Free Geographic Basic Data – "A driver for growth and efficiency both in private and public Economy"

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SUMMARY

This paper focuses on elements in the Danish "eGovernment Strategy 2011-2015" with the subtitle "The path to future welfare". The political main purposes with the strategy are

- Capitalization of a massive public digital effort
- A more efficient public administration
- Providing a basis for growth in the private sector

The presentation will provide an overview of the initiatives in one of the main programs under the Strategy "Good Basic Data for everyone", and particularly the initiatives about effective property management and reuse of property data. The Program and the associated project arise from an economic and strategic agreement between the Danish Government and Local Government Denmark.

Basic principles are

- Re-use of real property data that has already been recorded
- Free available public-sector basic data for both commercial and non-commercial use

In relation to property data this means among other

- An infrastructure will be established, which ensures that information on real properties and buildings, including their owners, is registered uniformly and securely in the authentic registers in the real property domain (Cadastre, Register of Property Owners, Building and Dwelling Register)
- Basic data on real properties will be improved and harmonized according to a commonly agreed definition of real property

Finally this paper summarizes the few small scale surveys, that have been made on development and growth on use, users and benefits of the private sector since the release of Free Geographic Basic Data the 1st of January 2013. It shows an exponential growth in inquiries on geographic basic data Web services, more than 10.000 new users (primary private citizens and private companies) and that the private geodata sector expects growth in business areas on basis of free Geographic Basic Data (improving data and creating valuable digital solutions).

SUMMARY (DK)

Denne artikel fokuserer på elementer i ”Den fællesoffentlige digitaliseringsstrategi 2011-2015” med undertitlen "Vejen til fremtidens velfærd". De politiske hovedformål med strategien er

- Kapitalisering af en massiv offentlig digitaliserings indsats
- En mere effektiv offentlig forvaltning
- At skabe grundlag for vækst i den private sektor

Præsentationen vil give et overblik over initiativerne i et af de vigtigste programmer under strategien "Gode grunddata Data til alle" og især initiativerne omkring effektiv ejendomsforvaltning og genbrug af ejendomsdata. Programmet og de tilhørende projekter er opstået og udvikles gennem en økonomisk og strategisk aftale mellem den danske regering og Kommunernes Landsforening.

Hovedprincipperne er

- Genbrug af grunddata
- Fri adgang til grunddata for alle – offentlige myndigheder, private virksomheder og borgere

I forhold til ejendomsdata betyder dette blandt andet

- Etablering af en digital infrastruktur, som sikrer, at oplysninger om faste ejendomme og bygninger, herunder ejer oplysninger, registreres i autoritative grunddataregistre hos de respektive domæneansvarlige (Matriklen, Ejerfortegnelsen, Bygnings- og Boligregistret)
- Grunddata vedrørende fast ejendom vil blive forbedret og harmoniseret i forhold til en vedtaget ny fælles definition af fast ejendom

Afslutningsvis præsenteres resultaterne af de mindre undersøgelser, der hidtil er blevet foretaget på udvikling af anvendelse, bruger segment og vækst i den private sektor efter ”frigivelsen” af geografiske grunddata den 1. januar 2013. Det viser en eksponentiel vækst i forespørgsler på web services vedr. geografiske grunddata, mere end 10.000 nye brugere (primært private borgere og private virksomheder), samt at den private geodata sektor forventer en vækst i forretningsområder baseret på frie grunddata (forædling af data og værdiskabende digitale løsninger).

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1. INTRODUCTION

"The digital path to future welfare" is the subtitle to the "Danish eGovernment Strategy 2011-2015" launched by the Danish Government in a common agreement strategically and economical with Danish Regions and Local Government Denmark. This one-liner and political consensus signalizes, that digital solutions in the public sector are vital tools to maintain the Danish welfare society in the future. The adoption and acceleration of new digital solutions in the public sector shall generate a more efficient public sector developed upon three main tasks/purposes:

- Digital communication with both citizens and companies
- Exploit IT and digital technology to modernize and optimize public service (e.g. school, healthcare, eldercare)
- Using all relevant public sector solutions and data to avoid developing parallel systems and for a closer public sector collaboration

At the same time the digitalization of the public sector expects to give a synergic growth in the private sector.

