Assessment of the Re-use of Public Sector Information (PSI) in the Geographical Information, Meteorological Information and Legal Information Sectors

The opinions expressed in this study are those of the authors and do not necessarily reflect the views of the European Commission.
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Executive Summary

Conclusion from the research is undoubtedly positive: Although the PSI Directive was not fully transposed into all Member States until 2008, it has already sparked positive effects. The re-use of PSI is increasing in all three sectors of public information, which have been individually scrutinized in this study. However, the impact of the Directive varies within the sectors.

The PSI Directive has had its strongest impact in the sector of geographical information (GI). The GI market is growing all across Europe; the income of GI re-users is increasing (for 66% of respondents) and the market is enriched by new re-user groups which offer innovative applications for geographical information. The National Mapping and Cadastral Agencies (NMCA) of Spain and Austria have made significant changes to their data policies, and they provide very good examples of pricing and licensing models oriented to re-use.

But there are also other public holders of GI that are aware of the Directive and have introduced significant changes that have been triggered by the Directive (reported by 54% of NMCA’s). Many changes refer to technical issues such as data formats and modes of delivery; GI is increasingly offered on Internet portals or via web services.

Re-users of GI confirm that holders have improved their delivery services in recent years. It is particularly the speed of delivery and the formats offered that have improved, in their eyes. Although they still complain about restrictive licensing and high prices, they have also highlighted some positive changes referring to pricing and licensing (34% and 28% of positive replies respectively). Here, good examples may support other holders in setting up new licensing conditions and encouraging them to reduce their prices.

The large majority (79%) of private re-users of GI would like to access more public GI, but some do not take it up, primarily because of unfavourable pricing and licensing conditions. Nevertheless, there is clearly a significant demand for GI. In order to meet this demand it is important to improve the delivery conditions rapidly.

In recent years, GI has been made increasingly available by private sources. This leads to a substitution of public sector information. When stable markets for a certain kind of geographical information are established, PSI holders should consider reviewing their range of public tasks.

The study also reveals an impact of the Directive in the sector of legal and administrative information. Half of the holders have indicated that they have made noticeable changes in their data policy since 2002, one third of them confirming that the changes have been brought about by legislation. The majority of them (79%) offer legislative and administrative information free of charge on the internet.

The market for legal and administrative information is growing; since 2002 an average increase level of 40% was reported by holders. The majority of re-users have recorded increasing income. It is in particular those who add value to PSI who have reported
exceptional growth rates. In addition, several new online information portals have been set up which offer convenient search tools to access judicial information.

However, the survey also highlights the continuing dissatisfaction expressed by companies about public authorities. In contrast to other sectors of PSI, in which re-user complaints are predominantly about pricing and licensing, in the legal sector many of the respondents criticize the lack of information on what PSI is accessible and where to find it for re-use. This can be explained by the decentralized organization of the jurisdiction. But importantly, it could indicate that re-users do not have a successful business relationship with the public sector.

In the sector of meteorological information, the results of the study suggest that the Directive has had little impact thus far. Although the National Meteorological Services (NMSs) have also introduced many changes in their data policy, only five of 25 NMSs have reported that they changed their data policies based on a change in their national legislation.

Nevertheless, the market for private weather services is growing. Most of the respondents have recorded an increasing data volume download (for 74% of respondents) and from those that reported numbers related to income 80% confirmed significant increase in recent years. However, it can be assumed that the number of companies active in the meteorological sector in Europe does not exceed 70, which is still a very small number for a market with such important information as weather and climate.

Re-users complain first and foremost about pricing, transparency and licensing. Furthermore, in the meteorological sector complaints about discriminatory activities are particularly high. Many re-users express their wish for an efficient system providing free meteorological data and unrestrictive licences, as provided by the public authorities in the United States of America.

As in the other sectors, the large majority of re-users of meteorological information (88% in the online questionnaire) would like to obtain more PSI from holders. However, due to unfavourable pricing and licensing they currently refuse an extension of the procurement or they gather information from other free public sources (such as the US weather services).

Comparable trends in the PSI market can be observed in all three sectors. Due to recent activities concerning the data policies of PSI holders, re-users are concerned about the stability of their business models. For the stable development of the market, it is important that holders define a consistent strategy about their position in the chain of B2B or B2C relationships, especially their role towards re-users.

The study reveals that most re-users in all three sectors are neither aware of the PSI Directive (79% in GI, 58% in MI and 71% in L&AI) nor know about existing rights concerning re-use requests. So far, there have been few formal complaints from re-users. One reason is the lack of national initiatives that support requests for re-use; another seems to be the legal complexity, expense and delays that surround cases involving re-use requests. The difficulties between holders and re-users often consist of a mix of legal issues, such as privacy protection, copyright and freedom of information.
The case studies and telephone interviews carried out to supplement the survey results confirmed the impression of re-users of discriminatory practices in all three sectors. In this context, PSI holders often refer to their obligation to comply with compulsory public tasks as defined by specific laws.

To raise awareness of the Directive within Member States, it is recommended that regular monitoring of key indicators should be introduced at a European level. The most important indicators of data delivery are on the one hand the income of PSI holders (under the condition that data is not made available for free) and on the other hand the volume of data delivered. In order to raise the comparability of this monitoring, indicators should be defined at product level. This would also help to develop a set of standardized products in Europe.

Furthermore, the indicators must reflect the common business or delivery models of each sector. Therefore, specific delivery conditions such as server access, free access or reseller partnerships between holders and re-users should be taken into account.

A great hope for an improved access to PSI lies in central bodies in charge of promoting PSI re-use at the national level. In most European public administrations, granting private organizations with access to public information for commercial purpose represents a major cultural change. Such historical change requires a particular effort from Member States, and an adaptation of their organization through the empowerment of a dedicated public body for the promotion of PSI re-use.

The study revealed that in all three sectors the markets are growing and that the re-use of PSI has already increased. PSI holders have introduced into their data policy numerous changes which meet the spirit of the Directive. The demand for more PSI in the market is still significant, as re-users of all three sectors declare unabated buying interest. In order to meeting this demand and thereby to support the information economy in Europe, PSI holders should focus on crucial aspects such as licensing and pricing, and provide greater support for the re-use of PSI.

1 Introduction

As of 2000, the transformation of traditional industry into one that is information and knowledge-based was recognized by the European Union as a guarantee of long-term growth, high employment rates and stable quality of life in Europe; this was achieved by the i2010 Strategy originated by the European Member States in Lisbon.

Considering the emergence and dynamism of information-based product and service development, the key producers of primary information – i.e. public services and related organizations in both the public and private sectors of Europe – are of immense importance. However, due to some issues regarding access to information held by public bodies and its re-use, the full potential of employment, innovation and value creation cannot be realized.

The European Community has actively improved conditions for the re-use of public information. In Europe, basic principles for re-use of public sector information were

The exploitation of public sector information was evaluated in an empirical study carried out in 2005 in the Member States, at which time the implementation itself had not yet been fully realized. This study is known as the MEPSIR report (Measuring European Public Sector Information Resources).

In 2007, the EC commissioned this study to assess the re-use of PSI in three specific sectors: geographical information, meteorological information, and legal and administrative information.

The specific objectives of the study are fourfold:

- general overview and analysis of the geographical (cartographic mapping and cadastral), meteorological, and legal and administrative PSI fields
- measurement of the re-use of PSI in each specific field
- identification of key indicators for analysing the re-use of PSI
- analysis of the implementation of the Directive’s framework conditions by the supply side, and identification of successful examples and practices in each field.

This final report includes also case studies of relevant practices in the EU.

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2 The survey

2.1 The focus of the Directive

The PSI Directive is built around two key pillars of the internal market: transparency and fair competition. It sets out the basic rules for the re-use of PSI throughout the European Union, whose essential aspects are:

- Procedure to deal with requests for re-use:
  - Public sector bodies shall process requests for re-use and shall make the document available, preferably through electronic means.
  - If licences are needed, the public sector body should finalize the licence offer to the applicant within 20 working days after its receipt.
  - If a request is decided negatively, the public sector body shall communicate the grounds for refusal. Any negative decision shall contain a reference to the means of redress in case the applicant wishes to appeal the decision.

- Conditions for re-use
  - Formats: Documents for re-use shall be made available in all formats and languages in which the information exists, wherever possible by electronic means.
• Charging: According to the Directive, charges shall not exceed the cost of collection, production, reproduction, and dissemination together with a reasonable return on investment.

• Transparency: Any conditions applicable to re-use, charges and other conditions shall be pre-established and published.

• Licences: Licensing conditions shall not unnecessarily restrict possibilities for re-use and shall not be used to restrict competition. Furthermore, Member States shall ensure that standard online licences for the re-use of public sector documents are available and can be processed electronically.

• Practical arrangements: Member States shall ensure that practical tools are in place which makes it easier to find the material available for re-use. Such a tool could be an assets list, preferably online.

• Non-discrimination and fair trading

• Non-discrimination: The Directive obliges the Member States to avoid discrimination. If documents are re-used by a public sector body as input for its commercial activities which fall outside the scope of its public tasks, then the same charges and other conditions shall apply to the supply of the documents for those activities as apply to other users.

• Prohibition of exclusive arrangements: the Directive prohibits exclusive arrangements. Existing exclusive arrangements should be terminated at the end of 2008 with an exception for exclusive rights necessary for the provision of a service in the public interest.

In its public communication, the Directive encourages Member States to go beyond these minimum rules and to adopt open data policies, allowing widespread use of documents held by public sector bodies. Concerning charges, public sector bodies are encouraged to set lower charges or to make no charge at all; it is recommended in any case that documents be made available at charges that do not exceed the marginal costs of their reproduction and dissemination.

It is the aim of this study to assess the re-use of PSI in different sectors, in order to highlight developments which meet the spirit of the Directive and to obtain information about barriers which continue to limit re-use. The case studies, in particular, address the named aspects of the Directive and provide examples of its concrete implementation.

2.2 The three sectors

PSI contains a large amount of different data, ranging from geographical information to legal to statistical. As the basic conditions within the varying segments may differ significantly, this study focuses on three sectors in particular. For more detailed information, three data groups were chosen for each sector (see figure 1).

For the evaluation of the re-use of Geographical information (GI), it is necessary to determine the most important categories of GI and thus to ensure the study remains focused on them. So, in the context of this study, GI is defined as: topographic data in all
scales, cadastral information (including address coordinates), and aerial photography.

Previous studies\(^1\) of the German market indicate that these are the categories with the highest re-use rates. Besides, they are relatively easy to confine, which will help PSI holders and re-users to answer the questionnaire.

The Meteorological Information (MI) can be split into a variety of different data sets; there are, among others, observations of temperature, wind speed, humidity, etc. measured at ground stations or by weather balloons, satellite images from geostationary or polar-orbiting satellites providing images of the Earth in the visible or infrared spectra and several kinds of weather prediction sets. The study focuses on three categories: synoptic observations, radar weather images, and weather predictions. Usually, all of them are provided only by the public sector. Satellite images are not part of the main focus of the survey since they are provided only by the European organization EUMETSAT (Meteosat, Metop-A), from the US organization NOAA (NOAA satellites, EOS satellites, GOES) and certain Asian organizations, but not from National Weather Services (NMS) directly.

The study will consider three major categories of Legal and Administrative Information (LAI), namely legislation, judicial information and administrative information. For this study, legislation includes primary legislation enacted by national and/or regional parliaments as well as secondary legislation also enacted by national and/or regional parliaments, but also by other authorized public bodies such as Ministries. Judicial information refers to court decisions which can be either decisions made by national and/or regional courts and their representative bodies, or decisions made by tribunals and other authorized bodies, e.g. Ombudsmen and Commissioners. The third category, administrative information, refers to information that relates to the function of government and public administration, and includes regulations, official notices (such as calls for tender), codes of conduct and other background information on decision-making processes. This kind of administrative information is usually formally published in, for example, official journals for those jurisdictions that maintain them.

\subsection{2.3 The indicators}

One aim of the study was to develop a set of indicators in order to assess the re-use of PSI. PSI holders and re-users were asked about these indicators in an online questionnaire and

\footnote{German Federal Ministry of Economics and Technology: “Prospects for Business Models of German Companies in the European and Global Geo-Information Market”, June 2008.}
by telephone interviews. Although the indicators of the three sectors differ in their detail, the questionnaires were structured similarly.

These are the indicators considered in the questionnaire for PSI holders:

<table>
<thead>
<tr>
<th>PSI delivery</th>
<th>Web portals</th>
<th>Customers</th>
<th>Data policy</th>
<th>Standard product</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Income</td>
<td>• Existence and functionalities</td>
<td>• Customer groups</td>
<td>• Changes in data policy</td>
<td>• Price</td>
</tr>
<tr>
<td>• Number of requests</td>
<td>• Traffic on the portals (hits, page impressions)</td>
<td></td>
<td>• Legal basis</td>
<td>• Attributes</td>
</tr>
<tr>
<td>• Download volume</td>
<td>• Changes since 2002</td>
<td></td>
<td>• Direction and intensity of changes</td>
<td></td>
</tr>
<tr>
<td>• Changes since 2002</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The PSI re-users were asked about the following indicators:

<table>
<thead>
<tr>
<th>Procurement of PSI</th>
<th>Basis data</th>
<th>Data policy</th>
<th>Substitution</th>
<th>Web portals</th>
<th>Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Type of procured data group</td>
<td>• Income related to PSI</td>
<td>• Assessment of different aspects of the holder’s policies</td>
<td>• Shares of substituted information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Data volume</td>
<td>• Number of employees</td>
<td></td>
<td>• Data procurement by web portals</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Knowledge about PSI Directive</td>
<td></td>
<td>• Assessment of different aspects</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.4 The survey

For each sector, different questionnaires were provided for PSI holders and for PSI re-users. The links to the questionnaires were delivered to the PSI holders and re-users via e-mail. As an e-mail attachment two PDF versions of the questionnaire manuals, in English and German respectively, were distributed. The exchange rates for the conversion to the Euro and the recommendation letter of the European Commission supporting the study were also attached to the e-mails.

The questioning in all three sectors was supported by various associations and networks, who forwarded the invitation e-mail to their members. The links to the questionnaires, documents and information about the study were also available on the website of ePSIplus and MICUS Management Consulting.

