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PSGI Policies in Norway and England: are they within the Spirit of Recent EU Directives?*

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Abstract

The removal of *Public Sector Geo-Information* (PSGI) from current 'silo systems' is a socio-political challenge based on intertwined regional and national policies, along with the different policies and cultures of public sector agencies. These socio-political issues have created a web of complex access policies (e.g., pricing, copyright, and licensing agreements) that have in many cases negatively influenced access of PSGI. Therefore, for PSGI to be made more accessible there should be in place more transparent, formalised, non-conflicting and well-structured policies to regulate sharing and reuse. A number of European states have made considerable efforts to facilitate the sharing and reuse of PSGI. Recently, their efforts were boosted by the European Union through the issuing of two key Directives (PSI and INSPIRE) to facilitate the concept of reuse of *Public Sector Information* (PSI) and the sharing PSGI in the case of INSPIRE. The challenge then is to determine whether these Directives are effective in improving the quality of access to PSI across Europe. The success of the Directives can in part be measured by answering the following questions: Are the current and future access policies of member States in compliance with the letter of the Directives? And are they in compliance within the spirit of the Directives? In an attempt to answer the questions above the authors investigated and analysed key policies supporting the concept of sharing and the reusing of PSI/PSGI in five European jurisdictions. This paper discusses key findings of the investigation with respect to Norway and the United Kingdom with specific reference to England. The paper presents the results of the investigation in the following manner: a discussion of the concept of sharing and reusing of PSGI, followed by a review of key EU Directives that directly or indirectly govern access to PSGI, and a discussion on PSGI access policies in Norway and England. An analysis of these policies is then presented to illustrate whether or not they are within the spirit and letter of the PSI and INSPIRE Directives.

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Keywords: Public Sector Information (PSI), Geo-Information (GI), Access Policies, GI Access Policies, PSI Directive, INSPIRE Directive, Letter and Spirit of the Directives

1. INTRODUCTION

As the information-based society matures the importance of current and possible application of Geo-Information (information with a spatial component) is becoming more and more evident. The application of Geo-Information (GI) can be seen across all sectors of the information society; from playing key roles in sectors such as defence, the environment, forestry, planning across different jurisdictions, crime prevention, emergency response, transportation, the health sector, and in numerous business solutions to name a few [Dangermond and Smith 1988; Bryan and Stone, 2003; Negroponte, 2006]. The significance of the applications of GI and GI services in today's society is fuelled by recent advancements in technology (in particular Geo-Information technology). Today's Geo-Information technology allows a wide cross-section of professionals and even the ordinary citizen to utilise GI in their businesses, as well as, their day-to-day activities; long gone are the days when it required expert geomatics knowledge to apply, manipulate, visualise and analyse GI in a GIS environment.

Although the technology exists to support the application of GI across different sectors of modern society, many sectors of the information society have yet to tap the full potential of GI and GI services as tools to assist in improving the methodology of decision-making and the creation of new business solutions and products [Olesak and Moeller, 2007]. This is in part, due to the fact that GI are not made readily available to potential users. This limitation in the availability of GI can be attributed to the fact that the major of GI producers—excluding national mapping agencies—are public sector agencies having GI as a by-product of their activities and not as their main objectives. Thus, the focus is on the collection of GI and not on its dissemination. For today's society to utilise the full potential of public sector Geo-Information (PSGI) in its activities, PSGI must be made more easily accessible to the wider cross-section of society (i.e., to all users and potential users). That is, PSGI must be removed from its current 'silo systems' into more diffused systems so that they can be shared—as defined by Directive 2007/2/EC—across the public sector and made available for reuse—as defined by Directive 2003/98/EC—by the private sector [Pick, 2005 and Olesak and Moeller, 2007].

Removing PSGI from its current 'silo systems' is both a technical and a socio-political challenge. However, the technical challenge is not as significant as the socio-political problem as the technology already exists—and is improving—to facilitate efficient and effective access to PSGI. The problem facing the GI sector in making PSGI more accessible (i.e., available for sharing and reusing) is one

intertwined in the culture, the socio-economic, and socio-political structure of the PSGI producing organisations and the environment in which they operate. These issues have created a web of complex policies (e.g., pricing, copyright, licensing agreements and liability issues) aimed at creating more robust funding models for these organisations that have in many cases negatively influenced the sharing and reusing of PSGI. Therefore, for PSGI to be made more readily accessible there should be in place more transparent, formalised, non-conflicting and well-structured policies to regulate sharing and reuse.

Over the years a number of European countries on their own have made considerable efforts to facilitate the sharing and reuse of PSGI. These efforts are not limited to the frequently mentioned implementation of the physical and technical infrastructure but also to the creation of *policies* to facilitate access and accessibility to PSGI. Recently, the efforts of the individual States were boosted by the European Union (EU) through the issuing of two key Directives (the PSI and INSPIRE Directives) to facilitate the concept of sharing and reusing of *Public Sector Information* (PSI) and in the case of the INSPIRE Directive specifically *Public Sector Geo-Information* (PSGI). The challenge then is to determine whether these Directives are effective in improving the quality of access to PSGI across Europe. The key to the success of the Directives will lie in the answer to the following questions: Are the current and future access policies of the Member States in accordance with the letter of the Directives? And are they in compliance within the spirit of the Directives?

In keeping with the above themes the authors investigated and analysed key policies supporting the concept of sharing and the reusing of PSGI in five European jurisdictions [van Loenen et al., 2007]. This paper discusses key findings of the investigation with respect to Norway and United Kingdom with specific reference to England and Wales. This was done because although the case study investigated GI policies in the UK the majority of the in-depth investigations were carried out in England and Wales. Therefore, the authors are more knowledgeable on the situation as it relates to England and thus, the comparisons, analysis and examples will be drawn mainly from England. Also, it should be noted that although Norway and England are not Member States of the European Union (EU) they were still used in the discussions because Norway for the most part complies with EU regulations and England as a member of the United Kingdom—which is a Member State of the EU—is obligated to comply with EU regulations that are related to the Treaties ratified by the United Kingdom. Norway and England were selected for the discussion because they used totally different solutions to address the issues of sharing and reuse of PSGI. See van Loenen et al., 2007 for more background on Norway and England and their GI markets. The paper presents key aspects of these three months (November 2006—January 2007) of investigation in the following manner: a discussion of the concept of sharing and reusing of PSGI is first presented. This is followed by a

review of the key EU Directives that directly or indirectly govern access to PSGI. This review is followed by a discussion of access policies in Norway and England. An analysis of these policies is then presented to illustrate whether or not these policies are within the spirit and letter of current EU Directives. The paper closes with a discussion of the lessons learned from the case studies.