From a surveyors point of view it is of particular interest to pay attention to the third and last main track of the strategy "Digital solutions for closer public sector collaboration", since this track covers geodata and real property areas and targets the geodata sector. The Danish Government and Local Government Denmark expect an investment of approx. DKK 930 million up to 2016 in developing the basic data program "Good Basic Data for everyone – a driver for growth and efficiency", which is an important part of the eGovernment strategy, since there is expected to be a significant potential for reuse and value creation for public and private sector users of real property and geographic data.

Once the complete initiatives has been fully implemented, the revenues for society are expected to be approx. DKK 800 million annually, off which the private sector revenues will be up to DKK 500 million annually.

This paper provides a kaleidoscopic overview of the eGovernment Strategy with a focus on the Basic Data Program, and the potential this program offers to the geodata sector.

2. THE DANISH eGOVERNMENT STRATEGY 2011-2015

2.1 eGovernment Strategy – Background

The global economic situation has not gone unnoticed in the Danish economy, and it puts both the public sector service and the private sector's profitability under pressure. In this economic reality – a period of economic recession – there is a political consensus in Denmark for the need of digital solutions in society, in order to maintain and develop the Danish welfare model and to kick start growth in the private sector.

"The eGovernment Strategy 2011-2015 – The digital path to future welfare" was drafted by the Danish Government in 2011 as a common strategically and economical agreement with Danish Regions and Local Government Denmark. The strategy introduces development of new digital solutions and more efficient use of existing digital solutions as tools to growth and future welfare. Since the current government took office, it continued unchanged the previous government's eGovernment strategy in the government's program. It is a positive political situation providing continuity of the policy objectives.

2.2 Strategic societal goals

The hardcore strategic goals with the eGovernment Strategy are to capitalize the previous massive public digitization investments and to accelerate development and adoption of new digital solutions to ensure the sustainability of the economy, with the purpose of preserving the Danish welfare state in the coming years.

Two priority main thrusts will pave the way to the overall objective

- A more efficient public administration: Accelerate the adoption on and optimizing digital solutions in the public sector

- Provide a basis for growth in the private sector: Simplified digital dialogue with the public sector and free use of basic data

The central government sector will because of the significant investments and developments be the driving force in the realization phase but in close cooperation with the private sector by involving relevant skills. There is an expectation of an innovative interaction between the public sector and the private sector, which can create a positive synergy and give Danish companies growth and business advantage.

2.3 Three main tracks

The strategy is divided into three main tracks with different areas and targets:

- **Track 1 No more printed forms or letters**: Digital point of contact between the public sector and citizens and companies
- **Track 2 New digital welfare**: Good public service does not necessarily require a face-to-face contact, digital solutions can in many cases provide more modern and effective service
- **Track 3 Digital solutions for closer collaboration**: Public sector authorities are required to use all relevant public sector data and solutions to promote reuse of data and to avoid developing of parallel systems

