

# Agenda

Advancing economics in business

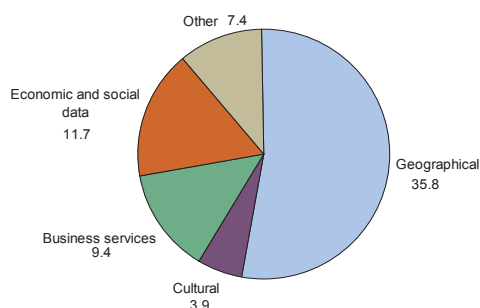
## Public information, private profit: how should government agencies compete?

**Public sector agencies are the largest producers of information in Europe. This information has been recognised as an under-exploited asset, worth around €68 billion per year. The European model is to charge companies for public sector information, whereas US government agencies typically distribute data for free. From a public policy perspective, what are the effects on competition and efficiency of trying to recover the costs of public information from the private sector?**

Where would you go for mapping services—Ordnance Survey or Google Maps? What about for financial information about a rival company—Companies House or Experian? Google Maps and Experian are two private sector organisations repackaging, refining and reselling government-sourced data for commercial use, but like other information providers, they may face competition from public sector agencies seeking a financial return.

Such public sector agencies are the largest producers of information in Europe, collecting and disseminating a wide range of information in many areas of activity, including economic statistics, geographical data and business accounts. This information has an estimated value to the European economy of around €68 billion per year (see Figure 1).<sup>1</sup> Indeed, research suggests that 15–25% of total data requirement in e-commerce trading is based on public sector information (PSI).<sup>2</sup> Companies such as Google, upmystreet.com and MapInfo take raw data produced by government and turn it into commercial products by blending it with other data, adding a user-friendly interface, or filtering and validating the information.

**Figure 1 Economic value of PSI in the EU, 1999 (€ billion)**



Source: European Commission (2000), op. cit, p. 9.

This article explains how PSI is provided, in both the USA and Europe, highlighting the competition issues that may arise from public and private sectors competing side by side. Such competition issues have been addressed in the UK, where the Office of Fair Trading (OFT) reviewed a number of abuse of dominance cases, and also opened a broader market investigation in August this year.<sup>3</sup>

The article also evaluates the economics of different charging mechanisms for PSI, finding that the 'European model' based on royalties is not necessarily the best solution for economic efficiency and competition.

In Europe, government agencies generally charge companies for wholesale access to commercially useful datasets such as maps, and the agencies may also compete with these companies in the downstream market for value-added information. This contrasts with the situation in the USA, where access to, and re-use of, government federal information is characterised by practically free re-use. The European model allows public sector agencies to provide a return on investment to government, but the US model appears to benefit further development of the downstream information market.

### What is public sector information?

Public sector bodies are typically under a statutory obligation to collect information, or do so as part of their normal functions, such as the collection of company accounts data by Companies House. Much of the data collected is made freely available to the public for specific requests—for example, the UK Environment Agency's website will tell you whether your home is at risk of flooding. Furthermore, under freedom of information (FOI) legislation, these agencies may be

subject to a legal obligation to supply data to individuals for free or at a small cost. Yet despite making the information free at the level of a minor data request, agencies usually charge for bulk datasets. The distinction between a number of FOI requests and a single bulk data request is understandably a difficult practical matter.

Public sector bodies and private sector companies use bulk datasets as an input to produce 'value-added' information. For example, the Environment Agency supplies wholesale environmental data to third parties, for use in compiling property-specific environmental risk reports, but it also has a Property Search Report product that competes in the downstream value-added market with private sector property information products.

## Why is there a competition problem?

Public sector agencies generally have a monopoly in the collection of data, selling it at a wholesale level. They also sell the data at the retail level, where they face competition from private sector companies. As a result of this vertical integration and dominance in the wholesale data market, familiar competition issues of unfair price discrimination, predatory pricing and margin squeeze may arise.

