

Title: Transposition of Directive 2013/37/EU, regarding the Re-use of Public Sector Information Lead department or agency: The National Archives Other departments or agencies: Ministry of Justice	Impact Assessment (IA)
	Date: 24 June 2015
	Stage: Final
	Source of intervention: European Commission
	Type of measure: Directive
	Contact for enquiries: marcia.jackson@nationalarchives.gsi.gov.uk
Summary: Intervention and Options	RPC Opinion: N/A – confirmed with RPC Secretariat

Cost of Preferred (or more likely) Option				
Total Net Present Value	Business Net Present Value	Net cost to business per year (EANCB on 2009 prices)	In scope of One- Measure qualifies as In, One-Out?	
£-0.03m	£0	£0	Out of scope	Zero Net Cost

What is the problem under consideration? Why is government intervention necessary?

The European Council and European Parliament adopted Directive [2013/37/EU](#) amending Directive [2003/98/EC](#) on the re-use of public sector information on 26 June 2013. Member States were given until 18 July 2015 to transpose the Directive. The UK needs to ensure the amendments to the Directive are reflected adequately in UK law and policy. The recitals to the amending Directive acknowledge that Public Sector Information is a valuable resource in the knowledge economy. It is stated that the rules laid down in the 2003 Directive have not kept pace with rapid technological change; and that some Member States have pursued open data policies more vigorously than others, resulting in a scope for 'minimum harmonisation'.

What are the policy objectives and the intended effects?

The action is intended to contribute to economic growth and job creation by unlocking the economic potential of already legally-available public sector information through improved conditions for exploitation by businesses and civil society re-users. The action is also intended to have a positive effect on the transparency, efficiency and accountability of governments and to contribute to citizen empowerment.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

The following options packages have been assessed against the base case ("do nothing"). All Options involve copying out amendments to Articles 1,2,3,4,5,6,7,8,9,11 as far as is possible. Amendments to Article 4 (on the redress mechanism) and Article 6 (on charging) are known to require implementation options beyond copy out. **Preferred Option:** Non-copy out of article 6(3) (Criteria set out in Regulations) and article 4 (Transfer the dispute resolution role to a body which has similar regulatory responsibilities likely to include a tribunal process).

Will the policy be reviewed? Yes. If applicable, set review date: July 2018						
Does implementation go beyond minimum EU requirements? No						
Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.	Micro	< 20	Small	Medium	Large	
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)			N/A Non-traded:			

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister: Dominic Raab Date: 24 June 2015

Summary: Analysis & Evidence

Policy Option 1

Description: Transposition of Directive 2013/37/EU, regarding the Re-use of Public Sector Information

FULL ECONOMIC ASSESSMENT

Price Base Year 2015	PV Base Year 2015	Time Period Years 10	Net Benefit (£m per annum)		
			Low: 0	High: 0	Best Estimate: - 0.03

COSTS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant)	Total Cost (Present Value)
Low	Optional	1	Optional	Optional
High	Optional		Optional	Optional
Best Estimate	0.04		0.01	0.16

Description and scale of key monetised costs by 'main affected groups'

The monetised costs of the policy arise from amendments to the redress mechanism. The Information Commissioners Office (ICO) is estimated to incur annual costs of £11,570 due to investigation of Public Sector Information (PSI) complaints and representing themselves when their decisions are appealed. The First Tier Tribunal (Information Rights) is estimated to incur annual costs of £860 from having to hear appeals against ICO decisions. The ICO are also estimated to incur one-off costs of £35,000 due to receiving the regulatory power.

Other key non-monetised costs by 'main affected groups'

The ICO may experience further costs depending on the volume of complaints and appeals following implementation of the regulation. Further costs may be incurred by the ICO through the transfer of regulatory power and any obligations attached to regulating PSI. The amendments are expected to increase the number of PSI requests public bodies receive and they may incur costs of having to process these additional requests.

BENEFITS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant)	Total Benefit (Present Value)
Low	Optional		Optional	Optional
High	Optional		Optional	Optional
Best Estimate	0		0.01	0.13

Description and scale of key monetised benefits by 'main affected groups'

The Office of Public Sector Information (OPSI) and the board that hears appeals against OPSI decision; (the Advisory Panel on Public Sector Information (APPSI))) will no longer have to investigate PSI complaints. This leads to a saving of £11,570 for OPSI and £1,300 for APPSI.

Other key non-monetised benefits by 'main affected groups'

There is a benefit to current and potential PSI users as there are lower barriers to obtaining PSI. Greater access to and usage of PSI is expected to create beneficial economic activity through entrepreneurship, supporting job and product creation. There are potential further social benefits from services or products that are developed from this expanded access to PSI.

Key assumptions/sensitivities/risks		Discount rate (%)
		3.5

Evidence on benefits for the monetisation model for pricing changes is sensitive to assumptions (including in its applicability to a UK context) and model specifications. The main sensitivity for the analysis of charging provisions is interpretation of the scope of exceptions to the marginal cost pricing policy. The available evidence on benefits may not fully capture the wider economic impact of public sector information – for instance the benefits in terms of consumer surplus (discussed in **Annex C**).

Additionally, there is insufficient evidence to suggest whether the volume of (currently low) complaints will change over the coming years. The costs of a complaint are low. A complaint in 2013/14 handled by OPSI cost £6,626. Due to the low costs and volumes, there would need to be a substantial rise in either to change (increase) the estimated costs substantially.

Implementation of Directive 2013/37/EU

On the Re-use of Public Sector Information

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1. POLICY PROPOSAL

- 1.1. This Impact Assessment (IA) concerns the implementation of Directive 2013/37/EU (the 'amending Directive') into UK law which amends Directive 2003/98/EC on the Re-use of Public Sector Information (the 'PSI Directive'). The PSI Directive was implemented in the UK through the Re-use of Public Sector Information Regulations 2005 (the 'PSI Regulations'¹).
- 1.2. The PSI Directive is concerned with the re-use by businesses and citizens of information held by public sector bodies. 'Re-use' essentially means the use of existing information in new products and services. Its aim is to support technology driven growth and civil society applications, for example, in the use of mapping information in satellite navigation products.
- 1.3. The PSI Directive affects how information can be re-used once it has been legitimately accessed, by placing obligations on the public sector to the benefit of re-users. The PSI Directive does not create rights of access to information.
- 1.4. The PSI Directive does not override or modify data protection rules. Re-use of public sector information in the UK must therefore comply with the Data Protection Act and any related regulations.
- 1.5. The amending Directive amends the current PSI Directive in several respects:
 - The general principle was changed to ensure accessible documents are re-usable for commercial and non-commercial purposes. (Article 3)
 - The means of redress available to a re-user must now include the possibility of review by an impartial body capable of making binding decisions. (Article 4)
 - The fees chargeable by public sector bodies for re-use of documents are capped at marginal cost, with important exceptions. (Article 6)
 - The scope of the amending Directive is extended to documents held by museums, libraries (including university libraries) and archives; with important differences around charging and permissions. (Article 1, 11)
 - There are new transparency requirements for situations in which charges are made. (Article 7)
- 1.6. The amending Directive largely reflects the current UK PSI re-use practice. Therefore, it is assumed implementation of the amending Directive will not require substantial changes to current UK practice.

Groups affected

- 1.7. Where they exist, any costs resulting from implementation of the amending Directive would fall on the public sector therefore the One In, Two Out (OITO, formerly One In, One Out) policy does not apply in this situation. Any benefits would primarily accrue in the private and voluntary sectors. This is because the amending Directive is concerned with making information held by the public sector easier for other sectors to re-use.
- 1.8. In order to facilitate an accurate yet proportionate analysis of the distribution of monetisable costs the public sector is divided into a number of sub-sectors. These include central government major information traders in the public sector (many of which are Trading Funds), local government, the health sector and the cultural sector. These provide natural groupings due to differences in volume of activity, ownership of information and the PSI Directive's differing treatment of particular sub-sectors.

¹ The Re-use of Public Sector Information Regulations 2005 S.I. 2005/1515

Documents affected

- 1.9. The PSI Directive applies only to documents supplied as part of an organisation's **public task**. This factor further excludes from the marginal cost charging those policy products which do not meet this criterion. For example, the Met Office regards just 1% of its trading revenue as relating to activities it is willing to discuss in the context of the PSI Directive (bulk data sales). Its primary public task comprises the Public Weather Service where related data are understood to be made available under open licensing terms. On the other hand, Ordnance Survey does not distinguish between public task and non-public task licensing revenues, with 91% of its revenue being relevant to the provisions of the PSI Directive.

One in, two out

- 1.10. Under the One In, Two Out (OITO, formerly One In, One Out) policy of regulation, a measure of net cost to business (an In) cannot be implemented unless an equivalent measure(s) of net cost is removed or simplified (an Out).
- 1.11. EU legislative measures that have not been 'gold plated' are exempt from OITO. 'Gold plating' refers here to transposition of EU legislation in a manner which goes beyond minimum requirements and so represents additional regulation for the UK.
- 1.12. UK implementation of amendments will meet the minimum requirements of the PSI Directive without the need for 'gold plating'.

Territorial Extent

- 1.13. It is anticipated that UK implementation of the amending Directive will occur through a single UK-wide statutory instrument. Arrangements will be made for Gibraltar to mirror this instrument.

2. CURRENT PSI PRACTICE

- 2.1. Re-use involves using PSI for purposes other than the public task for which it was originally produced or collected. Re-use can be undertaken by anybody, including companies, the public sector, the third sector and the general public. PSI can be re-used both for commercial and non-commercial purposes. The PSI Directive establishes the range of information which falls within scope. There are several criteria which must be satisfied before re-use can take place:
- The information must be accessible – i.e. the information has either been published by the public sector body in question or has been made available under access legislation such as FOI.
 - Personal information is exempt and compliance with Data Protection legislation applies.
 - Information where the copyright is held by a copyright holder other than the public sector is outside the scope.
 - The applicant must obtain the permission of the public sector body before re-using it.
 - These general principles continue to apply under the amending Directive except that making accessible information available for re-use becomes mandatory for most public sector information.
- 2.2. Under the current PSI Regulations, there is a process which allows a re-user, or potential re-user, to make a complaint. The first step would be to submit a complaint to the public sector body concerned. If, following investigation, the complainant remains dissatisfied then it may refer the matter to the Office of Public Sector Information (OPSI) to investigate. The complainant and/or the public sector body may request that the recommendations of OPSI are reviewed by the Advisory Panel for Public Sector Information (APPSI) under the PSI Regulations.