2. THE CONCEPT OF SHARING AND REUSE OF PSGI

As mentioned previously, if PSGI is to be utilised to its full potential in decision making and the creation of business solutions in today's society, then, there should be timely and easy access to PSGI for both existing and potential users. In this paper the term 'access to PSGI' specifically refers to the ability of both the public and private sector to locate, view, assess, download, and use GI held by public sector or GI held by other organisations on behalf of the public sector (i.e., PSGI). In the context of this paper the term (Access to PSGI) is reviewed and discussed with respect to two specific purposes; the sharing of PSGI and the reuse of PSGI in today's information based society.

The sharing of GI in its simplest form may be viewed as the process of allowing GI to be used repeatedly for many different purposes by different users [MacKaay, 1982]. A more formal definition refers to sharing as:

"...those transactions in which individuals, organizations or parts of organizations obtain access from other individuals, organizations or parts of organizations to spatial data." [Omran, 2007]

Within the context of the European Directives the sharing of PSGI may be defined as the exchange or availability of GI and GI services across public sector agencies [Article 17 (1) Directive 2007/2/EC]. In addition, the term 'sharing' is only valid if the third party public sector agency accessing the PSGI uses it to assist in the performance of its mandated public task. It is within this definition that the term 'sharing' will be used in this paper. It should also be noted that although the word sharing is usually associated with the free exchange of a commodity, in the case of the GI community the term 'sharing of PSGI' may refer to the distribution of PSGI across public sector agencies, as well as, the exchange of PSGI. This can be for free, for a fee, or in other forms of arrangements (e.g., a data-for-data agreement).

The term 'Reuse of PSGI' on the other hand may be defined as the utilisation of public sector GI by a third party for purposes—commercial or non-commercial—other than the initial purpose within the public task for which it was originally produced [Article 2(4) of Directive 2003/98/EC]. In general, reuse seeks to promote the commercialisation of PSGI through the development of value-added products and the application of PSGI in areas other than the originally intended

area. That is, the concept of reusing PSGI seeks specifically to address the development of a GI market in the Member States, as well as, across the European Union. Under the umbrella of reuse PSGI may be made available for utilisation free of charge or for a fee ranging from the cost of distribution to the 'market value' of the PSGI.

In summary, the sharing of PSGI refers to the availability of GI across public sector agencies where it can be applied in the performance of the public task of these agencies; while the reuse of PSGI refers to the utilisation of PSGI by a third party in an area for which it was not originally produced. This application is usually in support of commercial activities. The concepts of both sharing and reuse of PSGI seeks to increase the repeated utilisation of PSGI and thus, increases the value of GI across the information-based society.

It should be mentioned that although many may associate sharing with the technical and physical exchange of PSGI, sharing, however, refers to a much broader range of issues. That is, in addition to the technical and physical functionalities associated with the sharing of PSGI, sharing includes the institutional settings, the legal framework, the financial, physical, and intellectual accessibility of PSGI [Bovens, 1999 pp. 102-124]. Legal access relates to legislation that provides the means to enforce access to information (e.g., freedom of information act) or to restrict its use (e.g., intellectual property acts). Financial accessibility concerns the policies that govern the balance amongst the costs associated with creating the data sets, the pricing of the data sets and the potential benefits to be derived from using PSGI. Physical access involves the policies regulating the physical accessibility to PSGI in the form of the ability to locate and access. Intellectual access policies concern the ease to understand or use the information. That is, the extent to which PSGI can be further utilised. This paper will analyse and discuss the EU policies associated with the four sharing issues (i.e., the legal, financial, physical, and intellectual) referred to by Bovens. Most if not all of the discussions will be based on public sector geo-information (PSGI) and *public sector information* (PSI) as PSGI is a subset of PSI and therefore, the policies governing PSI will also influence PSGI.

3. POLICIES FACILITATING THE SHARING AND REUSE OF PSGI IN EUROPE

In recognition of the importance of wider usage of *public sector information* (PSI)—inclusive of PSGI—in the social and economic development of the European community (e.g., in environmental sustainability, sustainable development, public participation in governance and economic growth to name a few) the European Union has implemented a number of Directives to support the sharing and reuse of PSI. Although, these Directives address different aspects of

the application of PSI to development, their common objective is the regularisation of the policies governing the sharing and reuse of PSI—inclusive of PSGI—across the European Union.

Of the PSI related Directives implemented by the EU the main ones directly influencing the sharing and reusing of PSGI are Directive 2003/4/EC on public access to environmental information, Directive 2003/98/EC on the re-use of public sector information (referred to in this paper as the PSI Directive), and Directive 2007/2/EC on establishing an Infrastructure for Spatial Information in the European Community (referred to in this paper as the INSPIRE Directive). These three Directives directly provide the legal framework on access policies—in terms of sharing and reuse—to PSGI and GI held by the private sector on behalf of the public sector.

Although all three Directives seeks to regulate access to PSGI, it is important to note that each Directive addresses different type of audiences—based on their classification and what they are using the PSGI for—and different categories of PSI inclusive of PSGI. Directive 2003/4/EC addresses citizens in general and regulates how they may access PSI pertaining to their environment. The PSI Directive is aimed at the private sector and seeks to provide more efficient access to PSI for commercial usage. The INSPIRE Directive on the other hand is aimed at the public sector and attempts to provide a framework for more efficient sharing of GI across the public sector to better enable this sector to perform its activities in the environmental sphere.

In addition to the Directives listed above there are other EU legislation that influences access to PSI in Europe. Those worth mentioning are Directive 2006/123/EC, Directive 2006/111/EC and the Treaty on European Union and the Treaty Establishing the European Community. Directive 2006/123/EC (Transparency Directive) aims to create an EU internal market in which the free movement of services is ensured. With respect to access to PSI the Directive requires, through a single contact point, transparency in all procedures and formalities that need to be satisfied to access a service. Directive 2006/111/EC which regulates the transparency of financial relations between Member States and public undertakings, has its influence on access to PSI in Article 2 which states that public undertakings should be transparent in the costs and revenues associated with different activities, and should provide full details of the methods by which costs and revenues are assigned or allocated to different activities [Article 2 Directive 2006/111/EC]. The Treaty on European Union and of the Treaty Establishing the European Community sets the framework for competition in the EU including competition of public undertakings and undertakings to which MS grant special or exclusive rights [Articles 81 to 89 of the Treaty]. Of interest to access to PSI is the fact that the Treaty prohibits unfair pricing, unfair trading conditions, applying dissimilar conditions to equivalent transactions with other

trading parties, amongst others. However, with regards to PSI it is worth mentioning that the Treaty exempts public undertakings entrusted with the operation of services of general economic interest or having the character of a revenue-producing monopoly. These are only subjected to the rules of the Treaty in so far as the application of such rules does not obstruct the performance of the task assigned to them [Article 86(2) Treaty].

