

# **Annexe F**

## **International case studies**

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A report prepared for the Office of Fair Trading  
by London Economics

OFT861f

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# 1 CASE STUDIES

## Terms of reference

- 1.1 The OFT commissioned London Economics (LE) to study public sector information (PSI) policy in three countries as part of its review of the functioning of the UK market for public sector information.
- 1.2 After taking advice from LE, the OFT selected the United States, Australia and Sweden for this exercise.
- 1.3 The OFT also asked LE to study three public sector information holders (PSIHs) in each country: the Meteorological Offices, the Company Registries, and the National Mapping Agencies.
- 1.4 Among other requirements, the OFT's terms of reference asked LE to:
  - provide general background information on the public sector information holders (PSIHs) and information markets in the selected countries
  - examine the government policy framework on public sector involvement in the collection, maintenance and dissemination of information in these countries
  - assess the potential implications of these policies for the operation of information markets, in general, and
  - examine the three specific PSIHs in each of the three selected countries and assess how their behaviour may affect the working of the markets in which they operate.

## Analytical framework

- 1.5 We now describe a typology of PSIHs, and discuss policy questions we consider relevant to them. We then describe the data one would need to evaluate policies that determine the behaviour of PSIHs.

## Typology of PSIHs

- 1.6 From the perspective of information policy, government agencies or PSIHs may be divided into two types:
- those whose primary function is to collect data, such as mapping agencies, and
  - those for which data collection is a by-product of other activities, such as hospitals.
- 1.7 A test of whether a PSIH is of the first or second type described above is whether it would serve any purpose if it kept its data secret. Of the three types of PSIH the OFT asked us to study in detail, mapping agencies and meteorological offices would serve little useful purpose were they to keep data secret, and are thus of the first type. Company registries are largely of this first type. However, where the data registries collect has a tax or licensing function, they become more of the second type.
- 1.8 Thus, due to the choice of case study PSIHs, this study largely discusses PSIHs of the first type. Thus, it does not discuss the privacy issues that might surround, for example, the release of hospital records.

## Relevant policy questions

- 1.9 For the first type of PSIH, policy must answer at least the following questions:
- what kinds of raw data should the PSIH collect?
  - how much of these data should it collect?
  - how many value-added products and services based on these raw data should it supply?

- what price and access conditions should it set for its various informational products and services?
- 1.10 With reference to question (i) above, we note that in practice it is not always clear how one should distinguish between raw and value-added data.
- 1.11 For the second type of PSIH, questions (i) and (ii) above are less pertinent because the data will tend to be collected automatically while the PSIH fulfils its other functions. Thus, for these PSIHs, policy must typically only answer questions (iii) and (iv) above.

### **Variables relevant to evaluation**

- 1.12 In principle one could evaluate the outcomes of national informational policy by measuring the following two variables:
- the value users gain from information minus their costs of paying for it, and
  - the value producers gain from selling information minus their costs of production.
- 1.13 In practice the first of these variables is very difficult to measure, since users' willingness to pay for data is often hard to determine. The profits of information suppliers would give a plausible measure of the second variable.
- 1.14 A sense of the value users derive from information may be gained from the frequency of data use and whether the data used are of the types and qualities users desire.
- 1.15 To estimate the value users of PSIH data obtain, this study adopted an interview-based rather than data-based approach. In the time-scale available, we did not feel it was possible to collect representative data on the use of PSIH outputs or the value of each use. Our interviews were with a small number of users of data supplied by PSIHs and other

informed participants in information markets. While these interviews gave only a partial picture of the value created by PSIHS, we nevertheless found them very useful.

- 1.16 While a recent study (PIRA 2000) attempted to quantify the effect of government information policies on national economies in Europe and the US, the data available for this exercise are very poor. In particular, it is hard to measure the economic importance of data that are given away for free. Therefore, we do not believe the estimates in the PIRA study to be robust, and do not pursue the path of attempting to estimate the effect of government information policies on GDP.

## **Study methods**

- 1.17 As directed by the OFT's invitation to tender, the sources used for this study were the following:
- a review of publicly available information including previous literature on public information policy
  - responses to questionnaires sent to contacts in each of the nine PSIHS studied
  - responses to questionnaires sent to contacts in other government departments with a role in national PSI policy
  - responses to enquiries to national competition authorities
  - contacts with representatives of private firms that re-sell information produced by each of the PSIHS studied, or compete with them to produce the relevant types of data, such as mapping information, and
  - representatives of private-sector firms that are end-users of public information.

- 1.18 Of these sources and methods of enquiry, we found the questionnaires sent to contacts at the PSIHs studied and to national-level contacts less useful than we had expected. This was in part because the recipients answered the questionnaires in brief only, but also because the contacts at each PSIH were not well placed to give a critical perspective on their own institution. Our contacts with representatives of private sector firms were in several cases very useful, because these contacts were able to give such a critical perspective.

## **Economic theory background**

- 1.19 This section discusses two points of economic theory relevant to public sector information policy. These are arguments about the desirability of zero-cost pricing of information, and arguments about the tendency for monopoly in the market for information supply.

### **The theory of information pricing**

- 1.20 Basic economic theory suggests that information goods should be supplied by tax-funded agencies at the marginal cost of dissemination only, which in the age of the Internet is plausibly zero. This argument depends on some key assumptions, as is discussed below. We then discuss the more complicated lessons of economic theory in the context of more realistic assumptions.
- 1.21 The result of theory that governments would maximise social welfare by supplying information for free rests on the plausible assumption that information goods are what economists term 'non-rival in consumption'. A good is non-rival if one person's consumption of it does not reduce the amount available to other people. This applies to information available for download from the Internet, as each additional download imposes no cost on society. In this context, charging a price of, for example, £10 for additional downloads would be socially harmful because it would discourage uses that would be worth £0-10 to each user but would have cost society nothing.

- 1.22 The theoretical result that zero-cost provision is optimal also rests on other assumptions, however. These are that:
- the government know what information goods consumers want, and
  - the government can raise tax revenue without distorting the economy.
- 1.23 Neither assumption is likely to be true in practice. We now briefly consider what economic theory prescribes in the context of failures in either assumption.
- 1.24 The likelihood that the government does not know what information goods the public want is particularly relevant to PSIHs whose prime purpose is data collection. For such agencies, the lack of knowledge about consumer desires creates a rationale for letting the PSIH or commercial firms act in a commercial manner, producing whatever data they wish and charging prices that support this activity with little or no need for government subsidy. Such a policy would prevent the government subsidising goods for which users have little desire. Because the non-rivalness of information goods means that additional use has no social cost, there is a well-established argument for the government to ensure that the copyright applying to information goods lapses after some period.
- 1.25 The fact that raising tax revenue typically creates economic distortion, and that this distortion is widely held to rise more than proportionately to the rate of taxation, may be held to create a rationale for the government to charge prices for information goods in excess of their dissemination cost. By doing so, the government would create a distortion in the market for information, but would be able to reduce taxes and thus distortions in other markets.
- 1.26 While the fact that taxes distort may justify prices for information goods in excess of dissemination costs, economic theory suggests commercial users should be charged lower prices. In the theory of optimal taxation,

a central finding is that taxes should be levied on consumer goods but not on firms' inputs to production, (see Diamond and Mirrlees (1971), Mirrlees' 1996 Nobel Prize citation refers to this work). Such a policy would minimise the distortion that taxes imposed on economic production. To use an example quoted below, the price of meteorological data essentially represents a tax on the market for weather derivatives, which in some cases may preclude this market from developing.