Despite the fact that re-users have been generally reluctant to participate in the survey, a significant sample could be finally obtained. The authors of the study would like to acknowledge the support received by several associations of re-users, such as EuroGeographics and PRIMET, in approaching their members. Those who responded to the enquiry about their reasons for non-completing the questionnaire gave the following comments:

- information is considered to be confidential
- information is too difficult to provide
questions were not understood due to different PSI re-use conditions in the varying countries
questions were not understood due to language problems
questionnaire was too long, re-users were not willing to spend their time in the completion of the questionnaire
re-users were not aware that the questionnaire was part of an “official” survey of the European Commission.

Additionally, telephone interviews were carried out with PSI holders and PSI re-users. These interviews were based on standardised questionnaires which focused only on the most important issues and did not, therefore, cover the complete online questionnaire.

3 Re-use of Geographical Information (GI)

3.1 GI – PSI holders

3.1.1 Responses to the survey

The producers and holders of geographical public information can be categorized into the following groups:

- Firstly, there are the National Mapping organizations, which produce topographic maps, geodesic surveys and aerial photography. It is usually the responsible agencies which carry out the medium and large scale mapping. In some countries, they are also responsible for hydrographic mapping, thematic mapping, and satellite images.
- Additionally, there is Cadastral Mapping, which includes mapping the country and updating the legal land register maps. The responsible public units carry out the small scale mapping, often in co-operation with private geographers and land surveyors.

The national mapping and cadastral agencies (NMCA) were contacted via their European association, EuroGeographics.

In total 27 PSI holders from 24 countries submitted answers to the questionnaire. Two answers were received from these countries:

- Belgium: General Administration of Patrimonial Documentation and National Geographic Institute
Micus Management Consulting GmbH
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- Germany: Federal Agency for Cartography and Geodesy and on behalf of the Federal States a single answer was given by the Working Committee of the Surveying Authorities of the States of the Federal Republic of Germany
- Spain: General Directorate of Cadastre and National Geographic Institute.

3.1.2 Organizational structure

The first question of the online questionnaire deals with the structural organization of the PSI holder in each country. This is relevant, as some forms of organization give the PSI holder more autonomy in terms of pricing and licensing models. Out of the 27 national mapping and cadastral agencies (NMCA) that responded, 63% are part of the public administration, 33% are public bodies with substantial financial autonomy and 4% are government-owned companies. None of the NMCA is organized as a public-private partnership.

The map below shows the distribution of the different forms of NMCAs throughout Europe.

Important in this context is the range of activities of the different PSI holders. In a EuroGeographics survey from 2006, the NMCA were asked about their fields of...
While in some countries different bodies are responsible for topographic information and cadastre, in others there is a single central body dealing with these two remits. Besides, there are NMCAs, which also cover land registers. Just two organizations responded that they cover the complete range of activities, including topographic mapping, cadastre, land registry and hydrography (see Figure 5).

### 3.1.3 PSI delivery

In order to assess the re-use of public geographical information it is important to collect information on the volume of data delivery by PSI holders. In this context the PSI holders have been asked about three indicators for each of the three data groups within geodata:

- Income in Euro
- Number of re-use requests
- Download volume in MB.

In addition, information about the changes since 2002 for each indicator was requested. This time period was selected because the period of five years was considered long enough to indicate the impact of the PSI Directive.

In 2007, the total income of the PSI holders for all three data groups of GI, was about €356 million. This figure only represents the revenue from the sale of geographical datasets generated by the 27 PSI holders that responded to the questionnaire. The revenue generated by value-added services is not included. Furthermore, revenues from public bodies at the regional or local level or private companies are also not included.

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Based on the income figures, it is possible to calculate the “indicator income per inhabitant”. The average income from sales of public GI data per inhabitant is €1.04. When this analysis is carried out in more detail for each country, there are differences between the Member States; the map below shows the distribution of different categories for the indicator income:

The indicators “income” or “income per inhabitant” should not be taken as an equivalent of the volume of PSI delivery; they are highly dependent on the pricing model of the relevant PSI holder. For example, the Spanish cadastral authority has introduced the free-of-charge policy for its cadastral information; hence, both income and income per inhabitant are very low.

More generally, in almost all European countries essential data is owned by municipalities, in particular in urban areas. The NMCAs in Denmark and Sweden are typical examples of an externalized sales system based on resellers.

From 24 responses 17 NMCAs gave figures about changes in income. 46% of the NMCAs responded that their total income had increased since 2002; 4% indicated an equal level of income and 12% said that their income had decreased.

Except for three NMCAs, all respondents recorded an increase in income in all three data groups since 2002. Two of the three PSI holders which recorded a decrease in income have reduced their prices.

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1 The number of inhabitants is based on 2007 Eurostat statistics.
significantly or have introduced free access to their data since 2002. The average of income for topographic information increased by \( \frac{2}{3} \), for cadastral information it doubled, and for aerial photography it increased by the factor 3.8.

Furthermore, all respondents who gave information about changes in re-use requests and in download volume experienced an increase in these indicators. Since 2002 the re-use requests increased by 2.5 on average and the download volume grew simultaneously by approximately 3.5. In some cases the data volume of single products has changed significantly due to new formats or other technical reasons.

### 3.1.4 Web portals

In the third part of the online questionnaire, the PSI holders were asked about their web portals. For topographic information, 23 web portals were named. Cadastral information is offered in 15 web portals and 16 NMCAs show aerial photography on their web portal.

The number of portals with a viewing function is fairly low. For topographic information, 16 portals show data, for cadastral information there are only eleven, and aerial photography is shown on twelve portals.

In order to obtain more information about the different web portals of NMCAs, 21 of the named portals have been analysed. The majority of them (43%) are completely or (19%) partially translated into English.

As it is crucial for re-users to obtain information about the definition and description of products, the web sites were screened as to whether they provide such documents. Nearly all of them (90%) offer this information.

Another important aspect for the re-use of PSI is the transparency of pricing. The majority of web sites (67%) give information about prices; however, 28% do not offer clear information about pricing.

The PSI Directive requests clear licensing conditions. 40% of the analysed web sites provided explicit information about licensing conditions, and another 10% at least partial information. However, nearly one third of the analysed web sites (30%) do not meet this standard.
### 3.1.5 Customers

The PSI holders were asked to identify their most important customer groups. 15 respondents answered this question. In total 16 re-user groups were named. For analytical purposes the re-user groups have been divided as follows:

- public administration
- “traditional re-users of topographic information”: i.e. utilities, water, telecommunications, transport
- “traditional re-users of cadastral information”: banking and real estate
- “new user groups”: geomarketing, software, portals, publishers, retailers.

The figure below indicates what proportions of the total download volume are taken up by the various user groups. The results are based on 24 answers. It can be noticed that public administration is, with 42%, the most important customer for public geographical information. It is followed by the traditional re-user groups (utilities, water, telecommunications and transport for topographic information; banking and real estate for cadastral information). However, with 12% of the download volume, the new user groups have a significant share in the PSI delivery.

It is assumed that these user groups are the carriers of new business models, for example:

- Free services over the internet financed by revenues from advertisement (mapping and imagery, routing, location finding)
- Consumer embedded electronics (navigation systems) and map-based mobile applications for handsets
- Sector-specific professional services for small and medium companies (geomarketing in the automotive sector, crop management in the agricultural sector, fleet management for home care services, security management in the winter sports sector, etc.)
The respondents had the opportunity in the questionnaire to name, in a comment box, any further user groups and their share. The answers were agriculture, forestry, education, science and research, architects, engineers, surveyors, construction, other countries, and non-profit organizations. Their share in the download volume, in combination with the share of private users, is 13% (others).

### 3.1.6 Data policy

The PSI holders were asked whether there had been a change in their data policy since 2002. Out of 22 answers, 82% answered in the affirmative.

The map below indicates in which countries NMCAs reported changes.

Those respondents who confirmed that there had been a change in their data policy since 2002 were asked whether these changes were brought about by changes in legislation. The majority of 54% answered yes. This suggests that the PSI Directive has had a positive impact on the NMCAs’ data policies.
The NMCAs were then asked in which direction their data policy had changed. The respondents were requested to evaluate the intensity of changes in different aspects of their data policy. This question was answered on a roll bar giving the opportunity of assessing the intensity of a change on a scale from 0 to 3. It should be noted, however, that answers to this kind of question are highly subjective and one cannot be compared to another. However, based on the answers, the following average assessments can be derived for each aspect. As they are consistent with the observations of the re-users about changes in data policies, it can be assumed that the results to this question correctly indicate the tendency of policy changes.

According to the answers, the most significant changes refer to the number of delivery formats, the speed of delivery, and the number of products. These changes can be characterized as technically driven changes which are closely linked to the digitalisation of data and the delivery of digital information on the internet. Furthermore, PSI holders have also attempted to improve pricing and licensing conditions.

### 3.1.7 Price of a standard product

For the geographical sector, an ortho-rectified aerial photography of 10 km² was chosen as a standard product. Aerial photographs are common products and, compared to maps, their pricing is relatively simple. However, aerial photographs can differ from each other in a number of parameters such as resolution, colour, date of production etc., all of which may influence the price. Therefore the respondents have been asked to specify their product.

The majority of respondents (88%) answered this question. The prices varied between €0 and €262, and the average price turned out to be €62. The price is country specific and dependent on the pricing policy of the NMCA of each Member State.
3.1.8 Suggestions and remarks

Finally, the NMCAs were asked for suggestions, remarks or examples of good practice in terms of the re-use of PSI. In total 25 remarks were made. They can be divided into five groups.

Eight suggestions deal with the necessity of achieving complete or partial cost recovery for the production of high-quality data. These respondents emphasized the need for a stable income through the sale of data in order to guarantee the continuation of the operation and to maintain product quality. Most of the NMCAs who mentioned this aspect, have a particularly high income through sales of PSI, pursue an active market strategy and / or act with substantial financial autonomy. However, five comments referred to the need to reduce prices in order to maximize the re-use of PSI.

Three remarks expressed a need for the amendment of legislation and financing policies. This can be interpreted in the direction that the respondents will support a reduction of prices as long as losses in income are balanced by other sources of finance.

Another issue, which was mentioned eight times, is the improvement of cross-border operability and co-operation between the Member States. This aspect is closely related to the objectives of the INSPIRE Directive and indicates that PSI holders attach great importance to the development of technical standards.

One respondent mentioned problems with privacy protection. This is of particular interest for cadastral information which contains ownership details relating to individuals.

3.2 GI – PSI re-users

3.2.1 Responses to the survey

Re-users of GI can be distributors, data brokers or content providers who edit and refine basic public data according to the needs and requirements of their customers. Private companies in the GI market frequently offer specialized software solutions and services based on geoinformation.
The online questionnaire was answered by 19 re-users. A major provider of navigation data and software submitted the online questionnaire with regard to the European market. In the telephone survey, 39 people were interviewed, most of them from Germany, Spain, Italy, and Sweden. In all for the geographical sector, 58 answers were received from re-users of 14 countries.

### 3.2.2 Knowledge of PSI legislation

In the telephone survey, the re-users were asked whether they knew of the PSI Directive and/or the implementing national legislation; 79% of the respondents answered in the negative. This indicates that a large majority of the re-users are not aware that legislation at EU and national level supports commercial re-use and that there are specific procedures for formal complaints to help them resolve issues in connection with re-use.

It is assumed that this result is related to the recent and relatively slow implementation of the Directive into national legislation. The lack of awareness for the PSI Directive both in the public and the private sector may be a major barrier against effective implementation of the Directive. It is strongly recommended that for the next two or three years the awareness and promotion of the Directive should be a high priority.

### 3.2.3 Procurement

In order to assess the re-use of public sector information the re-users were asked which data groups of public geographical information they re-used. It was possible for them to give more than one answer. The result shows that topographic information is re-used by 84% of the re-users, cadastral information by 74% and aerial photographs by 63%. It
should be noted that the data group of cadastral information also includes address coordinates.

The re-users had the opportunity of listing, in comment boxes, more kinds of public sector information obtained from the PSI holders. Here, environmental information, address information, tax information, geological and hydrological information were named. This highlights the fact that in most business models geographical information has to be mashed with thematic data in order to create added value.

When asked for their sources of public topographic information, 63% of the respondents stated that they obtained data from national sources, 32% from regional sources and 5% from local authorities.

### 3.2.4 Income

The income from geographical information varies significantly. The figures given ranged from €500 to €5m.

The fact that 26% of the respondents that filled out the online questionnaire did not answer this question can be explained by a variety of reasons:

- The reluctance of the private sector to provide income-related figures to third parties.
- The fact that many business models, particularly those of software providers or consultants, do not include the re-sale of public sector information. Especially in the case of companies commissioned by public authorities, service providers and software developers implement geographical information systems based on public geographical information, but they do not own data (the data is owned by their commissioners).
The impossibility to establish a direct link between the re-use of public sector information and economic results (see Figure 23).

The sample used in the survey is sufficient to support conclusions on the trends of the market for geographical information; however, definitive/measurable conclusions cannot be drawn. In particular, the total market volume (cumulated income) cannot be estimated on the basis of the survey. See section 6 of the report (Monitoring) for more explanations on the way such results can be obtained.

Two thirds (66%) of the respondents indicated that there was an increase in their income. Only 3% experienced decreasing income during that period. For 21% of the respondents, their income remained unchanged. 10% decided not to answer this question.

These figures show clearly that the GI market is growing for the majority of the re-users. This has been also found in the very recent market study of the German GI market from June 2007. In this study it was estimated that the German GI market has grown by 50% since 2000.

### 3.2.5 Data volume

In order to check the availability of different indicators, the re-users were asked to indicate changes in the volume of procured geographical information since 2002. The structure of the answers is similar to that of the question about income; nearly two thirds stated an increase in volume, one third did not answer this question, and 5% had a decrease in volume.

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### 3.2.6 Data policy

In order to find connections between the changes in the data policy of PSI holders and effects on the part of the re-users, they were asked whether they recognized any changes and how they assessed different aspects of the data policies.

The figures below show to what extent the re-users recognized changes in the data policy of “their” PSI holders and in which direction. First of all it has to be stated that for each aspect at least 30% of the respondents recognized that the changes were positive.

Furthermore, the number of respondents who had reported unfavourable developments, such as an increase in prices or worsening of format conditions, was very low (less than 8% in all cases).

