular jurisdiction.

UN e-Government Survey from 2008 - From E-Government to Connected Governance (United Nations 2008)

Introduction

Spatial enablement:

“The term 'spatially enabled society' attempts to describe an emerging cultural and governance revolution: pervasive spatial information technologies and spatially equipped citizens are changing the way economies, people, and environments are managed and organized. Economic wealth, social stability and environmental protection can be facilitated through the development of spatial information products and services created by all levels of society including governments, the business sector, and citizens”

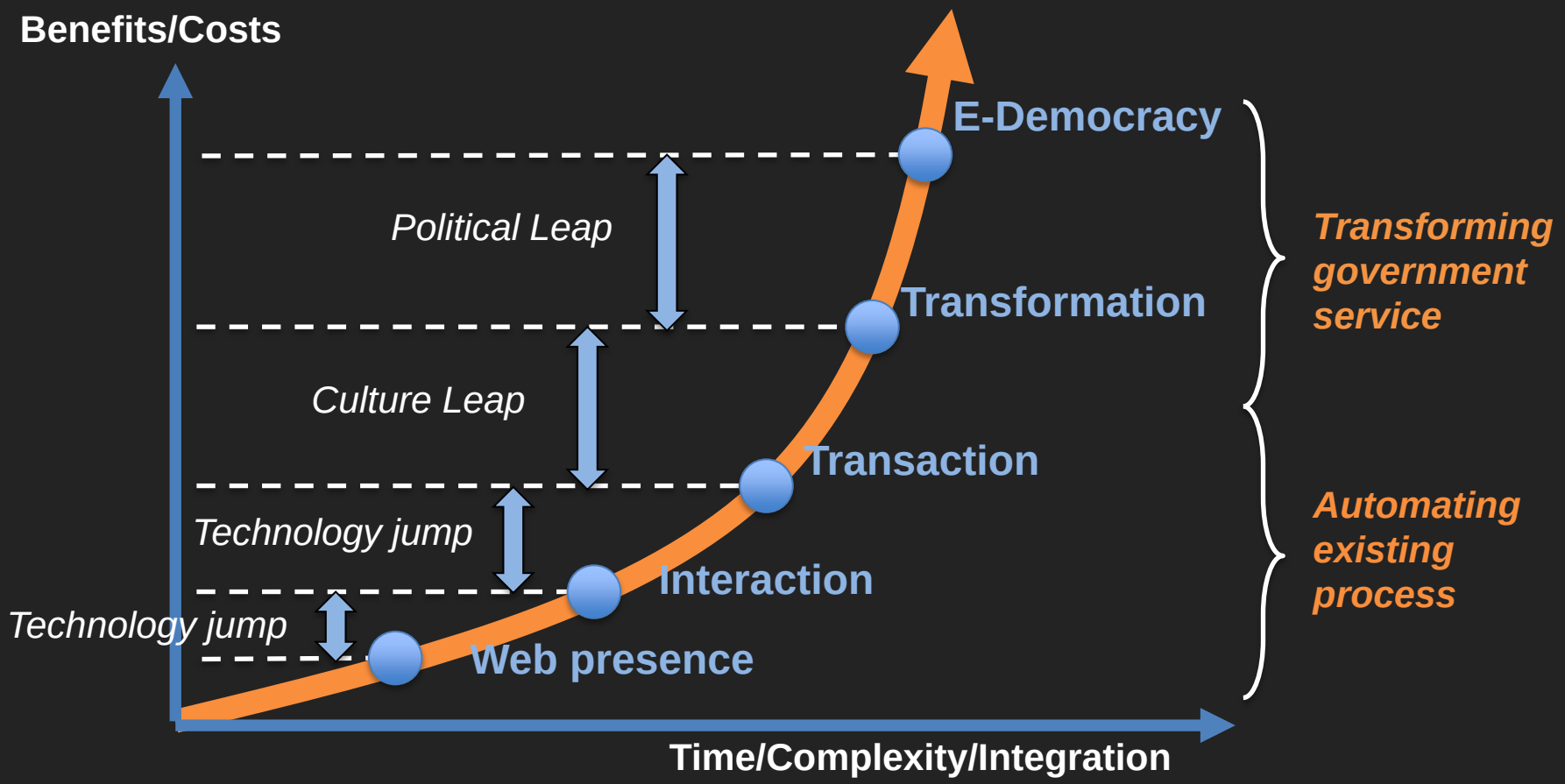
Spatially Enabled Society by Enemark and Rajabifard (2011)

Introduction

"The major challenges in implementing such a spatially enabling platform seems not to be technical, but institutional, legal and administrative in nature"