- 1.27 A considerable body of academic work in economics has examined tax policy in the circumstance that the government provides infrastructure that is useful to firms in their activities. This work typically finds that governments should set a charge on infrastructure use related to the degree to which that infrastructure becomes congested. As information is non-rival and thus cannot become congested, this academic work tends to suggest there should be no charges for commercial users of public information.

### **Arguments about monopoly in information supply**

- 1.28 It can be plausibly argued that the supply of information goods tends naturally towards a monopoly. At least two factors could contribute to this tendency. First, because information is non-rival in consumption, plausibly one firm could in principle supply an entire market, leaving no potential for a competitor to enter. Second, the production of some types of information, such as weather readings, requires a costly network of data-collection stations. Once one firm has established such a network, other firms may be discouraged from taking the risk of making a costly investment in their own parallel network. Thus, again there may be only one monopoly supplier.
- 1.29 There is a well-established body of economic theory about government policy towards monopolies. This typically argues that the government should cap the prices that monopolies can charge, but not the profits they can make (see Armstrong, Cowan and Vickers 1994). Such a policy would create incentives for the monopoly to be internally efficient. There is little presumption in economic theory that the government itself should

supply goods in markets that are prone to monopoly, and government supply of such goods has typically fallen out of favour since the early 1980s.

## **National and sub-national information policies**

- 1.30 The three countries we study approach the dissemination of public sector information very differently. In theory, in each country freedom of information (FOI) laws prevent government agencies from restricting citizens' access to public information. In practice exceptions to these laws permit many government agencies to make commercial use of their activities, although the US federal FOI law in particular still has some 'teeth' or effect.
- 1.31 In the United States, public sector information must typically be made available at no cost or the marginal dissemination cost, and PSIHs are generally prohibited from engaging in value-added commercial activities. As a result, PSIHs depend almost entirely on government funding to finance their activities.
- 1.32 Australian policy gives greater emphasis to cost recovery. This creates some tension with freedom-of-information legislation. PSIHs must respect the principle of competitive neutrality, which holds that government businesses should not enjoy competitive advantages over private firms simply by virtue of their public sector ownership. PSIHs also largely leave value-added information services and products to private firms. Due to their greater use of cost recovery, PSIHs are not entirely dependent on government funding for their activities.
- 1.33 Finally, in Sweden, the general policy is free access to information, but several important PSIHs are specifically allowed to charge for much of their information and, currently, are very active in the value-added information market place. As a result of these arrangements, such PSIHs typically depend on government funding for only their core, non value-added activities.

1.34 More detailed information on each country's policy is provided below.

## **The United States**

### National level public information policy

1.35 The US approach to public information is based on the precept that 'public information is information owned by the people, held in trust by their government.'<sup>1</sup> This approach implies that federal agencies must be proactive in ensuring access by the public and must provide access at minimal cost.

1.36 Information policy at the federal level is set out particularly in the following four documents:

- The Freedom of Information Act (1966),<sup>2</sup> which establishes citizens' and corporations' rights to much information held by government and restricts the prices federal agencies may charge for information to the direct costs of document 'search, duplication and review'
- The Copyright Act (1976),<sup>3</sup> of which paragraph 105 states that any work by the US government is exempt from copyright protection
- The Federal Technology Transfer Act (1986),<sup>4</sup> which permitted Cooperative Research and Development Agreements (CRADAs)

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<sup>1</sup> United States National Commission on Libraries and Information Science (2001), p16.

<sup>2</sup> 5 U.S.C. § 552, as amended.

<sup>3</sup> 17 U.S.C. § 105. However, the federal government is not precluded from receiving and holding copyrights transferred to it by assignment, bequest, or otherwise.

<sup>4</sup> Public law 99-502.

between private firms and federal agencies, and allowed firms to patent inventions arising from this work

- The Paperwork Reduction Act (1995),<sup>5</sup> which aims 'to ensure the greatest possible public benefit...from information created, collected, maintained, used, shared and disseminated by or for the Federal Government', and
- OMB Circular A-130, which elaborates the principle of information supply at the cost of distribution, typically interpreted as being low or zero. Successive Presidential administrations have issued differing versions of this Circular, imposing this principle more or less stringently (see Gellman 1996).

### Boundary between public information and commercial activity

- 1.37 A federal agency must in general collect or produce only the information it needs to fulfil its prescribed function, and then disseminate this information to the public on a non-commercial basis, regardless of how it is then used.
- 1.38 Particularly after the Federal Technology Transfer Act (FTTA) of 1986, federal PSIHS have entered into partnerships with commercial firms where the latter supplies data originating in the PSIHS at commercial prices. In some cases the commercial firm has provided the service of scanning paper documents into electronic format, and then sells the electronic version. Such arrangements have withstood legal challenges that the electronic version of the data was covered by the Freedom of Information Act and thereby should be supplied for free.
- 1.39 Overall, however, free supply of information in both electronic and paper formats appears to characterise federal information-supply policy in the

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<sup>5</sup> 44 U.S.C. § 3501(2).

US. The FTTA created incentives for private firms to engage in CRADAs with federal agencies, in which the firms invest in technology to scan paper documents and otherwise process data the PSIH has created. However, many of the products produced under these CRADAs are again supplied to the public for free.

### Pricing policies

- 1.40 The FOIA restricts the price federal agencies can charge for information. The general effect of these restrictions is to enforce very low prices, which may in practice be zero.

### Regulatory agencies

- 1.41 To coordinate and oversee the implementation of federal information resources management policies, the Paperwork Reduction Act establishes an Office of Information and Regulatory Affairs under the OMB.

### Sub national public information policy

- 1.42 Most US states have adopted freedom of information policies similar to those of the federal government. However, the federal copyright act does not extend to state and local governments. Thus, state and local governments can and do copyright their own information products. While in principle they are able to use cost-recovery pricing for their data, state and local governments appear to do so to a limited extent only. For example, Johnson and Onsrud (1995) note that:
  - 1.43 'A recent survey shows that approximately 21 per cent of local and county government GIS agencies assert copyright. (...) [C]opyright is insufficient for protection of ownership and control to enable cost recovery policy.'
  - 1.44 Furthermore, they note that:

'Cost recovery policy could potentially create liability exposure where an open access policy would be less likely to invite liability.'

- 1.45 Thus, this information and contacts in the US private sector suggest that many local governments give away their information for free or at dissemination cost, despite their legal ability to charge higher prices.

## **Australia**

### **National level public information policy**

- 1.46 The main documents that dictate Commonwealth (federal) public-sector information policy are:
- The Copyright Act of the Commonwealth (1968), which exempts most work by the Commonwealth government from copyright protection. This tends to prevent the government from exploiting data in a commercial manner
  - The Commonwealth Freedom of Information Act (1982): which establishes citizens' rights to information, but does not restrict the prices agencies can charge as tightly as the US version.
- 1.47 A wide variety of Commonwealth agencies receive revenues from fees they charge for information. In some cases these revenues approach or exceed the entire budget of the agency supplying the data. Several arguments have been advanced in support of such cost-recovery practices, including raising government revenues and preventing domination of Australian markets by US firms.
- 1.48 A consultation exercise on the government's approach to intellectual property use and management has been launched in 2005. The results are expected in 2006.
- 1.49 Current public information policy involves a mixture of free provision and cost recovery. The rationales for current policies include arguments that:

- information provision at low cost has economic and social benefits (in support of free or low cost information provision)
- charging for data prevents economic domination by foreign companies (in support of cost recovery and limited access), and
- charging for data provides useful government revenues (in support of cost recovery).