- 2.3. The 'base case' adopted in this IA represents the UK taking no action to transpose the amending Directive. In this situation the UK could be compliant only with those sections which had either not been amended or which required only 'soft law' measures, for example policy measures implemented through the Transparency agenda.
- 2.4. If the UK failed to implement the substantive requirements of the amending Directive it could be subject to infraction proceedings. The Commission has previously demonstrated a willingness to pursue inadequate transposition of the PSI Directive in Sweden² and in Poland³. Failure to implement could also lead to legal action brought from within the UK. In both cases legal action would impose costs on the UK Government and / or on individual public sector bodies.
- 2.5. The competitiveness of UK organisations may also be risked through non-implementation. For example, other member states might provide equivalent information for re-use at a lower price. In such a case, the domestic companies in those member states could enjoy a competitive advantage over UK organisations.
- 2.6. It has not been possible to quantify the risks associated with potential loss of competitiveness due to proportionality constraints. Maximum fines for infraction of European legislation are in the hundreds of millions of Euros per annum⁴, although it is unlikely that such a stage would be reached.
- 2.7. As the base case is being compared against itself there are no costs from policy changes to be monetised.

3. RATIONALE FOR INTERVENTION

What is public sector information?

- 3.1. Public bodies produce, collect or hold a wide range of information and content. In general public sector information (PSI) can be described as 'publicly funded information produced or collected by the public sector'⁵. In the UK, PSI covers a diverse range of subjects. In the context of the PSI Directive, PSI means information which is produced or collected by the public sector in order to meet a public task. The table below sets out examples of themes and the types of data coming under them, though not their status in the context of the PSI Directive⁶:

Table 3.1 Types of Public Sector Information	
Economic and Business Financial information, company information and economic statistics.	Social Demographic information, attitude surveys, census data.
Geographic Address information, topographic data, and hydrological information.	Meteorological Weather forecasts and climatological data.
Transport Traffic information, road safety statistics, vehicle registration information.	Environmental, agricultural and fisheries Land use information, environmental quality data, farm incomes.

² <http://epsiplatform.eu/sites/default/files/ePSIplatform%20Topic%20Report%20No.%209%20-%20Sweden.pdf>

³ <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/10/801&format=HTML&aged=0&language=EN&guiLanguage=en>

⁴ <http://www.scotland.gov.uk/Topics/International/Europe/Legislation/Infractions>

⁵ http://ec.europa.eu/information_society/policy/psi/docs/pdfs/opendata2012/impact_assessment/impact_assessment_report.pdf

⁶ <http://www.oft.gov.uk/OFTwork/publications/publication-categories/reports/consumer-protection/oft861>

Political Government press releases, proceedings of local and national governments as well as green papers.	Legal Crime and conviction figures, judgments and legislation.
Scientific Information from publicly funded research and medical institutes, patents.	Cultural Materials within museums, art galleries and library (including university library) resources.

- 3.2. Public sector information is published in a variety of ways, including on official websites, through data portals and in print. In some circumstances it may also be obtained under information access legislation (note the amending Directive does not create new rights of access). Users of the information are varied and include the general public, companies, libraries, charities, and the public sector itself. They use the data in various ways, but the key three uses include: for their own business or personal purposes, to produce products for consumers, or as an input into products for industry⁷.

For example, HM Land Registry is responsible for maintaining records of property transactions in England and Wales. This also enables it to compile information on the prices paid for residential property across those countries. This information is made available by the Land Registry and is re-used by a number of parties in order both to understand the behaviour of the housing market and to provide services to the general public, such as helping them to search for property online.

Characteristics of PSI

- 3.3. Public sector information, particularly when in digital form, has a number of economic characteristics arising from being an 'information good', in contrast to a 'physical good' such as a car or television. These include:
- **Low marginal costs** – once digital information has been produced, it is not costly to produce an additional copy. For example, putting data on a website means additional users can access it with only minimal impact on hosting and other costs.
 - **High fixed costs of production** – High fixed costs are likely to be incurred due to the collection, organisation and storage of the 'first copy' of digital information. For example it may be expensive to gather survey data.
 - **High potential for multiple use and re-use** – Digital information can be re-used in various ways and for different purposes. Furthermore, any resulting products from changes to the information can also be easily shared with other interested parties.

What is the problem?

- 3.4. Following the adoption of the amending Directive the UK must now decide its approach to implementation into UK law.
- 3.5. In making its Proposal to amend the PSI Directive, the Commission argued that its implementation review process had found that the original policy aims had not been met consistently across Member States. General EU-wide issues included:
- insufficient clarity and transparency, including practical issues;
 - licensing terms that are restrictive or unclear, or lacking altogether;
 - lack of information on data available for re-use;

⁷ http://ec.europa.eu/information_society/policy/psi/docs/pdfs/opensource2012/impact_assessment/impact_assessment_report.pdf

- lack of a robust complaints procedure;
- locked resources;
- excessive charging and lack of a level playing field, including attempts by public sector bodies to maximise cost recovery, as opposed to benefits for the wider economy;
- unfair competition between the public and the private sector;
- incoherent approach within and across the Member States;
- ineffective enforcement mechanisms.

What is the scale of the problem?

- 3.6. The amendments are in part modelled on the UK PSI system and so the UK is well placed in terms of PSI⁸. The scale of the problem for the UK is therefore assumed to be limited.

How is the proposed intervention likely to help?

- 3.7. The amending Directive was intended to remedy the issues outlined above. In particular, amendments to Article 3 are designed to tackle 'locked resources'; amendments to Article 4 provide for a strengthened redress mechanism; amendments to Article 6 attempt to rebalance issues around charging; amendments to Articles 5 and 7 relate to transparency and practical considerations; amendments to Article 1 attempt to ensure that more PSI is available for re-use than was previously the case.

4. ANALYTICAL APPROACH

- 4.1. This Impact Assessment (IA) is the post-consultation revision of two earlier IAs: the first prepared following the European Commission's 2011 Proposal to amend the PSI Directive, and the second during the pre-consultation stage to explore options for transposition. This IA is about the implementation of the revised legislation on re-use of PSI.

Scope of analysis

- 4.2. The Impact IA process aims to identify as far as possible the impacts of government proposals on society. A critical part of the process is to undertake a Cost Benefit Analysis (CBA) of the proposal. CBA assesses whether the proposals would deliver a positive impact to society, accounting for economic and social considerations. The IA process therefore should not be confused with a *financial appraisal*, which is focused purely on assessing how many resources government would save from certain proposals.
- 4.3. The IA has tried to identify as far as possible the impacts, with the aim of understanding what the net impact to society might be of implementing the amending Directive. A number of the amended articles have been highlighted as potentially having the greatest impact on the UK and as such have been looked at in more detail. This does not diminish the importance of other articles which are omitted. Where possible impacts have been monetised, otherwise they have been qualitatively described. See the pre-consultation IA for more detail on the articles not analysed in this IA.
- 4.4. Articles that have been identified for analysis:
- Article 1 – Subject matter and scope
 - Article 3 – Mandatory re-use
 - Article 4 – Redress
 - Article 6 – Charging.

⁸See the ePSIplatform scoreboard <http://www.epsiplatform.eu/content/european-psi-scoreboard>

5. APPRAISAL OF IMPACTS

The following section analyses the impact of the amendments identified as potentially having the greatest effect on the UK. For each article there will be a brief summary of the amendment and how the article currently stands. This is followed by a discussion, and where possible a monetised appraisal, of the costs, benefits and net impacts of the four articles. Following this is a final section detailing the overarching costs and benefits of amending the Directive.

Article 1 – Subject matter and scope

Description

- 5.1. The scope of the Directive will be extended to cover museums, libraries (including university libraries), and archives.
- 5.2. However, these institutions will be subject to discretionary obligations similar to those which exist under the current regime, and not to the more stringent obligations placed on existing PSI producers through the amended Directive.

Base Case

- 5.3. Museums, libraries (including university libraries) and archives are not covered by the current PSI Regulations. Central and local government, health services and organisations like Ordnance Survey are already subject to PSI Regulations.

Costs

- 5.4. Inclusion of museums, libraries (and university libraries), and archives is unlikely to create cost. The introduction of the 2005 regulations was not associated with loss of revenue for the organisations covered at that point. The charging rules for museums, libraries (including university libraries) and archives entering scope now are slightly more flexible than the rules for general organisations affected in 2005. Therefore, implementing the Directive will create a similar position where the expansion of PSI to these organisations is assumed to create a similar situation of zero net costs. (i.e. no loss of revenue). However, consultation responses highlighted several possible impacts on these organisations. There is a possible detrimental impact to museums through the effect the Directive may have on their trading subsidiaries. A further possible cost may be incurred by cultural PSI creators due to the complexity of dealing with documents that may involve international issues of religion, politics, and ethical treatment.

Benefits

- 5.5. The European Commission argued that the extension to cover these organisations would ensure that all publicly-funded material will be available for re-use. It is put forward that there are a number of economic benefits from higher levels of PSI re-use, which are discussed in more detail in Annex C.

Net Impact

- 5.6. The direct impact of the amendment will be broadly neutral but the extension of scope and subject matter for PSI will potentially contribute to the entire Regulations' aim of boosting the volume of PSI re-use, which has potential economic benefits.

Article 3 – Mandatory Re-use

Description

- 5.7. Amendments to Article 3 introduce the presumption that PSI documents will be available for re-use. This is understood to mean that where a request is made, some form of licence will be issued. For museums, libraries (including university libraries) and archives the discretion over whether to permit re-use remains.
- 5.8. The amending Directive does not create any new rights of access to information, so these provisions are not relevant to information which, for example, is withheld in England and Wales under the Freedom of Information Act (FOIA).