Although all the legislation listed in this section influence the sharing and reuse of PSI—inclusive of GI—in some way or another, the paper will focus mainly only Directives 2003/4/EC, Directive 2003/98/EC, and Directive 2007/2/EC as these Directives were enacted specifically to regulate the sharing and reuse of PSI.

3.1 Directives Promoting Sharing

The first of these key directives, Directive 2003/4/EC on public access to environmental information was implemented in February 2005. This directive was mainly aimed at improving the efficiency level of accessing and sharing public sector environmental information across the Union. Although this Directive addressed specifically environmental information, it did non-the less, contribute significantly to the notion of easier access and sharing of PSGI. The Directive was able to achieve this feat because the majority of environmental information are spatially related or are spatially linked. This directive also played another important role towards the sharing of PSGI as it paved the way for the creation of the INSPIRE Directive.

As eluded to in the previous paragraph, the second Directive, Directive 2007/2/EC—the INSPIRE Directive—was the first EU Directive aimed specifically at regulating the sharing of PSGI. The INSPIRE Directive sets out to facilitate in a seamless manner the sharing of PSGI amongst public sector agencies within Member States, as well as, across the EU. The Directive aims to achieve this goal by providing a legal framework that will formalise and assist in making the policies regulating the sharing of PSGI across the public sector more transparent. It is expected that the INSPIRE Directive will provide Member States with an effective guideline for developing clear and transparent policies to govern the sharing of PSGI and thus, facilitate wider and repeated usage of PSGI.

3.2 Directive Promoting Reuse

The third Directive, the PSI Directive was implemented in July 2005 and unlike the other two Directives mentioned in the previous paragraphs it set out to regulate the reuse of *public sector information* (PSI). The difference here is of two fold; firstly, the PSI Directive addresses all PSI unlike the other two mentioned Directives that addressed specific types of PSI (i.e., environmental information

and PSGI). Secondly, the PSI Directive seeks to regulate the *reuse* of all PSI, whilst, the other two Directives addressed the *sharing* of specific PSI. That is, the main aim of the PSI Directive is to provide a legal framework to regulate the reuse of PSI across the EU, thus, providing the same basic conditions to all users in the European information market [CEC, 2002 and Corbin 2003]. Similar to the INSPIRE Directive the PSI Directive sets out to achieve its goals by making the policies relating to the reuse of PSI more transparent and regularised and thus, reducing unjustified market distortions. Although the PSI Directive does not address PSGI specifically, it addresses PSI of which PSGI is definitely a subset. In promoting the reuse of PSI and thus PSGI, the PSI Directive indirectly facilitates making PSGI more accessible and usable by a wider cross-section of the society.

4. ACCESS POLICIES GOVERNING SHARING AND REUSE OF PSGI IN NORWAY AND ENGLAND

Although both governments—Norwegian and UK—support the concept of sharing and reuse of PSGI, the strategies implemented to achieve this goal are somewhat different, resulting in unique access policies to PSGI in each country. It should be noted that the end results of sharing and reuse of PSGI in both countries are not totally a reflection of the policies but a combination of the policies, the influences of public sector sharing culture, the nature of the GI market, and the activities of the GI community with respect to the implementation of different levels of SDIs. The above issues as they affect and influence the policies on sharing and reuse of PSGI in Norway and England will be presented and analysed in the following paragraphs.

4.1 Access Policies in Norway

In the early 1990's the Norwegian Government of the day with the support of the GI community recognised the importance of having more accessible PSGI to support environmental sustainability and the development of the Norwegian society in general. Although the emphasis was on the sharing—making PSGI readily available across the public sector—both communities (GI and political) also supported the concept of the reuse PSGI and the role it plays in creating a vibrant GI market. The political support for sharing is reflected in early PSGI policies, which made thematic PSGI datasets available for free, and legislation (The Environmental Data law) as far back as 2003 that specifically states that environmental data should be made freely available and free of charge (see van Loenen et al., 2007 for details). Whilst, support for reuse is evident in the size of private sector participation in projects that facilitate better access to PSGI and the public-private sector partnerships forged at different levels of the GI communities [Lillethun, 2006 and Strande, 2006].

Collaboration amongst public sector agencies and public-private sector partnerships in GI activities is an age-old tradition of the GI community in Norway [Mellum, 2004]. Two key collaborative GI related efforts that set the stage for the current policies on sharing and reuse of PSGI are the GeoVEKST project—implemented since 1992—and the AREALIS project initiated in 1997. (See Strande, 2006 for details of other GI related projects that support the culture of sharing and reuse of PSGI in Norway). In the case of GeoVEKST the main concept is the pooling of resources of both the public and to a lesser extent the private sectors (where they are involved in public task) to jointly fund projects for creating, improving and maintaining large scale digital GI [NDS, 2006]. Some of the main sectors contributing to the GeoVEKST project are as follows: road authority 16 %, energy companies 8 %, kommunes 36 %, SK 22 %, telecom 8 %, land use 7 %, and others 3 %. See Stortingsmelding nr.30 (2002-2003) and Lillethun, (2006) for more details on the membership of GeoVEKST project and their contribution. AREALIS on the other hand is a national program initiated by the Norwegian Ministry of Environment and coordinated by the Norwegian Mapping and Cadastre Authority whose main objective was to make environmental data and land use information available at national, regional and local level [NDS, 2006]. Key outcomes of this program were collaboration amongst agencies, the development of standards, rules, and manuals that facilitate the sharing and reuse of PSGI across administrative boundaries [NDS, 2006]. See Mellum, (2004) and NDS (2006) for more detail information on the AREALIS project.

Currently, the main policy influencing access to PSGI in Norway is the Norwegian government white paper Stortingsmelding nr. 30 (2002-2003) entitled “Norway Digital: A Joint Fundament for Value-adding”. This White Paper was accepted by the Norwegian parliament on the 18th June 2003 as a key tools to support the Norwegian eGovernment initiatives eNorway 2005 and eNorway 2009 [Strande, 2006 and Persson, 2007]. Interestingly, one of the three main themes of eNorway 2009 is the creation of a coordinated and user approached public sector, which should facilitate initiatives and projects across the public sector and between the public and private sector.