### Boundary between public information and commercial activity

- 1.50 In some cases public agencies can undertake commercial activities, for example, the Australian Government Information Management Office (AGIMO) states that publications that have a short life span or have a narrow target audience are not included in the Online Information Service Obligations, the minimum set of information that Australian government agencies must provide for free through websites.<sup>6</sup>

### Pricing policies

- 1.51 Australian Commonwealth agencies use a mixture of free provision and cost-recovery pricing.
- 1.52 In response to our questionnaires, different government agencies gave the following rationales for cost recovering practices:
- raising governmental revenues without increasing the general level of taxation
  - increasing operational efficiency and responsiveness to market changes
  - managing an increasing demand

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<sup>6</sup> See [www.agimo.gov.au/information/oiso](http://www.agimo.gov.au/information/oiso)

- speeding up approval processes
- expanding the volume and the range of services
- addressing equity and distributional issues
- conforming with international agreements, and
- abiding by competitive neutrality requirements.

1.53 The change of government in 1996 led to a move from cost recovery to more widespread distribution of information for free as well as greater competition among governmental agencies involved in similar sectors and between public bodies and private actors.

### Sub national public information policy

1.54 In general, state and local laws with respect to freedom of information and copyright appear similar to those obtaining at the Commonwealth level.

1.55 We have found some examples of differences in the pricing of geospatial data across state and local jurisdictions, with some adopting policies aimed at maximising access and others policies aimed at recovering costs.

## Sweden

### National level public information policy

1.56 Sweden was one of the first European countries to adopt freedom of information legislation with the Freedom of the Press Act<sup>7</sup> of 1766, last amended in 2002. This Act entitles Swedish citizens and legal entities to

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<sup>7</sup> This is one of four laws comprising the Swedish Constitution.

freely access official documents. The second chapter of the Act defines 'public' documents, and sets out citizens' rights of access and permissible fees.

- 1.57 As an EU member, Sweden is also required to adopt into law the EU Directive on the Re-use of Public Sector Information (the so-called PSI Directive).
- 1.58 Anyone who wishes to examine an official document is entitled to obtain a transcript or (paper) copy of the document in return for a fixed fee. A public agency is, however, under no obligation to release material recorded for automatic data processing in any form other than a printout of existing laws.
- 1.59 Despite citizens' legal right to information, the Swedish parliament grants some agencies permission to sell information on a case-by-case basis. In turn, several PSIHS are very active in commercial sales of data.
- 1.60 More specifically within the area of re-use, there is presently no common approach to the re-use and selling of PSI among public sector organisations in Sweden. We understand that the government is currently considering appointing a committee to investigate price and access conditions conduct in the area of public sector commercial activities. However, the Ministry of Finance states that nothing in this regard has been agreed yet.
- 1.61 Several competition concerns arise from this practice, since PSIHS both supply data to private firms and compete with these firms in the market for value-added data products. A government advisory agency has recently published two reports on concerns arising from these commercial activities of PSIHS (2000, 2005a). The later report recommended the privatisation of the commercial arms of two PSIHS.
- 1.62 The various ministries and public bodies in Sweden are effectively responsible for their own Public Sector Information (PSI) guidelines, including fees and charges. While there is a Fees and Charges regulation that prescribes prices for paper documents, government decisions

setting charging principles for specific public agencies take precedence over that regulation. This means that there is no overarching approach to the regulation of fees and charges for PSI activities in Sweden.

### National approach to defining PSI pricing policy

- 1.63 Pricing policy is essentially regulated by specific government decisions for each agency. In general, policy follows the principle of cost recovery, but prices information classed as 'essential' and 'non-essential' differently. Information classified as 'essential' is provided at a low cost that is closer to a dissemination-cost price rather than a cost-recovery price.
- 1.64 In practice, access to public documents is usually free to both individuals and companies. However, certain agencies have been very active in the development of commercial activities with regards to the sale of value-added PSI, as discussed above.

### Boundary between public information and commercial activity

- 1.65 As yet, national policy in Sweden does not establish a clear boundary between the production of primary public information and commercial activities. Public sector agencies are both producers of raw public information and competitors of commercial operators in adding value to the raw data. This dual role is not covered by national legislation but is governed by individual government decisions for each agency.

## Public sector information competition issues

### The United States

- 1.66 Representatives of the US Department of Justice told us the department had not received any competition complaints about the behaviour of PSIHS since 2001.

- 1.67 Among cases prior to 2001, federal court rulings in *DeLorme Publishing Co v NOAA* (1996),<sup>8</sup> and in *Tax Analysts v United States Department of Justice* (1996)<sup>9</sup> are revealing as to the application of the US Freedom of Information Act in practice. Both plaintiffs sought free release of electronic versions of paper public documents that private firms had scanned under exclusive licences with public bodies. In both cases courts ruled that the private scanners' commercial interest in these electronic data prevented the public body from releasing them freely.
- 1.68 These court rulings embody a narrow interpretation of the Freedom of Information Act, and in the *DeLorme* case cited a specific exemption from it. The rulings tend to encourage partnerships between private firms and PSIHs to supply electronic versions of data.

### **Australia**

- 1.69 Representatives of the Australian Competition and Consumer Commission (ACCC) told us the ACCC had taken very limited action in the area of public sector information.
- 1.70 However, in one instance (December 1995) the ACCC commenced legal proceedings against the Bureau of Meteorology (BoM), alleging the BoM had taken advantage of its market power by refusing to provide information to the Meteorological Service of New Zealand Limited (MetService).
- 1.71 The parties reached a settlement in 1997, by which an Australian subsidiary of MetService gained direct access to BoM data, and an

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<sup>8</sup> *DeLorme Publishing Co., Inc v The Nat'l Oceanic and Atmospheric Admin. of the United States Dep't of Commerce*, 917 F.Supp. 867 (D. Me. 1996), available at [www.med.uscourts.gov/opinions/hornby/1996/dbh\\_2-95cv94\\_delorme\\_v\\_noaa\\_doc02\\_mar.pdf](http://www.med.uscourts.gov/opinions/hornby/1996/dbh_2-95cv94_delorme_v_noaa_doc02_mar.pdf)

<sup>9</sup> *Tax Analysts v United States Department of Justice*, 917 F.Supp. 867 (D.D.C. 1996).

agreed access policy document was published to lay down the basis and rights of access to information.

## **Sweden**

- 1.72 The Swedish Competition Authority (SCA) has received several complaints from private companies in recent years about the behaviour of PSIHS. These companies claimed that, by combining public tasks (the creation and maintenance of public sector information) and commercial activities (the distribution of such information), public bodies were distorting competition.
- 1.73 The SCA has identified three main factors that seriously affect competition in the public information market (see SCA 2004):
- the failure to separate the public tasks of authorities from commercial activities
  - the persistence of public subsidies, and
  - the privileged standpoint that public authorities enjoy when accessing information.
- 1.74 However, the SCA felt that, in practice, the existing Swedish Competition Act could not be used to prevent such competition issues. In particular, it has been difficult to establish whether public agencies have established a competitive advantage over a potentially more efficient private-sector value-added reseller via the agencies' ownership of the raw data. Therefore, the SCA has not pursued any cases involving PSIHS in recent years.