Base Case

- 5.9. The original PSI Directive provided all public sector bodies with the discretion over whether to permit the re-use of generally accessible documents by external actors.

Costs

- 5.10. Where a standardised, non-transactional licensing mechanism was used to deal with requests by offering a licence at marginal (zero) cost this would not increase administration costs for public sector bodies. The Open Government Licence is such a mechanism and requires very few resources to set up and administer.
- 5.11. Where public sector bodies operated a charged licensing policy, mandatory re-use for accessible products does not represent an undesirable outcome since requests represent demand for products.
- 5.12. Hence any costs associated with mandatory re-use are negligible.

Benefits

- 5.13. The European Commission argued that mandatory re-use will lead to more individuals and organisations utilising PSI, which, in turn will create economic activity. The general economic benefits from higher levels of PSI re-use are discussed in more detail in Annex C.

Net Impact

- 5.14. The direct net impact of this proposal is likely to be positive to broadly neutral, however it may contribute to the overall aim of the Regulation to increase PSI re-use.

Article 4 – Redress Mechanism

Description

- 5.15. When an individual or an organisation has a dispute with a public sector body over PSI then they have the right to redress. The first stage of this process is for the PSI requestor to make a complaint to the body it is requesting information from. If the outcome of this complaint is unsatisfactory for the PSI requestor they can take their complaint to the ICO, who will now have the responsibility for investigating PSI disputes and making binding decisions. If either party disputes the ICO's decision then this is appealable to the Information Rights First-Tier Tribunal (FTT).
- 5.16. There is one exception to this; where a complaint concerns charging above marginal cost, the ICO will investigate the complaint, but will make a recommendation, not a binding decision. Having considered the ICO's recommendation in these cases, the public sector body will confirm its decision, which would be appealable to the FTT which could make the decision binding.

Base Case

- 5.17. Under the current PSI Regulations, there is a process which allows a re-user, or potential re-user, to make a complaint. The first step would be to submit a complaint to the public sector body concerned. If, following investigation, the complainant remains dissatisfied then it may refer the matter to the Office of Public Sector Information (OPSI) to investigate. The complainant and/or the public sector body may request that the recommendations of OPSI (part of The National Archives) are reviewed by the Advisory Panel for Public Sector Information (APPSI) under the PSI Regulations.

Costs

ICO

- 5.18. The ICO's investigatory role will be similar to that which OPSI already discharges under the 2005 Regulations in terms of the activities undertaken by staff investigating complaints.
- 5.19. Under the existing redress mechanism, in place in the UK since 2005, there have been fifty-two complaints to date, of which nine have gone through the full process of investigation, publication and monitoring of recommendations. The other 43 were resolved through facilitated discussions or policy interventions. Of these, two reached the review stage. With the redress mechanism switching to the ICO, a body with binding powers, we may see an increase in the number of complaints may be observed; this view is corroborated by consultation evidence where a number of stakeholders highlighted a possible increase in cases if this switch to the ICO materialised. However, in the absence of a robust alternative estimate we it is assumed that the ICO will assume that the ICO receives a similar level of PSI complaint cases to now. Consultation with the ICO suggested that their costs of processing a complaint case will be the same as for OPSI. Under the assumption that costs and volumes remain the same then moving the redress mechanism represents a transferred cost from OPSI to the ICO⁹.
- 5.20. The cost to the ICO of investigating PSI complaints is based on the following assumptions:
- *Volume of complaints a year:* Based on the current volume of complaints over the past nine years it has been assumed the ICO would have to fully investigate one complaint a year.
 - *Investigation Costs per Complaint:* The cost to the ICO to investigate a complaint is estimated at £11,400 based on the current expenditure levels for OPSI to fully investigate complaints.
- 5.21. This leads to annual costs of £11,400 for the ICO of investigating PSI complaints. This may be an underestimate as it only takes into account the volume and costs of the ICO fully investigating PSI complaints. Currently, the majority of PSI complaints do not require full investigation from the OPSI but there may still be costs of assessing these complaints. There could be further costs for the ICO if they receive a higher volume of cases than OPSI currently investigates. However, as the ICO is a larger organisation than OPSI they may bring greater efficiencies to investigating PSI complaints and which may lead to a reduction in the investigation costs per complaint.
- 5.22. The ICO may experience further costs if any of their PSI decisions are appealed to the First Tier Tribunal. The cost to the ICO of reviewed decisions is based on the following assumptions:
- *Cost to ICO if decision reviewed:* It is estimated that the cost to the investigatory body if their decision is reviewed is £1,500 per review. This is based on current costs to OPSI and is similar to the cost the ICO experience for FOI appeals.

⁹ If the volume of PSI complaints investigated by the ICO is higher than that currently investigated by OPSI then this will create further costs to the ICO. If the ICO receives additional funding to deal with this increase in cases then this may be a cost to the MoJ. However, there is also a possibility that due to being a larger organisation there will be efficiency savings and the ICO will see a lower cost to investigating cases which if combined with the same volumes as currently would lead to a saving. If there is a higher volume of cases and a lower cost per case then the cost to the ICO would depend on the magnitude of these two effects.

- *Number of reviews a year:* The current process has seen one review in nine years. Therefore it is assumed that there will be the equivalent of 0.1 reviews a year.¹⁰
- 5.23. This creates annual costs to the ICO of £170 due to reviews of their decisions. This may be an underestimate if there is a greater volume of complaints or a greater proportion of complaints are appealed following implementation of the updated Regulations.
- 5.24. This creates yearly costs to the ICO of £11,570 to deal with complaints if they become the PSI regulator. This may be an underestimate if the volume of PSI complaints increases post regulation, although the ICO may bring greater efficiencies to complaint investigation.
- 5.25. There could also be a number of other costs for the ICO associated with this transfer of Regulatory power. These include:
- Costs associated with training staff to be able to make competent judgements on PSI complaints and appropriate liaison costs to ensure knowledge transfer between OPSI and the ICO.
 - The ICO may be required or wish to publish guidance on PSI matters.
 - The administrative cost of processing PSI complaints.
 - There may be additional costs for the ICO of investigating complaints relating to marginal cost.
 - Costs associated with answering requests for advice regarding the new PSI Regulations.
 - The ICO may need to seek legal advice from the Government Legal Department to deal with any PSI-related complaints or Regulation matters.
- 5.26. The ICO have estimated measures such as drafting new guidance, internal training, meetings with key stakeholders and promotions may cost around £35,000¹¹. These incurred costs will be a one-off cost to the ICO; however a number of other costs identified but not monetised, such as processing complaints and provision of legal advice, will be ongoing costs.
- 5.27. This leads to an estimated initial cost of almost £47,000 for the ICO to become the PSI Regulator with an ongoing annual cost of just over £11,000. This may, however, be an underestimate if the ICO experiences more complaints than OPSI currently do and if there are further additional costs beyond those outlined in paragraph 5.26.

First Tier Tribunal

- 5.28. Moving the redress mechanism to the ICO moves the appeal process to the FTT. The impact of moving the appeal process to the FTT is based on the following assumptions:
- *Cost per day of a review panel:* The cost of providing a review panel through the First Tier Tribunal is estimated to be £1,000 per day.
 - *Number of days a review panel sits for:* An appeal requires 7.7 days of the panel sitting.¹²
 - *Number of reviews a year:* The current process has seen one review in nine years. Therefore it is assumed that there will be the equivalent of 0.1 reviews a year.
- 5.29. This creates an estimated annual cost of £860 for the FTT from appeals against ICO decisions.

Benefits

- 5.30. In the IA supporting its original (2011) Proposal to amend the PSI Directive, the European Commission made an economic argument for strengthening the redress mechanism. The thrust

¹⁰ There has been one review of OPSI decisions in the past nine years. While it is possible that due to the redress mechanism moving to the ICO this number may increase, in the absence of any robust alternative evidence it is assumed to remain the same. Around 1 in 4 of the ICO's FOI decisions are appealed to the FTT.

¹¹ Within a range of £30,000 - £40,000

¹² This assumes the new review process takes the same length of time as the current system. The FTT is an established redress route and as such they may resolve cases in fewer than 7.7 days. While 64% of cases take 7.7 days, some cases can take up to 325 days to resolve if they moved through the full OPSI process.

of this argument was that where redress mechanisms were weak, this prevented PSI users from fully enforcing their rights, thus restricting the economic benefits associated with PSI. The introduction of a 'stronger' redress mechanism in the form of the ICO may encourage current and potential PSI users to exercise their rights which in turn may generate further economic benefits associated with increased use of PSI. These wider benefits are addressed in Annex C.

- 5.31. With the redress mechanism moving to the ICO, these functions do not have to be carried out by OPSI and thus there is a saving from OPSI no longer having to incur these costs. The direct impact on society of this is neutral because these savings are transferred to the ICO as a cost of having to regulate PSI.
- 5.32. As the ICO have a right of appeal tribunal above them in the form of the FTT, APPSI will no longer hear PSI appeals. The saving of APPSI no longer having to hear PSI appeals is based on the following assumptions:
- *Cost per day of a review panel:* The cost of providing a review panel through APPSI is estimated to be £1500 per day.
 - *Number of days a review panel sits for:* An appeal currently requires 7.7 days of the panel sitting.¹³
 - *Number of reviews a year:* The current process has seen one review in nine years. Therefore it is assumed that there will be the equivalent of 0.1 reviews a year.
- 5.33. This leads to an estimated annual saving of £1,300 from APPSI not having to hear PSI appeals.
- 5.34. By moving the redress mechanism to the ICO/FTT there may be efficiency savings due to these institutions being established redress mechanisms for a number of regulations. Efficiencies gained through administrative and staffing means may lead to PSI complaints being resolved more quickly. These efficiencies may also manifest through decisions by the regulator that are more consistent with the Regulations.