The White Paper was formulated based on the experiences gained from GI collaborative projects, especially GeoVEKST and AREALIS [Strande, 2006]. A component of the larger eNorway 2009 plan, the White Paper sets out to regulate and modernise access to PSGI. The White Paper intends to achieve this feat by providing the ground rules for the implementation and regulation of two key initiatives to facilitate more efficient access—in terms of sharing and reuse—to PSGI in Norway. These two key initiatives are the establishment of a national SDI (Norge Digitalt) and the implementation of a national Geoportal (GeoNorge) as a component of the SDI. It is expected that these two initiatives will greatly improve access to PSGI for both the public and private sector in Norway.

A discussion on PSGI access policies in Norway necessitate that a distinction be made between *Thematic Datasets* and *Base or Reference Datasets*, since, in Norway PSGI are usually classified within these two main categories resulting in some access policies specifically addressing these two categories of PSGI. The term base datasets is used to refer to large scale data (usually 1:1000-15000), which include topographical data, hydrographic, roads and other infrastructures, land use, cadastral and buildings information, elevation, and orthophotos. Thematic datasets include a broad range of usually small scale theme oriented data produced by different levels of government and public sector agencies to assist in the performance of their tasks. Examples of Norwegian thematic datasets are demography, protected sites, biodiversity, pollution, fisheries, geology, mineral resources, and agriculture and forest resources.

4.1.1 PSGI Sharing Policies

Sharing of PSGI in Norway is mainly voluntary based on age old tradition and lately influenced by the policies set out in White Paper. The two key aspects of White Paper that influences and promote the sharing of PSGI are the sections regulating the implementation and operation of Norge Digitalt and GeoNorge. Of the two initiatives Norge Digitalt provides the framework for sharing, whilst, GeoNorge supports sharing by facilitating accessibility to PSGI. The main clauses of Norge Digitalt (ND) that support sharing are as follows:

- All partners in Norge Digitalt have free access to the GI of the other participants;
- For this access an organisation will have to pay an annual fee which is based on the size of the organisation and the importance of the base datasets to the function of the organisation;
- Also, the organisation will have to make its GI available to the other participants.

Norge Digitalt, which may be viewed as an extension of the GeoVEKST programs is currently coordinate by a division of Statens Kartverk (SK)—the Norwegian Mapping and Cadastre Authority. It operates on a principal agreement and specific partner's contract that includes: the GI to be supplied, the requirements for its distributions (similar to a Service Level Agreement), and the financial requirements associated with membership. Although Norge Digitalt was designed mainly to support sharing it does consist of private sector members; this is an aspect it inherited from the GeoVEKST programs.

4.1.2 PSGI Reuse Policies

Although there are no policy documents or legislations directed at regulating the reuse of PSGI, aspects of the White Paper do address the issues of reuse in the

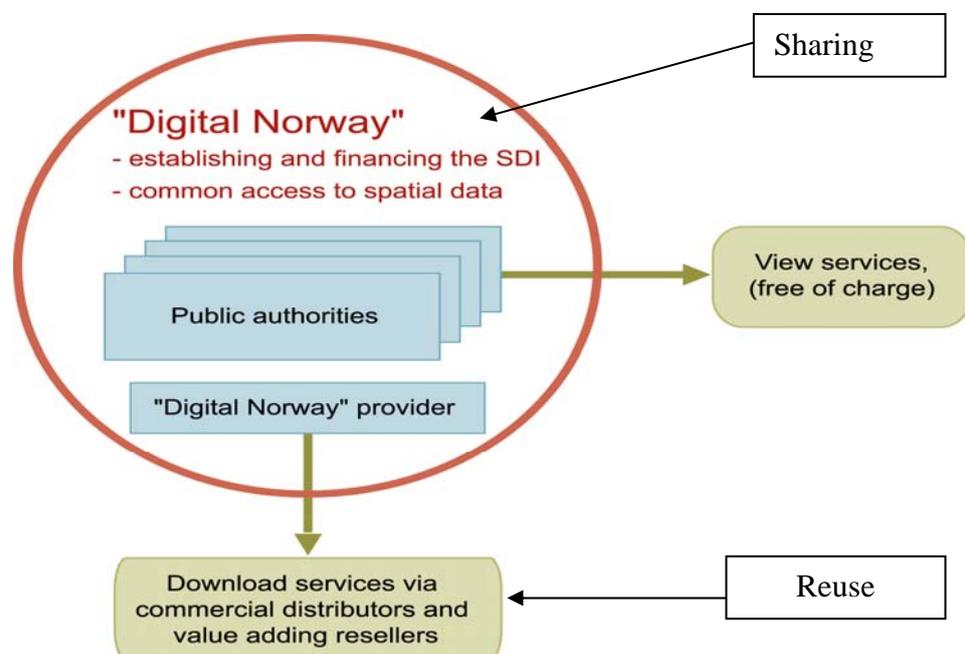
form of the activities of GeoNorge. GeoNorge supports reuse through the provision of public access to PSGI and thus, the policies regulating the implementation and operation of GeoNorge indirectly regulate reuse of PSGI. GeoNorge's influence on reuse is evident from the fact that it permits a publicly owned company Norsk Eiendomsinformasjon (NE) to sell the datasets of the members of ND to the public (i.e., non-members of ND).

GeoNorge the national geoportal provides members and non-members of ND with the facilities to locate, view, and assess the GI holdings of ND. For non-members the other component of access—downloading—is provided by Norsk Eiendomsinformasjon in most cases (Figure 1). However, downloading—the sale of PSGI in this case—is also provided by most of the custodians of the datasets with the exception of SK. The sale of SK's datasets and some other key land administrative datasets are provided by NE (partly under an exclusive arrangement). This is an important step in the direction of greater access to PSGI, as, having NE as the distributor of SK's GI removed the commercial activities from the national mapping agency which is often a stumbling block to access of PSGI in many European countries. In summary, NE acts as a seller and distributor of the datasets and services made available by the members of ND who opt to use this service. In some cases members of ND distribute their GI and GI services on their own. NE pays a royalty over to ND based on the datasets and services sold.