Next, the re-users were asked to assess the different aspects of the current data policies of PSI holders on a scale from 0 (unacceptable) to 7 (very good). This assessment backs up the former findings about current data policies of PSI holders. The aspects of coverage, delivery formats, products and speed of delivery were assessed by the re-users as better than prices, licensing and transparency.

General trends became clear when the shares of positive replies were analysed. 28% of the re-users (see Figure 28) stated positive changes in licensing, 34% of them (see Figure 27) stated an improvement in pricing policies, 41% of the re-users recognized positive changes in the speed of delivery and the number of formats.

This result is consistent with the assessment of PSI holders of the intensity of changes in the different aspects. According to the PSI holders, the changes that had taken place shortly before the survey

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5 The graph should be read as 0 (unacceptable) to 7 (very good) where the range between 1–2 should be considered poor, 3–4 reasonable and 5–6 as good.
was done focused on the more technical issues such as delivery speed and number of formats.

### 3.2.7 Web portals

Web portals are considered to be an important PSI distribution platform. In order to verify this assumption, the re-users were asked about the usage of web portals.

In total, 19 respondents answered this question. 26% of them obtained their data on a daily basis. This high frequency of data procurement on the web portal indicates the need for topical data and for web services. The share of respondents who procure data from web portals (weekly, monthly and yearly) do so to the same extent, namely 10–11%.
Furthermore, re-users were asked for the URL of the web portals from which they obtain PSI. They were permitted to name more than one portal. It was intended to check the acceptance and/or awareness of the web portals of the NMCAs which have been listed in the GI questionnaire of the holders. While respondents from eight countries answered this question, only four web portals of NMCAs were named. These were the portals belonging to Landmateriet (Sweden), Ordnance Survey (UK), Idee (Spain) and Bundesanstalt für Eichwesen und Vermessung (Austria). Furthermore, five public authority portals with a thematic background were named dealing with, for example, geology, statistics, forestry and environment. Again, this result emphasizes the importance of opportunities of data mashing. Also, ten regional authority web portals have been provided; this underlines the need for public geodata infrastructures which allow a far-reaching distribution of public geoinformation. Two of the named portals are run by private providers, but for two more portals the portal provider remained unclear.

Local authorities provide particularly detailed geographical information allowing the creation of applications for experts whose business activities are focused at local level. Several portals belonging to regional authorities were quoted in the survey (in Germany, Spain, UK and Austria).

### 3.2.8 Customers

The definitions of holders, re-users and end users are in some cases difficult to distinguish. The re-users were therefore asked about their customer groups according to their share of income. The intention was to gain a deeper understanding of information streams and business models.

The results show that the largest customer group of re-users comes from public administration. At this point it is helpful to go back to the results of the income generated by PSI re-use. A large number of respondents who had not been able to name these figures explained in the telephone interviews that many orders do not include the purchase and sale of data as such, but instead, for example, the purchase and sale of services and software. This is particularly so if the customer is from public administration.
3.2.9 Substitution

The following questions were asked in order to reveal whether re-users had already substituted public data and, if so, why they decided to do so.

When asked about their sources of geographical information, a majority of 62% of the re-users stated that they worked with a mix of public and private data. At least, nearly one fifth of the respondents (22%) work solely with public data.

In order to gain an idea of the effects of substitution, a question was put to the re-users about changes in the volume of data obtained from public sector since 2002. While one fourth of the respondents (25%) had reduced the volume of data obtained from public sources, 13% had increased their procurement of data from the public sector.

On being asked whether they would like to obtain more public geographical information, the majority of 79% of all respondents answered in the affirmative. This shows that there is still a high demand for public sector information in the geographical sector.

The re-users were then asked their reasons for not obtaining more geographical information from public sources. Six optional answers were given in the questionnaire, coloured blue in the figure below. Additionally, the re-users were given the opportunity to name other reasons for not using more PSI and to specify them. In total ten answers referred to other reasons, grouped under “unfair market”, “information not
available”, and “lack of centralization” (coloured red in Figure 36). It was permitted to list more than one of the given answers.

This question was answered by 20 respondents, who ticked 50 answers in total.

The answers show clearly that licensing and pricing are the most significant barriers to the re-use of public geographical information by respondents.

The result also reveals an aspect mentioned in several telephone interviews; clear, transparent, and reliable licensing policies are considered to be slightly more important than a reduction in prices; the uncertainty of licensing keeps many re-users from setting up a long-term business model based on PSI.

Nevertheless, the total level of prices is also a very important issue, particularly for distributors. As some interviewees in the telephone survey reported about margins below 5%, sale activities are very unattractive in this field.

The lack of quality of public data and its currency was mentioned in 44% of all answers. 28% of the answers referred to the speed of delivery. The number of kinds of formats was named by only one respondent.

Very interesting is the fact, that “unfair market” was listed in 33% of all answers, although it was not listed as an answer. Respondents explained that they criticize discriminatory practices of PSI holders such as the exploitation of competitive advantages of survey authorities caused by the lack of transparent pricing policies.

Four respondents complained about the fact that information which would be of interest for them was not available for re-use. The lack of centralization was named by two respondents and reflects the problem of data delivery in federal states.

3.3 Case Studies

There are several examples of new reuse oriented pricing and licensing policies which have been implemented recently in the GI sector. Two of the most interesting cases are briefly summarized below. Both represent a significant change in the pricing policy towards the development of the European PSI market. The third case study presents an alternative approach to that described previously.
3.3.1 Austria – A new pricing model

The recitals of the PSI Directive call on the Member States to encourage public sector bodies to make PSI available at marginal costs. The new pricing model of the Austrian National Mapping and Cadastral Agency (Bundesamt für Eich- und Vermessungswesen – BEV) has been chosen as an example providing positive changes in the sector of geographical information based on the introduction of marginal costs for public geodata and furthermore being a good illustration of a transparent and coherent licensing model.

As part of the transposition of the PSI Directive to Austrian law, the Austrian Act for Surveying, amongst the others containing the regulation on the State cost-recovery from the sale of data, was amended. In consequence, the BEV was enabled to change in 2006 its pricing and licensing model of cost-recovery to a new pricing and licensing model, which resulted in a significant reduction of fees up to 97% for certain type of data.

In addition, transparent re-use modalities have been introduced. A consistent standard-price model was developed differentiating internal re-use (for private individuals, for enterprises or for a public organization within the technical or administrative tasks) and external re-use for commercial reasons, establishing, for both groups, separate fees depending on the content of the data-layer and the size of the area.

The effects of this change in data policy have been significant with increases (up to 7,000%) of the number of orders for digital orthophotos. The number of external re-users has increased as well. The additional demand emerged from a sector of small and medium-sized enterprises. New players from this sector can be assigned to “new user groups” in the branches of geomarketing, health services, agriculture, etc. The development of new business models based on geographical reference data is observable.

Although fees were drastically reduced for certain data sets, the total turnover for the BEV from the products concerned is more or less stable. Hence, the BEV has raised the re-use of its reference data, without it suffering any drop in its turnover.

3.3.2 Spain – Free access to GI

Spain is a decentralized state: each autonomous region has its own cartographic authority. Several ministries also maintain cartographic databases in fields such as agriculture, environment, geology and demography, or for military purposes. The National Geographic High Council is the collegial assembly in charge of the coordination between these cartographic information holders.

The National Geographic High Council recognized two important trends in the development of the geographical information sector, which led to the creation of the Spanish National Spatial Data infrastructure:

6 Vermessungsgesetz (VermG)
The geographical information sector is growing rapidly, creating high-calibre value-added jobs and economic activity in a future-oriented knowledge society. Public information holders are major players in this swiftly evolving sector, and they must, therefore, foster innovation and growth in the creation of map-based value-added products and services.

Through the rapid development of internet services, enquirers are now able very easily to gain access to geographical information from private sources. It is essential, therefore, for the public holders of cartographic information not to lag behind in this technical evolution, and it is clear that there is a need to develop user-friendly internet services based on public geographical information.

In March 2003, the Spanish Cadastre administration made accessible the complete cadastral map of Spain on the internet. In 2004 the internet portal IDEE\(^7\) was launched to offer a free access to essential geographical data through Web Map Services (WMS). Since its creation, the amount of information available through the portal has continuously expanded, with an ever-increasing number of public data holders providing free access to their datasets via the platform. It should be signalled that the number of visits in the Virtual Cadastral Office has been increasing by more than 50% per annum since 2003 reaching 15 millions in 2007. All geographical and cadastral information is available free of charge for commercial re-use and without limitations of any kind.

An analysis of the impact of a free access to spatial data in Catalonia\(^8\) demonstrated that such initiative is highly profitable to public institutions, by saving a lot of time, simplifying processes and making optimal use of the available information. The impact on private companies is also positive.

This case study illustrates the arguments underlying a drastic reduction of the barriers to the re-use of PSI:

- **Free access to public sector information boosts both the private economy and public services, unleashes innovation and creates ideal conditions for a fast development of the information society.**
- **The management of licenses, usage control and sophisticated pricing models are supplementary administrative burdens both for public services and companies. Freedom of access to the geographical databases benefits in the first place to public services, most particularly to local administrations.**

### 3.3.3 Germany – Public tasks regarding production of leisure maps

Private publishers of cartographic maps in Germany have signalled that the pricing from State Survey Authorities for maps for leisure activities might not be in compliance with the non-discriminatory clause of the Directive: “If documents are re-used by a public sector

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\(^7\) Infraestructura de Datos Espaciales de España (www.idee.es)

\(^8\) The Socio-Economic Impact of the Spatial Data Infrastructure of Catalonia (Pilar García Almirall, Montse Moix Bergadà, Pau Queraltó Ros, 2008)
body as input for its commercial activities which fall outside the scope of its public tasks, the same charges and other conditions shall apply to the supply of the documents for those activities as apply to other users."

In February 2008, the Association of Cartographic Publishers requested precise information from 15 State Survey Authorities on the distinction between their core public task and the commercial activities they also undertake, including its compliance with the PSI Directive and its national implementing legislation. The answers of the authorities showed that the law that transposes the Directive in Germany\footnote{Gesetz über die Weiterverwendung von Informationen öffentlicher Stellen – Informationsweiterverwendungsgesetz (IWG)} and its non-discriminatory clause are known to them, but is considered not applicable to the production of maps for leisure activities.

The major problem seems to be that specific laws, such as the State Survey Laws, explicitly define the production of cartographic material as a public task, the State Survey Authorities consider that this applies too in the context of the production of maps for leisure activities. The fact that private cartographic publishers are eager to enter this market indicates that there might be ground for reviewing the need for general activity of a public body in this area. PSI holders ought to review their spectrum of public tasks.

### 3.4 Conclusions for the Geographical Sector

The survey shows that the PSI Directive has had a noticeable impact on the sector of geographical information (GI).

The GI market is growing all over Europe. The income of GI re-users is increasing and the market is enriched by the many new re-user groups which offer innovative applications for geographical information. The data volume delivered by PSI holders is increasing. In many countries, this development has, since 2002, led to a significant increase in income of public GI providers.

PSI holders of GI are aware of the Directive and have introduced a large number of changes triggered by the Directive. Regarding the changes of data policies of PSI holders, the survey gives clear information: PSI holders have carried out improvements which have had effects on the number of products, delivery formats and delivery speed. GI is increasingly offered on Internet portals or via web services. It may be assumed that these more technically driven changes were also promoted by the INSPIRE Directive and its request for technical standards. Nonetheless, these changes are recognized and welcomed by the wider community of re-users.

Changes in pricing and licensing have been pursued with less intensity by PSI holders, yet at the same time re-users complain forcefully about these issues. It is the development of relaxed licensing conditions in particular that seems to create difficulties for PSI holders.
The new pricing model of the Austrian BEV proves that significant reductions of fees down to marginal costs can be compensated by an increase in the number of customers and PSI requests. Although fees were reduced significantly in 2006, the income of the NMCA remains stable due to increasing numbers of requests. As the recitals of the PSI Directive recommend the delivery of PSI for low or no charges, the Austrian BEV and the Spanish Authorities are very good examples for the GI sector.

Although the range of geographical information offered by private sources is growing, public geodata is nevertheless in high demand by re-users. Most of the respondents in the survey reported that the share of public geodata in the total geodata they had obtained had remained the same or increased since 2002. Furthermore, the great majority of private re-users of GI would like to obtain more PSI than they currently achieve. In order to meet this demand it is important to improve delivery conditions rapidly. Since the ease of licensing is a crucial prerequisite for the promotion of re-use, this aspect should be given specific focus in the future.

The substitution of certain kinds of public sector information through private sources may encourage some PSI holders to review the scope of their public tasks. A good example is that of the German case study describing the conflict that may arise between PSI holders and re-users when certain activities of public holders are defined as “public task”, but which are in the light of the re-users added value PSI to be produced by the private sector.

4 Re-use of Meteorological Information (MI)

4.1 MI – PSI holders

4.1.1 Responses to the survey

The collection and provision of meteorological raw data is usually the main task of the National Meteorological Services (NMS). Each NMS maintains a weather station network across its country and – for countries with coastlines – their NMS also keeps an offshore station network. Some weather stations are run by personal staff, and from others the data is collected automatically and sent to a central facility. Most European NMSs are members of various public European or world organizations, which provide raw data and derived products for the private and commercial sectors:

- EUMETSAT: European Organization for the Exploitation of Meteorological Satellites
- ECMWF: European Centre for Medium-Range Weather Forecasts
- ECOMET: Economic Interest Grouping of the National Meteorological Services
- WMO: World Meteorological Organization; not directly providing meteorological information.

The questionnaire was sent to 28 European NMSs, and also to EUMETSAT, ECMWF and ECOMET. Refer to the annex for a list of all organizations.
EUMETSAT and 25 NMSs submitted their responses to the questions about the re-use of meteorological information. Half of the respondents filled in the online questionnaire, while the remainder submitted their responses after follow-up e-mail and phone contact.

The responses from 25 NMSs form the basis for the analysis of the answers in the following sub-sections. Some questions were not answered by all 25 NMS; this is highlighted in the text. The answers from EUMETSAT are handled separately in the following sub-sections. The access and the handling of licence requests for ECMWF data is performed by the NMS of each country. Therefore, since the questions do not apply to it, ECMWF did not complete the questionnaire.