Net Impact

- 5.35. The monetised impact of reforming the redress mechanism is an estimated net cost of just under £35,000 in the first year. Whilst the cost of investigating PSI complaints represents a transfer from OPSI and APPSI to the ICO and the FTT, there will be additional (one-off) costs to the ICO of assuming these Regulatory powers due to the need to issue guidance and train staff. Although many of the costs incurred by the ICO are likely to be offset by the abolition of APPSI.
- 5.36. On an annual basis there is an estimated minimal net benefit of £440. This is due to the costs of fully investigating PSI complaints being transferred from OPSI to the ICO, as well as the cost of an appeal to the FTT being less costly than an appeal to APPSI.
- 5.37. Despite this, the strengthening of the redress mechanism is likely to empower and encourage PSI users contributing to the overall aim to increase PSI re-use.

Article 6 – Charging

Description

- 5.38. Under Article 6 of the amending Directive, many public organisations would no longer be allowed to charge more than the marginal cost of allowing re-use of their PSI. In most cases, this means PSI would be free (as, for example, it costs nothing to email out a copy). This is contrasted to the original PSI Directive, which allowed full cost recovery plus a reasonable return on investment.
- 5.39. However, there are three exceptions to the marginal cost rule that are expected to substantially lower the impact:

¹³ This assumes the new review process takes the same length of time as the current system. The FTT is an established redress route and as such they may resolve cases in fewer than 7.7 days. While 64% of cases take 7.7 days, some cases can take up to 325 days to resolve if they moved through the full OPSI process.

- The first exemption applies to “public sector bodies that are required to generate revenue to cover a substantial part of their costs relating to the performance of their public task”.
- The second exception can apply where an organisation is required to recover costs related to a particular document.
- The third exemption applies to libraries (including university libraries), museums and archives. This means that those cultural organisations which would be brought within scope under the amending Directive would be excluded from the limitation to marginal cost charging.

5.40. Where these exceptions apply, organisations may charge for the cost of collection, production, reproduction and dissemination of the PSI, together with a reasonable return on investment.

Base Case

- 5.41. The current position on charging for information which public sector organisations supply on a re-use basis is set out in HM Treasury’s *Managing Public Money*¹⁴.
- 5.42. Following the *Cross-Cutting Review of the Knowledge Economy of Government Information* (2000)¹⁵ the policy of licensing and charging at marginal cost for much government information was established, with certain exceptions, notably trading funds. This policy was followed up by the *Power of Information Review* (2007). The *Open Data White Paper* (2012) reviewed and extended expectations around information provisions and licensing mechanisms.
- 5.43. The UK Government Licensing Framework (UKGLF) reflects the current government position on licensing and incorporates a default policy of marginal cost pricing, together with a process for gaining exception¹⁶ to that policy. The UKGLF is the norm for Crown bodies. Other public sector bodies, with control of their copyright assets, are advised to operate in line with the UKGLF as a matter of best practice. Where Crown organisations are exempted from the marginal cost pricing policy, they are required to gain accreditation to the Information Fair Trader Scheme¹⁷(IFTS). Membership of IFTS is also open to non-Crown bodies which operate charged licensing schemes as a best practice model.

Costs

- 5.44. Any revenue currently generated by organisations through PSI, which would be prohibited under the new Directive, would be transferred from these organisations to the individuals/organisations that purchased PSI, i.e. the revenue no longer received by the PSI producer is kept by the individual/organisation who previously would have had to pay. This in itself implies no direct economic cost to society.
- 5.45. There would be costs to society if this loss of income prevented or restricted the services offered by an organisation that received revenue from charging for PSI. If the revenue from PSI-funded services offered by organisations is impacted, then this loss in revenue may restrict or remove these services. This, in turn, may have an impact on the quality and quantity of PSI produced which may restrict any subsequent economic benefit associated with PSI re-use.
- 5.46. However, these costs are unlikely to appear in practice because of the exceptions to marginal cost charging. **Table 5.1** shows the income each sector receives from the sale of PSI. The only sectors that appear to rely on PSI for revenue are major information traders and museums, libraries (including university libraries), and archives. These are exempt, as are any other organisations that could lose substantial income from marginal cost charging. The overall economic cost of marginal cost charging is therefore estimated to be negligible.

¹⁴https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/212123/Managing_Public_Money_AA_v2_-_chapters_annex_web.pdf

¹⁵ http://webarchive.nationalarchives.gov.uk/+/http://www.hm-treasury.gov.uk/spend_sr00_ccr.htm

¹⁶ <http://www.nationalarchives.gov.uk/information-management/ifts/cost-pricing.htm>

¹⁷ <http://www.nationalarchives.gov.uk/information-management/ifts.htm>

Table 5.1 Summary of Re-use Related Revenues in the Public Sector estimates as of 2012, £ millions	
Sector	Revenue
Central Government	0
Major Information Traders*	138.1
Local Government	0
Health	0.1
Museums, Libraries (including University Libraries), Archives	55*
Total	193.2

*These include trading funds and other organisations which are involved in significant volumes of charged information trading, for example Ordnance Survey and the Environment Agency. These organisations are typically members of the Information Fair Trader Scheme.

Benefits

- 5.47. Restricting the PSI charging regimes of a number of public bodies is designed to encourage PSI re-use by lowering the cost. The wider benefits of encouraging further PSI use are discussed in a separate section on the broader impacts of the Regulations.

Net Impact

- 5.48. The direct impact of the amendment is expected to be negligible due to the exemptions that exist. For those areas where the exemption does not apply, the cost of PSI to re-users should fall and this may contribute to the Regulations' aim of boosting the volume of PSI re-use, which has potential economic benefits.

Overarching Impacts

The amending Directive is aimed at increasing PSI re-use through a combination of proposals to amend a number of articles in the original Regulations. As well as the articles discussed above a number of others, such as Article 5 (available formats) and Article 7, (transparency) aim to boost PSI re-use. If the combined proposals lead to an increase in the volume of PSI re-use this potentially has a number of impacts.

Costs

- 5.49. Amending the Directive as outlined above, especially in regards to charging and the redress mechanism, may lead to an increase in requests to organisations producing PSI. Any increase in requests may lead to additional costs for organisations that receive them if they have to increase the amount of resources they allocate to dealing with PSI requests. These costs may manifest themselves in an overall increase in administrative costs or these resources may need to be diverted from other areas of the organisations, which may be detrimental to other services these organisations provide. This possibility has been substantiated by consultation responses where a number of respondents highlighted the possibility of the new Directive leading to higher levels of requests to organisations which in turn may increase the associated administrative burden.
- 5.50. A further potential cost may be through restriction on future government activity. If marginal cost charging policies (article 6) have the effect of removing commercial and cost-recovery policies from available funding models options for public bodies, this may limit the development of new products and services. However, there are exemptions to the marginal cost restrictions which may restrict the scope of this possibility.

5.51. There is a potential risk to the quality of data and information produced by public sector bodies if existing funding models are disrupted. This could occur where these disruptions mean an organisation cannot afford to continue offering its current level of services. The potential for this impact is, however, expected to be limited.

Benefits

5.52. The EU Commission have reasoned that PSI is currently underutilised and the full potential economic benefit of PSI re-use is not being achieved. As such the proposed amendments to the Regulations are aimed at encouraging greater re-use.

5.53. The following proposals have been identified by the Commission as measures to realise more of the economic benefits of PSI by encouraging greater re-use:

- Article 1 – Increasing the scope of the regulation to include ‘cultural bodies’ so the base of PSI which can be utilised through re-use expands.
- Article 3 – Removing the discretion over whether to allow re-use should reduce the barriers to PSI re-use.
- Article 4 – A stronger redress mechanism is aimed at empowering PSI users and ensuring they can fully exercise their right to re-use PSI.
- Article 5 – If public bodies decide to provide PSI in a ‘standard machine readable format’ this will reduce the costs of using PSI for re-users.
- Article 6 – Introducing the marginal cost obligation will lower costs for PSI re-users.

5.54. These amendments are aimed at strengthening the rights of re-users and increasing legal certainty across the EU which should boost information sharing in the single market. Amendments which lower costs associated with PSI re-use should also encourage greater levels of re-use. Greater access to and usage of PSI should create beneficial economic activity through entrepreneurship leading to job and product creation. There are potential further social benefits from services or products that are developed from this expanded access to PSI.

5.55. Amendments to Article 7 are aimed at increasing transparency around PSI. Research on public governance by organisations such as the OECD¹⁸ and WTO¹⁹ suggests that transparency provides a tool to increase the efficiency of public procurement²⁰. Accessible information on public procurement at a European level would typically fall within the scope of the PSI Directive. Efficiencies in public procurement, if realised, would release public resources for other projects or reduce the need for taxation.

5.56. The amended Directive may contribute to more efficient use of public services. Potentially, better access to information, through a more diverse set of products based on PSI, may help people navigate public services more effectively.

¹⁸ http://www.oecd-ilibrary.org/governance/government-at-a-glance-2011/transparency-in-public-procurement_gov_glance-2011-47-en

¹⁹ http://www.wto.org/english/tratop_e/gproc_e/gptran_symp_oct02_pdf_files/symp_oct02_2_hoe_eve_e.pdf

²⁰ One mechanism suggested is that availability of data on public procurement will enable the identification of suspicious activity or discrimination in addition to widening access to potential opportunities.

SUMMARY OF IMPACTS

- 5.57. This IA has identified a number of monetised impacts. The ICO is estimated to experience monetised costs due to fully investigating PSI complaints, and handling appeals against their decisions. There would also be one-off costs from the ICO issuing guidance , a number of staff costs and stakeholder meetings. These are estimated at around £0.16m over the appraisal period. .
- 5.58. There are monetised benefits resulting from the OPSI and the board that hears appeals against OPSI decisions - Advisory Panel on Public Sector Information (APPSI) no longer having to investigate PSI complaints. This would lead to a saving of around £0.13m over the appraisal period.
- 5.59. The net monetised impact is estimated at around £-0.03m over the appraisal period.
- 5.60. The assessment has also identified non-monetised costs. There would be impacts from extending the scope of the PSI Directive to cultural organisations which may create additional costs due to the cultural complexity of their information. If the amending Directive leads to an increase in requests for PSI, then some organisations may experience increased costs of processing these additional requests.
- 5.61. There would be non-monetised benefits from the potential for increased flow of information within the single market by encouraging further re-use of PSI. Increased re-use of PSI may lead to subsequent economic and social benefits. By extending the scope and accessibility of PSI there are also benefits associated with greater public sector transparency.