## **Overview of case studies**

- 1.75 As noted above, this study focuses on three agencies in each of the three countries studied: the mapping and meteorological agencies and the business registries. To gain a sense of the size of these agencies,

Table 1.1 gives details of their annual budgets from government and other sources. The annual revenue of PSMA appears very low, but was taken from the company's 2005 annual report.

- 1.76 Table 1.1 shows that, while the US agencies have larger budgets than their counterparts in Sweden and Australia, they are actually smaller as a percentage of national GDP. We note, however, that these budgets refer to the entire agency in each case, while the share of each budget absorbed by activities of interest such as map production may differ across countries. We now describe the PSIHs studied in some detail.

**Table 1.1: Financial information on case study PSIHs (\$m)**

Country	Agency	Revenues from government <sup>1</sup>	Other revenues	Total Revenue	Net Surplus	Total revenues as % of GDP
United States 2006	SEC	894.4	2,124	3,018.4	-	0.02
	NOAA	3,611	0	3,611	-	0.03
	USGS (Total)	977.7	0	977.7	-	0.01
	USGS National Mapping Program	181.3	0	181.3	-	0.00
Australia 2005	ASIC	142.2	155.5	297.7	0.05	0.17
	BoM	136.1	13.4	149.5	6.15	0.09
	PSMA	0	2.5	2.5	-	0.00
Sweden 2004	Lantmäteriet	46.1	152.9	202.1 <sup>2</sup>	5.3	0.22
	SMHI	32.1	32.8	64.9	-	0.07
	Bolagsverket	0	38.6	38.6	-	0.04

Sources: US: NOAA (2006), USGS (2006), SEC (2006). Australia: Annual Reports of individual agencies. Those for ASIC and the BoM are available on the agencies' websites, while that of the PSMA is available for purchase via brokers listed on the ASIC website. Sweden: Annual Reports of individual agencies, available on their websites, replies to LE's questionnaire and Statskontoret (2000).

GDP figures were taken from the IMF website: [www.imf.org/external/country/index.htm](http://www.imf.org/external/country/index.htm)

Note:

Country	Agency	Revenues from government <sup>1</sup>	Other revenues	Total Revenue	Net Surplus	Total revenues as % of GDP
<sup>1</sup> For the US, federal appropriations.						
<sup>2</sup> The figures for Lantmäteriet do not add up due to the incompleteness of the information available in the agency's annual report.						

## National meteorological offices

### The United States

1.77 The agency responsible for the collection of meteorological information in the United States is the National Oceanic and Atmospheric Administration (NOAA). Among other activities, NOAA operates the National Weather Service (NWS) as the primary source for weather information in the United States.

1.78 The NWS itself provides the following range of services:

- National Oceanic and Atmospheric Administration (NOAA) Weather Radio (NWR)
- NWS Home Page
- NOAA Weather Wire Service (NWWS)
- Emergency Managers Weather Information Network (EMWIN)
- Interactive Weather Information Network (IWIN)
- NOAAPORT, and
- Family of Services (FOS).

## Pricing policy

- 1.79 The above services are typically available for free, although receiving them requires some expenditure on hardware. An exception is Family of Services (FOS), a collection of NWS services that is aimed at private companies who add value to and repackage these data. The annual user fees for these services, which range from around \$7,000 to \$18,000, are intended to allow the NOAA to recover its costs of the FOS service. We understand that the costs recovered through these fees are the IT costs of distributing the collected data to users. The fees do not cover NOAA's costs of collecting the massive amount of data available through FOS.
- 1.80 Several commercial providers of meteorological information in the US collect their own basic data, as well as using data collected by NOAA.
- 1.81 NOAA has entered into cooperation with commercial firms in the form of business partnerships and CRADAs.
- 1.82 Commercial firms add value to NOAA's data largely by 'cleaning' and 'enhancing' it. Data cleaning consists of filling in missing values and correcting erroneous ones. Methods of enhancing data include adjusting data for periodic changes in weather station location or instrumentation.

## Australia

- 1.83 The Bureau of Meteorology (BoM) is the main Commonwealth agency supplying meteorological information.
- 1.84 The BoM provides a 'Basic Service' of weather, climate, hydrological and advisory services free of charge. It also provides Registered User Weather Information Services for fees designed to recover the costs of collecting and providing these services. For example, the BoM provides specialised weather services to the aviation industry at a fee designed to reflect the additional cost of these services relative to the 'Basic Service'.

- 1.85 The Australian Productivity Commission (2002) has argued that the range of tailored services the BoM provides to specialised users is a consequence of a greater responsiveness of the agency to market developments that followed the adoption of a cost recovery approach.

### Pricing policy

- 1.86 The BoM's charges for its non-free services can include a connection fee to recover service connection costs and then a regular service charge that is designed to recover the incremental cost of providing these services in addition to the Basic Service, as well as any costs for the physical maintenance of the infrastructure by which these services are transmitted.
- 1.87 The information provided by the BoM is protected by copyright law and remains the property of the Commonwealth of Australia. Such data can be reproduced or repackaged without charge, provided the BoM is recognised as the source and a disclaimer used.

### Sweden

- 1.88 The Swedish Meteorological and Hydrological Institute (SMHI) is responsible for the collection and dissemination of meteorological data in Sweden. Like its US and Australian counterparts, the SMHI provides a considerable amount of information for free, but also some fee-based services.
- 1.89 The SMHI freely provides a large amount of current weather information and forecast data on its website. This information is updated either hourly or daily. A variety of reports and research projects are also available free of charge.
- 1.90 The commercial functions of the SMHI have been separated in an accounting sense from its core PSI functions since 1992. The Swedish National Audit Office audits the accounts of the core and commercial arms of the SMHI each year to ensure that there is no cross-

subsidisation between them. Thus, SMHI's commercial arm essentially operates according the principles of a private firm.

- 1.91 However, through its close relationship with the PSI arm, both in terms of geographical proximity and sharing IT systems, the commercial arm of SMHI may in fact enjoy various advantages over private sector value-added resellers of meteorological and environmental data and services.
- 1.92 The revenues of the SMHI in 2005 are shown in Table 1.1. In this year, the SMHI's revenues totalled SEK 533 million (\$64.9 million), of which SEK 248m was due to direct government funding, SEK 91m was due to indirect government funding such as revenues from sales of information to other parts of government, and SEK 194m was due to commercial revenue from the sale of information, forecasts and consultancy services.
- 1.93 The SMHI reports that the profitability of its commercial activities has fallen in recent years, however, due to increased competition in the market for weather information.
- 1.94 The SMHI is also notable for exporting fee-bearing services. Its primary export is consultancy services in its areas of expertise. Revenues from exports accounted for around 15 per cent of the SMHI's turnover in 2004. The areas of expertise include:
- environmental studies
  - forecasting
  - business services.

#### Size of market

- 1.95 The SMHI reports that in each of the years 2001-2005, SMHI supplied 95 per cent of the Swedish market for value-added meteorological, hydrological and oceanographic products. Market shares for consulting services and for other PSI activities are not available.