### 4.1.2 Organizational structure

The structural organization of the PSI holders in each country is analyzed first. This is of interest as some organizational structures allow PSI holders more autonomy in terms of the pricing and licensing models.

Most NMSs (19) are public authorities; only four stated that they are a public body with substantial financial autonomy. One NMS is a government-owned company, and one a private company.

The NMSs that act with substantial financial autonomy are those of Belgium, the United Kingdom, France and Portugal. A private company delivers the MI in Malta.

### 4.1.3 PSI delivery

PSI Holders data

In order to assess the re-use of public meteorological information it is important to collect information about the volume of data delivery by PSI holders. In this context the PSI holders were asked to respond to the following indicators:
Change of Income (2002–2007)
Change in the number of data requests (2002–2007)

In addition, a few PSI holders gave numbers about the total download volume and the change in the download volumes between 2002 – 2007. There is an increasing trend to put more data available for re-use for free, and when this happens, the download volume significantly increases (in some cases up to 700%).

Unsurprisingly, 20 NMSs responded that their total turnover had increased since 2002. One NMS indicated an equal level of turnover and four NMSs stated that their turnover had decreased.

According to the responses of some PSI holders, it is the weather forecasts that have contributed the most to their increase in income. The contribution of weather radar images has an impact only for a small number of NMSs. And since SYNOPS data has become freely available very limited income was reported.

Based on the given figures for the total income in the three analysed data groups, a sum of € 8 million can be calculated for the year 2007. It must be noted that this total sum is derived from answers of 14 holders which have filled in the online questionnaire; among others the bigger NMS of the EU, including France, United Kingdom and Germany. The sum only includes income from selling MI to re-users; i.e. re-users in the sense of private service providers. The overall income comparing to the year 2002 has increased in average by 70% where the highest number (86%) refers to the weather forecast part.

The increase in the number of data requests and data volume indicates a similar trend. 16 NMSs indicate an increase in the number of data requests, seven do not see any significant change and for two NMSs the data requests have
decreased. The data requests compared to the year 2002 has increased – in average by 36%. The data related to weather forecast shows the highest increase (53%).

The questions about the download volume and its change since 2002 were only answered by a few holders (5 of 14 holders in the online survey). In average, the download volume has increased by 1/3.

The NMSs have monitored an increase from just a few to several hundred per cent in the number of data requests and the download volume.

**EUMETSAT data**

EUMETSAT’s revenue from licences has increased by a factor of 1.2 between 2002 and 2007.

The data requests and download volume for satellite images and products offered by EUMETSAT to all of its customers (whether commercial sector or NMS’s) showed impressive rates of increase over five years:

- Registered users for real-time image data: increase by factor of 4.2
- Archive orders: increase by factor of 788
- Retrieval Volume: increase by factor of 170

The retrieval volume in 2007 was around 340T bytes of data and images. This is an extremely rapid increase in data requests and retrievals. This is due to the introduction of major new satellite missions (Meteosat Second generation in 2002–2003, and then EUMETSAT’s Polar System/Metop-A in 2006 providing global coverage for meteorology and climate/environment monitoring). This is combined with significant increase in coverage, data rate and the number of products of the real-time data dissemination service. The archive retrieval service has been continuously improved over the period. All this highlights the increasing re-use in meteorological information.

**4.1.4 Web portals**

All NMSs and both supranational organizations offer meteorological information on dedicated web sites or web portals. Some NMSs offer extra services for registered users (e.g. civil and private aviation, civil protection agencies, etc.).

An analysis of the web portals of all 27 EU member states, plus two EEA countries (Iceland and Norway) and the two supranational organizations, EUMETSAT and ECMWF, is given in this sub-section. Refer to the annex for a list of URLs of all web portals.

The web portals and internet presentations of these 31 organizations have been analysed with respect to the needs of re-users searching for meteorological information and the conditions for re-use:
Are the main pages also translated into English, including information about meteorological information, copyrights, licences, etc?

Is a comprehensive list of all basic data sets and products available?

Are prices specified for data sets and products?

Is the data policy explained in detail?

Are copyrights of the data or images shown within the web portal specified or linked on the first web page?

Most of the web portals provide information in English. 23 organizations show most of their web pages in English. Five organizations present only selected pages in English – mostly pages with general information about the organization or pages showing the current weather conditions and forecasts for the country concerned. In three web presentations, there is no information available either in English or in another European language apart from its own.

Comprehensive lists of available datasets and products are specified by only twelve organizations. More than half of the organizations specify their data and products only in parts; i.e. the visitor can guess by looking at the weather maps, charts and images what kind of data may be offered by the organization. Two organizations do not clearly indicate what kind of data they offer; they provide this information only on request or after registration. Organizations which are ECOMET members do, however, present a long list of products including prices and licences on the product overview of ECOMET (www.ecomet.eu).

A price list for the data sets and products offered is specified by only eight organizations on their web portal or web presentation. Two organizations do at least show prices for parts of their products, but the majority of the organizations do not give any price details; they merely specify a contact person or department.

Again, all ECOMET members show a complete price list on the ECOMET web page.
Licence conditions with respect to the access and re-use of meteorological data and products are given by 13 organizations on their web pages. Ten organizations do not show clearly any licence conditions for re-use, and eight organizations present partial conditions for data access and re-use – mostly linked to the use of images, maps and charts presented on the web pages.

Notes about copyright or links to licence conditions are available on the home page at the web portals of only six organizations. Seven organizations provide at least a short notice about copyright, but 18 organizations do not have a link on their home page to copyright or licence conditions.

The best results of this analysis were achieved by the web portals of EUMETSAT and the UK Met Office, followed by the web pages of ECMWF and the NMSs of Austria, France, Germany, Ireland and Norway.

4.1.5 Customers

The PSI holders were asked to name the most important user groups of meteorological information. A list of 13 user groups was given in the questionnaire; one field was left open for the respondents to specify ‘Others’.

For most NMSs the given percentages per user group were rough estimates. A few NMSs did not have any measures – no electronic measures, especially – for the distribution of data to different user groups.
The results derived from the answers are shown in the following diagram. The percentages shown in the diagram are averages given for each user group based on 21 NMSs which could provide rough estimates at least. Single percentages may significantly vary between the NMSs; for example, the Malta and Luxembourg NMSs are within the airport administration meteorological offices and thus for them the traffic sector is the most important user (>60% each).

The most significant user group, based on the average percentages, is ‘Public Administration and Internal Use’. The NMSs deliver meteorological data and products to other national public authorities, but some NMSs (e.g. those of Finland, France and Sweden) use a significant amount of data (>40%) internally, mostly passed on to the commercial branch of the relevant NMS.

The user groups marked with dark red bars in the diagram above represent the main customers of private service providers. The share for this group is around 49% of the total data volume that is delivered directly by 25 NMSs to public bodies (without intermediaries as private service providers) – a percentage that emphasizes the competition between private service providers and public sector authorities in some business sectors (see also Figure 52 in section 4.2.6).

The following figure shows the same data reorganized into six user groups. One third of the data volume is passed directly to serve various needs of different branches of the industrial and financial market, plus 13% to the (new) media sector, and 8% to private service providers. The share for research institutes could be high for some NMSs, especially in Germany, with more than 50%.

In addition to the user groups given in the questionnaire, there was only one extra group, mentioned by the Latvian Meteorological Service: hotels (1%). This was the only notice about customers in the tourism sector.

The main customers for EUMETSAT are, in order of importance: NMSs of EUMETSAT’s member states, NMSs of non-member states (worldwide), many users from universities and research institutes, significant number of private users (amateur meteorologists) and a few commercial users.
4.1.6 Data policy

The PSI holders were asked whether there had been a change in their data policy since 2002. Out of 25 answers, 15 NMSs answered in the affirmative.

Five NMSs confirmed that the change in their data policy was brought about by legislation; i.e. based on the change of existing national laws and edicts or in new ones. One third of the NMSs which had changed their data policy since 2002 stated that their reasons for changing their policy included a change in legislation.

The reasons given for data policy changes brought about by legislation in the five countries are as follows:

<table>
<thead>
<tr>
<th>Country</th>
<th>Given Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iceland</td>
<td>New legislation for public data from 2006 which states that the main rule for the public data owned by the governmental institution and collected for public money shall be open for access and free of charge or shall be sold only for cost of delivery.</td>
</tr>
<tr>
<td>Netherlands</td>
<td>Current KNMI Law 2002; complete privatization of all KNMI’s commercial activities, hybrid data policy for commercial re-use. Some data free, other chargeable for commercial re-use (principle of profitability)</td>
</tr>
<tr>
<td>Norway</td>
<td>All MI data owned/produced by Norwegian Meteorological Institute are free of charge, only marginal costs are charged. The free of charge policy implemented during 2007. From 2008 there will […] be no income from own data/products. Also few restrictions for re-use apply, i.e. only requirement is to give credit to the Norwegian Meteorological Institute if data used or displayed in original/recognizable form. The change is partly related to the PSI directive.</td>
</tr>
<tr>
<td>Slovenia</td>
<td>Based on the PSI directive, the availability and access of the MI has been improved.</td>
</tr>
<tr>
<td>Spain</td>
<td>All Spanish SYNOPS became free of charge. There is no extra charge for redistribution of data for the rest, such as radar, lightning etc. The change was implemented by Spanish law.</td>
</tr>
</tbody>
</table>

So it is clear that the national implementation of the PSI directive has led to or influenced a data policy change in at least five European NMSs.

The NMSs were also asked in which direction their data policy had changed over the past five years – whether the change in the data policy was based on legislation or on internal decisions made by the organization itself. Then the 15 organizations which confirmed a change in their data policy were requested to evaluate the change in their data policy according to these five criteria:

- Level of prices
- Ease of licensing
- Speed of delivery
- Number of products
- Number of delivery formats or means of delivery.

They were also required to indicate in their answers whether these criteria for the users or re-users of meteorological information improved or deteriorated after the data policy change.
According to the answers, the most significant changes referred to the number of products and speed of delivery, followed by the level of prices and data formats.

The positive trend in the number of products, data delivery and formats is also confirmed by those NMSs which have not changed their data policy in the past five years, as well as by EUMETSAT.

### 4.1.7 Price of a standard product

A National Composite Weather Radar Image in digital format has been chosen as a standard product of MI. Most of the NMSs have their own weather radar network and provide single-site or national composite images or image loops. In the questionnaire some additional characteristics of the offered product were requested: single-site or composite radar image, resolution and update rate of the image.

Eighteen NMS gave prices and details about their national composite radar images. The prices varied between €0.31 and €10.00. The price is a country specific and dependent on the pricing policy of NMS Member State. Several organizations referred to the ECOMET price list. The prices per country and user can be found at http://www.ecomet.eu/price%20list.htm#radar. For ECOMET members, the price list shows the product specification and prices in detail for end users, broadcasters and various levels of service providers.

Facts and figures from the answers given in the comment boxes and a comparison with the ECOMET price list (as of 10 March 2008) for national composite radar images are given below:

- Lithuania and Luxembourg do not have weather radar stations for creating national composite radar images. Lithuania plans a system for the future; Luxembourg uses Belgian weather radar images.
- The Swedish, Finnish and Latvian agencies offer different prices for the weather radar image for different users. Some service providers pay significantly more than end users, up to six times more in exceptional circumstances.\(^\text{10}\)
- ECOMET price list: only Norway and Iceland offer National Composite Radar Images for €0 (but with the obligation to quote the Agency as a source). Austria and Spain

\(^{10}\) Refer to http://www.ecomet.eu/price%20list.htm#radar
do not have different prices for end users, broadcasters and different levels of service providers. This applies partially also for Germany and United Kingdom (additional fee for internet redistribution).

- Many NMS offer current radar images on their web pages for free.

### 4.2 MI – PSI re-users

#### 4.2.1 Responses to the survey

The re-users of MI can be split into different groups:

- National weather services or other public sector bodies that use weather or climate data from other national weather services or European organizations. For example, all European NMSs use the satellite images and products provided by EUMETSAT.
- Private weather services that use the raw data or derived products to create value-added products for their customers.
- End users, who use the information for their own purposes and potentially create value-added products but not for resale. There are, among others, media agencies and publishers, insurance companies, transport industry, traffic and energy sectors, health industry, and private individuals.

The private weather services are re-users of particular interest. They are usually in competition with the data services provided by the NMS and they benefit from the implementation of the EU directive for re-use of PSI in the first place. Many of the private weather services are members of a national or European association of private meteorological services (PRIMET). The association represents more than 35 European companies, which were invited to take part in the survey. Since there are more and more private companies offering online weather services on their own internet portal or as part of online media portals, some of these companies – not members of PRIMET – were also asked to complete the questionnaire.

Fifty-eight private service providers were invited to take part in the survey and complete the questionnaire. Invitations were sent to companies in 14 EU-27 countries and 3 non-EU-27 countries (i.e. Croatia, Serbia-Montenegro and Switzerland). Since most of the private service providers are located in Germany, most respondents are from there.
Nineteen private service providers filled in the questionnaire and provided many comments on the current situation of MI re-use. It is estimated that there are no more than 60-70 companies, who are active in the European meteorological sector. Thus, responses have been received from one third of all re-users. As particularly the large companies have answered the survey, it can be presumed that the respondents cover about 80% of the private meteorological market.

4.2.2 Procurement

These private companies were asked what kind of data they procured from the public sector. Six data groups were predefined in the questionnaire, and one was left open for further comments. The following diagram shows the results.

It is not surprising that synoptical observations, satellite images, radar images and numerical weather predictions have been named by nearly all respondents. The creation or procurement of that type of data usually requires large station networks, satellites or computing centres, and all this data is produced by the public sector. In the field ‘Others’, the companies specified data from national water agencies, national road authorities, and environmental agencies, and data from the US market (all types of meteorological data and information).

The data volume of meteorological information the private companies procured from the public sector between 2002 and 2007 had increased for 74% of the companies; 26% of the companies said that the data volume has not significantly changed. The results of the online questionnaire show that most private service providers (88%) would like to get more data from the public sector in future; moreover, they ask for higher quality, for lower prices and for better licence conditions. This result was also confirmed by other companies during phone interviews.

