DANISH ENTERPRISE AND CONSTRUCTION AUTHORITY

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The value of Danish address data:

Social benefits from the 2002 agreement on procuring address data etc. free of charge

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Summary

Addresses play a fundamental role in society. Addresses are used on an enormous scale each day and are an integral part of a large number of IT systems and products both in the public and private sectors.

Addresses are also geographic identifiers that express the location of places and events. Key facilities such as emergency, fire and ambulance services, the police, postal and transport services, GPS systems, etc. all depend entirely on the availability of reliable addresses. Erroneous or incomplete addresses lead to inefficiency and errors and could even, in a worst-case scenario, mean the loss of lives.

Free and unrestricted access to addresses of high quality is beneficial to the public and forms the basis for reaping substantial benefits in public administration and in industry and commerce. This is why, in 2002, the official Danish address data was made available free of charge.

Making public data “free of charge” means setting the price of data to zero, so that users can use the official address data without paying the authorities who create and maintain the data.

Only a small number of European countries have, as Denmark, introduced a free-of-charge scheme for addresses.

Benefits

In spring 2010 the Danish Enterprise and Construction Authority (DECA), who is responsible for road names and addresses in Denmark, commissioned a study to analyse the benefits associated with the Danish free-of-charge agreement of 2002.

The conclusion of the study is that the direct financial benefits from the agreement for society in the period 2005-2009 amount to around EUR 62 million (~DKK 471 million). Until 2009 the total costs of the agreement has been around EUR 2 million.

In 2010 it is estimated that social benefits from the agreement will be about EUR 14 million, while costs will total about EUR 0.2 million. Around 30% of the benefits will be in the public sector and around 70% will be in the private sector.

The study was completed for DECA by COWI A/S and it is partly based on information from the 22 data distributors which disseminate free of charge the address data via the Public Data Server (the PDS).

The study only includes the direct financial benefits for the more than 1,200 parties receiving address data from a PDS distributor. The study does therefore not include the supplementary economic benefits arising in later parts of the distribution chain, and which must be assumed to likewise be of a very considerable size. One such example of a supplementary economic benefit is the use of addresses in GPS systems.

To illustrate this, according to Statistics Denmark, today 46% of Danish families have a GPS navigation system. This corresponds to about 1.3 million GPS systems, each with a copy of all Danish addresses.

Conclusions

The study documents that the free-of-charge agreement, as anticipated, has been an important condition for realising considerable social benefits of reusing public data on addresses. However, the study also indicates that not all expected benefits have been realised.

For example, this applies to the business registration area (Central Business Register, CVR) and the utilities sector, where so far use of the official addresses is limited. According to Statistics Denmark, one result of this is that enterprises employing about 15% of the workforce are registered at an address which is not official. Moreover, enterprises and the public experience that new addresses often only reach the users of the individual IT solutions with great delay.

COWI notes that this situation is caused by technical, traditional and legislative barriers.

DECA is therefore aware of the challenges that still exist and which will have to be dealt with in the years to come.

1. Background for the study

1.1 Agreement on better access to public data

In 2002 the Minister for Finance and the municipalities established an agreement entitled "Better Access to Public Data".[1] The agreement is often called the "free of charge agreement".

Amongst other things the agreement meant that address data, including geographic co-ordinates, which had been produced by the municipalities in the 1990s, would be made available free of charge.

Up to the date of the agreement, there had been some dissatisfaction that in practice the municipalities' data was inaccessible because users had to make an agreement on prices and terms with each municipality. The result was that private-sector resources were applied to develop a number of alternative collections of addresses of varying quality, even though the public sector already had the best possible data.

Once the agreement had been set up, private and public users could order municipal address data via PDS (www.ois.dk) by just paying distribution costs.

1.2 The "free-of-charge agreement" objectives and significance

The declared objective of the free-of-charge agreement was to ensure broad utilisation of the public address data for commercial as well as non-commercial purposes.

The aim was to improve public and private services and to promote public safety (ambulance, police and other emergency services) by using the official addresses as a common "reference" which could ensure that different IT systems work together. As the addresses were geo-coded with geographic co-ordinates, they could also be utilised as geographic identifiers in digital maps and e.g. for optimising route planning.

In preparation for the agreement, the Danish eGovernment Committee had completed a thorough analysis of the area and they expected that increased reuse of the geo-coded addresses would lead to large socio-economic benefits.

The agreement eliminated a number of the barriers which otherwise arise when use of public data is based on intellectual property rights (IPR) or licence agreements. After the agreement had been set up, a user could forward and exchange the free-of-charge data with other parties, without the public sector having to administrate licence payments or enforce intellectual property rights rules.

[1] In addition to the addresses, the agreement also covered data from the Building and Dwelling Register (BDR), the Municipal Property Register (MPR), the Cadastre, and the Land Registry. This memo only deals with the benefits relating to addresses.

The agreement entered into force in 2003, but it was not fully realised until 2005, following an amendment to the Statutory Order on the Public Data Server, which removed a number of legal limitations on distribution of address data to third parties.