Annex A: Specific Impact Tests

- A.1. When drawing up an Impact Assessment it is required to consider the influence of the policy on specific areas of society and the economy with respect to the amending Directive.

Human Rights

- A.2. No specific impact is foreseen in this area.

Justice Impact Test

- A.3. Issues discussed above in connection with the redress mechanism.

Health Impact Assessment

- A.4. No specific impact is foreseen in this area.

Competition Assessment

- A.5. There is likely to be an improvement in levels of competition within and between the public and private sectors, due primarily to the lowering of barriers to entry in markets which make use of public sector information. These effects are discussed in the main body of the text above and in **Annex C**, and not recapitulated here.

Small Firms Impact

- A.6. Introduction of amendments to the PSI Directive is again likely to be beneficial to small businesses through reductions in the barriers to entry of markets which depend on public sector information. These effects are discussed in the main body of the text above, in **Annex C** and in **Annex E**, and not repeated here.

Carbon Assessment

- A.7. No significant direct impact on carbon emissions is foreseen. Indirect effects may exist, for example where re-use of public sector information leads to transport efficiencies. However we are not able to present any quantification of such indirect effects here.

Equalities Impact Assessment

- A.8. Digital inclusion issues exist where certain socio-economic groups, such as the elderly and those from lower-income households, do not have the same ability to take advantage of opportunities arising from information technology. The extent and economic importance of the digital divide is set out in a report prepared for the government's Digital Champion Martha Lane Fox in 2009²¹. As changes arising from public sector information policy are likely to be manifested in the range and price of digital products and services, the effect of such policy on digital inclusion issues is of interest here.

²¹ www.parliamentandinternet.org.uk/uploads/Final_report.pdf

- A.9. Where access to the internet poses a general social problem we note that this gap is an active target of government policy. Organisations such as the Government Digital Service²² and the cross-sector body Go On UK²³ are engaged in efforts to reduce the digital divide. Their success would imply a reduced distributional impact over time. This leaves open the question of whether, among citizens able to utilise digital services, applications of public sector information would place certain groups at a particular disadvantage.
- A.10. It may be informative to consider a case study on the user base of an actual application which re-uses public sector information. mySociety (part of an independent charity) has a mission to “help people become more powerful in the civic and democratic parts of their lives, through digital means.” It runs TheyWorkForYou.com, a well-established website which re-uses Parliamentary information. For example the site republishes Hansard (Parliamentary transcripts) in such a way that a user can find a profile of a particular member’s speeches. The site receives around 200,000 unique visits per month, a figure which can double at key points in the political cycle, such as general elections. In June 2011, mySociety published a report²⁴ on users and usage of TheyWorkForYou.com. The report found, in comparison to the British internet user population: an over-representation of men; some over-representation of people over the age of 54; an over-representation of disabled users; a possibility of bias in terms of ethnicity; an over-representation of high income over medium income users, with lower income users fairly represented; and a bias towards those with higher education. Taken together these indicators suggest a tempered, yet beneficial impact on digital inclusion. For further discussion of the representativeness of the sample for users of the service, please see the report. While illustrative, this remains a single case study.
- A.11. Turning now to the range of digital services available, reducing barriers to the re-use of public sector information would increase the range of products and services available. If this argument is true then the effects may serve to reduce digital inclusion issues. For example, where information is available via the internet, enabling its re-use may result in mobile services becoming available.
- A.12. An illustration of this tendency to extend the reach of public sector information can be seen in the outputs of the Foreign and Commonwealth Office’s hackday²⁵ in January 2014. Four winning entries were selected, including FCO Alerts²⁶, a mobile app providing customisable alerts from the FCO travel alert webpage²⁷.
- A.13. The Government Digital Service identifies extension of access to public services to mobile platforms as an important tactic in the reduction of digital inclusion issues²⁸. The intuition here arises from access to mobile phones being more prevalent than home broadband. For example, there are around four times as many SIM cards per capita as fixed broadband lines in the UK²⁹. Hence, where re-use of public sector information increases the mobile accessibility of information it may serve to ameliorate rather than to exacerbate digital inclusion issues.

²² <http://digital.cabinetoffice.gov.uk/2013/06/14/introducing-digital-inclusion-team/>

²³ <http://www.go-on.co.uk/>

²⁴ http://blogs.dev.mysociety.org/wp-content/uploads/2011/06/TheyWorkForYou_research_report-2011-Tobias-Escher1.pdf

²⁵ <https://storify.com/foreignoffice/fco-hack-2014>

²⁶ <https://play.google.com/store/apps/details?id=uk.co.eleusis.android.fcoalerts>

²⁷ <https://www.gov.uk/foreign-travel-advice>

²⁸ <http://digital.cabinetoffice.gov.uk/2011/11/11/mobile/>

²⁹ <http://scoreboard.lod2.eu>

Annex B: Post Implementation Review Plan

Basis of the review: A Post Implementation Review is, in effect, required through Article 13 of the amending Directive by July 2018. This requires the European Commission to review the policy at European level. It also requires Member States to submit reports on the application of the amending Directive. It is suggested that the UK prepare its report in accordance with the suggested timescale. We also suggest that the topics required are considered in economic terms in order to fulfil the dual purpose of a domestic Post Implementation Review. This will be efficient in terms of administration, and may assist officials to influence European deliberations on the success and development of the policy.

Review objective: To consider whether the transposition of the amending Directive to the UK has been complete and the chosen implementation options continue to represent the best choices.

Review approach and rationale: The review should cover topics including the following: the availability of public sector information; the conditions under which public sector information is made available; the functioning of the redress mechanism; review of implementation of Article 6 on charging.

Baseline: As set out in this Impact Assessment.

Success criteria: Anticipated effects prove correct.

Annex C: Information Related to Benefits from Marginal Cost Pricing

- C.1. The purpose of this Annex is to provide the detail underpinning our summary in Section 5 of the available evidence on the benefits of marginal cost charging policies for public sector information.
- C.2. To recap: the expected mechanisms for these benefits began with increased demand for PSI by industry as an input to production, stimulated by decreases in price and reduced transaction costs. Price reductions were expected enable a wider range of organisation types (or business models) to exploit PSI, such as SMEs and charities. The resulting expansion of supply would ultimately enable consumers to enjoy a wider range of PSI-based products at lower prices. The anticipated result would then be an increase in total welfare.
- C.3. This section attempts to discuss the benefits to economic welfare generated by such a mechanism. Since the millennium a number of studies valuing the economic potential of PSI have been published. These include academic, regulatory and consultancy works alongside those instigated by the European Commission itself. This section outlines some of the most helpful and influential works with relevance to the proposal under consideration. It then considers what estimates could be drawn from them in a UK context. It is fair to say that the majority of the work focuses on the use of PSI by industry, rather than the surplus consumers enjoy from PSI products. The latter element would be important where consumer surplus was large compared to producer surplus (for end-user products), a situation which could well be the case with PSI products, e.g. free smart phone applications. We therefore suggest further avenues of research at the end of this section.
- C.4. The Office of Fair Trading's report *Commercial Use of Public Information*³⁰ (CUPI, 2006) estimated the size of public sector information to the economy to be £590m (2006). This estimation of market size attempted to take into account both revenues accruing to public sector information holders, alongside a measure of consumer surplus. It was expected that reforms could raise this figure to around £1.1bn. The necessary reforms occurring particularly in the areas of high pricing and access to 'upstream' data. This implied a potential economic benefit from the reforms on the order of £0.51bn (2006).
- C.5. Were marginal cost charging under mandatory re-use introduced without exception, unduly high pricing would be resolved by definition. The scheme would also be likely to remove incentives towards restriction of access to upstream data by effectively removing the ability to charge. Mandatory re-use could potentially resolve some of the issues around lack of exploitation of data. Hence, an adjusted (HMT GDP deflator to 2011 prices) CUPI based estimate of the potential economic benefit could be in the order of £0.573bn.

Use of GDP Deflator in Adjustments

- C.6. Using the GDP deflator may underestimate the growth in the potential size of PSI-related markets. One reason to believe this lies in the increased adoption of consumer computing technology in the form of smartphones, laptops and tablets³¹. This trend would work to increase the potential customer base for products using public sector information as an input, for example, GPS enabled navigation. The UK telecommunications regulator, Ofcom, reports, "The widespread take-up of mobile data services, including dongle-based mobile broadband and smartphone use, resulted in an increase in global data consumption of 159% in 2010."³² These trends could have accelerated the growth in the potential size of the market for PSI-based goods, as consumer capacity to make use of PSI-based goods in terms of computing devices

³⁰ <http://www.offt.gov.uk/OFTwork/publications/publication-categories/reports/consumer-protection/oft861>

³¹ <http://idgknowledgehub.com/mobileidg/idg-mobile-survey/>

³² <http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr11/international/>

and data connections grew rapidly – particularly for products suited to mobile devices, e.g. real-time transport advice.

- C.7. There is also reason to believe that the volume of information available to consumers has risen swiftly. Hilbert and Lopez (2011) estimate the global volume of stored information to grow at 23% per annum³³. If the public sector followed this trend there may simply be more PSI in 2012 relative to, say, 2006. This trend should also imply that there would be more complementary information available for re-use, indirectly increasing the value of PSI.
- C.8. If public sector information has benefitted from these trends, then the general GDP deflator may not adequately reflect the growth in potential of PSI-based markets. We do not present or use an alternate adjustment methodology here, but these facts could be seen as indicative of growing market potential.
- C.9. In 2008 HM Treasury commissioned an analytical work, *Models of Public Sector Information Provision via Trading Funds*³⁴, from scholars at Cambridge University (lead author Rufus Pollock). This paper analysed the costs and benefits of a move to marginal cost charging for six large UK trading funds. The increases in net benefit estimated in the analysis were: Ordnance Survey (£156m), Companies House (£1.9m), the Met Office (£1.03m), the UK Hydrographic Office (£0.34m), Land Registry (£1.2m) and the Driver and Vehicle Licensing Agency (£3.7m). The total increase in benefit would then be £164m (2008). An adjusted estimate (HMT GDP deflator to 2011 prices) would be £175m. The net cost (after tax increases) to government would be around £15m (2008). The stated methodology would now overestimate tax take on production as corporation tax has been reduced since publication.