The study revealed that the data volume measured over time could be an unreliable indicator, since the data formats and compression levels would vary over the years and as a consequence would not yield comparable results. Only a few companies (6) answered to the questions how the total income has changed between 2002 and 2007. All respondents said that there is an increase in the total income; for one company by a factor of 4 over five years.
The comment box to that question provided a place to state additional reasons. Some of those are shown here:

- All meteorological information that is available to public sector should be also available to private sector, and for the same conditions (fair market).
- No private company can afford all the data they would need (in Europe). We are in very unfair position compared to e.g. US companies.
- Prices should be based on market potential, not on cost for creation.
- Improve the availability of MI and double-check the licences; they are currently too restrictive.

### 4.2.3 Data policy

Most of the private companies that filled in the questionnaire noticed a change in data policy within the public sector in the past five years. The re-users were asked to assess the different aspects of the current data policies of PSI holders on a scale from 0 (unacceptable) to 7 (very good).\(^\text{11}\) This assessment backs up the former findings about current data policies of PSI holders. The aspects of coverage, delivery formats, products and speed of delivery were assessed by the re-users as better than prices, licensing and transparency.

The companies mentioned changes in licensing, redistribution and regulation. The comments about the changes in data policies of public bodies show that the private sector is still dissatisfied with the current situation.

The private companies also mark as inadequate (below 3) the current quality of the PSI holder’s data policies. Transparency, licences and prices, in particular, are rated as poor. The only criterion to come close to good ratings is that of delivery formats.

Eight out of 19 companies were aware of the European Directive on the re-use of Public Sector Information or its national implementation in their country. This implies that nearly 60% thereof were not aware of the Directive or of its implementation in their national legal systems.

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\(^{11}\) The graph should be read as 0 (unacceptable) to 7 (very good) where: the range between 1–2 should be considered poor, 3–4 reasonable and 5–6 as good.
4.2.4 Web portals

Public sector web portals are used by private customers, but not very intensively (10 out of 19 companies confirmed the use of public sector web portals). Most data is downloaded from FTP servers at regular intervals (hourly or daily). Continuous download of data or products from web portals is rarely used.

Much meteorological information downloaded from public sector web portals or online servers (FTP transfer) is data from the US National Weather Service (NCEP) or from the US weather satellite operator NOAA. This data is free and includes Europe.

4.2.5 Substitution

As mentioned earlier, much meteorological information is procured by private service providers from data sources outside European NMSs; principal sources are the public authorities in the United States (NCEP, NOAA).

User-friendly licence conditions and most data being provided free of charge or for only marginal costs of delivery encourage European service providers to obtain the data from the US instead of from European NMS. For instance, in 2007 a German private service provider procured 99.87% of the 4.300 Gigabytes of MI from the servers of the US national weather services.

If certain basic datasets are reported by re-users as not available from the public sector because of lack of data, high prices or bad licensing conditions. The private sector nowadays also starts to produce the data at their own cost. A good example is Germany. The German NMS has more than 2,000 ground stations on the main and secondary station network; it is an enormous and dense ground-station network and according to the remarks in the questionnaire from re-users, it has raised the number of freely available SYNOP data stations (primary network) from 23 to 61 in the past.

Despite the above, the number of freely available stations is considered still too low to allow private companies to undertake some added value services, such as high-quality weather analysis or predictions, especially for local use. An interesting example of the approach to solve the problem is Meteomedia AG case. Meteomedia AG (Switzerland) has built up a huge station network in Germany and Switzerland with around 600 sites to collect meteorological information at its own cost. Through this approach Meteomedia AG has access to an important number of additional weather stations allowing them to perform certain services.

Another example is a service provider from Croatia who has also reported the collection of data with ground meteorological stations not operated by their NMS.

Many comments were given by the re-users about the quality of the data they get from European NMS; for example, radar images, offered for free on the web portals of NMSs, do not have sufficient resolution needed by re-users. The appropriate raw radar images
are available but not for free and re-users could have to pay high fees for the re-use. Respondents stated that the lack of quality and quantity are the main drivers why private service providers search for data substitution.

### 4.2.6 Customers

The private customers were asked to specify their customer groups. The following chart shows the average mentions by 19 private companies over predefined customer groups.

A given value per company and customer group can vary; one company may be a specialist in the Energy and Water sector, another specialist in creating weather charts for the broadcasting sector.

Nevertheless, the customer groups Internet Services, Broadcasting and Print Media (the new and old media market) contribute 43% to the total income. The Energy and Water Sector, with 19%, is also an important sector.

The red bars in the diagram above mark the customer groups that are also marked in the corresponding diagram of the public sector (refer to Figure 46 in section 4.1.5). The share of total income of 19 private service providers for these customer groups is about 85%. On the other hand, these customer groups constitute 49% of the total data volume that is delivered directly by NMSs (without intermediaries as private service providers). This shows that the private service providers and NMSs are competitors in most of the customer groups.

### 4.2.7 Suggestions and Remarks

The private companies were asked to make general suggestions or remarks addressing the re-use of meteorological information.
Most of the remarks refer to the dominant position of the NMS who are the holders of raw data. Re-users advocated a strict separation from all business operations from PSI holders as is the case in several Member States. In their view, PSI holders should reduce their activities to the production of raw data, while re-users offer value added products and client-focused services. Re-users complain about a lack of transparency and control about the compliance with the non-discrimination regulations.

Another issue concerns the data delivery models of European NMS. Many re-users refer to the market for MI in the United States and request lower prices, easier availability and more co-operation. “Availability is needed 24/7 without the requirement for human intervention. Such availability is common in the US but is unusual in Europe.”

Some re-users complain about the organization of ECOMET, which is considered to be a barrier for re-use of public meteorological data, as it prevents competition between NMS. On the other hand, re-users from new Member States would advocate that all Weather services in EU countries should be automatically members of ECOMET, which would help to acquire data for standardized licence conditions.

### 4.3 Case Studies

Two case studies are briefly summarized below. Both illustrate two different approaches to licensing and pricing practices in the meteorological sector.

#### 4.3.1 EU – ECOMET

One of the objectives of the study was to provide a number of examples of current practice of PSI reuse in the EU. In the meteorological sector 50% of the responding NMSs called the ECOMET an example of best practice for facilitating cross-border re-use of MI.

ECOMET was involved in the discussion about the PSI Directive from the beginning. When the final version of the PSI Directive was published, ECOMET considered that their existing data policy (established in 1995) was entirely in accordance with the Directive.

The ECOMET’s licensing conditions apply to all commercial use of meteorological information. The website ecomet.eu presents the principles, tariffs (price list of all available MI) and licence conditions for re-users and holders. Collective price reductions and composition of data packages against reduced prices are also defined.

These predefined sets of licensing conditions could be adjusted by NMSs licensing policies, but they formulate mandatory details for delivery and payment conditions, intellectual property rights and limitations of use. Predefined sets of conditions are available for re-users such as publisher/broadcasters, Internet publishers and service providers. The members of ECOMET act on the same statutory level, what in reality leads to more transparency on MI re-use. A very important clause in the statute of ECOMET is the rule, which does not allow Private Service Providers to obtain data from
NMS of other European countries. The re-users have always to contact their national NMS to ask for MI. This prevents competition between the NMS in the delivery of data; however it is an issue criticized by some re-users as a limitation to only one point-of-access to data.

Private Service Providers would also like to see that the handling of MI is similar to the conditions for access and re-use on the US market. However, ECOMET’s view is different on this topic; due to different economic and natural initial situations a comparison between both markets is not valid.

4.3.2 Deutscher Wetterdienst (DWD) in Germany

Despite the relative prosperity of the meteorological market sector in Germany with more than 25 private weather services, the German NMS ‘Deutscher Wetterdienst’ (DWD) is strongly criticized by the private companies for its re-use policy.

Re-users complain about the refusal of the DWD to make certain raw data available. Some of the data was reported not to be available to private companies, either for free or for charging, for example most of the data collected by the primary and secondary ground station network. Another issue concerns access to weather radar images, as some re-users claim that access to this raw information is not available, not even for a fee.

A set of the above mentioned problems that were reported by German re-users is supported in writing by their national association ‘Verband deutscher Wetterdienstleister’ (VDW). The situation described in Germany, re-users claim, could lead to a heavy data substitution; for example a substitution of images taken by European Weather satellites (e.g. Metop, Meteosat) with images from US sources (e.g. NOAA satellites), which are available for free. It is claimed that an important potential for the development of the meteorological market, in particular for Germany, remains underexploited due to some of the above mentioned policies practiced by the DWD. However, DWD sees all its practices as being in accordance with the laws and edicts that define its public tasks.

4.4 Conclusions for the Meteorological Sector

Most European NMSs that responded to the survey indicated that their income on the sale of MI to re-users has increased between 2002 and 2007. In particular, as the increase can be monitored against the numbers for MI requests and figures for the download volume during this period, there has been proven an increase in the re-use of meteorological information in Europe.

At the same time, many private service providers procure/access basic meteorological datasets from the US market, since the data is much cheaper or even free. The share of the US data may rise up to 99% for some companies. Meanwhile, even in the meteorological sector, private companies started to substitute PSI by producing some data on their own – even if this means important investments. German and Croatian re-users
have built up their own meteorological ground station networks to collect synoptical data using their own station grids.

Fifteen out of 25 NMSs stated in their responses that they had changed their data policy since 2002 (for example: Austria, France, Germany, Italy and Sweden). Only five of those 15 NMSs (Iceland, Netherlands, Norway, Slovenia and Spain) attributed the change in data policy to changes in the national legislation and only partly related to the Directive on the re-use of PSI. A good example is the Norwegian NMS as it offers all the MI that it produces free of charge or charges only marginal costs.

Most of the NMSs, which have changed their data policy since 2002 attributed the changes to an increase in the number of products, to a greater speed of data delivery or to a change in the level of prices – lowering fees, but not to a significant change in how the data is licensed. According to the increasing trend to put more data available on the internet for free and to make it more accessible, it is commonly observed that the amount of downloaded data and the number of daily hits has substantially increased. This ties in well with the results from the geographical information sector.

The statements from the NMSs are in line with the results of the re-user survey. Most re-users noticed a change in the data policies of their NMS, but only partly related to licensing and data regulation. The assessment of the current quality of the PSI holders’ data policy shows that the private service providers marked the prices, licences and transparency for MI as poor (between 1 and 2 on the scale). The only criterion to come close to good ratings has been that of delivery formats.

The case study from Germany was selected to highlight certain problems in the re-use of MI data concerning availability of data, some aspects of pricing policies for present and historical information as well as the substitution matter, claimed by German re-users. It seems to be a problem not referring to Germany alone as the participating private service providers from other countries reported some difficulties in re-use too. During interviews, many of them signalled that it is quite hard to survive on the market in competition with NMS due to unequal licensing and availability of data conditions.

Pointing to these problems in discussion with representatives from NMS or their governmental ministries in charge, they refer to the definition of the public tasks that NMS are to fulfil as defined in specific laws. Re-users challenge this statement and the fact that NMS could be undertaking services that naturally should not be performed by them.

According to the above the association of German private meteorological service providers (VDW) complains also that, now in Germany, no established body is able to oversee the commercial and licensing practices of the DWD and to guarantee non-discrimination and fair market conditions.

The questionnaire has shown that the private service providers that participated in the survey expressed concerns to a greater or lesser extent with the handling of PSI re-use. They would like to see the European public sector starting to handle PSI re-use with an approach similar to that of the American market, with easier availability of MI, lower
prices, more cooperation with the private sector and a clear distinction between the public sector handling MI free for all users and the private sector offering value-added services. ECOMET dissents on this topic and takes a comparison with the US market for inappropriate.

5 Re-use of Legal and Administrative Information (LAI)

5.1 LAI – PSI holders

Public bodies that may be regarded as sources of legal and administrative information (LAI) can be separated into originating institutions, which have been empowered to make law (parliaments, courts etc.) and holders of legal information and administrative information, which have the responsibility of collecting and disseminating legal and administrative information.

Additional analysis of the PSI holders shows that they also cover a spectrum of functions. These range from the production of legal and administrative information, its collection to its dissemination. Using these criteria, the PSI holders were sub-divided into five categories:

<table>
<thead>
<tr>
<th>Country</th>
<th>Category title</th>
<th>Category description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 1</td>
<td>LAI Production only</td>
<td>Public bodies that make law, i.e. parliaments, ministries and courts, and that have a legal duty to disseminate the information they produce.</td>
</tr>
<tr>
<td>Category 2</td>
<td>LAI Production / Repository</td>
<td>As category 1, but the public body also acts as a central repository for legal and administrative information produced by other public bodies.</td>
</tr>
<tr>
<td>Category 3</td>
<td>LAI Production / Repository / Euro</td>
<td>As category 2, but the public body in addition to its function as a central repository is also able to request payment for the information it holds.</td>
</tr>
<tr>
<td>Category 4</td>
<td>LAI Collection / Repository</td>
<td>Public bodies that are not part of the formal law making apparatus, but instead have a mandate to act as a central repository for legal and administrative information produced by other public bodies.</td>
</tr>
<tr>
<td>Category 5</td>
<td>LAI Collection / Repository / Euro</td>
<td>As category 4, but the public body in addition to its function as a central repository is also able to request payment for the information it holds.</td>
</tr>
</tbody>
</table>

Important for and implicit in the categorisation, as given above, is the distinction between the standard dissemination, which is for the most part a legal duty, and enhanced dissemination of legal and administrative information that goes beyond the formal requirements of what has been referred to above as standard dissemination.

With respect to judicial information, the distinction between the standard dissemination and enhanced dissemination of legal and administrative information is often harder to discern. This is due to the largely operational autonomy of the courts. Generally speaking, the President of the court would be the person to approach regarding the operational aspects of re-use policy. Following long and well established practices, found in both
common law and civil legal traditions, it is common practice that the judges that hear the individual cases often decide themselves or in a collegiate arrangement (i.e. as a formal group reflecting the set up of the court, e.g. as a Chamber or Senate) on matters concerning the selection of cases for publication and the means of publication.

5.1.1 Responses to the survey

Altogether 24 public bodies in 17 Member States completed the survey in their capacity as PSI holders of legal and administrative information.

A list of the PSI holders that took part in the survey is given in the annex. The graphic below indicates the distribution of the 24 respondents across the five categories as described above.