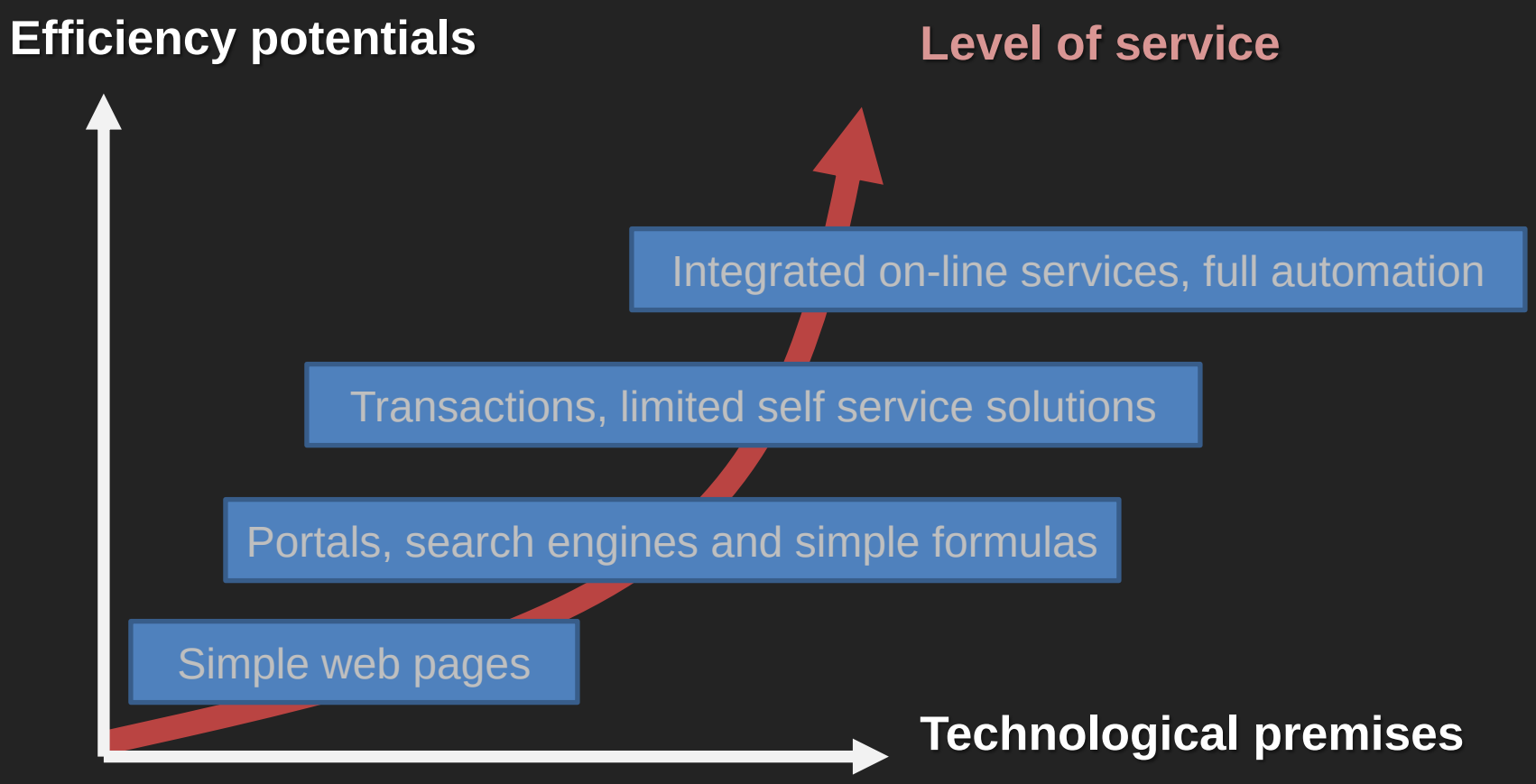
Spatially Enabling Governments Through SDI implementation by Masser et al (2008)

Introduction



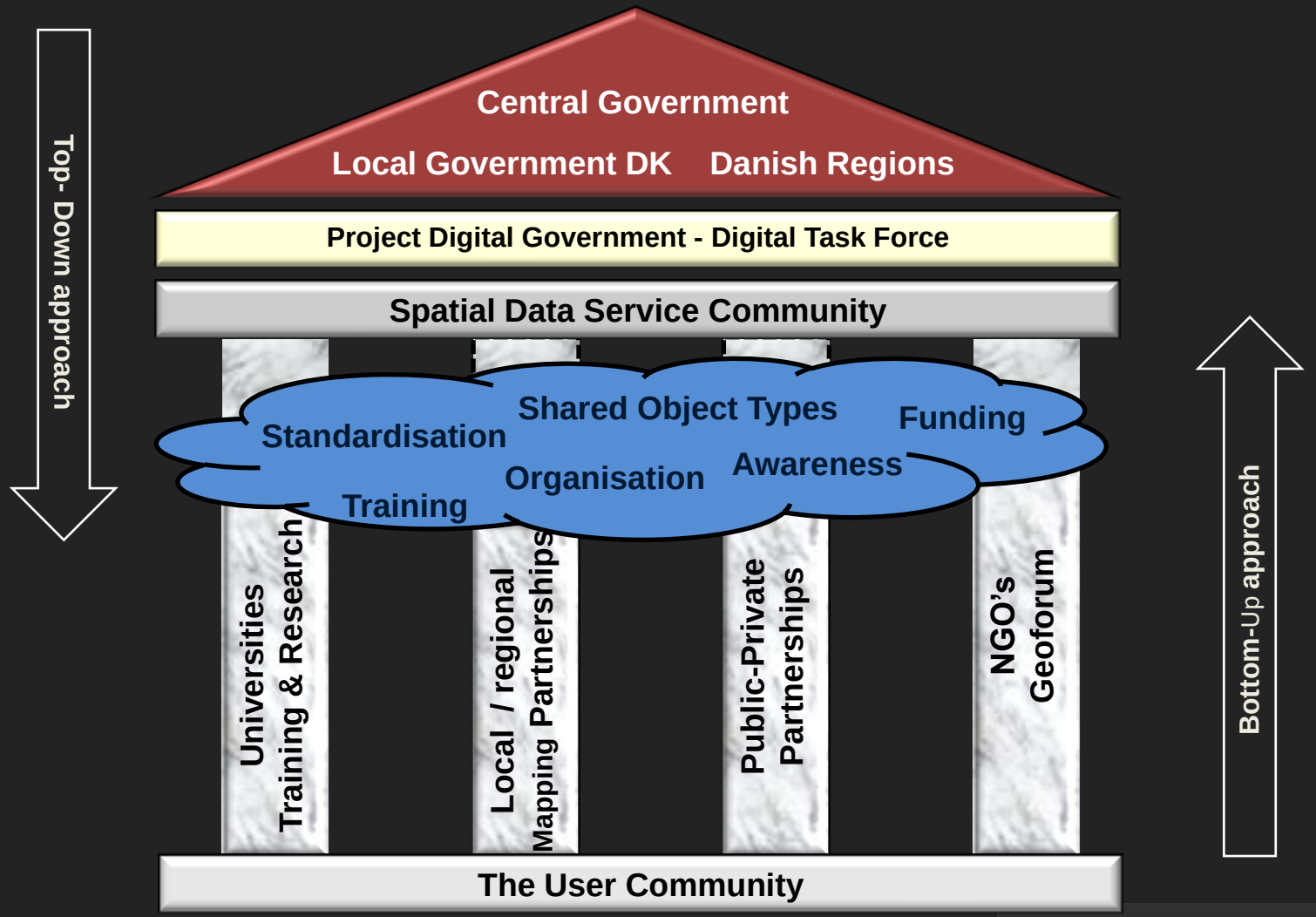
Five-stage model of e-Government (Siau & Long, 2005)

