

GGIM

Country Report of Denmark 2012
National Survey and Cadastre (KMS)
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References

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1. Executive summary

Providing welfare in a smarter way tomorrow is mandatory. The global financial crisis has turned well-balanced state budgets into deficits. While citizens continue to expect better and better public services, the public sector will have to manage with fewer employees in the years ahead.

E-government initiatives put focus on utilizing existing digital information actively in digitally supported workflows. Combining traditional register information with spatial information offers new ways of supporting IT-solutions, with focus on intuitive, user-friendly user-interfaces and support of well-informed decisions.

Opening existing digital information to broader use requires a new approach to how information is shared and how it can be embedded into e-government solutions. Service oriented architecture, technology and data standards, agreements on sharing information, and a partnership model that supports the role of both government infrastructure providers and private system integrators are important facilitators.

The Danish society has a long tradition of maintaining national registers supporting government related to citizens, business, land, environment, etc., and today these registers are available as central databases. Since the nineties, the basic national map resources have been converted into digital spatial representation of real world objects. With spatial objects sharing keys with the traditional national registers, whole new perspectives emerge in dealing with spatial information as “just” an additional dimension to traditional register information.

Denmark puts substantial emphasis on adopting e-government solutions for the public sector and is among the top-ranking countries in international studies. OECD reached this conclusion in a large-scale review of the Danish e-government initiative completed in 2010. Denmark launched its first e-government strategy in 2001. Since then, the central government, regions and municipalities have worked together closely on improving and extending their e-government solutions. Over the past ten years, our e-government initiatives have helped transfer resources from administration to welfare and optimize and automate work procedures throughout the public sector. But not everything is yet completed and there is still much to achieve.

It is the objective for KMS (National Survey and Cadastre, Denmark) that spatial information becomes an everyday resource for the public sector, businesses and the general public. KMS will work to ensure that spatial information contributes to improving the efficiency of public sector activities.

Making spatial information widely available for e-government is being achieved by establishing a national spatial data infrastructure (NSDI), which makes a vast amount of information readily available for the domains and applications where it is needed. Beside the national e-government initiative, also the European INSPIRE initiative with focus on the environmental domain is a main business driver for establishing a Danish NSDI. With its comprehensive set of implementation rules and guidelines, INSPIRE also facilitates interoperability and information sharing by providing sound and widely accepted standards for the implementation of the NSDI, which is a great benefit also outside the environmental domain.

When establishing our NSDI, we see it of utmost importance for a successful implementation to address issues concerning business, technology, organization and governance in parallel.

2. Implementation of National Spatial Data Infrastructure (NSDI)

Denmark has already carried out a number of initiatives on the way of implementing a NSDI. All registers concerning property, topographic mapping, addresses etc are digitized and available as part of a network of services in the NSDI.

Common Land Base for Public Administration (FOT)

FOTdanmark is the name for the collaboration between central government (represented by KMS) and the municipalities on establishing a shared cost-effective geographic foundation for public administration, the so called FOT-data. The aim is to achieve efficiency in the field of basic geospatial data within government through well-defined standardisation and reinforcement of collaboration across state and local government.

FOTdanmark establishes a unified topographic dataset that will be used as one of the fundamental elements in the NSDI for e-Government in Denmark. FOT-data is accessible for all Danish government bodies – state, regional and local. A national coverage of FOT-data will be available by the end of 2012.

The Danish Digital Elevation Model (DHM)

DHM is another fundamental element in the NSDI shared by all government bodies in order to meet the requirements for elevation data (terrain and surface). DHM was established in 2007 and is continually being improved with respect to features, quality, currency and accessibility in order to meet requirements, e.g. within preparation for climate changes.

Property and cadastre as a basis for registration

The national cadastre ensures that the registration process for properties is based on fully digital and efficient administrative procedures.

Cadastre is a natural part of the national SDI and the cadastral parcel map is one of the most significant datasets when it comes to adding a spatial dimension to multiple existing registers. Denmark has a fully digitized cadastral system where private chartered surveyors are responsible in creating new parcels and change for existing parcels.