Of the total number of respondents, 70% were involved in the formal law making process in the sense of enacting primary or secondary legislation or passing judgments. 62% of the total number of respondents were involved in the production of law only, that is to say they had no additional responsibilities for the enhanced dissemination of legal and administrative information.

At 38%, little more than a third of the total respondents had responsibilities for enhanced dissemination of legal and administrative information as described above. Of the total number of respondents, only 17%, while not involved in the formal law making processes, have responsibilities for the enhanced dissemination of legal and administrative information that involved the central collection of the information and its dissemination against established forms of payment, e.g. licensing or subscription fees.

5.1.2 Organizational structure

The first question in the online questionnaire sought to categorise the organizational structure of the respondent. Respondents were asked to classify themselves on the basis of whether they were a public administration, a
public agency organised like a private enterprise, a public body with substantial financial autonomy, a public private partnership or even a private company.

Of the 24 respondents, 46% were government organizations, of which only a third were Ministries of Justice or their delegated representatives. 37% of the total number of respondents were courts and in all cases, courts of the highest instance, i.e. Supreme and senior courts. A far smaller proportion, i.e. 13%, were official producers and distributors of official journals or officially designated publications offices. Only 4% of the respondents were parliamentary bodies.

Among the respondents, the question concerning the role of private enterprise or public private partnership only involved Latvia and Belgium. In Latvia, the dissemination of official legal material is handled by the government owned Latvian company Latvijas Västnesis. In Belgium, the Belgisches Stattblatt is a semi-commercial organization responsible for the dissemination of official information.

The graphic below shows the distribution of the organizational structures of the respondents by country.

Attributable to the differences in the organizational structures of the respondents and their respective functions, it was common for respondents to be a PSI holder of more than one category of legal and administrative information. In terms of the three categories of information delivered, legislation was the most common type, the relative proportions being as follows:

While proceeding further with the analysis, it will be helpful to consider in more detail certain aspects of legal and administrative information. These concern the scope, coverage and characteristics of legal and administrative information. The additional
background, given where appropriate, will aid an understanding of the apparent contradictions between PSI delivery and web portals and also explain why some of the points raised with respect to geoinformation and meteorological information in the other parts of this report do not apply to legal and administrative information.

5.1.3 PSI delivery

The total income from the delivery of legal and administrative information from PSI holders seems to be not a relevant indicator for measuring the re-use of legal and administrative information, as the overwhelming majority of respondents, i.e. 79%, answered that they derive no income from their PSI on the basis that the information is available to both private and commercial users free of charge.

17% of the respondents gave details of income. Significantly, all these respondents belonged to the category of central repositories with an additional mandate to disseminate legal and administrative information (see above). Of the four respondents that did give information regarding income, the range of income figures in 2007 varied from between €300,000 to €1.8 million and on average increased by some 40% since 2002.

Unfortunately, respondents gave no or very little information regarding download volume in MB/GB and/or number of documents downloaded. The same proportions were applicable for information sought regarding the indicators on the number of re-use requests and download volume in MB. With respect to the question regarding the download volume in terms of the number of documents downloaded, the information submitted was even less. Only 15% of the respondents gave information, 85% did not.

Nevertheless, it is significant that the respondents that were able to submit some kind of indicator information were always the same consistent respondents. Indeed, they all belonged to category 5 in the PSI holder classification given above. That is to say, the respondents were all PSI holders of legal and administrative information who have a tasking as central repositories with a mandate to disseminate information beyond the basic legal requirement.

The positive side to this observation is that PSI holders have been very active in making substantial amounts of legal and administrative information available free of charge. In doing so, they meet the spirit of the PSI Directive. However, the lack of available indicators prevents a monitoring of the re-use.

In conclusion, data submitted by the respondents indicates significant improvements in PSI re-use in terms of income and document downloads since 2002. However, the data
available in Europe as a whole to make such assessments is sparing and for the most part hardly visible. Due mainly to the dominance amongst PSI holders of law making organizations that disseminate legal and administrative information – more often than not free of charge as part of their formal responsibilities – this kind of indicator information is likely to become increasingly invisible in the future unless positive action is taken to capture it.

5.1.4 Web portals

Given that web based applications have now become commonplace, standard applications respondents were asked to give details regarding the existence and use of information via web portals as a means of making legal and administrative information generally available. Respondents were asked specifically to state whether their organization offers legal and administrative information via a web portal and if so, to provide the link(s) to the portal(s). Questions were also asked about usage and registration as well as whether the web portal was promoted as an access or contact point for PSI re-use.

Almost all, i.e. 96% of the organizations involved in the survey, maintain a web portal. The high instance of web portals can be explained by the requirement upon law making bodies and their agents to disseminate legal and administrative information, which has already been discussed in detail in a previous section.

That there is a high instance of the use of web portals as a means of disseminating legal and administrative information is to be expected given the formal responsibility of law making public bodies to disseminate information. In the majority of cases, and specifically where legislation and judicial information is concerned, re-use of the information for individual users, i.e. citizens, lawyers etc., is implied or covered by a general reference. The requirement, as stated in Article 7 of the EU PSI Directive, that any applicable conditions and standard charges for the re-use of documents held by public sector bodies shall be pre-established and published through electronic means where possible and appropriate was further examined in an additional analysis of the 27 web portals listed by all the respondents.

Of the 27 web portals analysed, 44% made an explicit reference to commercial re-use of the information obtainable through the portal. The references however were mostly to be found in a general disclaimer clause on the website as opposed to being explicitly stated in a declaration of information re-use policy.

In stark contrast, only 11% of the web portals analysed made an explicit reference to any form of charges for the re-use of the information obtainable via the web portal.

The analysis also considered the extent to which the web portals and the information on them were available in other languages. A distinction was made between the multilingualism of the web portal interface on the one hand and the legal and administrative information, here referred to as “content”, which could be obtained through the portal on the other hand.
Of the web portals examined, 59% have multilingual aspects to them. Only a minority have rendered both interface and some content in other languages. The web sites to do so were mostly those run by European Union institutions.

Nevertheless, the fact that 44% of the web portals cited in the survey have rendered their interface in another language is a high percentage. It is significant given that a mixture of influences, be they political, social, historical, cultural or linguistic, effectively limit the inter-operability of legal and administrative information and hence the use of this kind of information in services across Europe.

Of the 44% that offer their interface in other languages, half of these web portals are run by local authorities and are able to offer multilingual access to their portal using automatic translation services. The constructive use of such services increases the likelihood that legal and administrative information – if not the content itself, then at least access to it – will be more readily included in the development of Community-wide services as envisaged by the PSI Directive.

5.1.5 Customers

The PSI holders were asked to name their most important customer groups. Customers of PSI holders in this context included media and publishing houses, providers of legal information services, law firms, banks, insurance companies, other service providers as well as the public administration itself, educational establishments and non-profit organizations.

The greater majority of respondents, i.e. 90%, that answered the online questionnaire were able to give information indicating who were their main customers in the sense of re-users of legal and administrative PSI. Only 20% of the respondents reported that they provide for special user groups. The special user groups in both these cases were the judiciary and sections of the public administration.
Some of the reactions of respondents to the study confirmed the almost paradoxical view that certain legal publishers, most notably those who rely heavily on authors for the publishing house’s content for their products and services, tend not to regard themselves as re-users of legal and administrative information.

Customer substitution through the use of link-back mechanisms

One of the questions in the survey asked PSI holders to give information on the use of link-back mechanisms as a means of re-using legal and administrative information. An important indicator of re-use, the link-back indicator, draws upon one of legal information’s special attributes, namely the ability to uniquely refer to and locate a legal document through the use of a citation. Link-back mechanisms are best explained through an example.

Assuming a legal information provider wants to include EU legislation in their online products and services. There are two basic options.

In the first option (Case I in Figure 63), the provider could licence the EUR-Lex data from the EU Publications Office. This would involve signing a licence to use the data and then assimilating the EUR-Lex data into the provider’s own system, a process that can involve a substantial effort and cost. With the second option (Case II in Figure 63) the provider could insert links into his own data that link back to specific documents on the EUR-Lex service. That this is possible and usable from a legal point of view is, on the one hand, due to permanent link technology, but also, on the other hand, due to the strict and disciplined application of citation systems in the use of legal information.
Using such link-back techniques based on permanent links, the provider is able to add considerable extra value (e.g. access to multiple language versions of the document) to his products and services. It also has the consequence that the provider usually no longer has a need to conclude a direct licence with the PSI holder, in this example the EU Publications Office. The provider is also spared the extra costs of assimilating the EUR-Lex data into his own content management or database systems and does not need to concern himself with updates.

However, where the provider declines the option of a EUR-Lex license and uses a link-back option instead, the re-use of this important source of data will become invisible unless an attempt is made to capture and indicate the extent of redirected re-usage through the link back mechanism.

Respondents were asked whether or not they were aware of re-use of the legal and administrative information they hold by re-users employing a link-back mechanism. Of the PSI holders that responded to the question on the use of link-back mechanisms, 69% reported that their customers make use of such an option to access and re-use legal and administrative information. That said, none of the respondents were able to give any detailed information on who had linked back. Nor were they able to give any indication on whether or not they were aware that re-users have declined to licence legal and administrative information from PSI holders, because they (i.e. the re-users) are able to add value to their products and services using the more efficient and more cost effective link-back facility.

While the link-back option is a very attractive means of encouraging re-use of legal and administrative information, in its current form, the link-back option could increasingly render the re-use of legal and administrative information less visible. Nevertheless, the visibility can be reassured by the collection of information on the suppliers of publications, legal databases etc. and monitoring the income of re-users.

5.1.6 Data policy

Half of the respondents (50%) indicated a noticeable change to their data policy since 2002. Two separate respondents who answered with no to this question, nevertheless made the observation that e-Government initiatives and programmes had markedly influenced the information dissemination policy and practice of the public body.

Yet, only 33% of the respondents attributed the data policy change to changes in legislation.

In response to the question “How has data policy changed”, the respondents reported speed of data delivery and number of products as more noticeable indicators of change compared to changes in the pricing of information or in the licensing conditions for PSI re-use.

Figure 64 – Question to PSI Holders (Legal): “Has your data policy recently changed?”

- Yes 50%
- No 33%
- n/a 17%

Total number of answers: 24
5.1.7 Price of a standard product

In order to obtain information on the absolute level of prices, the survey sought to compare the price of a standard product across the EU Member States. A similar exercise was conducted for geoinformation and meteorological information.

As regards a standard product for legal and administrative information, respondents were asked to provide the price of a decision from a senior court in civil and commercial matters delivered in XML format. The question was modelled on a similar study involving company information that asked for the price of annual financial statements in XBRL format. Only one respondent gave a price and this was €1.50 for a judicial decision in XML format. All the other respondents gave zero for an answer stating that as the information was freely accessible, the question was not relevant. None of the respondents, however, gave details of whether the “free of charge” options also applied to data in specific formats such as XML. The technical format is an important part of the question as it separates the individual and occasional document re-user from the large scale, regular, mostly commercial re-user.

In contrast, the telephone interviews amongst PSI re-users (see below) revealed a readiness amongst legal publishers to pay from between €2 to €15 for court decisions in XML format acquired from a commercial service provider.

5.2 LAI – PSI re-users

5.2.1 Responses to the survey

In total, 39 re-users of legal and administrative information took part in the survey. Of these, 13 took part in the online questionnaire and 26 agreed to a telephone interview. The 39 respondents represented 14 different countries within the European Union. The figure below indicates the spread of respondents across the countries represented.
The range of respondents also reflected the diversity and complexity of the legal information market.

Nevertheless, the respondents could be allocated to the following groups based on their main business activity:

- Legal publisher / legal information provider / law firm: Just over half of the respondents, 55%, were from what can be regarded as the classical re-user markets of legal and administrative information, namely legal publishers, legal information providers and law firms. Given that many legal publishers have also developed online services to supplement their author-based business, the two areas of business, i.e. legal publishing and legal information provision, were regarded in such cases as a single category.

- Legal information provider but not publisher: However, where a legal information provider does not maintain a list of authors and demonstrates no author-based business as such, these organizations were treated as a separate category. The company Recht für Deutschland GmbH referred to in the case study below is an example of a company falling into this category. Useful for the current study, this type of division in legal publishing i.e. between legal publisher and legal information provider, is becoming increasingly less clear and more difficult to sustain.

- Information provider / business information publisher / media company: Also represented amongst the respondents as re-users of legal and administrative information were information providers of scientific and technical information (6%), a publisher of business information (2%) and a media company (2%).

- Service provider: Significantly, the second largest group of re-users of legal and administrative information, constituting some 35% of the total number of respondents, were a group described generally as service providers. These were all commercial organizations whose products and services are not normally identified with the market for legal services nor legal publishing, but whose products and services nevertheless rely heavily on access to and re-use of legal and administrative

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**Figure 67 – PSI re-users (Legal): Country of origin of the respondents**

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>39</td>
</tr>
<tr>
<td>Austria</td>
<td>2</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>1</td>
</tr>
<tr>
<td>Denmark</td>
<td>3</td>
</tr>
<tr>
<td>Finland</td>
<td>1</td>
</tr>
<tr>
<td>France</td>
<td>4</td>
</tr>
<tr>
<td>Germany</td>
<td>8</td>
</tr>
<tr>
<td>Hungary</td>
<td>1</td>
</tr>
<tr>
<td>Italy</td>
<td>1</td>
</tr>
<tr>
<td>Ireland</td>
<td>0</td>
</tr>
<tr>
<td>Latvia</td>
<td>1</td>
</tr>
<tr>
<td>Romania</td>
<td>2</td>
</tr>
<tr>
<td>Spain</td>
<td>4</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>2</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>5</td>
</tr>
</tbody>
</table>

**Figure 68 – Classification of PSI re-users (Legal) by market segment**

<table>
<thead>
<tr>
<th>Market Segment</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Publisher / Legal information provider</td>
<td>35%</td>
</tr>
<tr>
<td>Legal information provider</td>
<td>38%</td>
</tr>
<tr>
<td>Law firm</td>
<td>2%</td>
</tr>
<tr>
<td>Information provider</td>
<td>6%</td>
</tr>
<tr>
<td>Publisher / Business information</td>
<td>6%</td>
</tr>
<tr>
<td>Media company</td>
<td>2%</td>
</tr>
<tr>
<td>Service provider</td>
<td>11%</td>
</tr>
</tbody>
</table>

Total number of respondents: 39
information. Examples of service providers in this category included a centre for economic development, a specialist consultancy for tenders information, a publisher’s trade association as well as a management consultancy specialising in patents and information required by the pharmaceutical industry. Very noticeable too were the three online questionnaire respondents in the services category all of whom were in the property market.