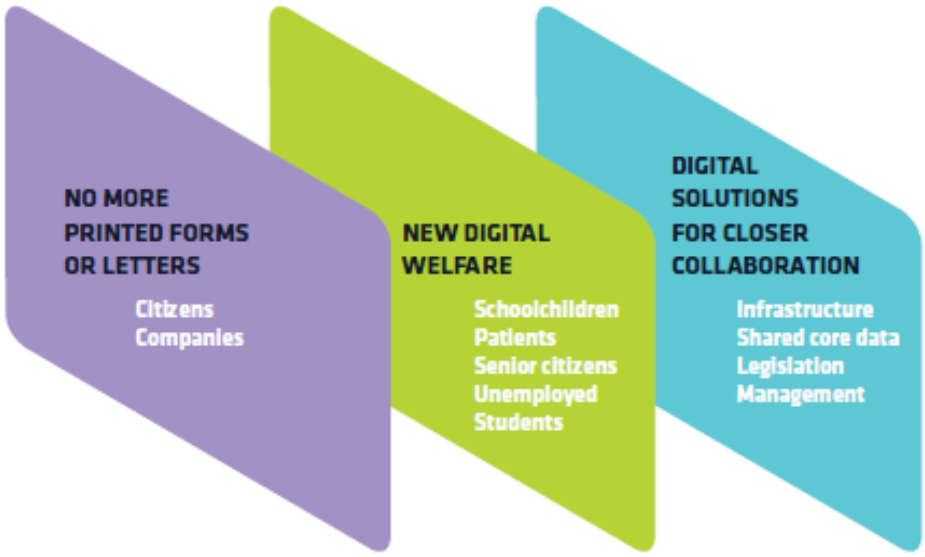

Fig. 1 The three main tracks in the Danish eGovernment Strategy (The Danish Government / Danish Regions / Local Government Denmark, August 2011: "The eGovernment Strategy 2011-2015")

2.4 Selected focus areas – in a geodata perspective

In particular Track 3 "Digital solutions for closer collaboration" is of interest to the geodata sector and especially the four underlying focus areas with related initiatives. The four focus areas are:

- **Area 1 Robust digital infrastructure**: A shared digital infrastructure that is safe and sufficiently robust to meet future requirements
- **Area 2 Shared core data for all authorities**: Effective and reliable sharing of core data between authorities
- **Area 3 Legislation in support of digital services**: Legislation adapted to the opportunities and challenges of a digitalized society
- **Area 4 Effective management of eGovernment**: Stronger coordination of public sector digitization

The four areas is founded in the INSPIRE philosophy, and points all on the need of cross-public-sector initiatives and collaboration, which will be a challenge in the relatively segmented Danish public administration. Administrative focus has often been primarily on optimization of own responsibility and management areas.

General principles for geographical data infrastructure - INSPIRE
1 Data should be collected only once and should be maintained, where it can be done most effectively.
2 Information collected at one level can be exploited under the other levels.
3 It should be easy to find the available geodata, and see the conditions under which data can be obtained and used.
4, It should be possible to collect geodata from different sources and share geodata between many users and uses.
5 The geographic information, that is needed for good management / administration, should be available under conditions, that do not prevent its widespread use.

3. GOOD BASIC DATA FOR EVERYONE

3.1 The Basic Data Program – Background

In recognition of the need of cross-sector-collaboration, in order to realize the objectives of the Track 3 in the eGovernment Strategy, the Danish Government and Local Government Denmark in 2012 launched a separate Basic Data Program of political and economic cooperation as a part of the strategy entitled "Good Basic Data for everyone – a driver for growth and efficiency".

Basic data, as personal data, business data, real property data, address data and geographic data, is the core data, authorities register and use in their daily administration and management. In accordance with the eGovernment Strategy use of high-quality basic data is an essential basis for public authorities to perform their tasks properly and efficiently and to give benefit from digitization.

The objective of the Basic Data Program is the creation and development of a coherent digital basic data infrastructure, with a focus on interoperable public basic data for multipurpose. As a significant part of the program it is a goal to create a common platform for distribution of basic data, so that data are applied in both the public and private sector.