Such competition problems are familiar in vertically integrated industries, from sugar to telecoms. It is notable that the OFT recently returned to competition issues in PSI with a market study examining whether public sector bodies have an unfair competitive advantage over private sector rivals,<sup>4</sup> following studies of property information<sup>5</sup> and previous Competition Act 1998 cases involving Companies House and the Environment Agency.<sup>6</sup>

The OFT study could highlight the potential for structural or behavioural remedies (such as regulating the wholesale activities for every agency supplying public information), many of which have been implemented in other sectors with a similar market structure. If remedies were put in place, the burden of regulation could be considerable, given the large number of public agencies involved. In view of the cost of such ex ante regulation, which would place a complex regulatory burden on public agencies, it may be time for European governments to consider the merits of not charging for public information—a move which would be likely to remove the need for detailed antitrust oversight of this market.

## Why is there a problem with charging for information?

A study for the European Commission estimated the size of the US PSI market to be between two and five times that of the EU, despite the two economies being similar

in size. Some studies suggest that this is due to the high cost of European PSI. For example, it is reported that comparable meteorological information could cost \$4,290 for US data, and \$1.5m for European data.<sup>7</sup> The implication is that if European PSI were freely available, the related market in value-added data might expand to approach US levels, whereas keeping the 'European model' of charging for public sector data restricts the development of this market.<sup>8</sup>

In the USA, regulations on PSI state:

Government information is a valuable national resource, and ... the economic benefits to society are maximized when government information is available in a timely and equitable manner to all.<sup>9</sup>

In Europe, however, PSI with strong commercial uses, such as financial or mapping data, is typically charged for, and such data, is made available only on a restricted licence basis. Given the evidence on the development of the US value-added market, should Europe follow the US model and make the data freely available?

## Should the data be free?

Since the US model essentially makes the data freely available, or charges a marginal cost of dissemination (which is very low), there are no competition issues relating to discriminatory pricing for wholesale data. The US model also seems to accord with economic theory, which shows that allocative efficiency of the economy can be maximised where prices are set equal to marginal cost.

However, from a public policy perspective, this conclusion is not necessarily applicable to an information product, where the creation, maintenance and updating of the data incur relatively high fixed costs and relatively low marginal costs. Marginal cost pricing would often not allow for full cost recovery.

Is the answer then that the public sector should seek to recover the full costs from reselling the information? Not necessarily.

In the case of PSI, data is originally sourced for government purposes, not for resale. Indeed, the fixed costs of creating and maintaining the raw data are generally incurred irrespective of whether resale to private companies is permitted. Since these costs would be incurred as a result of the government's information requirements, by definition the government must already attach a value to the output that is at least as high as the costs. Any further use is a by-product of the original dataset. Therefore, according to a cost-causality view of cost allocation, the fixed costs could in principle be

allocated fully to the government, not borne by private companies that want to re-use the data. This would be optimal for welfare maximisation, since prices can be set at marginal costs and the fixed cost is covered in a way that does not affect subsequent usage decisions. At the limit, the data could be distributed at no more than the cost of dissemination (eg, the cost of copying a CD-ROM) and without licence restrictions on the re-use of the data.

### Are there any disadvantages to the US model?

There are problems with not charging, or charging only marginal dissemination cost, for raw data. The obvious one is the lower income stream from public agencies, which lose their commercial revenues from selling wholesale and value-added data, placing an additional burden on the public purse.

If the price elasticity of demand for information were very high, such that the marginal cost pricing of information led to unprecedented growth in the downstream product market, the burden could be offset by increased tax revenue and employment related to the success of downstream resellers.<sup>10</sup> Indeed, the US model has the benefit of maximising the applications of the data, and it is claimed that taxpayer-funded government information in the USA has contributed to growth in information retrieval from a \$4 billion industry in 1994 to a \$10 billion industry in 2002, and from 900 database vendors in 1991 to 2,400 in 1999.<sup>11</sup>

A second potential problem with the US model relates to incentives. If wholesale data is free, the public sector body receives no additional revenue from investing in expanding the range of the data it supplies.<sup>12</sup> Aligning the incentives for the public sector body to the demands of users can be more problematic where there is no price signal.

### Can governments charge for the data without distorting incentives?

Assuming that governments want to charge for public sector data, there are a number of mechanisms, with different consequences for efficiency and competition. Choosing between these mechanisms is not always straightforward.