## Competition issues

- 1.96 Statskontoret (2005a) expresses concerns that competitive conditions in the value-added market may be distorted by the special terms on which SMHI's activities are carried out. Furthermore, Statskontoret were also concerned that there is a risk of the business operations of SMHI being pursued at the expense of the agency's core functions.
- 1.97 In view of these concerns, Statskontoret recommended precisely defining and focusing SMHI on its official functions and reallocating grants according to a purchaser model. Thus, Statskontoret recommended that the SMHI should be split into a government agency with a public-service role and a company for purely commercial activities on a competitive basis. Further, Statskontoret recommended that the remaining commercial work in SMHI be progressively exposed to competition. Statskontoret also recommended that, at a later date, the government and Swedish Parliament consider whether it would be appropriate to form a more focused 'network agency' without any commercial work.
- 1.98 During discussions over its future status, the SMHI made a request to be allowed to convert into a state-owned limited company of particular 'national interest'. Statskontoret (2005a) reports that the motive for this request was the SMHI's desire to secure better prospects for competing in European markets for meteorological information. The government turned down this request. In its place, SMHI implemented a reorganisation from New Year 2003 to implement a better demarcation between its public and commercial activities.

## National company registries

- 1.99 National company registries differ from many other PSIHs in two ways. First, national company registries earn income from both their data collection activities (as companies typically have to pay for the statutory filing of their reports) and their data dissemination activities. Second, the

company registries undertake fairly little data processing and manipulation, as often companies themselves file the information the registries supply.

## **The United States**

- 1.100 The Securities and Exchange Commission (SEC) maintains a register of public companies in the United States.
- 1.101 Business registers that list both public and private companies are also maintained at the state level.
- 1.102 Public companies are required to file certain financial and other information with the SEC, which then makes this information available to the public. In addition, all securities (stocks and bonds) sold in the United States must be registered with the SEC.
- 1.103 Users can access registration documents and reports filed with the SEC via the agency's Electronic Data Gathering, Analysis, and Retrieval system (EDGAR). EDGAR is accessible over the Internet for free.
- 1.104 The SEC does not check the information it makes available. Rather, it relies on the fact that firms have a legal responsibility to file correct information.

## **Pricing policy**

- 1.105 The SEC charges companies a fee of \$107 per \$1,000,000 of the maximum aggregate price at which companies offer securities for sale.
- 1.106 State-level registries largely offer free access to basic information, while charging cost-of-dissemination fees for more detailed searches.

## Australia

- 1.107 The Australian Securities and Investment Commission (ASIC) is in charge of keeping legal and financial records of Australian businesses and making such material available to the public.
- 1.108 ASIC provides basic information, such as the National Names Index, an index of Australian corporate and registered business names, free of charge. However, the Corporations (Fees) Regulation 2001 requires that fees, paid to the government, be imposed for anything other than very basic information.
- 1.109 Companies must pay a fee to lodge their registration documents. Different types of documents are charged different fees.

### Relationship with commercial firms

- 1.110 Interestingly, ASIC has a close relationship with private-sector information brokers that offer value-added services based on ASIC's raw data. ASIC's website directs users wishing to acquire more sophisticated data to a choice of private information brokers, who are free to price their services as they wish.
- 1.111 Brokers' prices typically depend on the amount of information that end users request. We understand that in some circumstances, such as when end users purchase very large volumes of information, brokers' fees may be lower than ASIC fees. Brokers charge a service delivery fee in addition to the ASIC fee, which may vary between brokers.
- 1.112 We understand that commercial resellers of ASIC information do not collect their own basic data, but depend largely on data they receive from ASIC.
- 1.113 None of the representatives of information brokers we contacted had concerns over the quality of ASIC's data, most respondents said that ASIC's data are of high quality.

1.114 Similarly, all of the information brokers we spoke to stated that they had no concerns over competition issues with ASIC. They reported that there is no overlap of competences between ASIC and the brokers. This is because ASIC provides data to the brokers who in turn are responsible for making this material available to citizens and businesses.

## **Sweden**

1.115 The Swedish Companies Registration Office (Bolagsverket) was created in 2004 and operates under the Ministry of Industry.

1.116 Bolagsverket deals with the registration of new companies and changes in the status of existing ones. It also receives companies' annual accounts, registers corporate mortgages, and makes decisions on liquidations. The information gathered through these operations is made public through Bolagsverket's Trade and Industry Register. This register contains information about all forms of Swedish business enterprise.

1.117 The Bolagsverket receives no public funding. It provides basic information for free but charges fees for any other type of information. It covers all of its operating expenses through charges for its services. The Bolagsverket performs some minor checking of the data companies file with it, including the coherence of addresses and whether named individuals are bankrupt. In general, however, it does not check the data submitted, but rather relies on companies' legal obligations to submit correct data.

1.118 There are no copyright obligations concerning the data on companies the Bolagsverket collects. All data stored in its archives, registers and databases are considered 'raw' PSI and these are the domain of the Register Department of Bolagsverket. Bolagsverket does not add any value to the raw data, such as producing business ratios or other combinations. Furthermore, Bolagsverket does not provide consulting services concerning the content or the meaning of the data it maintains.

1.119 Due to the restricted range of activities the Bolagsverket undertakes, there is no policy question regarding the appropriate separation between

the Bolagsverket's core PSI and commercial functions. There is a policy question of how high the Bolagsverket's fees should be, however, whether these should be regulated and with what goal in mind.

## **National mapping agencies**

### **The United States**

- 1.120 The United States Geological Survey (USGS) is the main US federal agency providing mapping data.
- 1.121 The USGS provides a considerable amount of basic material free online. Additional information, 'on-demand' products and printed editions of any data or map can be purchased at a price intended to cover only the expense of printing and distribution.
- 1.122 By law, USGS is required to examine its prices annually to ensure that all pertinent costs are being fully recovered. The USGS is permitted to recover only those costs associated with printing and distribution, including equipment depreciation, overhead, storage, accounting, order processing, packaging, shipping, and postage.

### **Services and products**

- 1.123 The USGS carries out a variety of different activities, of which mapping is only one. As Table 1.1 shows, the USGS's budget for its National Mapping Program is only \$180m of its total annual funding of \$971m. This figure of \$180m is relatively small in the context of the size of the US and the scale of the US market for mapping data. Thus, this budget figure may suggest why private providers of maps in the US often rely on their own raw data.

### **Relationship with commercial firms**

- 1.124 Some US commercial providers of mapping and geological information use a mixture of USGS and private data, while others exclusively use

private data. We also understand that most private companies own the infrastructure, such as aeroplanes and satellites, through which they collect data.

- 1.125 Commercial firms add value to USGS information by transforming maps and other services into more accessible formats, and by modifying them to meet specific client demands. For example, several firms provide user-friendly versions of the TIGER (Topographically Integrated Geographic Encoding and Referencing) maps that link census data to geographical data on the boundaries of census tracts. These maps are available through the US Census Bureau, but are based on 1:100,000 maps produced by the USGS. The Census Bureau's website lists commercial value-added resellers (VARs) of TIGER files, but also permits users to download the TIGER files for free.<sup>10</sup>

### CRADA and business partners

- 1.126 The USGS has entered into cooperation with commercial firms in the form of business partnerships and CRADAs.