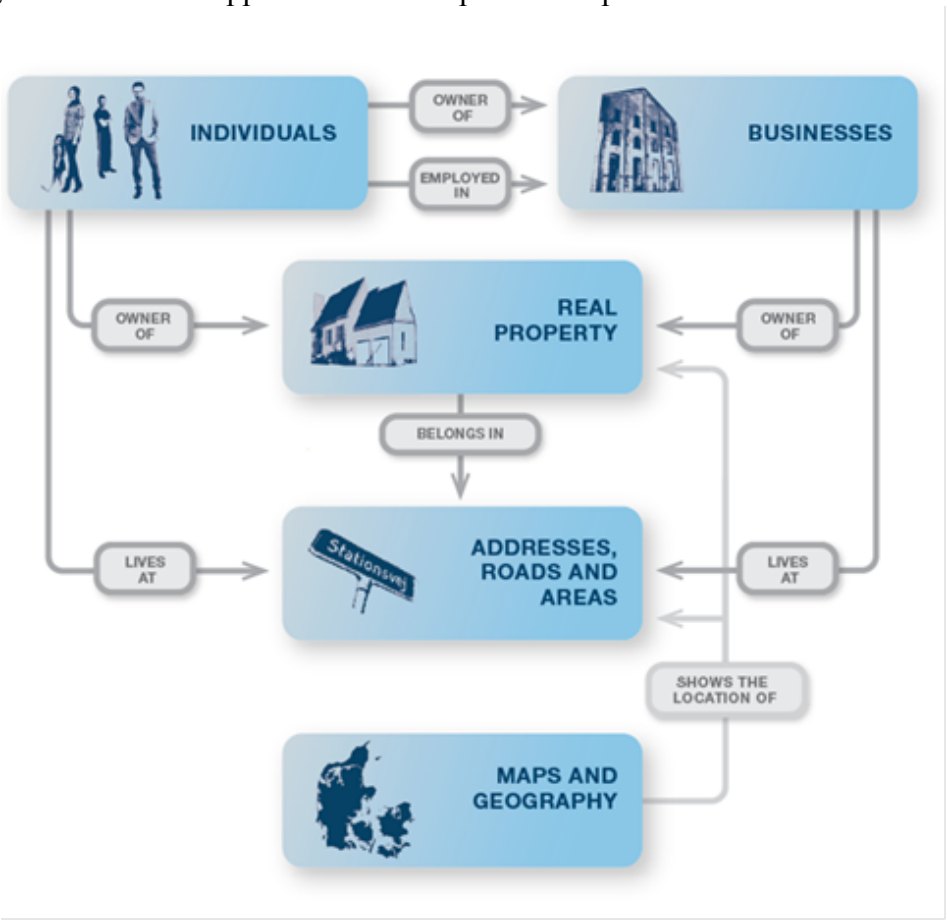

Fig. 2 Basic Data (The Danish Government / Local Government Denmark, October 2012: "Good Basic Data for everyone")

3.2 Strategic societal goals

Completely in line with the eGovernment Strategy the overall vision of the Basic Data Program is "….that basic data is to be the high-quality common foundation for public sector administration: efficiently updated at one place, and used by everyone – including the private sector." *("Good Basic Data for everyone").*
This vision expresses the objective of a more modern and efficient public sector and innovation and growth in the private sector. Open and easy-to-access high-quality basic data shall contribute to the overall strategic goals of the Basic Data Program:

- Modernizing and streamlining the public sector: Releasing more resources by sharing and re-using data that has already been recorded – across institutions and included directly in case processing
- Innovation, growth and job creation in the private sector: Free available public-sector basic data to the private sector is a potential driver for new products and solutions, in particular digital ones

Seen in a broad societal perspective the Basic Data Program is expected to provide public and private users a number of significant concrete benefits:

- The public: Smoother interaction with public authorities – e.g. faster case processing, less reporting to public authorities, less need for re-entering data
- Businesses: Less bureaucracy, more growth – e.g. less reporting and registration, cheaper procurement of public-sector data, improved foundation for collaboration with the public sector due to the existence of common data and new opportunities to develop data-based services and products.
- Public authorities: More efficient and effective administration – e.g. efficient and effective maintenance of basic data and fewer redundant registers, cheaper development of IT systems, when basic data is accessible from a single source, fewer manual workflows

The Danish Government and Local Government Denmark have initiated the program and the related initiatives on the basis of a positive business case. Once the initiatives have been fully implemented, the revenues for society are expected to be approx. DKK 800 million annually, of which the private-sector revenues will be up to approx. DKK 500 million annually.