In summary, although the White Paper makes a distinctive attempt to improve on the reuse of PSGI, there are however, a number of issues not addressed by the White Paper or even created by the White Paper. This occurs primarily because the White Paper was mainly conceived to facilitate the sharing of PSGI. A key issue not addressed by the White Paper is the fact that there is no clear distinction between public and private sector partners in ND. Although the private sector participation in ND specifically exclude them from using the GI they hold on behalf of the public for commercial purposes the arrangement is still of concern to the private sector GI community. This is because they see this arrangement as creating an uneven playing field within the GI community [Welle Donker and Zevenbergen, 2007]. One solution to this problem would be to make all public sector owned GI available for free to the public, thus, removing the concern of unfair competition. Another key concern with the reuse of PSGI in Norway is the role of NE in the GI market. That is, NE is supposed to function as a wholesale distributor of ND's GI, however, increasingly with the advancement in technology NE is now more capable and is actually selling PSGI to end-users [Welle Donker and Zevenbergen, 2007]. The private sector GI community also sees this as unfair competition. In addition, the exclusive arrangement between SK and NE needs further analysis to determine if it is in breach of Article 11 of Directive 2003/98/EC.

To date, steps to implement the PSI Directive—and thus further regulate reuse—can be seen in changes to the Freedom of Information Act, which will be enacted in 2008. Key aspects that will be dealt with in this Act that are of concern here are the exceptions to free access for re-use and non-exclusivity. That is, law stipulates that the current systems of PSGI pricing and distribution policies are to remain the same.

Figure 1: An Overview of the Framework for Sharing and the Reuse of PSGI in Norway (From Lillethun, 2006)



4.2 Access Policies in England

Over the last decade the government of the United Kingdom (UK)—inclusive of England—has implemented a number of positive initiatives—which can be viewed as policy documents—to enhance sharing and reuse of Public Sector Information (PSI). These policy documents—in particular PSGI documents—aims at building on existing policies recommended by different committee reports of which Lord Chorley's report of 1987 is worth mentioning [DOE, 1987]. Some of these key current initiatives are as follows [APPSI, 2004]:

- The Ministry of Justice promotion of the re-use of PSI to enhance the knowledge economy and the quality of government in the UK;

- HM Treasury initiatives to leverage PSI to generate revenue and reduce the cost of government;
- The Efforts by the Ministry of Justice to promote transparent government through the Freedom of Information Act;
- The Department for Business, Enterprise and Regulatory Reform efforts to enhance the competitiveness of the UK Information Sector; and
- The Join-up Government Policy implemented by the Government Offices to facilitate sharing of information across government.

Although these policies individually seem to be positive steps in support of access to PSI (i.e. the creation of a PSI market), when analysed together these policies do exhibit strong conflict of interest with each other [APPSI, 2004 and IAAC, 2002]. Many experts see this conflict of government policies as the main obstacle in the establishment of vibrant functioning PSI market in England and the rest of the UK [APPSI, 2004]. Although these policies do not refer directly to PSGI, examples of the conflicts can be seen in the GI sector specifically with regards to government agencies classified as Trading Funds that are required to generate surpluses. This requirement forces these agencies to sell their GI at prices not consistent to the concept of sharing and reuse to a lesser extent. Currently, efforts are underway to address this issue in the GI sector. A key example of an effort to improve the PSGI access policies in England is the UK GI panel commissioned report on a UK GI Strategy, which was expected to be made public in July 2007 but delayed until early 2008 [Lawrence, 2006].

Another barrier to the reuse and commercialisation of PSI in England is the existence of the different copyright laws relating to PSI [APPSI, 2004]. The main copyright law affecting PSI is the Crown Copyright which is the copyright law that applies to information produced by central government agencies referred to as Crown Bodies. However, it is difficult to distinguish which government organisations are Crown Agencies and thus, affected by Crown Copyright because of technical legal reasons [APPSI, 2004]. Therefore, different central government agencies will have different copyright laws regulating their information; thus resulting in different rules for accessing PSI. Also, it should be noted that information produced by local authorities are subjected to laws of copyright but not Crown Copyright. This introduces yet another set of laws governing copyright relating to PSI in England.

4.2.1 Sharing of PSGI

To understand the policies governing PSGI sharing in England it is important to have an overview on the nature of the key PSGI producing organisations and the structure of the GI market in England. For example, the main GI producing organisations (i.e., the Ordnance Survey, the United Kingdom Hydrographic Office, Her Majesty Land Registry, and the Royal Mail Group) are classified as Trading Funds or are public companies; these classifications force these organisations to sell their GI thus, eliminating the concept of “free sharing” and in general places restrictions on sharing. Combining this facet with the complex copyright laws of the UK creates a very complicated environment for PSGI sharing.

The situation in England is further complicated by the dominant or significant role played by the Ordnance Survey (OS) and other Trading Funds in the GI market. Currently, the OS is seen as a monopolistic player in the English GI market [OFT, 2006]. This dominance and the monopolistic position enjoyed by the OS places great restriction on the sharing and reuse of PSGI from other large producers and users of PSGI such as Local Government, the Environment Agency, Central Government Agencies, the Health Sector and the Greater London Authorities to name a few. This point is illustrated in the fact that the majority of the more widely used GI in the English public sector—with few exceptions—are referenced to, derived from, or are actually OS datasets. Therefore, sharing of these datasets will be governed by the underlying policies and licensing terms agreed between these agencies (custodians of the GI) and the OS. Similarly, the sharing of PSGI produced by other organisations classified as Trading Funds will be affected by the licensing agreements under which these organisations distribute their datasets. In summary, there are no national policies governing the sharing of PSGI in England. Policies governing sharing are mainly a reflection of the policies related to the Collective Licensing Agreements and that of other key GI producing organisation.

To cope with the barriers to sharing of PSGI—specifically the inability to access OS dataset and the datasets of other agencies classified as Trading Funds at a fair price—a number of public sector agencies in conjunction with the OS and their partners have established four types of licensing agreements under a collective banner known as the Collective Licensing Agreements (CLAs). The Collective Licensing Agreement is a contractual arrangement between the OS—and in some cases its partners—and public sector agencies for access to OS datasets at an agreed price and under specific conditions. These contractual agreements usually contain a number of restrictions that permits sharing only across agencies with very similar agreements. It should be noted that in the CLAs OS datasets refer to datasets to which the OS are the custodians or to datasets where the OS are the main partners.