### Australia

- 1.127 Both the State and Commonwealth governments undertake mapping activities. All these governments provide some information for free and sell raw data to commercial value-added businesses.
- 1.128 A special company, Public Sector Mapping Agencies (PSMA) Australia Ltd. stands between the mapping agencies in various branches of government and the commercial resellers. PSMA combines spatial data from the various governments to create national spatial information datasets, which it then licenses to value-added resellers. PSMA does not sell directly to the public, who are therefore forced to purchase data through one of the resellers.

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<sup>10</sup> See [www.census.gov/geo/www/tiger/index.html](http://www.census.gov/geo/www/tiger/index.html)

1.129 Currently, five national datasets are available through the PSMA network: the transport, cadastral, administrative boundary and 'points of interest' databases, and the geocoded national address file.

### Pricing policy

1.130 We understand that the PSMA's shareholders do not require the company to maximise profits. Rather, they require that the PSMA make its products as widely available as possible within the constraints of operating on a sustainable basis.

1.131 The PSMA charges a licence fee for the use of its datasets and royalties on any published material. The royalties depend on the amount, type and final use of data.

### Sweden

1.132 The National Land Survey (Lantmäteriet) is responsible for mapping and related services in Sweden. It controls several databases containing geographic information and land ownership data, and is also the head agency for the regional and local cadastral agencies.

1.133 Table 1.1 shows Lantmäteriet's annual turnover from the sale of these products is around SEK 1,600 million (\$202.1m). The Land and Geographic Information division produces a range of products in the areas of:

- maps and geographic information
- historical maps and archives
- aerial photographs and satellite imagery, and
- geodesy, GPS and detailed surveys.

1.134 The Lantmäteriet's funding stems from its commercial activities in parallel with grant-funded official activities, with no sharp organisational

boundaries between the two. It claims copyright for its data on behalf of the state, and also provides value-added products and consulting services.

### Pricing policy

- 1.135 Lantmäteriet charges for the majority of its products, but makes some available free of charge on its website. Most of its products have some value-added element and are priced at above their cost of production. Interestingly, Lantmäteriet's annual customer satisfaction survey, which was started in 2000, includes questions on its pricing. Typically around half of the respondents view Lantmäteriet's prices as being too high. In response, the agency plans to introduce a new pricing model during 2005 (Lantmäteriet 2004). This would enable customers to select more precisely which information they wish to buy, to minimize the extent to which they bought material for which they had no use.

### Competition issues

- 1.136 Lantmäteriet has for a long time had a monopoly in the collection and production of basic geographical data, and is also the leading supplier of value-added geographical data in Sweden. Statskontoret found that other, independent value-added businesses have found it difficult to gain access to Lantmäteriet's basic information on the same terms as the agency itself (Statskontoret, 2005a).
- 1.137 The Swedish Agency for Public Management (Statskontoret) has argued that the Lantmäteriet's accounts fail to adequately separate its costs and revenues from its various branches of activity. This, according to Statskontoret, entails a risk of cross-subsidisation and under-pricing in the portion of activities subject to competition.
- 1.138 In response to these concerns, Statskontoret has proposed that, in accounting and organisational terms, the administration of databases containing basic geographical information should be operated separately

from the Lantmäteriet's commercial work. The Swedish government appears sympathetic to these proposals.

## **Overall view of competition policy issues**

- 1.139 Strong conclusions emerge from the case studies with regards to potential competition issues associated with the activities of the PSIHs in producing valued-added information.
- 1.140 The US and Australia have essentially prevented their PSIHs from undertaking activities which would compete directly with those of the private sector. PSIHs are kept out of the value-added segment of the PSI value chain.
- 1.141 In those two countries, the national competition authorities have not received any complaints from private operators about the behaviour of PSIHs over the last five years. Neither did the small sample of publishers, information brokers and resellers who were consulted as part of this study express any concern about potential competition from the PSIHs.
- 1.142 In contrast, in Sweden the three PSIHs reviewed in this report are allowed to undertake value-added activities and thus compete with the private sector in the value-added segment of the PSI value chain.
- 1.143 There have been several competition complaints about the behaviour of Swedish PSIHs. Efforts are underway to remedy the perceived market distortions by reducing the scope for cross-subsidisation within PSIHs and thereby permitting fairer competition between the commercial arm of the PSIHs and the private firms.
- 1.144 While some have argued for complete separation of the two types of activities, it appears that the approach currently preferred in Sweden relies more on accounting separation and requirements for the commercial operations of the PSIH to operate at arm's length from the non-commercial part of the PSIH. In particular, access to raw data is to

be provided on the same terms and conditions as for private sector businesses.

- 1.145 The key lesson from the case studies is that, to avoid competition issues in the PSI market place, either PSIHs must be prevented from undertaking value-added activities, or there must be a clear separation between the PSIH's commercial and non-commercial activities.

## **Evaluation of meteorological offices**

- 1.146 To help evaluate meteorological offices' effect on the wider economy, a useful question is whether these offices' policies have supported the development of weather derivatives (WD) markets. While WD markets represent only one rather specialised source of demand for meteorological data, previous literature has claimed an interesting linkage between the policies of meteorological offices and WD markets. In particular, literature has argued that the higher prices at which meteorological offices make data available in the EU than in the US have stifled the development of markets for weather derivatives in the EU (Lemmons and VanderMarck 2000, Weiss 2002).
- 1.147 It is difficult to establish in a rigorous, data-based fashion whether the policies of meteorological offices have particularly helped or hindered the development of WD markets. Thus, for a view on this point we turned to contacts in the private sector, and in particular one informed source in the US private sector who had dealt with many countries' meteorological offices.
- 1.148 It is clear from examination of the contracts traded on the Chicago Mercantile Exchange (CME) that the policies of European meteorological offices have not precluded the development of WD markets altogether. The CME is the world's leading exchange for the trading of WD contracts, which are typically futures contracts. The weather futures traded on the CME currently cover 18 cities in the US, nine in the EU and two in Tokyo, though none in Australia. The European cities covered

include London and Stockholm, though no others in either the UK or Sweden.

- 1.149 It is not clear whether the policies of European meteorological offices have restricted the number of WD contracts the CME quotes for Europe below the number it quotes for the US, or whether the number in the EU is lower for other reasons. Whether the CME quotes a contract for a city is likely to reflect both demand factors relating to the variance in temperature in that city, and supply factors such as the availability of cheap meteorological data. Demand factors might explain why the CME lists US contracts for Des Moines, Iowa, but not Los Angeles, California.
- 1.150 Because the role of demand and supply factors is difficult to separate, the views of our informed US source were particularly valuable on this point. This source believed that the development of the US WD market in the 1990s had resulted from a favourable coincidence of deregulated markets for energy supply and liberal data supply policies by NOAA. He did believe that high pricing for data by national meteorological offices had essentially prevented the development of WD markets in some countries. These included Finland, Ireland and Poland and also, until this point, Australia. Our source believed that policies towards the WD market in Australia had recently changed, however, and that this would permit a considerable expansion of trade in such products in that country. He did not think the (low) prices charged by the UK or Swedish meteorological offices had obstructed the development of CME WD markets in these countries. However, he believed positive pricing might have prevented some 'end-user' trades, where a market maker trades directly with a hotel or amusement park so as to reduce its exposure to weather risk. The effect of pricing by meteorological offices on WD markets would become clearer as these markets increased in size.
- 1.151 In contrast to the criticisms private-sector contacts expressed regarding the relevance of USGS mapping data, this US representative of a weather data reseller believed that national meteorological offices were unlikely to be supplanted by private sector providers in the near or

medium future. This source felt that few private firms would be willing to invest in a network of weather stations that would duplicate those of the existing agencies. A private firm, WeatherBug, has created its own network of stations in the US, but the respondent did not feel this firm had been successful in producing data of equal quality to NOAA. Further, the respondent felt that in practice governments would prohibit private firms from setting up weather observation stations in airports, which are key locations to make observations. Thus, considerable barriers to entry into the market for weather data production would remain for some time.