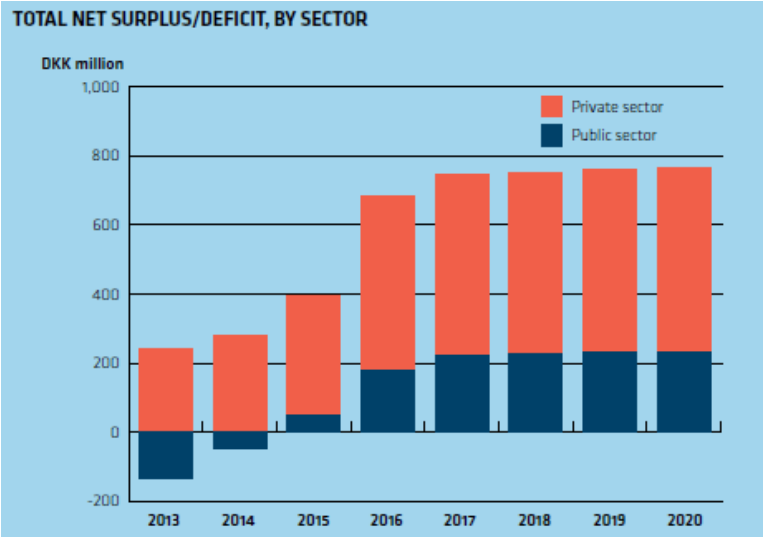

Fig. 3 Estimated net gains in the public and private sectors (The Danish Government / Local Government Denmark, October 2012: "Good Basic Data for everyone")

3.3 Five processes forward the goals

In order to achieve the strategic goals, there shall be launched initiatives in five parallel processes / tracks, which should be briefly addressed here, particularly with a focus on real property data and geographic data.

- **Track 1 Releasing public basic data for free use**: In order to encourage reuse of data and reduce establishing of shadow registers and double registrations, there will be given open and free access to public-sector basic data for everyone. Public authorities and private businesses alike will be able to use it freely for commercial as well as for non-commercial purposes.
- **Track 2 Enhancing the quality of data**: In order to enhance the quality of data and consistency of data registers, simplifications and improvement of coherence in the basic data registers e.g. by including other relevant data will be done. A number of existing registers will become redundant, and therefore can be phased out.
- **Track 3 Make it possible to link data**: In order to make it easier to link data and thus create a potential for value-added digital solutions, efforts will be made to ensure, that all data conforms to the same technical requirements.
- **Track 4 Improve the distribution of data**: In order to secure, that data can be distributed easily, rapidly and reliably, a common data infrastructure and a common single distribution solution – the Data Distributor – will be established. This leads also to the benefit, that the authorities responsible for the basic data registers will save resources, as they will no longer have to drift a host of different distribution solutions individually.