Danish e-Government strategies

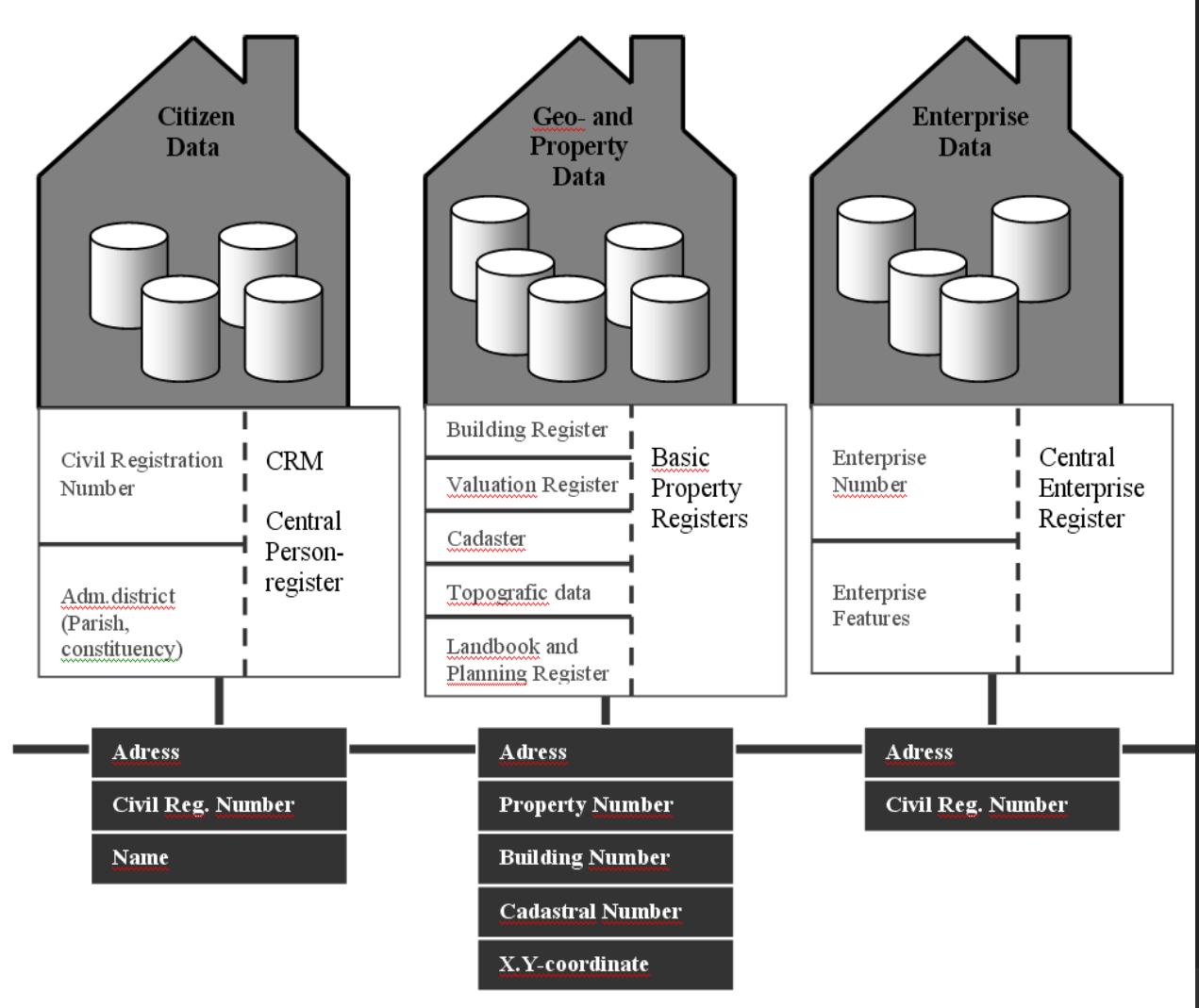


"Better public service, a higher degree of efficiency and stronger collaboration"