There are at least four distinct Collective Licensing Agreements which are categorised according to the different public sector groups in the following manner:

1. The Pan-Government Agreement—Refers to the contractual arrangement between the OS and Central Government Agencies (e.g., Crown and non-Crown bodies, government departments, executive agencies and sponsored bodies).
2. Mapping Services Agreement—This is the contractual arrangement between a group of organisations (the OS, Intermap, and Intelligent Addressing) and Local Government Agencies for the provision of GI to assist in the performance of the business of government and the development of National Infrastructure Projects (e.g., National Land Information Service, National Land Property Gazetteer and the National Street Gazetteer).
3. London Government Agreement—Refers to the contractual agreement between the Greater London Authorities (which symbolize regional authorities) and OS for the provision of GI.
4. National Health Services Agreement—This a blanket agreement amongst the different health sectors of England and the OS for the provision of GI (pilot project).

In general, the CLAs employ different types of sub-licensing agreements within the main four categories of agreements. Usually these sub-agreements are defined in terms of price range and access to datasets. For example, the primary licensing agreement provides users with access to datasets ranging from large-scale (i.e. OS MasterMap) to small-scale. Users within this licensing agreement pay more than the users within the other lower order of agreements. The lowest level agreement provides users with access to only small-scale datasets for the lowest fee range. There are variations to these agreements in that users can opt to upgrade an agreement by adding larger scale datasets for an increase in the fixed fees.

Although the CLAs were designed to facilitate access their complex nature limits their effects in the aspect of PSGI sharing in England. The CLAs only facilitate sharing within categories and only if the public sector agencies willing to share GI have similar sub-licences. That is, sharing is only permitted within categories and where the sub-licences are equivalent. The CLAs are mainly top-down agreements where holders of the primary licence agreement can utilise the datasets of the holders of lesser agreements. This however, is not possible in the reverse direction. That is, agencies holding licences within the secondary user group (e.g., medium-scale datasets) cannot access the large-scale datasets (dataset falling within the primary licence group) of another government agency even after it has been employed in the function of that agency. However, the CLAs allows all government agencies free sharing of all datasets made available

under the agreement and any new datasets created by other government agencies as long as it does not involve sharing across categories (e.g., agencies under the Pan-Government Agreement cannot share data with an agencies operating under the Mapping Services Agreement) and to lesser sub-licensing arrangements.

It should be noted that the future of the CLAs is in doubt as both the Pan-Government Agreement and the National Health Services Agreement are in breach of Directive 2004/18/EC of the European Parliament and of the Council of 31 March 2004 which governs public sector procurement. Therefore, for the CLAs to continue or before any new arrangements can be signed the structure of the above mentioned agreements must be changed to comply with Directive 2004/18/EC.

It must be said that even with its complexity the CLAs still facilitate restricted sharing of PSGI [IGGI, 2004]. Some key contributions of the CLAs are the promotion and increase awareness of the usefulness of GI in the performance of the public functions by the different levels of government and their agencies, public sector access to more affordable GI, and the increase usage of PSGI and GI in general by the public sector. Also, IGGI, 2004 provides more details on the benefits of the Pan-Government Agreement which is a part of CLAs.

4.2.2 Reuse of PSGI

Similar to sharing, reuse of PSGI is strongly influenced by the policies of the OS and the restrictions of the CLAs. This is because as mentioned before the majority of the datasets produced by the public sector are referenced to OS's datasets accessed under the CLAs. However, there are datasets within the public sector that are independent of OS's datasets and therefore, a discussion on the policies regulating reuse of PSGI in England will have to be divided into two categories. That is, reuse of non-OS referenced datasets and the reuse of OS referenced datasets. Where OS referenced datasets also includes datasets referenced to that of OS's key partners.

Non-OS referenced datasets (i.e., GI produced by the public sector which does not use OS datasets as their reference) are usually made available to the public for fees ranging from free to cost of distribution. These datasets—especially those produced by local government and environment agencies—are made available online where free viewing and simple GIS activities can be performed to facilitate public participation in governance. In the case where these GI are made available for viewing the format is usually raster data with watermarks added to prevent unauthorised usage.

The reuse of OS referenced datasets is far below the expected capacity based on the quality of the datasets. This is partly because of the restrictions placed on

public sector GI by the CLAs. These restrictions results in neither the public nor the private sector eagerly lining up to participate in the exploitation of the benefits of these PSGI under the concept of reuse. The public sector refrain from supporting reuse of OS referenced datasets because of the complex nature and language of the CLAs, which make it difficult for them to interpret. The complex nature of the CLAs result in the preparation of reuse agreements for these PSGI being very time consuming efforts that often incur costly legal fees before they can be finalised. The private sector on the other hand although recognising the benefits to be gained from the reuse of these PSGI tends not to exploit these PSGI because of their cost and the restrictions placed on the usage of value-added products—created from them—by the OS. That is, they find it much simpler and in some cases cheaper to collect the data again or find an alternative source for its provision.

In the UK there is no nation-wide facility that supports reuse by providing users with the ability to locate, view, assess and download GI (i.e., a national Geoportal) and thus, no national policy supporting the reuse of PSGI. However, there are a number of Geoportals and websites providing access to specific types of GI. See Beaumont et al., 2005 for more details on Geoportals in the UK. Of these Geoportals GI Gateway ranks highest in the provision of national coverage. GI Gateway provides three key services on its site:

1. A discovery of the geographic datasets in Great Britain that are available for third party access, who creates and owns them, and the different options for obtain access to these datasets;
2. An online Data Directory of organisations who supply geographic data, and/or data products and services in Great Britain; and
3. An Area Search that allows users to search for administrative information about a specific area by entering the postcode.

However, GI Gateway does not totally facilitate viewing, assessing and downloading of GI and thus, as a tool to support reuse it is limited.

Currently, the concept of reuse of PSI is under review in England and the rest of the UK and in recognition of the existing barriers affecting reuse of PSI the government has established a number of organisations (e.g., the Office of Public Sector Information, the Advisory Panel on Public Sector Information and the Office of the Information Commissioner) to investigate, regulate, report, and support reuse within the concept of the PSI Directive. See OPSI, 2007 for more detailed information.

5.0 ANALYSIS OF THE POLICIES WITHIN THE LETTER AND SPIRIT OF THE DIRECTIVES

In transposing EU Directives into national legislation Member States are allowed the flexibility of accommodating national preferences. This accommodation along with the EU's co-decision making process results in many proposed laws being made more 'accommodative' so that they are acceptable to all Member States and thus, resulting in more effective implementation. Therefore, it is important to analyze the Directives within both the spirit and letter of the law as the spirit and letter of the Directives may not be identical. The spirit of the law refers to what is meant to be the ultimate objective of the law; whilst, the letter of the law refers to the text of the law and what it prescribes. In this section the Authors review each Directive (Environment, INSPIRE and PSI) to determine the spirit and the letter of the Directives. The review looks to the preamble of the Directives for the spirit of the laws as this section of the law provides readers with an insight of what was intended by bringing the law into practice. This review is important, as it will provide the framework for the analysis of the adherence to the laws of the PSGI access policies in both Norway and England.