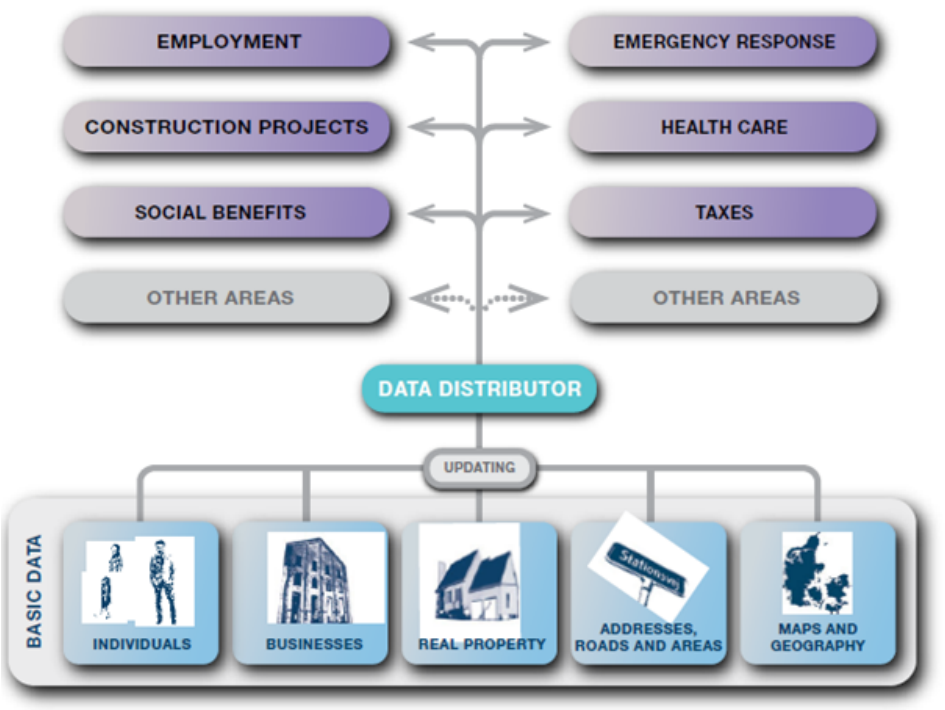

Fig. 3 The Data Distributor (The Danish Government / Local Government Denmark, October 2012: "Good Basic Data for everyone")

- **Track 5 Establishing of a cross-institutional basic data committee**: In order to ensure efficient and coordinated on-going development and use of basic data, a cross-institutional basic data committee is to be established, in a governance structure where the responsible Basic Data Committee is referring directly to the Danish Government Finance Committee and Local Government Denmark Executive Committee.

To ensure the development and implementation of the initiatives under the Basic Data Program the Danish Government and Local Government Denmark has allocated significant financial resources for the purpose which until 2016 amounts to DKK 960 million.

3.4 Real Property Data

Today data about real property and buildings in Denmark is created and registered in several different registers with different sector specific purposes and origin of data. Some registers are authentic registers and consist of authoritative basic data, data that can be used without verification as e.g. the Cadastre (cadastral information) and the Land Register (information about titles, mortgages and easements), while a number of public authorities registers are composed of copy data from other registers for certain administrative tasks.

Furthermore real property data currently is registered in three different public registers the Cadastre, the Land Register and the Joint Municipal Real Property Register under three different authorities and under very different legal basis, different responsibilities in the

property formation process and change process, and by significant differences in the requirements for documentation, maintenance and display of data. Even the key term "Real Property" is defined differently in these registers.

Due to this silo split data structure and disharmonized concepts of data it is difficult to compare and merge data across the registers, and both public authorities and private business have spent huge sums on buying and administrating basic data. And the double registration is inefficient and increases risks of errors, because the information is not necessarily updated at all places.

To improve efficiency and better use of real property basic data, and in order to achieve the financial and administrative benefits in this area of data, the initiatives in the Basic Data Program includes

- Free access for all to retrieve and use cadastral data including cadastral maps from the Cadastre (launched 1st of January 2013) and information about titles, mortgages and easements from the Land Register (launched 1st of July 2013)
- Establishing an infrastructure to ensures that information on real properties and buildings, including their owners, is registered uniformly and securely in the authentic registers in the real property domain (Cadastre, Register of Property Owners, Building and Dwelling Register)
- Improvement and harmonizing basic data on real properties according to a commonly agreed definition of real property
- All real properties will be registered in one authentic basic register the Cadastre
- Real property data will be distributed in a unified and documented format via the Data Distributor

3.5 Geographic Data

Geographic data consists of location-specific information about e.g. land parcels, buildings, roads, watercourses, public restrictions. The production of these national digital information e.g. maps, orthophotos, elevation models of high quality are in general a public issue partly financed by sale to other public authorities and private businesses of access data registers and by sale of the use of data

Some of the geographical themes are currently maintained in various registers on the basis of different legislation and administrative purposes. This situation results in inconsistent data, significant costs of acquiring the rights to the use of data and maps, and the procurement of the same thematic data by several producers.