- 1.152 The source referred to above and other US private-sector resellers of NOAA data provided comments on the quality of NOAA data. None expressed concern that NOAA's data were of poor quality or that the agency's inability to charge for data removed its incentive to provide updated and valuable data. Rather, private resellers believed NOAA personnel were motivated by a desire to be good scientists rather than to increase the revenues of their employer. One contact stated that he believed this was the case with the UK Met Office also.
- 1.153 Commercial resellers of meteorological data from the Australian BoM gave largely positive comments on the quality of BoM data. However, one representative of a large reseller stated that the BoM lacked extensive experience in distributing data to value-added resellers and that, consequently, the services provided could be improved. The representative of another commercial provider had several concerns over the strong competition his firm received from the BoM, in particular due to the BoM's large public visibility, free data provision, and ability to withhold data from commercial resellers.
- 1.154 Overall, the comments private data resellers provided suggested that meteorological agencies' high prices for data had hampered the development of the market for weather derivatives in some cases and had thus reduced economic activity. Thus, while there may be an argument for taxing weather information somewhat, it appears that some meteorological agencies have in the past taxed it excessively.

## Evaluation of company registries

- 1.155 As is noted above, the company registries in the three countries differ in their pricing policies. The SEC is tax-funded and does not charge for data, while the Swedish Bolagsverket receives no government funding and thus does charge. The Australian Securities and Investment Commission receives some government funding but also charges for most of the data it supplies.
- 1.156 The effect of these differing institutional arrangements on national markets for company information is hard to assess. However, there is reason to believe that it is fairly small. This is because company registries do not collect information themselves, but rather hold data private companies generate in their annual reports and other filings. It is possible to collect some of these data sources directly from companies, and one major private provider of company information in the US told us that they only used companies' annual reports and thus did not use data provided by the SEC.
- 1.157 The fact that private suppliers of data on businesses do not use data from the national company registries creates something of a question of the relevance of these organisations. A further question over relevance is whether national tax authorities could in fact supply the data currently supplied by company registries. The Swedish Bolagsverket has developed a web-based service that allows new companies to register with the Bolagsverket and the Swedish tax authorities at the same time. A sensible question in view of this joint work would be whether appropriate releases of information from the tax authorities would fulfil some or all of the current functions of the companies registry.
- 1.158 The institutional setup of company registries could cause the concern that the registries have powers to raise taxes through the charges they levy on data providers. In most cases companies are obliged by law to supply data to company registries, but also charged for doing so. In this

circumstance it might be advisable for the fees charged to filers to be closely regulated.

- 1.159 Another concern that might arise from the business model of company registries is the potential for internal inefficiency within the registries. While the registries will be subject to some competition from private firms that source annual reports directly, no private competitor has the power of company registries to compel private firms to send it data. In this context direct competition with the company registry may be somewhat limited, and the registry itself faces little pressure to achieve optimum efficiency.
- 1.160 Were there any concerns about the internal efficiency of company registries, it would appear a simple matter to privatise them, since their activities appear well-defined and thus easy to specify in a tender requirement. On an anecdotal basis, it would appear possible that the introduction of private-sector practices would improve the quality of service provided by some registries. The practice of UK Companies House in making its web services unavailable for 66 hours per week appears unusual in the context of standard commercial practice, for example, even though the agency does use this time to update its records. By contrast, the Swedish Bolagsverket stated that their service is offline for maintenance on only two weekends per year.

### **Evaluation of mapping agencies**

- 1.161 The sources examined in this study permit only a partial evaluation of the economic impact of mapping agencies in each of the three countries. An informed source in the US private sector (a different contact to that quoted above in the context of meteorological offices) provided interesting views on the effect of the USGS. Private-sector contacts gave less detailed comments on Australian PSMA or Sweden's Lantmäteriet. However, Lantmäteriet's annual report provides some interesting tools by which the agency's performance can be evaluated. The use of these tools might be considered best practice by a PSIH.

1.162 Our source in the US private sector stated that, while the free supply of data by the USGS may well have stimulated private investment in GIS and other mapping technologies in the past, the private sector has now overtaken the USGS and provides better quality and more valuable data. This source believed that USGS maps were now largely used only as a reference of last resort, and noted that even US defence and homeland security mapping needs are now met by the private sector. Thus, he thought it likely that the US federal government would soon exit the business of map production. Our source summarised his views by suggesting that, were the USGS National Mapping Program (USGS NMP) to disappear overnight, its output would in general not be missed, though he qualified this view by saying that the TIGER maps produced by the Census Bureau with USGS input remain highly useful (see paragraphs 1.140 to 1.146 above).

1.163 The particular problem for the USGS's relevance to current markets appears to be that the agency has lacked the funds to invest in the types of maps that are currently highly valued by users such as utility companies. The maps commercial clients currently value most are large-scale (such as 1:50 or 1:250) maps of urban areas that are highly accurate and up to date. The USGS, by contrast, conducted a lengthy programme to map the entire US at a smaller 1:24,000 scale.<sup>11</sup> The USGS finished this national mapping programme in 1990, since which date the rationale for the continued existence of the USGS NMP has been somewhat questionable. Indeed, a bill was tabled in the US Congress to abolish the USGS, though this did not pass. By comparison, the largest scale map the Swedish Lantmäteriet produces is at a 1:10,000 scale. While PSMA Australia is a trader rather than a producer of mapping data, the largest scale map produced by Geoscience Australia, the national producer of mapping data, is 1:25,000.

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<sup>11</sup> The USGS used a smaller 1:63,360 (one inch to the mile) scale to map most of Alaska.

- 1.164 With regard to the other mapping agencies we study, our contacts with private information providers revealed little concern over the quality of data that the Australian PSMA provides to VARs or the terms of access to such material. With respect to the Swedish Lantmäteriet, as noted above Statskontoret (2005a) suggests that the agency's ability to control copyright and licensing of its data and to charge high prices to VARs means that the Swedish market for mapping data fails to achieve its potential benefit to consumers.
- 1.165 The Lantmäteriet's annual report (Lantmäteriet 2004) contains essentially three tools by which the agency can be assessed. The first is the agency's annual surplus, shown in Table 1.1 above. The second is an annual customer satisfaction survey. This includes questions on ease of contact, speed of service delivery and pricing. The repetition of this survey annually since 2000 has permitted a sense of trends in performance. We discuss comments on Lantmäteriet's prices above. Third, the report describes levels and trends in sickness absence among Lantmäteriet's staff, and measures the agency has taken to manage and reduce such absences.<sup>12</sup> This material provides some information on the agency's internal efficiency. Overall, the provision of these tools, some providing objective data and others subjective but external views, appears something of a best practice in measures, some objective and others subjective but the agency has developed a new pricing model that may respond to some of these concerns.