2.1 Availability and dissemination of data

Geodata-info.dk provides access to and overview of national geodata sets and geodata services. Geodata-info.dk contains the metadata for the content in the NSDI, including the INSPIRE geodata sets and geodata services. Geodata-info.dk is developed as an open source based implementation in cooperation with the other Nordic countries.

“The Digital Map Supply” (Kortforsyningen)

KMS makes its geospatial data available on the internet as network services and datasets through the digital distribution platform “The Digital Map Supply”, thus helping to improve access to spatial information. “The Digital Map Supply” reduces the technological and economic barriers and increases the accessibility of up-to-date spatial information. It addresses both technical and business issues for sharing.

The application of the “Digital Map Supply” mirrors since it opened up in 2002 a tremendous increase where the number of hits on an annual basis, in 2012 will be around one billion. “The Digital Map Supply” covers the entire country with a number of important geospatial reference data and is embedded into applications supporting numerous domains.

The Danish Nature and Environmental Portal (Danmarks Miljøportal)

www.miljoportal.dk is the entrance to a set of public data and services on nature and environment that ensures a consistent and updated data base, supports government tasks, and strengthen communication with the public. The portal part of the Danish Nature and Environmental Portal ensures the availability of uniform, updated environmental data and promotes the use of digital processes in environmental management.

The portal is jointly owned by the Ministry of the Environment, Association of Municipal Governments and Association of Regional Governments in a partnership. In that sense the organisation is quite unique.

2.2 Use of spatial data across government bodies and private sector

The benefits from government digitisation efforts cannot be realised until administrative processes and IT architectures are coordinated between government bodies and cross-governmental processes and methods are created.

Benefits include greater transparency, efficiency and consistent management processes to both society and individuals and businesses. There is still great potential to further spread the use of geospatial information in the coming years in order to create more benefits.

It is crucial that there is a comprehensive and efficient infrastructure for spatial information for civil security and emergency preparedness. In Denmark a close collaboration between emergency authorities, police, and fire and ambulance services is being established in order to provide that.

2.3 Coordination, cooperation, management and governance

The aim of the e-government strategy is to strengthen government digitization.

Some of the most important elements for this exercise are:

- strengthened coordination
- targeted implementation and program management
- clear field of responsibility
- strong central coordination at the different sectors in the administration
- focus on priorities and profit realization.

There is an emphasis on collaboration and consensus-based development, which is considered to be a more efficient approach than legislation. This is reflected in several co operations established between government bodies.

Realising the potential of a NSDI depends on the establishment of a structure and decision making process, which ensures that the necessary binding agreements between government bodies can be put into place.

Economic frameworks and financing models help to increase the use of shared geospatial information across the public sector. This guarantees that the necessary data are in place and accessible under conditions that ensure the widest possible use and benefit.

Historically KMS is working under a cost recovery financing model requiring users to contribute directly to the data creation and maintenance. Earlier this cost recovery model was implemented by establishing individual agreements with different government bodies. With today's concept of utilizing spatial information as an infrastructure, where information can be shared seamless between different organizations, the approach of having individual (potentially different) agreements with different organizations has become an obstacle for establishing an efficient NSDI. Today the individual arrangements have been replaced by a mandatory subscription arrangement, ensuring that all government bodies can benefit from a shared NSDI based on uniform and comprehensive agreements on sharing. A significant barrier to the increased use of geospatial information has thus been considerably lowered.

3. Strategic basis and the implementation

The initiatives, projects and activities for implementation of the NSDI are based on a number of strategies – both of national and of international character:

1. Implementation of the INSPIRE Directive and national law
2. Strategic basis for KMS - "Location – a gateway to e-government 2011-2015"
3. "Strategy for e-government 2011-2015"

3.1 Implementation of the INSPIRE Directive and national law

Implementation of INSPIRE

The implementation of the INSPIRE Directive is well proceeding according to plan. In 2011 access was mandated to spatial datasets under the INSPIRE Directives Annex I through standardized discovery and view services. To ensure that all services are running according to the requirements for service quality, a method of monitoring service quality has been implemented. In 2011 an EU consultation of data specifications for the themes of the Annex II and III themes was completed.