Danish SDI strategy



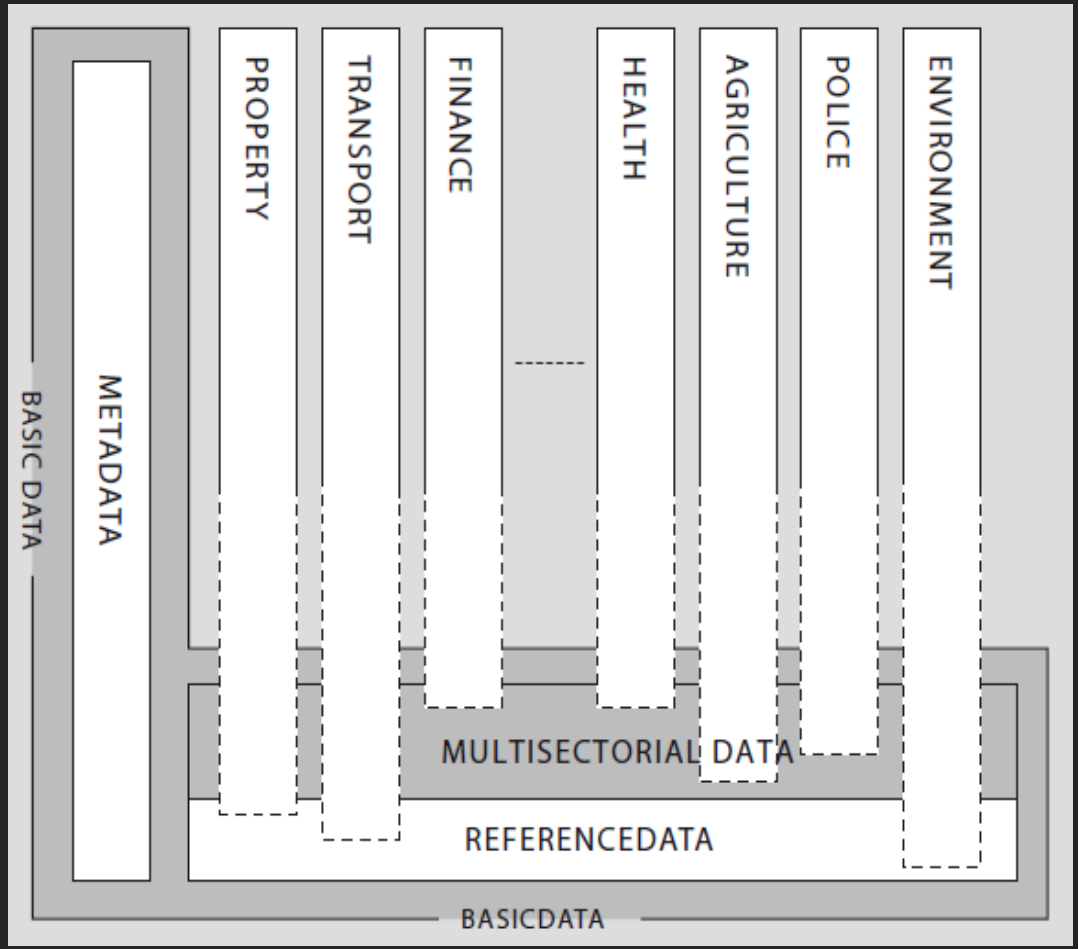
Initial SDI approach



Basic data concept

Geographical data with a profound role:

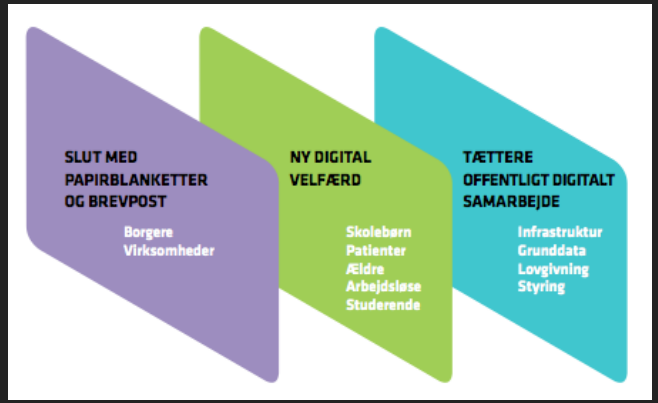
- Metadata,
- Reference data
- Multi-sector data



E-Government strategy 2011-2015

The spatial awareness has increased and the need for administrative and geographic basic datasets is regarded as a central aspect of facilitating the future well fare of in the society Special attention is given to:

- Further development of authorised basic spatial datasets
- Facilitation of common distribution of basic datasets
- Ensuring reuse of data for instance diverse spatial data as property data, building data and address data
- Improved and qualified basic data as a means of developing e-services for enterprises and citizens
- Strengthening the focus on developing and implementing self service solutions

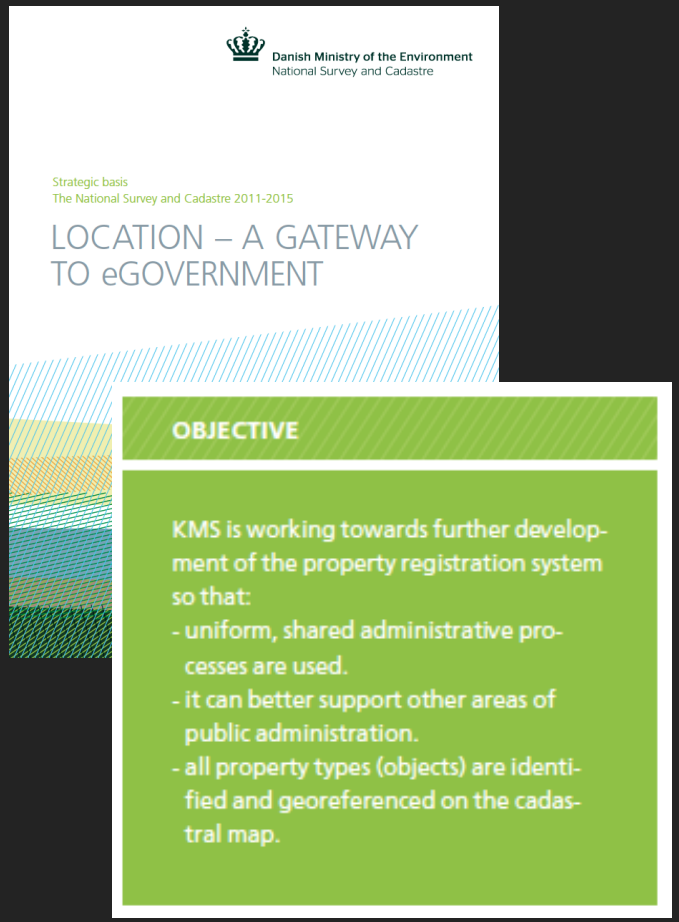


Danish Government, Local Government Denmark and Danish Regions (2011)

SDI and property data

Focus on the need for a single, structured and uniform registration and georeferencing of all property – based on fully digital and efficient administrative procedures.

- The registration of all types of property should occur in relation to the national cadastre.
- Unique and secure property registration requires geographical referencing so that what is owned and where it is located can be determined.
- Currently, the cadastral map is only used to geographically identify individual plots of land - other types of property (apartments, buildings on leased land and technical facilities at sea) are inconsistently geographically referenced by different authorities.



Danish National Survey and Cadastre (2011)

The real property rights

Location of easements

The location of easements primarily has to document the situation out of consideration for legal and judicial matters. It is also essential that the registration are regarded in relation to the rest of the property field and the infrastructure for maps and geo-data, a relation, which will support that the location remains up-to-date.