The Environment Directive

The spirit of the Environmental Directive is summarized by its Article 1, which states the objectives of the Directive as guaranteeing the right of access to public sector environmental information, the progressive dissemination of this information and where possible the use of electronic technology should be the means of dissemination. That is, the spirit of the Directive seeks to "Guarantee access to environmental data for all, to the extent possible" (see Considerations 8 and 9 Directive 2003/4/EC)¹. In addition, the Directive aims at harmonising access regimes for environmental data across Europe [Consideration 7 Directive 2003/4/EC].

Speaking to the letter of the law, the letter of the Directive may be interpreted as the requirements of Member States to: make available environmental information to any applicant at his/her request and without the need of having to state an interest [Article 3 Directive 2003/4/EC]; provide access to justice in instances where access to the data is denied [Article 6 Directive 2003/4/EC]; provide free viewing of lists of environmental data [Article 5 Directive 2003/4/EC], stimulate electronic access to environmental data [Article 7 Directive 2003/4/EC]; and

¹ It is necessary that public authorities make available and disseminate environmental information to the general public to the widest extent possible in particular by using information and communication technologies (Consideration 9) and without his having to state an interest (Consideration 8)

where a price is asked for data that price should not exceed a reasonable amount [Article 5 Directive 2003/4/EC].

In summary neither the spirit nor the letter of the Directive attempts to promote access in the sense of this paper; namely sharing and reuse. The core aim of the Directive is to make environmental data readily available to the public and to supply said data on demand using electronic technology where possible.

The INSPIRE Directive

The INSPIRE Directive lays down general rules aimed at promoting the establishment of an Infrastructure for Spatial Information in the European Community (INSPIRE). The purpose of INSPIRE is to facilitate Community environmental policies and policies or activities which may have an impact on the environment [Article 1 Directive 2007/2/EC]. The INSPIRE website (www.ec-gis.org/inspire) and Masser (2007, p.67) provide more in-depth information on the principles of INSPIRE.

In terms of the spirit of the law, the authors interpret the spirit of the INSPIRE Directive to be full adherence to: *free discovery services, free viewing, and pricing policies that promote sharing. With respect to pricing MS can choose between free of charge sharing and a range of pricing policies that do not exceed a reasonable return on investment.*"

For the letter of the law, the Directive sets out its goals by requiring Member States to: reduce the time for searching and assessing data through the provision of metadata [Article 5 and 6]; provide easy to use and available to the public discovery services, view services, download services, transformation services, and services allowing spatial data to be invoked [Article 11(1)]; measures to preclude any restrictions likely to create practical obstacles, occurring at the point of use, to the sharing of spatial data sets and services [Article 17(2)]; transparent available data [Article 11(1)]; and pricing for sharing based on the policies of the MS, as long as, these pricing policies do not exceed a reasonable return on investment [Consideration 23].

It should be noted that the above letters of laws are subject to exemption where they are in conflict with the regulations, privacy issues or security interest of individual Member States. For example access can be limited when it adversely affects intellectual property rights [Article 13.1.e]². Another example of an exemption is that free of charge viewing services can be excluded where charges for viewing data secure the maintenance of spatial data sets and services,

² In this specific instance the INSPIRE Directive might be in conflict with the PSI Directive since the latter requires public sector bodies to exercise their copyright in a way that facilitates re-use (Consideration 22). Such a discussion is, however, outside the scope of this paper.

especially in cases involving very large volumes of frequently updated data [Article 14.1 and 14.2].

PSI Directive

The PSI Directive establishes a minimum set of rules governing the re-use and the practical means of facilitating reuse of existing documents held by public sector bodies of the Member States [Article 1]. If the spirit and overall goals of the PSI Directive is viewed in accordance with the above concept of exploitation of PSI, then, it may be summarised as the promotion of the reuse of PSI through the creation of conditions conducive to the development of Community-wide services to facilitate reuse (Consideration 5). This can be achieved through the harmonisation of rules and practices in the Member States relating to the exploitation of PSI resources (Consideration 6 and 7). This type of framework—as proposed by Considerations 5, 6 and 7—is necessary to ensure fair, proportionate and non-discriminatory conditions for the re-use of such information (Consideration 8). In summary the authors' interpretation of the spirit of the law with respect to PSGI is the creation of: *non-exclusive contracts; transparency of available PSGI; transparency of use restrictions (licenses/fees) for the reuse of PSGI, and the pricing of PSGI at a maximum of the cost of dissemination.*

In support of the concept of reuse the letter of the law requires Member States to have equal market conditions for comparable categories of re-use which is supported by non-exclusivity of PSI [Article 10 and 11]. In terms of charging for PSI the letter of the Directive requires Member States to price datasets at a maximum charge of the cost of collection, production, reproduction and dissemination, together with a reasonable return on investment [Article 6]. To support charging there should be in place transparent fees, transparent use restrictions, and standardized licenses and charges, [Article 7 and 8]. Other aspects of the PSI Directive that are significant to the reuse of PSGI are the recommendation of open standards, license conditions that do not unnecessarily restrict both re-use and competition, and transparency of available datasets through practical arrangements such as assets lists [Consideration 13 and Articles 3, 5, 8 and 9].

5.1 Are the Policies within the Letter and Spirit of the Directives?

In this section of the paper the authors examine whether or not the access policies of Norway and England are within the letter and spirit of the two most recent EU Directives governing access to PSGI (i.e., INSPIRE and PSI). The Environmental Directive was not included in this section because of the significant degree of overlap between it and the INSPIRE Directive. The analysis will be based on the knowledge of the access policies of both countries gained from case studies and the authors' interpretation of the spirit and letter of the laws presented in the previous sections.

5.1.1 Are the Policies within the Letter of the Laws?

In general, the access policies of Norway comply with the letter of the laws of the two most recent European Directives governing access to PSGI. In fact, Norway deserves high marks when it comes to adhering to the laws on sharing. Although participation in Norge Digitalt is voluntary, the usage of Norge Digitalt and GeoNorge to support sharing are areas where the Norwegian access policies clearly complies with the letter of INSPIRE. There are however cases where complying with the letter of the laws are in doubt, specifically on the issue of reuse. For example, the inclusion of selected private sector GI organisations as members of Norge Digitalt seems to be in breach of Article 10 and 11 of Directive 2003/98/EC. This point was raised even though the agreement for private organisations inclusion in ND forbid them from using GI held on behalf of the public for commercial purposes because feedback form the private sector does raise concern of breaches of the Articles.