One mechanism is for the government to sell raw data wholesale to recover fixed costs, charging a fee for use of the data based on average total costs where the wholesale fee paid by the reseller is linked to the volume of data sold in the downstream retail market. This is a poor arrangement for economic efficiency since resellers of value-added information must pass on to consumers the charge for using extra units of information—for example, to supply an extra customer with a more detailed map—despite there being no relationship

between this charge and the cost of producing the underlying data.

A second method involves the government selling the raw data wholesale to recover fixed costs, with the wholesale databases being sold as lump-sum units (eg, complete UK mapping). This would produce a better outcome for economic efficiency if resellers of the information are of sufficient scale that the average fixed cost per unit is a small part of their total costs, since the resellers would face near-zero marginal costs in using the data to provide further value-added services. Although this arrangement would maximise resellers' incentives to develop a wide range of information products, it could have negative competition implications, since it introduces a scale barrier of entry for smaller companies wanting to compete in the downstream market.

A third method would be for the government to recover fixed costs by charging for the data in variable increments with price discrimination based on volume (a two-part tariff). A well-designed two-part tariff, where the fixed-cost recovery is kept to a small part of the variable cost of the wholesale product, would minimise the distortion to economic efficiency, since price can be set close to marginal cost. Again, however, if two-part tariffs introduce a significant scale barrier of entry for companies wanting to compete in the downstream market, smaller private sector companies may complain that the raw information is unfairly restricted to a small group of users with a high willingness to pay.

### Royalty fees

A related option, employed by some public agencies, is to charge a royalty fee based on the final retail price of the downstream product. Under this arrangement, if a location-based information service provides a map for free, it would not pay a royalty fee to the supplier of raw mapping data (in general, this is why services such as Multimaps are free). Yet if the information service charged £100 for the map, it would pay, for example, 5% of this for the raw data. A royalty fee mechanism has the attractive feature that many low-cost or free services can be provided, since the marginal price of the raw data for such products is close to zero.

However, if the information service combines mapping with data on the local population and local businesses to produce a more sophisticated retail product, it would pay £5 to each supplier of the raw data for a retail product costing £100.

Royalty fees can therefore have the unfortunate characteristic of encouraging retail information providers to split their product into several products with less functionality, as illustrated in Figure 2. As shown, if the information service produces the combined product A,

the raw data costs 15% of the final product price, but if it splits product A into products B and C, it can reduce its input cost to an average of 7.5% of the final product prices. This result is not desirable, since it encourages private sector information providers to reduce the scope of their consumer products in a way that is not reflective of the underlying costs of producing the raw data.

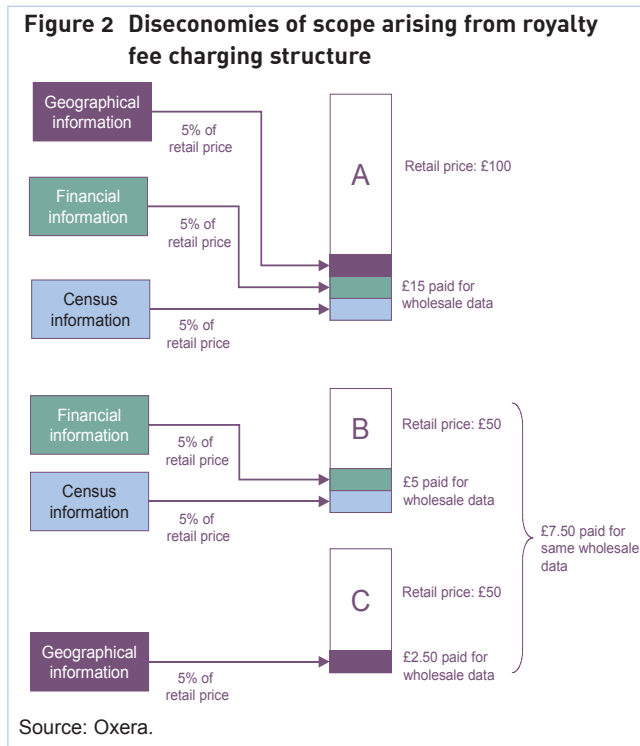
These examples indicate that any pricing structure resulting in wholesale prices significantly above marginal cost is likely to be detrimental to allocative efficiency.