Location of easements has to meet three purposes:

- To secure and document the state of the law at the property, including the geographic delimitation of easements
- To inform rights holders, rights obliges and others about the state of the law
- To secure that information about the state of the law is updated and coherent with other information regarding utilization of real property.

The real property rights

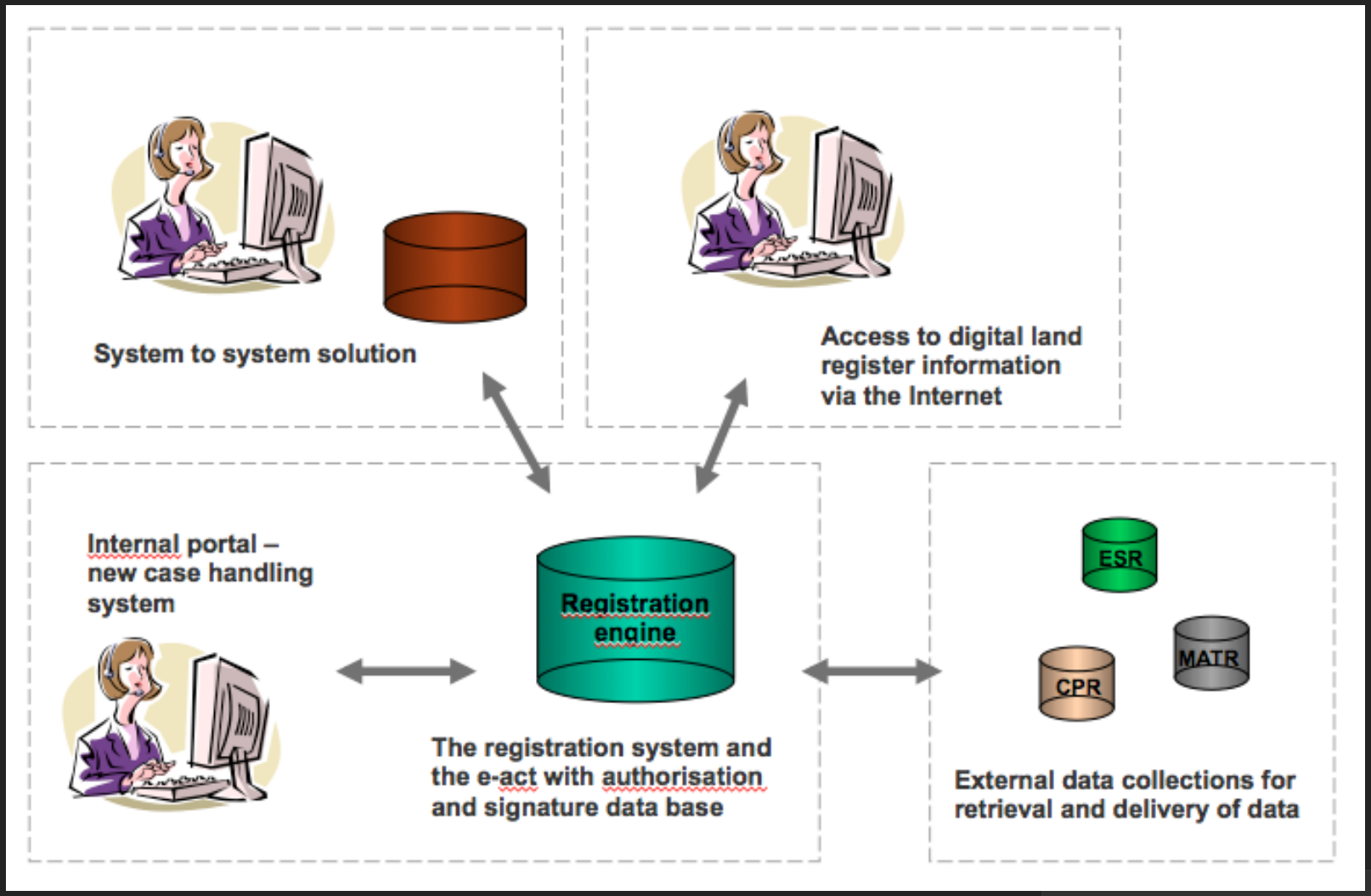
Location of easements

To handle the located easements a digital location database (SFDB) is implemented. SFDB makes available a number of services as means of handling the locations related to the registration processes. Furthermore SFDB can be considered a genuine “network service’ which is put at the disposal of the actors who notify registration of easements – for example chartered surveyors in private practice.

When registering a new easement, three documents have to be prepared:

- The notification including easement text, possible power(s) of attorney and digital signature
- e-sketch (portable document format) – presenting the situation of the easement on the cadastral map
- File in GML-format (Geography Markup Language) – as identification of the location