## **Conclusion: evaluation of national policies**

- 1.166 As stated in , policies towards public sector information would ideally be evaluated in terms of their effect on the value obtained by consumers of information in excess of their costs of paying for it, and the profits of information suppliers. The value obtained by users of information is hard to measure, however. In the absence of reliable data on the value users

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<sup>12</sup> Between 2003 and 2004, sickness absence decreased from 4.3 per cent to 3.6 per cent of total working hours.

obtain, we conclude with comments that give a more partial evaluation of the different institutional approaches used in the three countries.

1.167 In particular, this section makes the following points:

- substantial prices for information may drastically reduce data use and thus be socially inefficient
- tax-funded PSIHS may in some cases become redundant, but nevertheless be politically hard to close down, and
- there is a risk that partnerships between commercial companies and PSIHS become so close that the commercial partner becomes a monopolistic supplier of public information in electronic form.

### **Adverse effects of significant prices for information**

1.168 There have been various claims in past literature that policies of charging for public information have reduced economic activity or the value that users and hence society obtains from available information. These claims are typically supported by the point of economic theory that positive prices are inefficient because they prevent uses of data that would provide small private benefits but no social cost. However, the claims of negative economic consequences in past literature have not typically been closely based on data and thus have not been entirely convincing.

1.169 The comments we received from a private-sector data reseller connected to the weather derivatives (WD) market suggested that high prices for meteorological data had in some countries prevented the development of markets for WDs and thus had directly reduced the level of economic activity. Traders of WDs operated on low margins and thus could not absorb high prices for data. This contact felt the moderate prices charged in the UK had had little if any discouraging effect on UK markets for WDs. Overall, however, it was important that meteorological offices took a facilitative approach to the development of WD markets rather than effectively taxing them out of existence.

## **Redundancy of tax-funded information providers**

- 1.170 Some private sector contacts provided the rather unexpected comment that they found PSIHs somewhat redundant as they acquired their raw data from other sources. These comments related particular to the USGS, a mapping agency and company registries. By contrast, a representative of a reseller of meteorological data told us he saw little alternative to acquiring data from meteorological offices now or in the near future.
- 1.171 With regard to mapping agencies, as we note above an informed private-sector source believed that the USGS had become largely redundant because of its low level of past investment in map production and the fact that it produced maps at a typical scale of 1:24,000, whereas users now typically value maps at larger scales such as 1:250.
- 1.172 One lesson of the US experience may be that it may be difficult to judge whether an agency that provides data for free is still providing products that users value highly. In the absence of a market test for the relevance of a PSIH's output, other tests such as regular surveys of users may be necessary to verify the PSIH's continued relevance.
- 1.173 In the UK context, perhaps a more interesting lesson from the US experience is the claim that heavy private investment in mapping technology has allowed the private sector to supersede the public sector as a supplier of maps. Our US source suggested that the fact that the UK Ordnance Survey charges for its own mapping data tends to discourage such investments in private map generation in the UK. This study has not investigated whether there is any evidence for this claim, but it appears a relevant one for future study.
- 1.174 There would appear to be a further question to be asked about the relevance of company registries in the context of the collection of information on companies by national tax authorities. The Swedish companies registry, the Bolagsverket, has developed a service by which new companies can register with the Bolagsverket and the tax

authorities at the same time. This practice suggests it may in general be possible to reproduce the information provided by company registries by releasing a suitably edited extract of companies' tax filings.

### **Emergence of private monopoly in information supply**

- 1.175 In the US, the possibility of partnerships between PSIHs and private firms appears to have facilitated the emergence of sophisticated resellers of public data. In particular, the adoption of legislation such as the Federal Technology Transfer Act of 1986 has facilitated the emergence of Maptech and Google in the mapping sector and West Publishing in the area of legal documents. There have been some complaints, however, that the relationship between these private resellers and the relevant public departments is too close and essentially leads to the private firm becoming a monopolistic seller of public information in electronic form.
- 1.176 To avert the risk that partnerships between PSIHs and private resellers lead to private monopolies in information supply, PSIHs can conduct competitive bidding processes for the rights to participate in a partnership that may involve, for example, the scanning of paper documents into electronic form. The US meteorological agency NOAA did indeed set up such a bidding competition for the rights to sell electronic versions of nautical maps in the DeLorme case. In the context of the risk that winners of these bids may enjoy monopolistic positions in the resulting markets, however, policymakers may be advised to structure these bidding competitions carefully to reduce this risk. For example, policymakers may wish to impose restrictions on the prices and access conditions private resellers may subsequently set. Alternatively, they may want to ensure that PSIHs create multiple partnerships with competing private firms, so that no firm later establishes itself as the dominant gateway to the PSIH's raw data.
- 1.177 Thus, overall a clear definition of the role PSIHs are expected to play may ultimately lead to more attention on the behaviour of private resellers of information and whether the markets in which they operate

are competitive. This latter question become particularly pertinent once one recognises that government funding for PSIHs is unlikely ever to be high enough to supply all the demands of private consumers of information that has traditionally been thought of as 'public sector information'.

# APPENDICES

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## A GLOSSARY

This glossary is divided into the following sections, each organised alphabetically:

- general terms
- Australia
- Sweden
- United States.

### General terms

Cost recovery policy	Policy of pricing information goods at a rate that on average will recoup the cost of data collection and dissemination. For example, cost-recovery pricing for maps would recover the cost of aeroplane flights used to produce the underlying data and that of printing the map.
Dissemination cost policy	Policy of pricing information goods at a rate designed to recoup the costs of dissemination only. For example, dissemination-cost pricing of a map would recover only the cost of printing the map.
LE	London Economics
Non-excludable goods	Goods for which it is physically difficult or impossible to prevent people from consuming, such as clean air

Non-rival goods	Goods for which consumption by one person does not reduce the amount available for others, such as radio broadcasts
PSI	Public Sector Information
PSI Directive:	EU Directive 2003/98/EC on the Re-use of Public Sector Information
PSIH	Public Sector Information Holder
Public goods	Goods that are both non-excludable and non-rival (see above), such as national defence
WD	Weather Derivative

## **Australia**

ACCC	Australian Competition and Consumer Commission
AGIMO	Australian Government Information Management Office
ASIC	Australian Securities and Investment Commission
BoM	Bureau of Meteorology
PSMA	Public Sector Mapping Agency

## **Sweden**

Bolagsverket	Swedish Companies Registration Office
Lantmäteriet	National Land Survey
Statskontoret	Swedish Agency for Public Management

SCA	Swedish Competition Authority
SMHI	Swedish Meteorological and Hydrological Institute
<b>United States</b>	
CRADA	Cooperative Research and Development Agreement
EDGAR	Electronic Data Gathering, Analysis, and Retrieval system
EMWIN	Emergency Managers Weather Information Network
FOIA	Freedom of Information Act, 1966
FOS	Family of Services
FTTA	Federal Technology Transfer Act, 1986
IWIN	Interactive Weather Information Network
NOAA	National Oceanic and Atmospheric Administration
NWR	NOAA Weather Radio
NWS	National Weather Service
NWWS	NOAA Weather Wire Service
OMB	Office of Management and Budget
SEC	Securities and Exchange Commission
USGS	United States Geological Survey



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