The range and diversity of respondents reflected well the range, scope and diversity of re-users in markets that re-use legal and administrative information. Most of the large legal publishers – that in Europe constitute over 70% of the market for legal and regulatory information (see European Online Information Report 2007, IRN Research, UK) – were involved in the study.

5.2.2 Knowledge about PSI legislation

Respondents to the telephone survey were specifically asked whether they knew of the EU PSI Directive and/or the national legislation, which implements the directive into national law. Of the total number of respondents, only 29% said that they were aware of the EU PSI Directive and the respective national implementing legislation. Moreover, the respondents who positively answered were unable to link developments in their business or markets to the PSI Directive. In contrast, 58% stated clearly that they had no awareness of the directive and further 13% declined to give an answer.

Seen in another way, the telephone survey indicates that 71%, that is well over two thirds of re-users of legal and administrative information, i.e. legal publishers, legal information providers and law firms, are not aware of the EU PSI Directive.

5.2.3 Procurement

Respondents could list one or more categories of information that they re-use. Of a total number of 39 respondents, 28 procured legislation for the purpose of re-use, 22 procured judicial information and 15 administrative information. 16 respondents regularly procured both legal and judicial information and were all legal publishers or legal information providers.
The examples of administrative information that respondents have procured included:

- Trade register information
- Official bulletin
- Information on tenders
- Resolutions of local authorities and town councils
- Practice guidelines
- Resolutions of Ministries and other executive bodies
- Building regulations
- County councils
- Contaminated land regulations
- Environmental information
- Highway schemes
- Local authorities information
- Planning enforcement information
- Road information
- Town planning and local land charges

Of particular significance is the extensive procurement of local authority and property-related information that is being re-used by respondents from the United Kingdom. All these respondents belonged to the PSI re-user category service provider.

Respondents were also asked to state from whom they procure legal and administrative information for the purpose of its re-use. Again, many of the respondents listed more than one type of PSI holder.

Not surprisingly, 28 out of 39 respondents obtained legal and administrative information for the purpose of re-use from national sources. The national sources were either the originating institutions themselves or a designated national central repository, e.g. the Federal Chancellery in Austria or Office of Public Sector Information (OPSI) in the UK.

In contrast, 13 respondents obtained legal and administrative information for the purpose of re-use from local government sources. The understanding however of “local” varied
widely, going from the regional parliaments of the German Federal States on the one hand to county councils in the United Kingdom on the other hand. Nine respondents obtained administrative information for the purpose of re-use from the EU, i.e. mostly via EUR-Lex for legislation and the website of the European Court of Justice for cases. 18 respondents obtained their judicial information from the courts. The courts as PSI holders in this sense were almost all supreme and senior courts as opposed to the courts of the lower instances.

Curiously, three respondents obtained the legal and administrative information they needed from commercial providers. These were all respondents who belonged to the PSI re-user category service provider. That is to say, these companies use legal information to supplement and support their core business which itself does not involve legal publishing. Their preference is to supplement their own services with legal information from an established legal publisher rather than to process the original documentation themselves.

Also of note was the statement from one German legal publisher who in addition to the court websites also regularly orders courts decisions from a specialist commercial firm, because they are able to provide the required documentation in XML format.

5.2.4 Income

Respondents to the online questionnaire were asked for the generated income that could be related to the re-use of legal and administrative information. In all, 9 out of 13 respondents submitted information concerning current income and increases since 2002.

The range of income attributed to PSI re-use of legal and administrative information in 2007 amongst the respondents ranged at the lower end from €50,000 to €19 million at the higher end, averaging at approximately €5 million per respondent. Significant were the changes that had been recorded since 2002.

In the legal publisher / legal information provider market segment, revenues attributed to the re-use of legal and administrative information grew by 800% for a French respondent, doubled for a Spanish respondent and grew by a half for an Italian respondent. Considering only this part of the overall market, the survey indicates that the four legal publishers, who also maintain legal information services, generated PSI related revenues in 2007 to the level of €10 million per respondent. Compared to 2002, these respondents increased these revenues by 230%.

When in contrast the respondents in the service providers market segment are considered, the average generated by each of these respondents that can be attributed to legal and administrative information lies in the region of €160,000 per respondent and has grown by two-thirds since 2002. It must be recalled that for the service providers this source of income is not from their core business but is a peripheral and supplemental source of income.

Very noticeable in this particular market segment were the revenue figures for the respondents active in the UK property market. The average increase in income for these
respondents attributable to re-use of legal and administrative information has on average more than doubled per organization since 2002.

Given that the data set is small, care must be taken in interpreting the results and certainly in extrapolating them with a view to making estimates of the value of the potential markets for the re-use of legal and administrative information.

Nevertheless, the survey’s results do illustrate the impact that the re-use of legal and administrative information can have on the core business of traditional, long-established legal publishers. The high levels of income growth attributable to PSI re-use should be contrasted with their equivalent for the legal publishers’ traditional core business, which would be considered prosperous where the growth rate tended toward high-end single digit figures.\(^\text{12}\)

### 5.2.5 Barriers

In order to identify where interest in the re-use of legal and administrative information lay, respondents were specifically asked to give details of the kind of PSI they would like to obtain. And, where they have already made efforts to procure the information, what barriers, if any, prevented them from doing so.

**Desired legal and administrative PSI**

Of the 13 respondents who completed the online questionnaire, 77% explicitly stated that they would like to obtain more legal and administrative information from the public sector. The remaining respondents declined to give data in this regard.

Both the respondents to the online questionnaire and those that took part in the telephone interviews stated they would like to obtain more legal and administrative information from the public sector and gave further information on the type of information they would like to procure. The information types are listed according to PSI re-user category in the table below. The table indicates a correlation between the category of PSI re-user and the legal and administrative PSI they would like to procure.

<table>
<thead>
<tr>
<th>PSI Re-user Category</th>
<th>Category title</th>
<th>Category description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Publisher / Legal information provider</td>
<td>15</td>
<td>• Courts of Appeal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Cases from regional courts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Case law of first instance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Administrative courts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Legislation with annexes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Parliamentary information</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Ministerial information</td>
</tr>
<tr>
<td>Legal information provider</td>
<td>5</td>
<td>• Regional legislation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Ministerial information</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Decisions of lower instance courts</td>
</tr>
</tbody>
</table>

\(^{12}\) European Online Information Market 2007, IRN Research, UK
Particularly noticeable is the difference between PSI re-users from the legal information provision side of the market and those who belonged to the service provider category:

Legal publisher / legal information provider / law firm: PSI re-users from the legal information provision side of the market are looking for more primary and secondary legal information, i.e. legislation and court decisions. Noticeable is the recurrence of the desire to obtain decisions of the courts of lower instance. This category of PSI re-user also expressed an interest in legal and administrative PSI produced by ministries.

Service provider: In contrast, the PSI re-users who belonged to the service provider category expressed their interest in legal and administrative PSI not in terms of types of information but rather in terms of information by theme. The themes listed involved building control, the environment, as well as traffic and roads management and reflected the dominance in the service category of PSI re-users active in markets involving town planning and property.

**Barriers to procurement**

Respondents were also asked to supply the survey with information on the barriers they had encountered trying to procure the desired legal and administrative PSI. The most common barriers encountered were “restrictive licensing”, “high prices” and “unreliable availability”.

The barrier “unreliable availability” was given by PSI
re-users from the categories: publisher / legal information provider; media company and service provider and refers to the irregular supply of information from the PSI holder to the PSI re-user. An example of this is the supply of judicial information from the lower instance courts. Whilst such information usually falls automatically into the public domain, its supply to PSI re-users can be sporadic – and hence unreliable – due to the limited resources of the court to disseminate the information.

Rejected requests

Respondents were asked to give information on instances where a request for legal and administrative information for the purpose of its re-use was rejected. Of the respondents that completed the online questionnaire, 24% reported that their requests for re-use of legal and administrative information were turned down. The rejections occurred less frequently amongst the PSI re-users in the categories involving legal information specialists (i.e. legal publisher / legal information provider/ law firms) than in the service provider category.

In the legal specialist category, a legal information provider in Germany had their requests for the re-use of legal and administrative information rejected by a Federal Ministry on the basis that the Ministry was bound by contractual obligations to refer such requests to juris GmbH, the official government supplier of legal information. In another example, a German lawyer was refused judicial information from a senior court in Bavaria, again with the reference that the requester should contact juris GmbH.

Amongst the service providers, the PSI re-users involved in the property market in the United Kingdom all experienced relatively high levels (from 10% to 40% of the total number of requests made) of re-use request rejections. The reason for rejection in virtually all cases lay in the fact that the data in question involved personal information and was therefore subject to restrictions imposed by data protection legislation.

5.2.6 Data policy

Of the 39 respondents who took part in the survey, 80% stated that they had noticed a change in PSI holder data policy since 2002. In contrast, 20% said they had not.

However, virtually none of the respondents regardless of whether they had participated in the online questionnaire or in the telephone interviews were able to relate changes in PSI holder data policy to changes in their income from legal and administrative PSI re-use.

Respondents were also asked to assess the current data policy of PSI holders on a scale from 0 (unacceptable) to 7 (very good) in terms of pricing, licensing, transparency, products, speed of delivery, delivery formats and coverage.

The assessments given by the 13 respondents who submitted answers in the online questionnaire are given in Figure 73. It is significant that the assessments fall essentially into two parts. In the first part, information coverage, delivery formats, speed of delivery and products all lie in the range between reasonable (3–4) and good (5–6). In direct contrast,
the second part shows that the transparency of PSI holder data policy, licensing and prices are all rated as just a little above poor (1–2) by the PSI re-users.

The assessments indicate that the general availability of legal and administrative information has improved as far as PSI re-users are concerned. The improved availability can be attributed to an improvement in the general legal and administrative information dissemination activities of public bodies. From the point of view of PSI re-users, these activities have been triggered largely by general IT and internet-related developments and the e-Government programmes that were started in order to assimilate them.

However, the low assessments for transparency, licensing and prices indicate that the business aspects governing PSI re-use have not improved. In particular the low assessment for transparency refers not only to the lack of information on re-use policy, which includes details on terms and conditions of re-use. It also refers more generally to a complete lack of clarity as to what information is available and critically, where does the information dissemination task of the public body producing the information begin and end?

The assessments highlight the difference between making information available as part of an information dissemination requirement and making information available for re-use. In the first part of the above assessment coverage, delivery formats, speed of delivery and products receive a higher ranking, because these are all activities covered by the requirements upon public bodies to make their information available. In the second part, transparency, licensing and prices receive a much lower assessment, because these activities all refer to the business aspects of PSI re-use, i.e. not information dissemination.

The message from the survey here is that all stakeholders involved in the re-use of legal and administrative information must take care not to regard the formal requirement upon a public body to disseminate information as synonymous with an approval or permission to re-use the information. Just because legal and administrative information is disseminated to the public domain does not mean in practice that conditions have been laid down for its re-use.

### 5.2.7 Web portals

Given that the delivery of PSI via web portals for the purpose of re-use has gained in importance, the survey asked questions about the usage of web portals and what suggestions PSI re-users had for their improvement.
Usage of web portals

Of the respondents that took part in the online questionnaire and the telephone interviews, almost all of them, i.e. 92%, use web portals to obtain legal and administrative information. The 8% that said they do not use web portals were service providers who licence the PSI they require directly from the PSI holder.

One respondent, a service provider from Denmark, said that web portals enabled them to have data-mining robots running all the time. The robots are tasked to find new documents as well as documents based on selection criteria set by the editors. An innovative way of locating information for the purpose of its re-use, the use of such technical means, akin to the link-back options discussed earlier, runs the risk of making the evidence of re-use less visible. In contrast, the single exception to the use of web portals was the respondent from Romania. In Romania, publishers are obliged to request information from each individual institution producing PSI, as there is no central web portal or repository for the information.

In the online questionnaire, respondents were asked to name the web portals they use. In all 27 were listed, of which three are maintained by EU institutions, 15 by national institutions and nine by regional or local institutions.

Asked about the frequency of their use of web portals, 38% of the respondents to the online questionnaire stated that they use web portals on a daily basis, 46% on a weekly basis and only 8% on a monthly basis. Put another way, 84% (i.e. 46% + 38%) of the respondents draw upon web portals for legal or administrative information on a weekly or less basis.

Satisfaction of PSI re-users regarding web portals

Yet, despite such extensive use of web portals, only 38% of the online questionnaire respondents were satisfied with the web portals, the remaining 54% that answered stated explicitly their dissatisfaction.
The respondents gave as their wished for improvements the following suggestions in the following order of priority: more services, a better ordering service, epayment mechanisms and lastly more formats and faster delivery speeds.

An explanation for the apparently paradoxical results in the survey is that in practice, a web-portal used by a PSI holder to disseminate legal and administrative information is not automatically a web portal from which a potential re-user can procure information.

5.2.8 Customers

To evaluate the re-use of legal and administrative information, it was important to get information about the customers of PSI re-users. Here the survey sought information on the PSI holders’ most important customer groups and their share of the total income that the company generated from the direct re-use of legal and administrative information.

By far the biggest group of customers of PSI re-users of legal and administrative information are law firms and other organizations that provide legal services. This group constituted 68% of the whole. Law firms and providers of legal services were also the main customer groups of the PSI re-users categorised as service providers and who are active in the property markets.

Banking and insurance at 12% and the services industry at 10% were also identifiable customer groups of PSI re-users that took part in the survey.
5.2.9 Suggestions

The survey concluded by asking respondents to make suggestions addressing the re-use of legal and administrative information as well as the problems connected with the re-use of legal and administrative information.

The answers were submitted as free text and analysed on the basis of their themes. The results for the most recurring themes are given below.