The real property rights

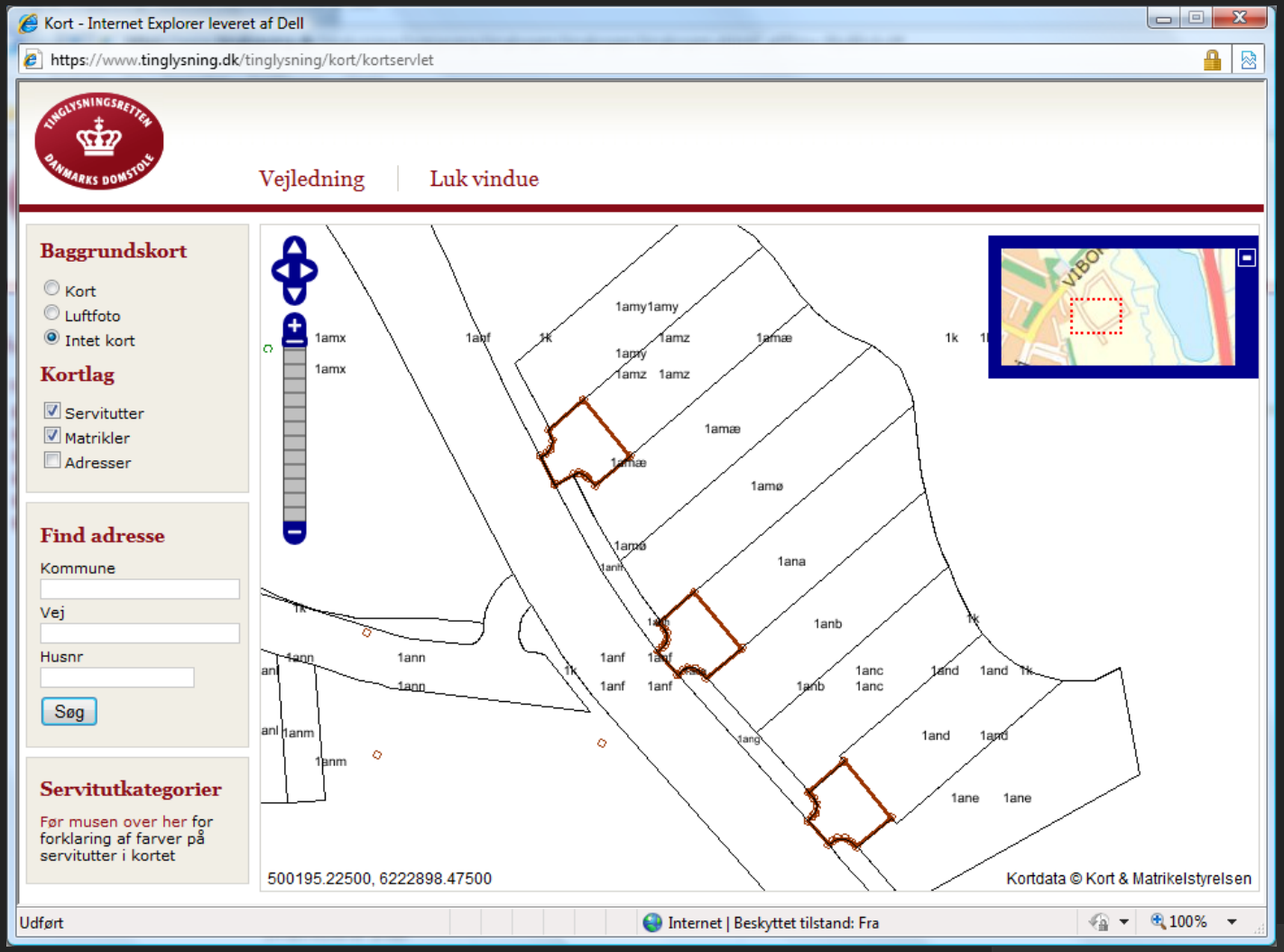


The real property rights

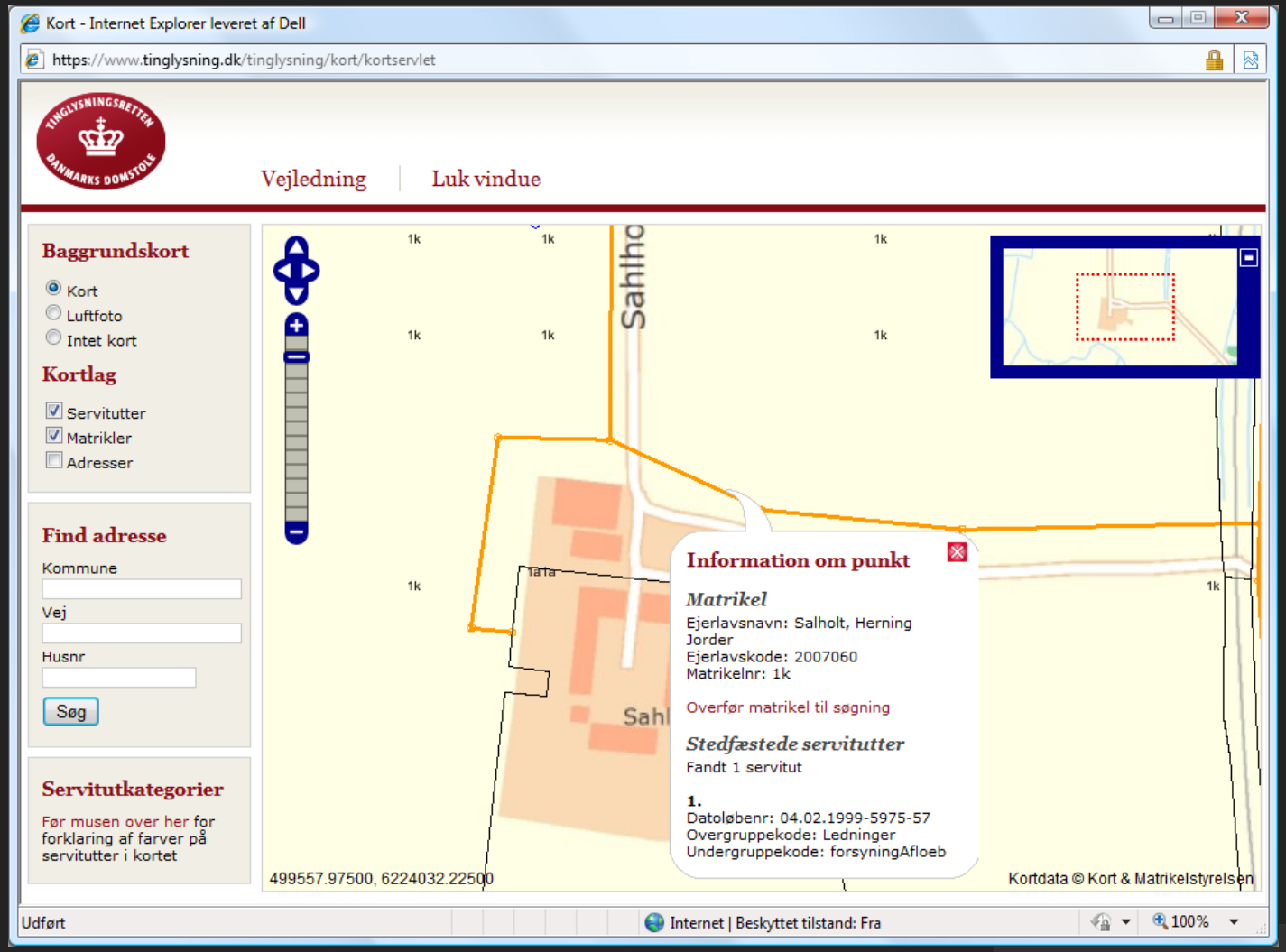
Display

- With the introduction of the electronic registration system a categorization of easements is introduced at the same time. This categorization also has to appear from the location, and it is the responsibility of the notifier that the correct category is put on the easement as well as the location.
- The categories are introduced to support the visualization of the information in the user interface, and it will also be an extremely useful tool at the identification of for example registered utilities, buildings on hired property and in GIS analyses.
- To present the information from the location database a web feature service (WFS) displaying the located easements has been built up. The service makes it possible for the user of the registration system as well as the plot owner to get a survey of the easements published on the single property.