Ordnance Survey in the Evidence on Benefits

- C.10. One issue in generalising the above analysis for impact assessment purposes is the concentration of anticipated benefits in Ordnance Survey. In this subsection we discuss some of the developments with respect to Ordnance Survey which have significance in the interpretation of both CUIP 2006 and Pollock 2008.
- C.11. Ordnance Survey was the highest profile case discussed in CUIP. Between 2009 and 2011, partly in response to that report, a programme of business change took place. This included the launch of OS OpenData, which provides free access to a number of datasets under permissive licensing terms³⁵. With respect to its core commercial products Ordnance Survey has reduced the number of specific use contracts in operation and engaged more positively with regulators. These actions are likely to have helped to realise a proportion of the envisaged benefits, leaving a reduced potential for gains from further reform.
- C.12. The concentration of benefits in Ordnance Survey cited in Pollock 2008 (around 95%) suggests the changes in licensing and pricing over the 2009-2011 period may have had an impact on the amount of benefit to be realised from a marginal cost charging policy. In particular, if the products within the OS OpenData range are, or represent a close substitute to, the categories in the 2008 analysis, then moving to a statutory marginal cost charging regime where the policy is practically in effect should not be expected to yield extensive further benefits.
- C.13. The categories of products analysed for the benefit given in Pollock 2008 included Large Scale Topo and Transport Network Products. Neither OS MasterMap Topography Layer nor OS MasterMap Integrated Transport Network were included in the OS OpenData product range. This implies that the release of OS OpenData would not fulfil the conditions required by the 2008 analysis. However, some of the products released may form sufficiently close substitutes to decrease the additional benefit it may be possible to realise from further changes to charging poli-

³³ <http://www.sciencemag.org/content/332/6025/60.abstract>

³⁴ www.berr.gov.uk/files/file45136.pdf

³⁵ <http://news.bbc.co.uk/1/hi/8597779.stm>

cy. To summarise the impact of these statements: the reforms over 2009-2011 are unlikely to have met the conditions required to deliver the full benefits envisaged by the earlier analyses.

- C.14. Ordnance Survey commissioned a study into the economic impact of its OpenData offering. The full report is not yet available for review. However, the published synopsis, *Assessing the Value of OS OpenData™ to the Economy of Great Britain – Synopsis*,³⁶ concluded, “The study estimates that the OS OpenData initiative will deliver a net £13.0 million – £28.5 million increase in GDP in 2016. The main components of this increase are net productivity gains (£8.1 million – £18.2 million) and additional real tax revenues (£4.4 million – £8.3 million).” As the document does not present all the information which went into the analysis it is not straightforward to assess how much weight should be placed on them. Nevertheless, the stated conclusions accord with expectations in other papers of economic gains to be had from marginal cost charging policies being applied to geospatial information. We cannot include the benefits suggested in this report elsewhere in this Impact Assessment as the policy is already in force and so its effects will not be changed by the transposition of amendments to the PSI Directive.

The Commission’s Impact Assessment

- C.15. The European Commission, as part of its preparation for proposing amendments to the PSI Directive, commissioned a study from Information Economics, *Review of Recent Studies on PSI Re-use and Related Market Developments*³⁷ (Vickery, 2011). The review concluded that “aggregate direct and indirect economic impacts from PSI applications and use across the whole EU27 economy are estimated to be of the order of EUR 140 billion annually.” While easing access, including implementation of marginal cost charging could lead to an increase of around €40bn in PSI-related economic activity across the EU27. If distributed in a similar fashion to the UK/EU proportion of GDP or population, this would imply an estimate of about €5.2bn (about £4.2bn) for the UK (2011) for the benefits to be derived from the policies under consideration in this Impact Assessment.
- C.16. The paper presented a review of literature relating to policies connected to the amending Directive. The headline values presented relate to syntheses of literature on the effects of policies such as marginal cost charging and also to related issues such as increased public sector efficiency through more effective re-use of its own data. As such, while we note and present the Commission’s estimate we will not make significant use of the figures in deriving our own benefits estimate due to the risk of overlapping evidence.
- C.17. The headline value presented in the Commission’s paper was in part extrapolated from UK papers by Pollock^{38 39}, in particular *Welfare Gains From Opening Up Public Sector Information in the UK* (2010). The original estimates given in that paper were £4.5-6bn for the high-range and £1.6-2bn for the mid-range. By high- and mid-range is meant the values of model parameters used to represent elasticity of demand and multiplier effects. A mid-point for the mid-range estimate would be about £1.8bn (2011). Due to sensitivity analysis considerations while we report this figure, we will down-weight it when developing a best-estimate of benefits. We discuss some of the issues connected to sensitivity of elasticity and multiplier parameters within the model in the next subsection, which the non-technical reader may decide to skip.

Sensitivity of parameter values in Pollock 2010

- C.18. An important issue in interpreting the results of *Welfare Gains from Opening Up Public Sector Information in the UK* (Pollock 2010) lies in the paucity of empirical evidence on the values of model parameters. In particular the value of the multiplier parameter, which expresses how im-

³⁶ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/207692/bis-13-950-assessing-value-of-opendata-to-economy-of-great-britain.pdf

³⁷

http://ec.europa.eu/information_society/policy/psi/docs/pdfs/minutes_psi_group_meetings/presentations/15th/02_market_value_psi_eu_vickery.pptx

³⁸ http://rufuspollock.org/economics/papers/psi_openness_gains.pdf

³⁹ http://rufuspollock.org/economics/papers/economics_of_psi.pdf

portant a role in value chains public sector information plays. This is acknowledged in the work, which uses ranges of values and also acknowledges that the values of key parameters will vary across products. We will use the mid-range estimate as the elasticity assumptions made are closest to (although more optimistic than) those made in CUPA Annex G⁴⁰ (2006) which were grounded in a study specifically of the UK PSI market.

C.19. We are not aware of any closely related benchmarks for the multiplier parameters used. The grounds described for the parameters used included: new products; complementary products; reductions in transaction costs; and public sector efficiency gains. While these grounds are compelling, the mapping to particular numerical values of the multiplier parameter is made as an assumption.

C.20. To discuss the sensitivity of the estimates provided within the context of the model as given, this gave the welfare change equation:

$$\Delta W = F \left(- (1 - \theta)(1 - g) + \theta \frac{\lambda \varepsilon}{2} \right)$$

$$\Delta W = F \left(- (1 - \theta)(1 - g) + \theta \frac{\lambda \varepsilon}{2} \right)$$

C.21. Where θ is a distributional weight for the project under consideration whose value is given as 0.8. The numeraire used being given as the marginal cost of public funds. F is the revenue under consideration, λ is the multiplier, ε elasticity and g the proportion of F coming from government already. After rearranging this becomes:

$$\Delta W = \frac{2}{5} F \left(\lambda \varepsilon + \frac{-(1 - g)}{2} \right)$$

$$\Delta W = \frac{2}{5} F \left(\lambda \varepsilon + \frac{-(1 - g)}{2} \right)$$

C.22. As this equation contains both costs and benefits, from a sensitivity perspective we may be interested in the requirements on parameters λ and ε for ΔW to change signs: i.e. the point at which the model produces zero change. Therefore setting:

$$\Delta W = 0$$

$$\lambda \varepsilon = \frac{(1 - g)}{2}$$

$$\Delta W = 0$$

$$\lambda \varepsilon = \frac{(1 - g)}{2}$$

C.23. If we assume that government does not currently contribute to the funding and would be required to make up the entire cost of provision, $g = 0$, then:

$$\lambda \varepsilon = \frac{1}{2} \lambda \varepsilon = \frac{1}{2}$$

C.24. Hence if demand is unit elastic then the multiplier need would need to be one half or greater for the change in welfare to be non-negative. Alternatively, if the multiplier is one, elasticity of one

⁴⁰ http://www.offt.gov.uk/shared_offt/reports/consumer_protection/oft861g.pdf

half is required, or $\lambda = \varepsilon \approx 0.71$ would also produce the result. Any objections to $g = 0$ should take account of the fact that $g > 0$ would reduce the requirements on λ and ε and thus make $\Delta W > 0$ easier to achieve. With respect to ε , CUPi used values of 0.3, 0.8 and 1.5 at low-, mid- and high-ranges respectively, and we might expect these values to be lower than those used by Pollock since the price cut under consideration in CUPi was smaller than that implied by a marginal cost charging policy. The model employed in CUPi did not involve a multiplier. If $\lambda = 1$, as seems conservative since this value would represent re-use of PSI neither unduly shrinking nor expanding other markets, then the model would suggest benefits at either mid or high ranges. As a consequence we might conclude that the model, on its own terms, is only moderately sensitive to the particular values of λ and ε .

- C.25. The next refinement might be to analyse the shape of the assumed (linear) demand curve in order to investigate its effects on the estimates produced, although producing such an alternate model is beyond the scope of this Impact Assessment.