1.3 Costs and finances of the agreement

Part of the agreement involved a three-year compensation package for the municipalities amounting to EUR 1.3 million, while municipalities were obligated to update data annually.

In addition to this are the costs incurred by DECA to distribute the address data through the PDS, and in the period 2005-2009 these amounted to EUR 0.65-0.80 million. Therefore the total costs of the agreement over the five years amounted to about EUR 2 million.

In the current year (2010) the costs of the agreement only involve the costs of the PDS to distribute data, amounting to about EUR 0.2 million.

1.4 The role of DECA

According to the Building and Dwelling Register (BDR) Act, the Danish Enterprise and Construction Authority (DECA) has overall regulatory responsibility for the Danish system of road names and addresses recorded by the municipalities in the Building and Dwelling Register (BDR).

DECA is also responsible for making the data (including the addresses) in the BDR available for other parties in an appropriate manner through the PDS, from which a number of registered data distributors order and distribute data to users and application developers.

Since 2009, DECA has also made address data directly available online via a set of "Address Web-services" (AWS), although so far they have only limited capacity.

Since 2004, DECA has maintained close cooperation with the most important public and private users of address data, including the Danish emergency service (112), the police, fire and ambulance services, Post Danmark, as well as producers of digital maps and other location-based services, e.g. GPS systems.

As a result of these activities, DECA has a good overall view of use of the free-of-charge address data.

2. The value assessment

In 2009 DECA decided to carry out a "value assessment" to document the social benefits of the free-of-charge agreement. The consultancy firm COWI A/S was requisitioned to carry out the work on the basis of the guidelines in the public business case model for digitalisation projects. The results of the assessment are now available-

2.1 Results of the assessment: scope of use

The assessment shows that in 2009, free-of-charge address data were delivered to a total of 1,236 public and private parties. Of these deliveries, 286 were full, nationwide copies of all addresses.

The figures are based on information which COWI obtained in 2010 directly from the PDS data distributors. The figures only include information from the 14 responses received from the total of 22 data distributors in Denmark. The actual figures will therefore be higher.

The distributors estimate that 12 out of the 286 nationwide deliveries are for IT solutions or products with more than one million end users, while by far the majority of deliveries (about 1,000) have less than 1,000 users, i.e. they typically involve a single authority or enterprise.

According to COWI, the figures also indicate that about 70% of deliveries are to the private sector, while about 20% are to central government and the regions and 10% are to municipalities.

2.2 Results of the assessment: direct financial benefits

On the basis of the figures for address-data utilisation, COWI concludes that the direct benefits of free-of-charge data for the five years 2005-2009 can be estimated at about EUR 62 million.

On the basis of the PDS data distributors' expectations of 10% growth in 2010, the value of free-of-charge data for the current year is estimated at EUR 14 million.

As mentioned above in section 1.3, the total costs of the agreement were about EUR 2 million for the years until 2009. In 2010 the costs will be about EUR 0.2 million.

2.3 Method of calculation

The value calculations in the assessment are based on an assumption that the economic value of the free-of-charge addresses in the individual IT solution corresponds to the price users (e.g. public-transport journey planners) actually paid for municipalities' address data before the free-of-charge agreement. Based on this, the total value of all distributed address datasets can be calculated to EUR 76 million.

It is debatable whether this value is either too low or too high.

It may be too low because the price in 2000, i.e. before the free-of-charge agreement, was based on that the user was only allowed to utilise data for his/her own purpose (single site license). After the agreement, any user can freely share data procured free of charge with others, and can integrate data in products intended for resale. In this case the utility value of the data set would be higher today than before the agreement.

On the other hand the value may be set too high because, all else being equal, general digitalisation in society and the increasing spread of basic

digital data since 2002 would have resulted in falling prices for the addresses.

It is worth noting that the price of similar data in a number of other EU countries today corresponds more or less to the price of the Danish data before it was available free of charge.

To take account of the uncertainties mentioned above, and to incorporate the prudence principle, the assessment reduces the calculated value of the address data by 25% so that only 75% is included in the results i.e.: (75% x EUR 76 mill.) = EUR 57 mill.

The assessment also includes the savings made because enterprises no longer have to use resources to enter into agreements with municipalities on procurement, rights and data import. Similarly, municipalities' savings from no longer having to deal with negotiations, agreements and deliveries of data have also been included in the calculation of the benefits.

These savings have been calculated at about EUR 5 million from 2005-2009.