The real property rights



The real property rights



The real property rights

Borger.dk

- Digital registration of property is one among a number of national e-services having access via the national front-end portal for citizens: Borger.dk (www.borger.dk)

- This portal is on one hand an entrance to general information about public service linking to the relevant websites. Secondly Borger.dk delivers targeted information to the individual citizen by the use of a personal sign-on.

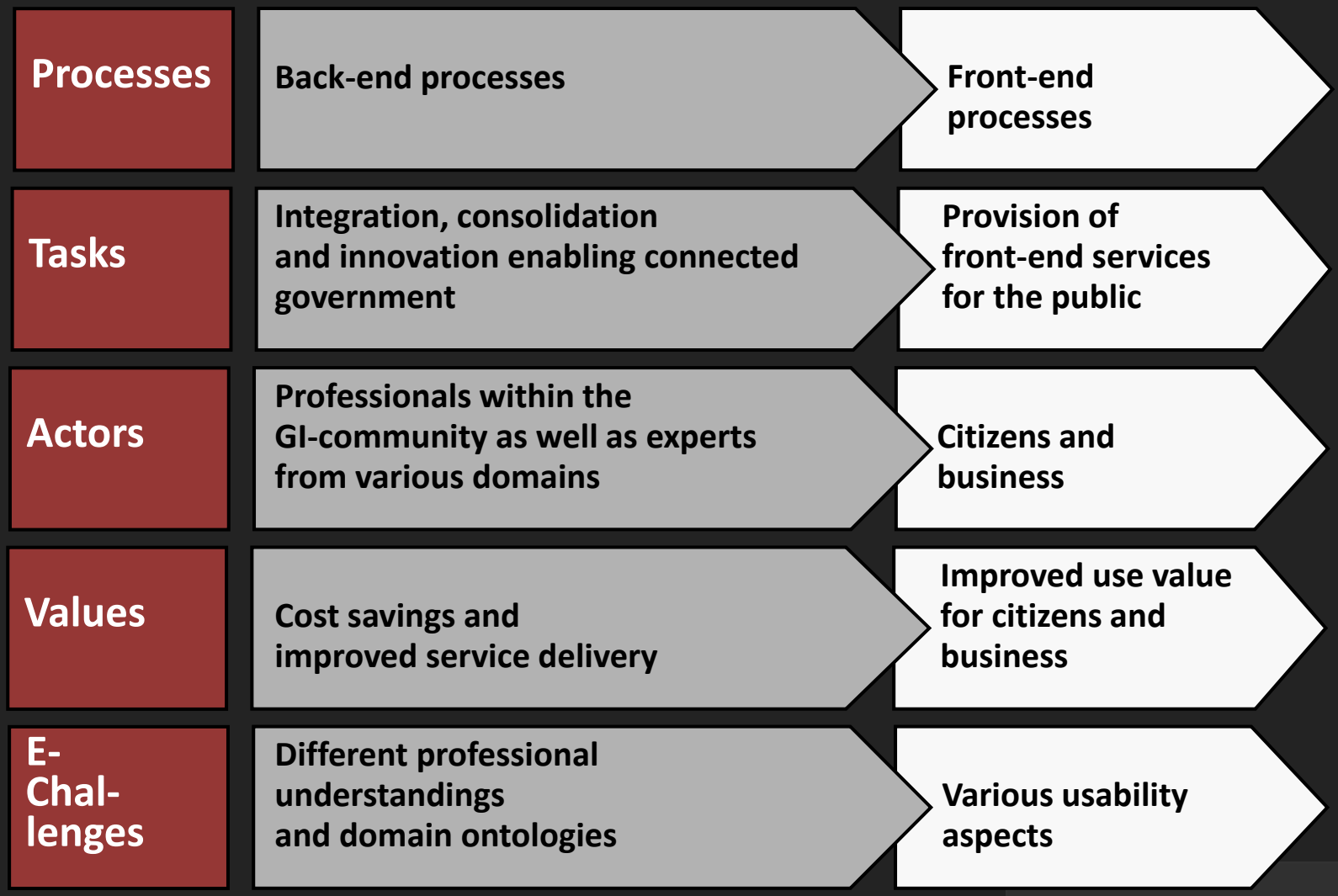
Towards spatial enablement

Effective connected government is about a “bigger and better” front-end with a “smaller and smarter” back-end referring to an understanding of :

- *“Back office” as the internal operations of an organisation that support core processes and are not accessible or visible to the general public. These government functions normally do not interact with outside entities and involve such diverse tasks as calculat-ing benefits or enforcement of environmental laws*
- *“Front office” processes are often understood as “services” though service delivery has both front and back office components. The element of contact in service processes fundamentally distinguishes them form the more production oriented processes in the back office*

UN e-Government Survey from 2008 - From E-Government to Connected Governance (United Nations 2008)