In the area of geographic data the Basic Data Program includes

- Open access to all geographic basic data / maps, as can be used freely for commercial and non-commercial purposes (launched 1st of January 2013)
- Coherence will be created between public-sector data across administrative boundaries and purposes

- An up-to-date elevation model will be fully accessible for both public and private partners
- Geographic data will be distributed in a unified and documented format via the Data Distributor

4. EFFECT STUDY

4.1 Effect study on the use and users of free basic data - geodata

Since the geographic data has been released the 1st of January 2013 as free accessible and available basic data for everyone, The Danish Geodata Agency has done an effect study on the development of the use and of the user segments, based on downloads on the web services operated by the agency.

The agency conducted a user survey in week 42-43 2013 involving 900 users of the web services operated by the agency with approx. 40% responses. In addition the usage statistics from the web service Map Supply in 2013 was included in the study.

During 2013 the requests on the web service distributing digital geographical data (maps and spatial data sets) nearly has increased from approx. 80 million requests per month to approx. 140 million requests per month – fig. 4.

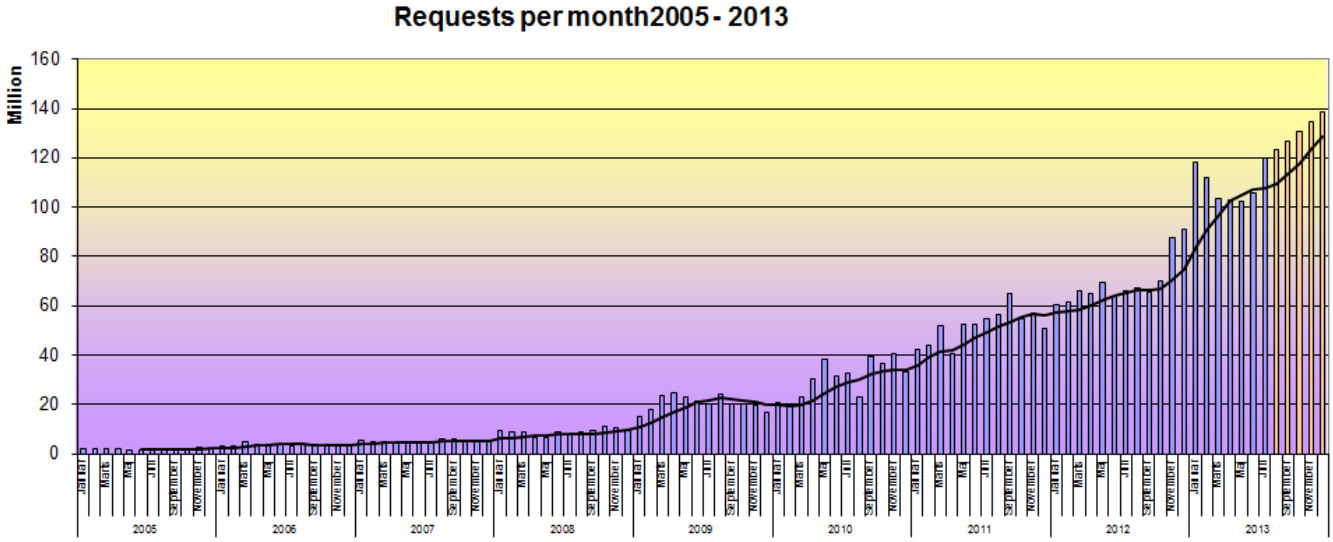

Fig. 4 Request per month on digital geographical data (maps and spatial data sets) on the web service kortforsyningen.dk (mapsupply.dk) (The Danish Geodata Agency)

The number of users is in 2013 increased from approx. 800 registered users to approx. 12000 registered users. There is no doubt, that citizens represent a large part of the new users - but

also many new companies have emerged. Public fills not so much among new users, since they already had access – fig. 5.