In terms of compliance with the letter of the laws access policies in the UK do comply in most cases but only because there are exemptions when the laws are within conflict of the regulations of Member States. For example, the CLAs would be in clear breach of Art 17.1 and 17. 2 of the INSPIRE Directive if were not for the exemptions provided by Art17.3. If it were not for these exemptions the access policies of UK would tend to fall short in compliance with both the INSPIRE and the PSI Directives.

5.1.2 Are the Policies within the Spirit of the Laws?

On the concept of the spirit of the law as defined by the authors, neither countries access policies are totally within the spirit of the INSPIRE or PSI Directives. Analysing the spirit of the Directives individually, it can be seen that for the INSPIRE Directive the access policies in Norway are generally within the spirit of the Directive. Norway's access policies comply with at least three of the four key components framing the spirit of the law (i.e., pricing policies that promote sharing, free viewing and free discovery) identified by the authors (see Table 1).

England on the other hand has a lot of work to do on their access policies if they are to be within the general spirit of the INSPIRE Directives. For example, a key concept of the spirit of INSPIRE is having pricing policies that promote sharing, which is not supported by current access policies in England. See Table 1 for more details on where the English policies falls short on adhering to the spirit of the INSPIRE Directive. Although, the current English access policies fall short of compliance to the spirit of INSPIRE there are initiatives in place aimed at improving the policies within the spirit of INSPIRE.

Table 1: An Analysis of Access Policies in Norway and England within the Spirit of INSPIRE

Spirit of the Law INSPIRE	England	Norway
<i>Pricing Policies that Promote Sharing</i>	No, although the CLAs were introduced to promote better access to GI their complex pricing and licensing contracts prevents sharing across different sectors in the majority of cases.	Very close to it and as more public sector agencies join Norge Digitalt it will be achieved in the long-term.
<i>Pricing and Exchange Transparency</i>	No, complex pricing system for the different CLAs.	Less complex pricing system but not totally transparent.
<i>Free Viewing</i>	In some cases but a significant number of datasets are not for free viewing.	Yes, through GeoNorge, other portals and custodians' websites.
<i>Free Discovery Services</i>	Not at a national level but GI-Gateway may be viewed in this light.	Yes, nationally through GeoNorge.

Table 1 provides a snap shot of the key concepts forming the spirit of the INSPIRE Directive and a summary of how the access policies in Norway and England measure up to these concept. From the Table it is evident that Norway's access policies are generally within the spirit of the Directive, however, in the case of England their policies do fall short of adhering to the spirit of the Directive.

In Norway the access policies governing the reuse of PSGI are generally within the spirit of the PSI Directive. However, there are some instances where the policies are in conflict with one of the key concept of the spirit of the law (i.e., the non-exclusive contracts). For example, as mentioned previously the inclusion of the some private sector organisations in Norge Digitalt does provide these organisations with exclusive contracts. See Table 2 for more details on how the access policies of Norway measure up with the spirit of the PSI Directive.

For England and the UK in general, it is fair to say that their current policies governing reuse of PSGI are not within the spirit of the PSI Directive. This conclusion is supported by recommendations made in a number of UK Government commissioned reports on the reuse of PSI in the UK (see for example APPSI, 2004; OFT, 2006; and Mayo and Steinberg, 2007). Also,

activities of citizen groups (e.g., the Free Our Data campaign) support the conclusion that English/UK policies are not within the spirit of the PSI Directive (see <http://www.freeourdata.org.uk/> for details). However, based on the Government's responses (e.g., ODPM, 2002 and Armstrong, 2007) to these reports it is evident that in the UK they are working on making their reuse policies fall in line with the spirit of the PSI Directive. See Table 2 for a summary of the current situation in England with respect to compliance to the PSI Directive.

Table 2: An Analysis of Access Policies in Norway and England within the Spirit of the PSI Directive

Spirit of the Law PSI	England	Norway
<i>Non-exclusive contracts</i>	No, complexity agreements that tends to be exclusive.	Moving in that direction, although the rethinking of the position of Norsk Eiendomsinformasjon might be required.
<i>Transparency of GI</i>	No	Yes
<i>Transparency of use restrictions</i>	Use restrictions tend to be complex and differs form one agreement to another. However, the click-use licensing system does provide more transparent use restriction.	In most cases yes. Restrictions under contracts created by Norsk Eiendomsinformasjon are more or less fairly transparent
<i>Pricing of GI at the cost of dissemination</i>	In a few isolated cases.	Yes, in a number of cases. In fact some key categories of datasets (e.g., thematic and environmental GI) are available for free or cost of dissemination

From Table 2 it is evident that both countries need to work on their reuse policies in order to adhere to the spirit of the PSI Directive. Positive steps toward adhering to the Directive can be seen in the case of Norway while, in England, failure to comply with key components framing the spirit of the Directive means that a lot of work still needs to be done to bring its reuse policies in line with the spirit of the Directive.

6. CONCLUSIONS

The paper presented an overview of the policies governing access to PSGI in Norway and England. This overview was followed by an analysis of these policies to determine whether or not they are within the letter and spirit of EU Directives governing access to PSGI. From the analysis it is fair to conclude that although the majority of the policies reviewed were within the letter of the Directives when analysed in terms of the spirit of the Directives, the policies of both countries did fall short in adhering to the spirit of the laws.

If the Directives are to achieve their goals then it is important that the access policies of the Member States are not only adhering to the letter of the law but also to the spirit of the law. Therefore, based on the case study—which did not identify access policies of any Member State that were totally within the spirit of the laws—the authors recommend that the EU carryout an awareness drive aimed at communicating to Member States the importance of adhering to the spirit of the Directives if PSGI is to be used effectively and efficiently across the EU.

Currently, the impact of the PSI Directive on the reuse of PSI is being reviewed by the ePSIplus Thematic Network with results expected in the latter half of June 2008. It is the authors' opinion that the results of this evaluation should be directed not only at the European Parliament and Council but also at the governments of the Member States. It is expected that making the results and recommendations of the review available to the national governments should ultimately produce national legislations on access that are not only within the letter but also within the spirit of the Directives.

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