Revenue base used in Pollock 2010

- C.26. The relatively large numbers reported above (£4.5-6bn, £1.6-2bn) in relation to *Welfare Gains from Opening Up Public Sector Information in the UK* are derived from a model involving a particular revenue base.
- C.27. There are reasons to suggest this base, and hence the benefit figure derived from it, should be smaller. The revenue base used took into account both information sales by government to government and government to the private sector. It may be fair only to assume extremely limited elasticity of demand in the government to government segment. To illustrate, the One Scotland and the Public Sector Mapping Agreement have essentially provided government organisations with all the Ordnance Survey data they might require for internal business purposes. Hence if benefits measure how much the market might expand from its current size, we should exclude from the revenue base that portion of the turnover which we should not expect to expand at all.
- C.28. The turnover of public sector information holders, including sales to government, is F . However, as discussed above, some of this revenue comes from elsewhere in government. It is reasonable to assume that public sector demand for such data is nearly satiated through existing arrangements, and so should not be expected to expand due to a lowering of prices in the same way as private sector demand might. So we must then remove from F that revenue which comes from elsewhere in government. CUPi gave this proportion as $g = 0.45$ (oft861, 3.10). Re-running the analysis with $F' = (1 - 0.45)F = 0.55 \cdot 0.5 \cdot (550 + 400) = 261.25$, $F' = (1 - 0.45)F = 0.55 \cdot 0.5 \cdot (550 + 400) = 261.25$, then, using equations and mid-range parameters ($\lambda = 5, \varepsilon = 2$) from the paper a midpoint estimate would be £1.045bn ($0.4F'\lambda\varepsilon = 0.4(261.25)(5)(2) = 1045$). ($0.4F'\lambda\varepsilon = 0.4(261.25)(5)(2) = 1045$). Inputting this document's estimate of the total relevant government to non-government revenue (circa £150m) the benefit figure, using the same 'mid-range' parameters would be around £0.6bn. Hence a range of values taking the model as given and using a revised base with the 'mid-range' parameters would be around £0.6-1bn. We provide this value here in order to illustrate the significance of the base on the projected benefits.

Deloitte (Belgium) (2011)

- C.29. Further work procured by the European Commission in 2011 included Deloitte Belgium's *Models of Supply and Charging for PSI*⁴¹. This work was a collection of case studies relating to European public bodies and the effect of transition from cost recovery to marginal cost

⁴¹ http://ec.europa.eu/information_society/policy/psi/docs/pdfs/report/11_2012/models.pdf

charging policies. The study found that price decreases stimulated increased demand in terms of units by a significant factor. Austria's Federal Office of Metrology and Surveying (BEV in German) was reported to have implemented price cuts of up to 97% in 2006 and by 2010 revenue was 46% higher than it had been previously. This was primarily due to increases of 250-7000% in demand for various products making up for in volume what was lost in price.

- C.30. The case of Austria's BEV is not necessarily analogous to the UK because, while it is difficult to judge with any confidence from the information available, it may be the case that prices in the UK currently⁴² are more similar to Austrian prices post- rather than pre-policy change⁴³ (rough comparison of 1:50000 scale mapping for internal business use). However the general effect should be considered when assessing the costs of moving to marginal cost charging.
- C.31. In terms of overall economic benefit, the Deloitte paper did not venture a value, and hence its main contribution is towards the assessment of costs and elasticity of demand. In the next subsection we comment on the reliability of download statistics as a proxy for demand.

Interpretation of Download Statistics

- C.32. We interpret estimates of elasticity of demand for PSI as an input to products which have been derived from figures based on downloads of published data cautiously. Where an organisation at first employs cost recovery policies, it is reasonable to expect that all licensed customers are engaged in productive activities. In transitioning to a situation where data is published on the web with no access charge, it is reasonable to expect that a proportion of downloads are for activities which do not directly lead to increased economic activity such as curiosity, repeat downloads, or, least optimistically, automated web crawlers. Some of these, such as speculative downloads may, however, represent the first step in a series of actions leading to an innovative new product; although presently we are not aware of any evidence of the proportion or value attached to this segment. This point would be less applicable where the figures were based on use of application programming interfaces (APIs) for granular access to public datasets. Since the bulk of API requests would be more likely to come from genuine applications, it would be a better indicator of productive use.

Koski (2011)

- C.33. An empirically focussed work was conducted by Heli Koski of the Research Institute of the Finnish Economy, ***Does Marginal Cost Pricing of Public Sector Information Spur Firm Growth?***⁴⁴ (2011). This study used financial data from firms across the European Union, USA and Australia which were involved in geographic information consuming industries, such as architecture, engineering activities and related technical consultancy.
- C.34. The main question considered by the work was whether marginal cost charging policies had an effect on the revenues of individual organisations. Two econometric models were employed for this purpose, and these looked at revenue data from firms operating in the markets detailed above. One point to note is that the international data used would have placed an emphasis on the Spanish move to marginal cost charging which occurred during the 2000-2007 period studied.
- C.35. The primary conclusion of the work was that countries employing a marginal cost charging policy for their geographic PSI could expect 15% higher revenue growth in the relevant industries, particularly among small and medium enterprises.
- C.36. The next subsection comments further on the models used in Koski (2011) in further detail and develops estimates of welfare benefit in a UK context. To summarise, this estimate of welfare

⁴² <http://www.ordnancesurvey.co.uk/oswebsite/docs/ordnance-survey-business-portfolio-price-list.pdf>

⁴³ http://epsiplatform.eu/sites/default/files/ezpublish_media/Schennach.pdf

⁴⁴ <http://ideas.repec.org/p/rif/dpaper/1260.html>

benefit is found to be on the order of £550m. Given the length and complexity of the chain of reasoning involved, this should only be taken as indicative of the possible order of the effect.

Interpretation of Koski (2011)

- C.37. To comment in further detail, the paper⁴⁵ employed two econometric models. The database used was of international firm-level financial data spanning 2000-2007. Of the countries in the database which had also changed PSI charging policy to marginal cost, Spain was most heavily represented; although Austria, Australia and the USA also contributed towards data on companies operating under marginal cost regimes. The 2004 policy change coincided with a period of strong growth in the Spanish construction sector⁴⁶ which may have particularly benefitted the sector under consideration; however similar trends were at work in other EU member states^{47 48}. Some controls for the effects of general GDP growth appear to have been made, meaning the remaining issue would be whether the relative importance of GI in the economy was comparable to the UK.
- C.38. This composition of the available data motivated the author's choice of Spain as the treatment group in Model 2, a difference in difference model comparing the performance of Spanish companies before and after the policy change with international comparators in countries practising cost recovery pricing throughout.
- C.39. Model 1 was a random effects model run on cross-national data. Due to the composition of the database, as described above, Spanish companies would have dominated the pool of companies operating under marginal cost charging. The results showed statistically significant increases in sales growth for SMEs and All companies for companies operating under marginal cost charging regimes; however for Large companies the effect was negative, though not statistically significant.
- C.40. The results showed that Model 1 explained only a low proportion of variability in the data and that Model 2 explained slightly more. So, while marginal cost charging may have a statistically significant effect on sales growth, the magnitude of this effect may be modest in comparison with the other factors affecting sales in firms. However, our primary interest here was in whether the marginal cost charging for certain PSI had an effect on revenue in relevant firms, which it appears to have had.
- C.41. The results of this paper provide evidence for the growth-enhancing potential of marginal cost charging for SMEs and the private sector in general. It is harder however, to translate this into an overall welfare benefit for two reasons. First and foremost is the question of the base we should consider: the current size of the affected sector. Secondly, the main result of this work is an increased growth rate, meaning the benefits in year 2 are greater than year 1, which, while encouraging, makes calculation of the benefit we should consider less reliable. In line with the per annum methodology used throughout this paper we will take the value after three years as a per annum proxy, since Koski observes that the benefits of increased growth become apparent after two years.
- C.42. To translate the increased growth rate into an economic benefit we may perhaps consider the UK IT industry as the base. As a whole, this industry was valued at £30.6bn in 2010 with a growth rate of 3.6%⁴⁹. If this sector grew 15% faster as a result of marginal cost charging policies, the results would be worth £170m in year one, and £530m in year three.
- C.43. Turning to other sources for information on revenue base and growth rates: in 2006 the European Commission sponsored report *Measuring European Public Sector Information Re-*

⁴⁵ <http://www.etla.fi/wp-content/uploads/2012/09/dp1260.pdf>

⁴⁶ <http://www.bde.es/webbde/SES/Secciones/Publicaciones/InformesBoletinesRevistas/BoletinEconomico/11/Ene/Files/art3e.pdf>

⁴⁷ http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Construction_sector_statistics

⁴⁸ <http://www.bis.org/ifc/publ/ifcb31j.pdf>

⁴⁹ http://www.innovateuk.org/_assets/pdf/Corporate-Publications/ICT%20Strategy.pdf

*sources*⁵⁰ was published. This valued the European re-use sector at €26.1bn. Translating this to the UK would imply a sector value of £3.81bn (1.1232 EUR/GBP, UK-GDP/EU-GDP=0.13).

- C.44. Consulting Where similarly valued, the UK Location related hardware, software and services industry at £1.23bn and suggested a growth rate for the industry of 2-3%⁵¹. Using these figures, the supposed increased rate of growth would be worth £4.61 million per annum.

Table C.1 Interpretation of Koski 2011 in Terms of Industry Growth				
Source	Industry Size	Growth Rate	Additional Industry Size After One Year	Additional Industry Size After Three Years
ICT Sector - Technology Strategy Board	£30.6bn	3.6%	£170m	£530m
Re-use sector - MEPSIR	£3.81bn	"	£20m	£60m
Geographic info sector - Consulting Where	£1.23bn	2.5%	£10m	£20m
Calculated by comparing industry size with original and boosted growth rates. Reported anticipated effects rounded to nearest £10m.				

- C.45. These figures could reasonably be seen as ranging from wide to narrow. The former because not all software relies on PSI, the latter because not all PSI is geographic.

- C.46. It should be noted that the figures in **Table C.1** do not take into account consumer surplus or multiplier effects. The consumer surplus will depend on the pricing model in these downstream markets. We have assumed that producers enjoy half the total surplus, so that the figures in the table above would be doubled. This is a conservative estimate given the lack of information on the share of surplus enjoyed by producers. All these effects suggest the estimates derived above are likely to significantly undervalue the effect of the policy change. Pollock (2008) attributes 30% of total surplus to producers. A report published by the McKinsey Global Institute⁵² suggests that in the US, consumers of internet services enjoyed a surplus of €46bn on a willingness to pay of €61bn, implying producer surplus of around 25% of total welfare. Hence we would argue that 50% is a conservative choice for this parameter as the lower the value the more benefits to producers are multiplied to represent total welfare changes. Issues related to consumer surplus are discussed further at the end of the *Evidence on Economic Benefits* section in the context of scope for further research.