The most common suggestion addressed the need to create more awareness about the re-use of PSI and on the PSI Directive itself. This was closely followed by the related issue of addressing the problem of competition between public and private organizations where there is contention and disagreement regarding the definition of the “public task”. This was ranked equal with a desire for more service quality and formats for the purposes of PSI re-use.

Curiously, a change of legislation was low on the re-users’ agenda. This was possibly due to the fact that the PSI Directive was not known enough and respondents were not familiar with the options for changing the current text of the PSI Directive. Similarly, reducing the price of PSI or even giving it away free of charge was not the highest priority of the PSI re-users.

5.3 Case Study

The case study concerns the company Recht für Deutschland GmbH (RfD), which maintains and provides access to the biggest facsimile archive of official journals in Germany at both the Federal and Federal State level. Article 7 of the PSI Directive concerns transparency and provides that any applicable conditions and standard charges for the re-use of documents held by public authorities shall be pre-established and published through electronic means where possible and appropriate. This case study highlights the importance of transparency for successful PSI re-use and emphasises the critical and decisive role it plays in realising the aims and objectives of the PSI Directive.

The Recht für Deutschland database contains over 1.3 million documents and draws upon official information from official legal journals (Gesetzesblätter, Verordnungsblätter), administrative journals (Amtsblätter) and ministerial journals (Ministerialblätter). The official information contained in these mostly printed documents has long been regarded
as being in the public domain. After all, publication of these documents in an official journal is part of the standard dissemination requirement (see above) placed upon the originating institution. However, in order to obtain enough information to be able to launch the RfD products and services, the RfD project team took a period of two years to conclude agreements with the Federal authorities and those of the 16 Federal States. An excessive amount of management time was taken up negotiating with PSI holders who had no policy on PSI re-use and were uncertain and insecure about re-use conditions and charges.

The case study is a clear example of a general problem concerning the re-use of legal and administrative information and is also observed in other EU Member States. The problem is that public sector information, made available free of charge by PSI holders as part of their standard dissemination duties, does not necessarily mean that the information can be re-used in the sense advocated by the PSI Directive. Furthermore, that making PSI available free of charge does not necessarily translate into no or even low procurement costs for companies attempting to build added-value products and services based on the information. An important lesson from the case study is that greater effort needs to be put into implementing Article 7 as well as to monitoring compliance. For PSI re-use to become truly attractive to innovative small and medium-sized enterprises, as indeed the PSI Directive would wish for (see preamble points (3) and (15) of the EU PSI Directive), a greater transparency with respect to PSI re-use terms and conditions is needed to help reduce risk, to minimise the overall costs incurred in procuring PSI and to thereby encourage innovation – especially amongst small and medium-sized enterprises.

5.4 Conclusions for the Legal Sector

The survey highlights some fundamental differences between geographic and meteorological information on the one hand and legal and judicial information on the other. In contrast to geographic and meteorological information, legal and judicial information is basically accessible to the public for free. That legal and judicial information is universally regarded as being in the public domain is due to the fact that this type of information has to be made public in a formal sense (i.e. promulgated) in order to acquire the force of law. A second fundamental difference between geographic and meteorological information compared to legal and judicial information is that legal and judicial information can only originate from a single official source (e.g. parliaments, governments and courts) and hence cannot be substituted.

The diversity and scope of legal and administrative information revealed by the survey nevertheless highlights a pressing need for improvements in the dissemination of this kind of information in terms of both information management practices and their technical implementation. In this respect, specifications for a legal and judicial European data infrastructure should be considered. Such specifications should address the way the data is structured, stored and disseminated over the internet. By being able to include such indicators as the volume of data accessed over the infrastructure, the specification would be a valuable tool for monitoring the extent of re-use of legal and administrative
information. Infrastructures set up on the basis of such specifications should strive to actively include regional and local information producers such as lower instance courts.

In the case of administrative information, the survey shows that existing problems in this particular area share similarities with problems encountered in the field of geographic and meteorological information. Namely, that administrative information is spread amongst a very large number of local sources. Furthermore, there is a complete lack of awareness with respect to re-use amongst both PSI holders and re-users, crucial problems being licensing and pricing as well as a general lack of transparency regarding conditions and charges applied to re-use. The problems are also aggravated by the sheer variety of documents that constitute administrative information. Further investigation into this area requires that administrative information be studied as a category in its own right.

Yet, despite the diversity of legal and administrative information, the survey has shown how the re-use of PSI from the legal and administrative sector has made an important contribution in economic terms.

Over the last few years, better access to legal and administrative information in electronic form together with the development of the internet has led, even in some traditional economic sectors, to extremely high growth rates. By improving access to a greater variety of information (in particular administrative information) and by bundling different types of information, PSI re-use has led to the emergence of new business sectors. This development is particularly noticeable amongst service providers.

An improvement in the provision of services, in turn creates displacement effects between public bodies and re-users, which also has a positive impact on the economy.

One observable consequence of a displacement effect is where the PSI Holder makes considerable improvements to their internet services. In the examples observed during the survey, these improvements have taken the form of improvements to the structure of databases, more regular updating, better search functions, customized newsletters, alert systems, etc. Such improvements have in some cases made the business models of service providers redundant in that information users turn to the services provided for free by publicly funded bodies rather than those of commercial service providers. However, new growth opportunities and innovation in other services compensate for this loss of economic activity. Society generally benefits from the wider dissemination and diffusion of legal and administrative information and these benefits also manifest themselves in terms of general growth in the economy.

Nevertheless, despite the increasing dissemination of legal and administrative information there are still some areas where the information is free to access (following promulgation), but not available for free for the purpose of re-use (examples here involve Germany, Spain and Rumania). Inhibitors to the re-use of legal and administrative information will cause problems for publishers of legal and judicial information where such inhibitors continue to persist. In such cases, the problem areas are virtually all the same: licensing, pricing, transparency and the de facto competition between public bodies and private companies.
6 Monitoring

The study has shown that in some sectors the Directive has had a noticeable impact and has influenced the PSI re-use positively. However, many issues of the Directive are still not addressed sufficiently by PSI holders. In order to raise awareness and to emphasize the objective of the Directive, it is recommended that regular monitoring of selected key indicators on a European level should be introduced. This monitoring should be aimed at measuring progress from year to year in each country.

The study “Assessment on the re-use of PSI” shows that no single indicator can adequate measure of re-use for all kinds of PSI and in all European countries. This monitoring requires access to data on administrative processes which are not yet in all cases monitored, and even less, published by public administrations. Therefore, the result depends on the cooperation of the public bodies concerned.

Assessment of the re-use of PSI from the point of view of companies poses a different set of problems. Companies affected by the Directive on PSI are mostly small, innovative companies which cannot be easily surveyed. However, in most European countries, professional associations have been established to represent companies in the relevant economy sector, and these associations are adequate points of contact to evaluate the impact of the re-use of PSI in their country and also expose barriers preventing such re-use.

The following framework could allow an adequate assessment of the re-use of PSI in Europe (for the GI sector):

1. Define a set of products essential to re-users at the European level.

For an improved evaluation, it is recommended that categories of digital products be redefined to be more in line with re-user needs. For geographical information this could be administrative limits, georeferenced vectorial street directories, toponymy, address coordinates, orthophotos or aerial photography, digital terrain models, and detailed vectorial topographic maps or cadastral maps.

In order to avoid over-complexity at the start of the monitoring, it can be initiated with a small number of products in each sector. When the reporting of these indicators is well established, the spectrum of monitored products can be extended.

If indicators are defined at a product level, they are easier to compare and they make the topic more concrete. In addition, they help to raise awareness for the diversity of PSI and its importance for business models.

2. For each of these products, define adequate indicators for each Member State.

For each of the categories of products, each country would choose adequate indicators, considering its particular distribution system. Two kinds of indicators are suggested:
Income: this indicator was provided by most of the NMCAs in the survey. Although it is not a direct indicator for the success of the Directive (as high re-use levels can be achieved with low income), it is, in combination with the volume of re-used PSI, a major indicator concerning the data policy of the NMCA. In some cases, it may make sense to aggregate the income generated by the national authority with income generated by private companies (value-added resellers, PPPs) and local administrations (see Figure 8, Section 3.1.3).

Volume of re-used PSI: suitable indicators depend on the NMCA’s delivery model. In the case of geographical information, the following types of indicators may prove useful:

- Indicator based on the number of products sold. This type of indicator can only be used when the data is delivered in the form of (digital) products (number of downloaded files, number of edited CD-ROMS or DVDs, number of units sold recorded in the accounting system, etc.)
- Indicator based on the number of users. This type of indicator can only be used when access to the data is granted to identified users or companies (number of registered users, number of licensees, number of customers, etc.)
- Indicator based on server access. When access to the data is provided online, especially when access is free of charge, the two indicators above may be not available. In that case, alternative indicators should be used (number of opened sessions, downloaded volume, server load, etc.)

All NMCAs could choose at least one of these indicators (possibly several of them), that is best adapted to their business model in order to provide a reliable information on the volume of re-used PSI. For some products it might be interesting to monitor the prices in order to make a pan-European comparison of absolute prices.

Detailed methodology for the evaluation of the indicators should be defined in each country by the concerned NMCA, and submitted to the European Commission. Before any agreed monitoring exercise is finalised, comments or advice on these indicators can be provided by experts on the re-use of PSI.

In terms of GI, discussions on the definition of suitable indicators for monitoring the use of online services can be raised on the periphery of the issues currently dealt with in the implementation of the INSPIRE Directive.

This framework should allow changes in data policies: each NMCA should have the possibility to choose new indicators if made necessary by a change in their business model.

3. Support national professional organizations in assessing the economic impact of PSI and exposing barriers.

In contrast to public bodies, most private companies are not willing to disclose detailed information about their activities such as the production of databases or the revenue generated by particular products or services. Furthermore, no direct link can be established by the companies between the re-use of public sector information and economic results (see Figure 22, Section 3.2.4).
Considering these difficulties, the following approach is suggested:

- Questions should be adapted to the respondents’ willingness to answer:
  - Identify barriers against the re-use of PSI by asking qualitative questions (availability, quality, conditions of re-use) based on the products defined
  - Assess growth in economic sectors related to PSI by analysing the total revenue and employment volume aggregated at the level of an economic sector.
  - Surveys should be carried out at the national level by professional organizations such as associations or lobbies to ensure a better surveying of the potential re-users. In order to improve comparability of the results throughout Europe, methodological and/or financial support could be provided to these organizations.

4. Medium-term strategy: harmonization of the indicators at the European level.

Diffusion of best practice, cross-border cooperation and technical harmonization of the data infrastructure (e.g. INSPIRE for geographical information) could contribute to a convergence of the distribution systems for the re-use of public information across Europe. This change should allow the construction of a consistent measurement framework for all Member States.

7 Conclusions

Conclusion from the research is undoubtedly positive: growth rates have been reported in every market segment under consideration. The improved access to information from the public sector in Europe contributes to this success.

The results imply that EU Member States have made major changes to their work-flows, processes and procedures in public administration. In particular, technical oriented changes in the data policy such as delivery formats, delivery speed and number of products have been pursued at high intensity. PSI is increasingly offered on Internet portals or by web services, thus providing instant access to a large amount of regularly updated data.

In order to increase especially the commercial re-use of PSI, PSI holders should adapt their policies regarding data delivery to the needs of their markets; simple licensing conditions being a prerequisite for the promotion of PSI re-use, PSI holders should focus primarily on this aspect.

In all three sectors, re-users are interested in obtaining more PSI. The demand for their data is there. Even in the geographical information sector, which has experienced an intensive phase of substitution by private geodata providers, public GI is of great interest to re-users. Therefore, it is worthwhile putting an increased effort into setting acceptable and user-friendly conditions for re-use.

According to the Directive, any applicable conditions for the re-use of PSI shall be non-discriminating and exclusive arrangements shall be prohibited. While the survey itself was not able to elicit quantitative data regarding discriminatory practices, the case studies
and telephone interviews carried out to supplement the survey results confirmed the concerns of the re-users about possible cases of such practices. Regarding the public task matter, the biggest problem seems to be that specific laws in certain Member States explicitly define the production of PSI originating material as a public task for certain PSI holders. This leads them to carry out commercial activity in competition with re-users. The fact that, for example, private publishers are eager to enter a part of the GI map market indicates that there might not be a need for general activity of a public body in this area.

Investigating possible discriminatory practices is extremely tricky; therefore, it will be of major importance to raise awareness, and to ensure high transparency in all those PSI holders offering commercial services, especially when done in competition with its proper re-users.

The overriding majority of GI re-users had never heard of the PSI Directive or its implementation at national level, even in the comparatively organized community of GI re-users. Therefore, the study concluded that there is a significant lack of awareness. Re-users are not familiar with the aims and objectives and, even more importantly, they do not understand what the Directive can do for them in terms of content acquisition and bridge building with PSI holders. The level of re-user information must be improved by Member States, associations and the EU.

The research has shown that there are only very few cases of formal complaints, whereby re-users have chosen to seek redress through legal channels. In most Member States a formal complaint against a PSI holder must be taken to court; re-users responding to telephone interviews stated that they considered that option as too uncertain, too expensive and too time consuming.

As conflicts between PSI holders and re-users often consist of a mixture of legal issues, they are of particularly dense complexity. Questions of copyright, privacy protection and freedom of information are interwoven with requests for PSI re-use. Due to this complexity, the outcome of court procedures is very uncertain. There is a need for low-barrier channels of redress in each Member State.

To raise awareness of the Directive in Member States, regular monitoring of key indicators should be introduced on a European level in co-operation with stakeholders. The most important indicators of data delivery are income and data volume. In order to improve the comparability of this monitoring, indicators should be defined at a product level. This would also help to develop a set of standardized products in Europe. Furthermore, the indicators must reflect the common business or delivery models of each sector. Therefore, specific delivery conditions such as server access, free access or reseller partnerships between holders and re-users can be taken into consideration.

The challenges of the information and knowledge-based industry has been understood and tackled at the European level. The study has revealed the first positive effects of the PSI Directive. The development of the information economy through a better access to public databases raises essential issues which cannot be solved without involvement of the national level. It is to hope that the responsible actors understand the opportunities linked to the re-use of PSI and take actions to support these positive trends.
### A.1 Geographical information

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### A.2 Meteorological information

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### A.3 Legal and administrative information

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<td>Mr. Jerome Flanagan</td>
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