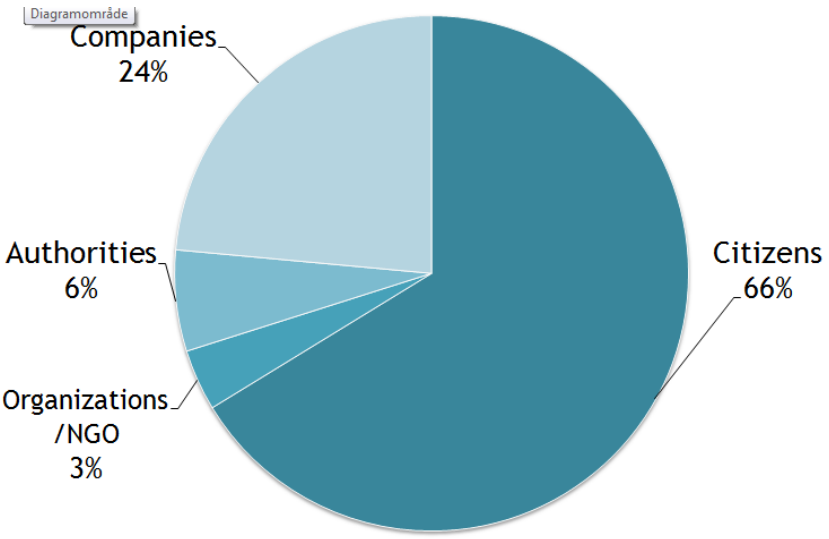

Fig. 5 Survey of user types (The Danish Geodata Agency)

The survey shows, that 76% of the respondents are experienced users of geodata, while 24% of the users have been unfamiliar with the area. Furthermore 44% of respondents expressed, that they would not have used data, if they should have paid a fee for using / downloading data.
Among the private geodata companies there are signs of optimism due to free access and free commercial use of basic data. In a small study in spring 2014 carried out of Geoforum Danmark comprising 23 responses out of 127 surveyed geodata companies, 65.2% of the companies answered, that release of basic data has created new business opportunities, and 73.2% of the companies expects growth in 2014 within the area of basic data.

5. CONCLUSIONS

As shown in this paper there is a broad political consensus in Denmark for the need of digital solutions in society in order to maintain and develop the Danish welfare model and to kick start growth in the private sector. This situation has resulted in a Danish digital strategy plan "The eGovernment Strategy 2011-2015" (The Danish Government / Danish Regions / Local Government Denmark, August 2011) with a range of underlying actions, programs and projects, among which the basic data program "Good Basic Data for everyone" (The Danish Government / Local Government Denmark, October 2012) has specific administrative authorities and commercial interest for the private geodata sector.

In order to achieve the strategic goals a more efficient public administration and growth in the private sector there are launched initiatives in five parallel processes / tracks – Releasing

public basic data for free use, Enhancing the quality of data, Make it possible to link data, Improve the distribution of data and Establishing of a cross-institutional basic data committee.

Among the basic data, personal data, business data, real property data, address data and geographic data are estimated to have the greatest potential for re-use and thus the greatest value for both public and private actors, which targets the geospatial sector. This results in free access to real property data e.g. cadastral information, information on titles, mortgages and easements and to geographic data e.g. maps, orthophotos, elevation models.

Since there is still much work to do in development and implementation of the Basic Data Program and related initiatives schedule is talking about 2016/2017 "deadline", it is not possible at this stage to see the full effect. But smaller effect studies on the release of data in 2013 shows positive trends. The use of data and new users has increased significantly, and the private geodata sector expects growth in this business area in 2014.

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