Towards spatial enablement

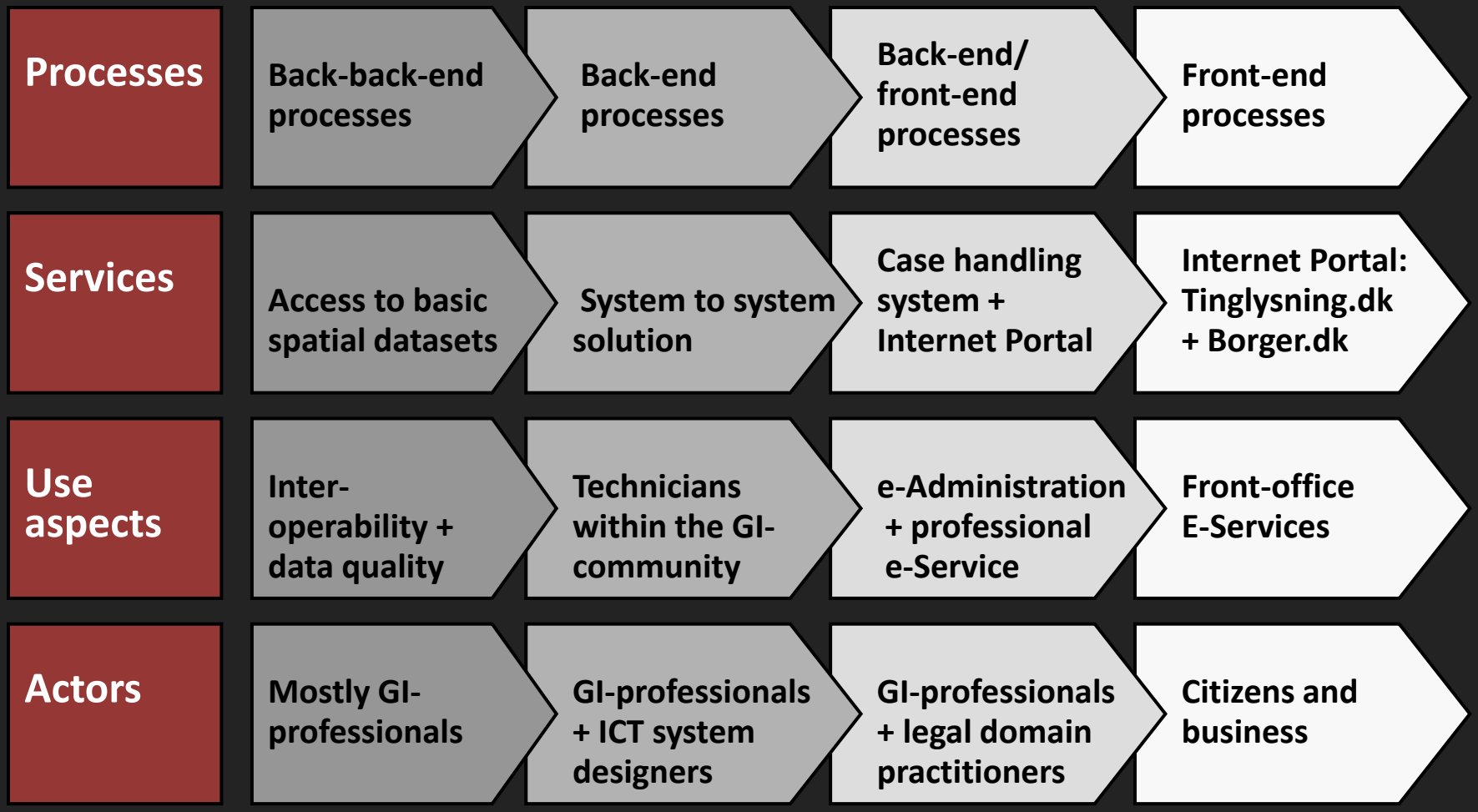


Towards spatial enablement

Which can be elaborated into (Schroeder et al, 2011):

- Back-back-end processes – referring to the basic infrastructural elements handled by professionals insuring central SDI-aspects as basic data sets, interoperability and quality
- Back-end processes – referring to e-Administration understood as typical e-Government functions which normally do not interact with outside entities
- Back-end/front-end processes – referring to e-Services mostly used by professionals and linked to back-office administrative functions within governmental organisations
- Front-end processes – referring to front-office e-Services designed for citizens and business which also can be related to the concepts of e-Democracy

Towards spatial enablement



Towards spatial enablement

Central elements of the system can be distinguished:

- Basic spatial datasets – related to back-back-end SDI-processes ensuring interoperability and data quality by providing national basic datasets as the cadastral parcel from the land register
- System to system solution – back-end process handling the located easements by means of a digital location database, which makes available a number of services for administration of the registration processes.
- Case handling system/internet portal – back-end/front process characterised by the property right Internet portal (tinglysning.dk) in the front-end giving access to the electronic registration system linked to the digital location database in the back-end.
- Front-end internet portal (Tinglysning.dk/Borger.dk) – the character of the front-end process is illustrated by the citizens portal (Borger.dk) functioning as the main public e-government entrance linking to diverse national e-services – among others the portal for e-registration of property giving access to a survey of easements related to a single property.

Conclusions and final remarks

The central role of GI-professionals as main actors in use and development of the back-end of system:

- During this first iteration of an on-going system development process it has been a great challenge to create the necessary spatial awareness to be able to re-engineer traditional procedures of the back-end as well as fulfilling usability demands at the front-end.
- Though, it is obvious how this kind of functioning prototypes is a must when trying to make the visions of a spatially enabled digital government tangible for citizens, professional parties and policymakers.

Dealing with the further development of e-registration of real property rights:

- a central task is to re-engineer existing e-services due to the usability needs of the end user to provide easy access to information.
- Furthermore there is a need for refining the system-to-system-solutions to be able to communicate more efficiently. A number of fundamental functionalities are still lacking due to the vision of a full digital enhancement of the process of handling easements in the real property rights system.

Conclusions and final remarks

The Danish strategy for the further development of digital government for the period 2011-2015:

- The spatial awareness has increased and the need for administrative and geographic basic datasets is now considered a key issue of facilitating the future well fare of the society.
- The focus on reuse of data, on improving and qualifying basic data as a means of developing e-services for enterprises and citizens, and on developing and implementing self-service solutions emphasises the specific responsibility of the GI-community as central actors of the innovation process towards the spatially enabled digital society.

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