- C.47. Since the other studies considered in this section attempt to account for consumer surplus it is necessary to adjust for this in order to compare like with like. We take the average of the low and high values after three years, £275m, to work on as this represents the kernel of the re-use industry together with a proportion of the industries likely to directly benefit from spill-over. Adjusting for consumer surplus as one half of total surplus would imply a value on the order of £550m. Given the length and complexity of this chain of reasoning, the value above estimate should be taken only as indicative of the order of the effect.

ACIL Tasman (2008)

⁵⁰ http://ec.europa.eu/information_society/policy/psi/docs/pdfs/mepsir/final_report.pdf

⁵¹ <http://www.consultingwhere.com/reports.html>

⁵² http://www.mckinsey.com/insights/mgi/research/technology_and_innovation/internet_matters

- C.48. The Australian work by ACIL Tasman *The Value of Spatial Information*⁵³ (2008) valued the detriment to the Australian economy of inefficient access to key geographic information at \$0.5bn (2008). Converted at 0.658 AUD/GBP (to £329m) and scaled in line with UK-GDP/AUS-GDP=1.77 (to £582m) then adjusted via the HMT GDP deflator to 2011 prices this would translate to a benefit of about £0.62bn. The detriments included in this figure included: access to fundamental data – relevant to the proposals on mandatory re-use considered here; data formats – relevant to the proposals on data formats considered here; and suitability of the licensing frameworks – relevant to proposals regarding mandatory re-use and marginal cost charging. Relevant to the pricing issues considered in this impact assessment was the consideration of detriment stemming from inconsistent application across regional jurisdictions of a national best practice policy of marginal cost charging for fundamental data promulgated in 2001. As such the Australian situation presented, while not providing a perfect analogy for the current UK position, shares a number of meaningful similarities.
- C.49. The report also discusses the ‘dramatic increase’ in demand for spatial data following lowering of prices after the 2001 policy change. For one group of fundamental datasets, distribution increased from 90,438 copies in financial year 2002/3 to 1,524,206 in 2005/6, or around 1700%. As discussed above raw supply statistics should be interpreted with care in this context due to curiosity downloads, web crawlers, etc. However as only 60% of supply was via the internet even discounting that portion would imply a rise in quantity supplied of nearly 700%.
- C.50. One cautionary point on translation of this study to the UK environment: Australia has over the last decade experienced strong performance in sectors relying heavily on geographic information, in particular resource extraction⁵⁴. This may imply the figure above would be an overestimate in the UK context. However, as indicated by the title, the study concerned spatial information, which constitutes only a subset of the information within scope of the amending Directive (albeit a major one). In the absence of other risks, this would indicate the figure being an underestimate. It is difficult to judge which effect would predominate.
- C.51. On the dataset level other assessments have also shown benefits from moving to a free of charge regime. The Danish Enterprise and Construction Authority, assessing the impact of its move to release address data for free in *The Value of Danish Address Data* (2010) concluded, “In 2010 it is estimated that social benefits from the agreement will be about EUR 14 million, while costs will total about EUR 0.2 million.”⁵⁵ Clearly if this return on investment were realised across wider classes of PSI the resulting benefit would be considerable. However, the extent to which forgone revenue is accounted for as a cost is not clear in this work.

Summary of Literature

- C.52. The following table summarises the benefits that might arise from adoption of a marginal cost charging policy for all public sector information, together with mandatory re-use. This is not a scenario for benefits within the current Impact Assessment since, as discussed elsewhere, effective price changes are not anticipated for major classes of information. It is instead intended to calibrate our understanding of the possible effect of increased use of public sector information.

Table C.2. Summary of Estimated Benefits from Charging Changes	
Basis for estimate	Estimated annual benefit of MC charging with mandatory re-use (2011 prices)
CUPI (2006)	£0.57bn

⁵³ http://www.crcsi.com.au/Documents/ACIL_Tasman_Report_full.aspx

⁵⁴ http://www.minerals.org.au/file_upload/files/annual_reports/AR_2011_Final.pdf

⁵⁵ http://www.adresse-info.dk/Portals/2/Benefit/Value_Assessment_Danish_Address_Data_UK_2010-07-07b.pdf

Pollock (2010, low)	£1.8bn
Vickery (2011, headline)	£4.6bn
Koski (2011)	£0.55bn*
Acil Tasman (2008, adjusted for UK)	£0.62bn
*From 15% higher growth rate, see text for further details.	

C.53. The relevant available literature suggests a benefit on the order of £550-4600m could be obtained if all accessible public sector information were priced at marginal cost. Taking a conservative balance of the evidence summarised above as our best estimate, we might expect a benefit (in the order) of £600m from marginal cost charging with mandatory re-use. We avoid providing a formally weighted average in order to mitigate the risk of spurious precision being read into the analysis.

Scope for Further Research

C.54. This section discusses the scope for further research on the benefits related to marginal cost charging for public sector information. In particular issues created by the treatment of consumer surplus that may be problematic for previous research, particularly the possible underestimation of benefits, and how these might be addressed.

C.55. Much of the work presented considered the value of changes in charging policy in terms of the increased activity of firms which purchase PSI as an input to production. In order to present a view of total welfare changes, certain assumptions are made in relation to consumer surplus. Consumer surplus being the value of the additional benefit enjoyed by consumers over and above what they had to pay for a product.

C.56. Certain aspects of the markets for public sector information products may cause difficulties for these approaches to consumer surplus. For instance OFT CUP1 Annex G suggests, “the demand for unrefined information products already reflects the consumer surplus that the ultimate end user obtains from refined products bought from private sector suppliers using unrefined PSI as an input.” There are a range of business models where this may not necessarily hold, particularly charitable/civic projects but also free provision of services by private sector providers.

C.57. In the case of private sector provision of free/low cost products the assumption which may fail is that private sector revenue is derived from sales of products or services to consumers. Noting the advertising-based business model deployed by significant consumer IT service providers such as Google we find that the revenue of such ventures may be derived largely from the willingness of other entities to pay for a consumer’s attention rather than from the sale of a product or service to a consumer. This may place the products or services outside of conventional markets to a greater or lesser extent. Where this analysis extends to public sector information-based products it implies that the link between the willingness of intermediary re-users to pay for PSI and consumers’ willingness to pay for PSI-based products will be distorted.

C.58. We should also consider why sales revenue is not then generated in addition to advertising revenue. This may be the case due to similar cost structures for consumer data products as for ‘upstream’ data products: high fixed costs and low variable costs implying low marginal costs of production. In the extent to which a market for consumer products was competitive this structure should result in downward pressure on prices to (near zero) marginal costs – implying losses where fixed costs were not recouped. One possible outcome would be monopolistic competition based on product differentiation. This could perhaps be seen to be the case in the ‘freemium’ model where consumers essentially upgrade from a free product to one with premium features.

- C.59. Benkler's *The Wealth of Networks*⁵⁶ offers further discussion of potential commercial advantages to be gained from offering products at no charge.
- C.60. In the case of charitable or civic applications of PSI, as no revenue would be generated through the product or service then cash payment for data as an input to production represents a cost which may be more than such projects can bear. Again this is because the resources of not-for-profit or charitable ventures are not necessarily related to the willingness to pay of consumers for their services (and resources may in any case be expressed in volunteer time not easily convertible to cash).
- C.61. Let us assume that the above argument holds: that in certain markets, such as internet services or mobile phone applications, re-users' willingness to pay for PSI is not reliably related to consumer surplus. The question then remains of how to value consumer surplus for public sector information products. Research in this vein would also be suggested by HM Treasury's *Green Book*⁵⁷ and a supplement to it⁵⁸ in relation to the valuation of non-market impacts. One set of methods focus on stated preference. One methodology in this category is contingent valuation, essentially asking people what they would pay for something. Another methodology is choice modelling, which involves offering individuals a series of sets of options and observing which options are chosen. The resulting data is then used to analyse the value attached to features of the options. The Life Satisfaction approach differs from stated preference methodologies by focussing on use of existing aggregate data to determine the effect of an intervention on overall life satisfaction.
- C.62. Choice modelling through discrete choice experiments may be of particular interest. The method was developed in the context of public infrastructure projects, with its early deployment on San Francisco's BART transport by Daniel McFadden⁵⁹, and has been used in other UK regulatory contexts, for example by OFCOM^{60 61} and by Transport Scotland⁶². Certain characteristics of PSI product markets, e.g. software features, may be particularly congruent with choice models, given the similarity of choice modelling to 'freemium' models where different bundles of features attract different prices. Choice modelling may also be able to cope with the counterfactual nature of the appraisal at hand, since observational data will not be available on exposure to products and services not yet developed.
- C.63. As an illustration of the type of work possible, consider a consumer who visits the beach and the value to them of a website or smartphone application which integrated data on bathing water quality, tide times, weather, mapping, parking charges, public amenities etc. The type of access, data and the price would then form factors in a choice model, leading to estimates of willingness to pay. Additional research would be needed regarding the population likely to use the service, and the costs of developing it, in order to analyse surplus. This process may need to be repeated over several themes in order to provide a robust understanding of the relationship between public sector information and end-consumer surplus.
- C.64. The scope for further practical research into consumer surplus is highlighted here since where Government makes further commitments to improving available evidence this analysis may serve to inform planning and prioritisation. Due to time and resourcing requirements such research was not an option for this Impact Assessment.

⁵⁶ http://www.benkler.org/Benkler_Wealth_Of_Networks.pdf

⁵⁷ http://www.hm-treasury.gov.uk/d/green_book_complete.pdf

⁵⁸ http://www.hm-treasury.gov.uk/d/green_book_valuationtechniques_250711.pdf

⁵⁹ http://www.nobelprize.org/nobel_prizes/economics/laureates/2000/press.html

⁶⁰ <http://stakeholders.ofcom.org.uk/binaries/consultations/DDR/researchrpt.pdf>

⁶¹ <http://www.ofcom.org.uk/static/archive/ra/topics/economic/surveys/pmr.pdf>

⁶²

http://www.transportscotland.gov.uk/files/documents/analysis/LATIS/TMfS07_HighOccupancyVehicleLaneSPResearch_21102008.pdf