The Infrastructure for Spatial Information Act

The Danish Act for Infrastructure for Spatial Information implements the regulations, principles and associated guidelines of the INSPIRE Directive into Danish law. With the Infrastructure for Spatial Information Act, Denmark has strengthened the framework for the NSDI and its links with e-government.

As part of the Infrastructure for Spatial Information Act, the Coordination Committee on Infrastructure for Spatial Information was established. The Committee forms a structure for cooperation and decision-making in the field of spatial data. The Committee consists of representatives for owners of geodata covered by the act plus other shareholders. It is working to facilitate and support the further development of an effective NSDI.

3.2 Strategic basis for KMS - "Location – a gateway to e-government 2011-2015"

KMS' vision "Location – a Gateway to e-government 2011-2015" provides the framework for developing national spatial information.

With today's tight budgets, it is a challenge for government to do things smarter, more efficient and cost-conscious. To achieve this, it is necessary to invest in technology to improve and optimize e-government.

Meeting this challenge will require clear agreements on central principles like the broad use of authoritative data, unambiguous allocation of responsibilities among authorities and smooth access to information and internet services. Such principles are already part of the foundation for developing the NSDI and should also support enhanced cooperation across public authorities in more general terms.

Of special focus areas are the opportunities for reuse of data and for efficient data management and dissemination.

Emphasis is on developing business procedures, data resources and network services to ensure an up-to-date and reliable NSDI.

Bringing the NSDI into play is an undertaking, where a close cooperation between government and private sector must be nurtured. The public sector can benefit from the private sector offering solutions within different domains and application areas embedding the NSDI where relevant. This approach ensures that utilization of the authoritative information in the NSDI benefits from the efficiency provided by solutions created under market competition. Therefore, a constructive, forward-looking dialogue with the private sector must be ensured with a view to creating synergies with public sector operations.

3.3 The public sector Strategy for e-government 2011-2015

The public sector e-government strategy published in November 2011, deals with a number of measures for the digital road to future well fare concerning citizens, companies, health care and education. Geospatial information plays an important role in the public sector e-government strategy.

Efficient management of e-government

The strategy sets clear and binding goals for e-government by 2015. Achieving the objectives is less about developing major new IT solutions and more about ensuring more consistent implementation of the e-government solutions established in recent years. Not only does this require a strong decentralized implementation capacity, it also demands a centrally focused coordination effort.

The Ministry of Finance has undertaken the task to lead the process of implementing the e-government strategy on the basis of successful business cases that show significant savings by digitizing the public sector.

Shared core data for all authorities

The e-government strategy states to designate certain data to be authoritative and form a shared data foundation for e-government. These core data must be cross-referenced and – where relevant – geospatially enabled, so the public sector can connect work procedures and compare data with other authorities and sectors.

Even though Denmark has made considerable headway with core data, challenges still remain. Public authorities need to decide on one way to use and add to the body of

‘authoritative core data’. New data collected by the authorities should be linked to relevant core data, enabling casework that’s aligned across the various public authorities.

The determination of where the responsibility lies for creating and maintaining data sets that are designated as core data is necessary to ensure the creation of the required organisation and governance of the shared foundation for e-government.

4. Perspectives

The objective for 2015 according to the national public e-government strategy 2011-2015 is to achieve the objective to create a smarter public sector through digitalisation, which is simpler, more efficient and coherent.

All public authorities will be required to use all relevant public sector components, to avoid duplication of work and to promote reuse of pertinent data. This will help to ensure that citizens experience a collaborative public sector.

The implementations of core data, common data model and clear guidelines have begun. There is also a defined approach to ensure the dissemination of core data.

Simple and efficient governance and better models for financing and sharing data are also something that will be focused in the upcoming period.