### So how should PSI be paid for?

The ultimate decision about the correct pricing structure depends on the government's priorities. If economic efficiency is the primary concern, recovering fixed costs from wholesale charges is not the best solution, and the government should pay for PSI (the US model). Pricing solutions based on marginal dissemination costs are optimal from an efficiency perspective, and may lead to a multitude of new downstream applications deriving from cheap access to the raw data.

However, if achieving a financial return from public agencies is the overriding concern, the question turns to the optimal solution for charging for PSI. At first approximation, lump-sum charges help to minimise the distortions to efficiency. However, this approach creates a scale barrier to entry which hinders the development of the downstream market. Turning to the alternative of charging a wholesale price in excess of marginal cost, there are ways of improving efficiency using two-part tariffs or royalty fee solutions.

Ultimately, the distortion to efficiency and the potential for competition problems created by charging for PSI must be weighed carefully against the financial returns achieved from public agencies. The 'hidden costs' of charging for public information should not be underestimated.



<sup>1</sup> European Commission (2000), 'Commercial Exploitation of Europe's Public Sector Information', Executive Summary, report prepared by Pira International Ltd, University of East Anglia and KnowledgeView Ltd, September 20th, p. 8.  
<sup>2</sup> Department of Trade and Industry (2000), 'Government Information and the UK Information Market', report prepared by Electronic Publishing Services, May.  
<sup>3</sup> Oxera advised the complainant, Sitescope, in the first such case brought under the Competition Act 1998: OFT (2004), 'Competition Act 1998: Competition Case Closure Summaries', Sitescope Ltd and EDR Landmark Ltd complaint against the Environment Agency, OFT Gazette, February.  
<sup>4</sup> OFT (2005), 'Studies: Commercial Use of Public Information', Announcement, July 28th. Related OFT studies include: OFT (2005), 'Chance to Reform Property Search Market', press release, September 21st; OFT (2004), 'Online Property Search Companies not Anti-competitive: No Competition Act Breach but Further Study Needed', press release, August 19th; and OFT (2004), 'New Study into Property Search Market', press release, December 8th.  
<sup>5</sup> OFT (2005), 'Chance to Reform Property Search Market', press release, September 21st; OFT (2004), 'Online Property Search Companies not Anti-competitive: No Competition Act Breach but Further Study Needed', press release, August 19th; and OFT (2004), 'New Study into Property Search Market', press release, December 8th.  
<sup>6</sup> See OFT (2002), 'Decision of the Director General of Fair Trading: Companies House, the Registrar of Companies for England and Wales', decision document, October 25th; and OFT (2004), 'Competition Act 1998: Competition Case Closure Summaries', Sitescope Ltd and EDR Landmark Ltd complaint against the Environment Agency, OFT Gazette, February.  
<sup>7</sup> *New York Times* (2005), 'Bush didn't Invent the Internet, but is He Good for Tech?', January 23rd.  
<sup>8</sup> Due to economies of scale in the USA (ie, there is one national meteorological service in the USA, but 25 in the EU), the US wholesale prices are likely to remain lower than in Europe, even if the European charging structure were to switch to marginal cost.  
<sup>9</sup> Office of Management and Budget (Executive Office of the US President) (1996), OMB Circular No. A-130, February 8th.  
<sup>10</sup> Potential of European PSI:

	EU (€ billion/year)	USA (€ billion/year)
Investment value in PSI	9.5	19
Economic value	68	750

Source: European Commission (2000), op. cit.  
<sup>11</sup> US National Weather Service (2002), 'Borders in Cyberspace: Conflicting Public Sector Information Policies and their Economic Impacts', report by Peter Weiss, February.  
<sup>12</sup> If the public agency is also mandated to supply data at zero charge, it may face no incentives to improve the quality of service, whereas if it can charge for data at marginal dissemination cost, it may recover the cost of improving an aspect of the quality of dissemination, such as customer support.

If you have any questions regarding the issues raised in this article, please contact the editor, Derek Holt: tel +44 (0) 1865 253 000 or email [d.holt@oxera.com](mailto:d.holt@oxera.com)

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