3. Other benefits

3.1 Benefits further down the value chain

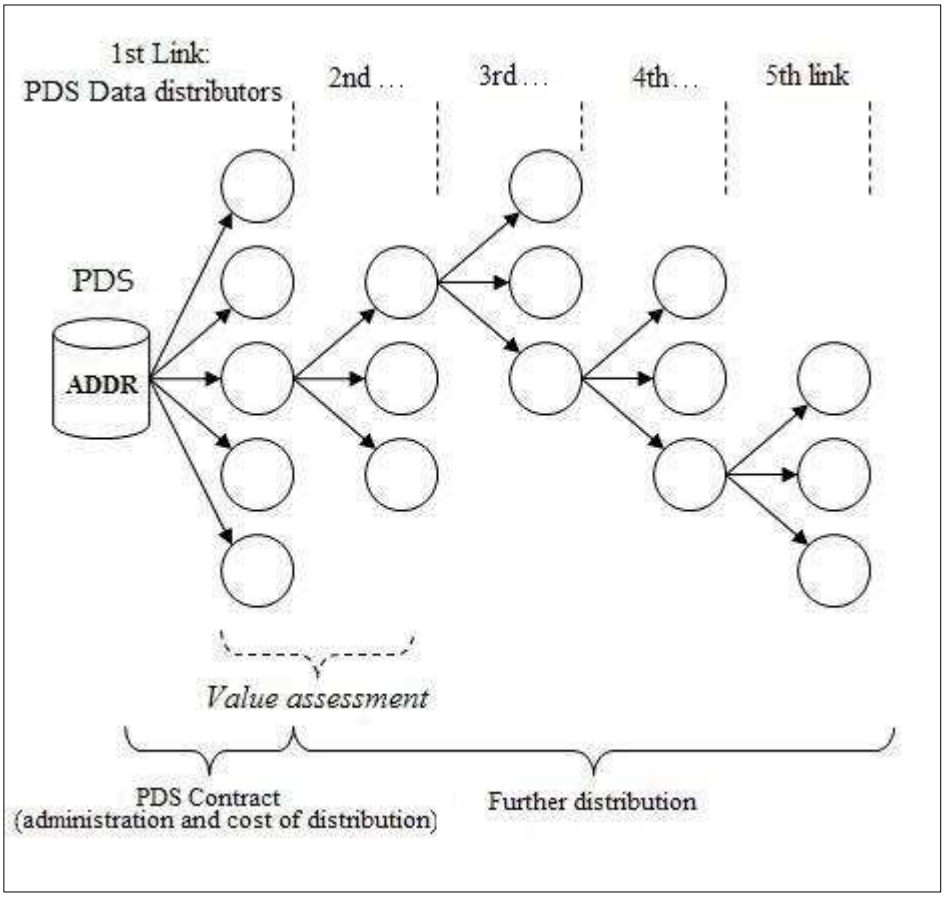
The value assessment only includes the direct financial benefits for the more than 1,200 parties receiving address data from a PDS distributor. The supplementary financial benefits arising in later parts of the distribution chain have not been included in the analysis.

For example, this may be applicable if the party receiving data from a distributor is a supplier of data for GPS systems.

In this case the enterprise in question will integrate address data with other relevant data into a GPS data product which is then resold to producers of GPS car navigation systems. Each producer of these GPS systems incorporates data in its products which can be resold to the individual car owner via several wholesalers and one retailer. (See diagram next page)

To illustrate the overall market for address data, according to Statistics Denmark, today 46% of Danish families have a GPS navigation system. This corresponds to about 1.3 million GPS systems, each with a copy of all Danish addresses.

As mentioned the study only estimates benefits in the first and second link of the distribution. The financial benefits linked to reuse of free address data in the third, fourth, fifth and subsequent links, as described above, have not been included in the value assessment, however they are likewise expected to be of a very considerable size.



3.2 Indirect and derived benefits

The assessment does not include indirect and derived benefits arising as a result of the following:

- no more duplicated data collection in alternative data sets because public address data is available to all on equal terms,
- the public can be more confident that the 112 emergency services, ambulances, police and other emergency services all use the same reference data,
- users can report errors and omissions more easily because errors only have to be corrected by one party at one place: the municipality at the Building and Dwelling Register (BDR),
- all else being equal, the address data used in IT systems will be updated more frequently due to low data costs,
- address data for all of Denmark is available at a known level of quality and in a fixed, standardised data format.

4. Potential for further benefits

4.1 Challenges - not all expectations realised

COWI notes in the assessment that the benefits expected by the Danish eGovernment Committee in 2002 have not been fully realised.

The study primarily shows that, despite the changed financial terms for utilisation, a number of important social areas and sectors are not yet using the official address data.

For example, this applies for the business registration area (Central Business Register, CVR) and the utilities sector, where enterprises have traditionally collected their own address information. According to Statistics Denmark, one result of this is that enterprises employing about 15 % of the working population are registered at an address which is not official.

There are similar problems of inconsistent address information with resulting duplicate work, errors and uncertainty in other state and municipal administrative back-end systems.

COWI notes that this situation is caused by technical, traditional and legislative barriers.

Furthermore, the assessment has identified a number of technical and organisational barriers which prevent rational and adequately frequent updates of address data in the IT solutions which use the addresses.

People and enterprises therefore frequently experience that a new address (or a change in an existing address) takes several months or even years to show up, for example in their GPS systems. If this means that ambulances, the police or a company's customers and suppliers cannot find their way, it is clear that there will be serious consequences.

4.2 Plan to secure further benefits

These challenges will receive special attention from DECA in 2010-2011 in connection with an action plan to underpin the addresses as an element in the Danish infrastructure.

The Action Plan takes its point of departure in documented needs from a number of important users of addresses and address data, and it aims at achieving further social benefits and promoting economic growth and eGovernment.

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