

CHAPTER TWENTY

THE POWER OF INFORMATION: AN INDEPENDENT REVIEW *

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EXECUTIVE SUMMARY

This is an unusual review in that it is a story of opportunities rather than problems. It takes a practical look at the use and development of citizen and state-generated information in the UK. For example, information produced by the government (often referred to as ‘public sector information’) includes maps, heart surgery mortality statistics and timetables, while information from citizens includes advice, product reviews or even recipes.

Public sector information underpins a growing part of the economy and the amount is increasing at a dramatic pace. The driver is the emergence of online tools that allow people to use, re-use and create information in new ways. Public sector information does not, however, cover personal information, such as credit record and medical histories. This is the first review to explore the role of government in helping to maximise the benefits for citizens from this new pattern of information creation and use.

When enough people can collect, re-use and distribute public sector information, people organise around it in new ways, creating new enterprises and new communities. In each case, these are designed to offer new ways of solving old problems. In the past, only large companies, government or universities were able to re-use and recombine information. Now, the ability to mix and ‘mash’ data is far more widely available.

The review was conducted through a wide-ranging literature review, three in-depth case studies and interviews with over 60 decision makers, website operators, and users inside and outside government. There are social and economic benefits to new ways of making and sharing information, whether involving government, citizens or both, for example:

- In medical studies of breast cancer² and HIV patients, participants in online communities understand their condition better and generally show a greater ability to cope. In the case of HIV, there are also lower treatment costs³

* This was first published as a report titled *The Power of Information: An independent review* by Ed Mayo and Tom Steinberg. The original report is available at: www.opsi.gov.uk/advice/poi/power-of-information-review.pdf

¹ This report reflects the views of the external authors and is not a statement of government policy.

² Rodgers, S. and Q. Chen (2005). ‘Internet community group participation: psychosocial benefits for women with breast cancer’, *Journal of Computer-Mediated Communication* 10(4): article 5; Zicbland, S. (2004). ‘The importance of being expert: the quest for cancer information on the internet’, *Social Science & Medicine* 59(9): 1783–1793; Gustafson, D. H., R. Hawkins, et al. (1999). ‘Impact of a patient-centered, computer-based health information/support system’, *American Journal of Preventive Medicine* 16(1): 1–9.

- Studies of ‘wired’ local communities demonstrate that there are more neighbours who know the names of other people on their street⁴
- Sharing restaurants’ food safety information in Los Angeles led to a drop in food-borne illness of 13.3% (compared to a 3.2% increase in the wider state in the same time frame). The proportion of restaurants receiving ‘good’ scores more than doubled, with sales rising by 5.7%⁵
- By providing clear information when dispensing medication, pharmacists can improve patient adherence/persistence with medication advice by 16–33%.⁶

Since 1990, when the World Wide Web first made the internet usable by mass audiences, the number of users has risen from virtually none to 61% of the UK adult population. The impacts of this transformation are diverse and profound. TV consumption is falling and internet usage is rising fast, and as many prospective online shoppers now consider a search engine to be as important as talking to a trusted friend when making purchasing decisions.⁷

The largest websites are now often those that bring together information created by the people who use them. The proportion of people using such sites to help themselves and others is now on a par with the friendly societies and mutuals of the nineteenth century.

A wide range of user communities have emerged whose goals align closely with those of different parts of government. In education, for example, these range from small self-help groups of a few dozen students with Asperger’s Syndrome to over 8 million posts on TheStudentRoom, about issues such as homework and university applications. Parenting websites like Netmums⁸ operate as an online community, with 275,000 users providing advice to prospective and current parents. In the consumer field, MoneySavingExpert⁹ now has 2.5 million unique users per month with many sharing information on the latest money-saving tips and tricks.

Government itself produces a vast amount of highly valuable information, and the internet increases its potential social and economic value. In terms of scale, the Ordnance Survey, for example, estimates that it underpins £100 billion per year of economic activity in the UK.¹⁰ Direct revenues from public sector information are only a fraction of the wider value that this information creates. Revenues to government from the sale and licensing of public sector information are around £340 million, and the total market for public sector information stands

³ Hellinger, F. J. (2002). *Focus on Research: HIV Disease*, Agency for Healthcare Research and Quality, United States Department of Health and Human Services, available at www.ahrq.gov/news/focus/fochiv.pdf

⁴ Hampton, K. N. (2007). ‘Neighborhoods in the network society: the e-Neighbors Study’, *Information, Communication and Society*, forthcoming.

⁵ Jin, G. Z. and P. Leslie (2003). ‘The effect of information on product quality: Evidence from restaurant hygiene grade cards’, *Quarterly Journal of Economics* 118(2): 409–51.

⁶ Dr Grace Lomax, presentation to Patient Compliance, Adherence and Persistence Conference, 2005.

⁷ Henley Centre Report for AOL (2004). *Brand new world: how the internet is changing consumers’ attitudes to brands and what marketers and advertisers can do about it*, available at www.aolbrandnewworld.co.uk.

⁸ www.netmums.com.

⁹ www.moneysavingexpert.com.

¹⁰ Oxford Economic Research Associates Ltd (Oxera) Report for Ordnance Survey, *The economic contribution of Ordnance Survey GB*. September 1999.

at £590 million per year. The Office of Fair Trading estimates that this could double to £1 billion per year if reforms are implemented.¹¹

This report argues that government could now grasp the opportunities that are emerging in terms of the creation, consumption and re-use of information. Current policy and action is not yet adequate to grasp these opportunities. To this end, the report recommends a strategy in which government:

- welcomes and engages with users and operators of user-generated sites in pursuit of common social and economic objectives;
- supplies innovators that are re-using government-held information with the information they need, when they need it, in a way that maximises the long-term benefits for all citizens; and
- protects the public interest by preparing citizens for a world of plentiful (and sometimes unreliable) information, and helps excluded groups take advantage.

This review makes 15 practical recommendations in line with this strategy. These are designed to achieve a step change in the way that government acts in relation to public information and user-generated websites. Noting that clear leadership is required to effect the proposed changes, the review also proposes that the Cabinet Office, in conjunction with the Office of Public Sector Information (OPSI),¹² report to the Cabinet Sub-Committee on Electronic Service Delivery (PSX(E)) by December 2007 on departments' plans for implementing this report's recommendations, and report again on progress and results by December 2008.

RECOMMENDATIONS

EXPLORING NEW OPPORTUNITIES

Recommendation 1. To improve service delivery and communication with the public, the Central Office of Information (COI), in partnership with the Office of Public Sector Information (OPSI), should coordinate the development of experimental partnerships between major departments and user-generated sites in key policy areas, including parenting advice (Department for Education and Skills), services for young people, and healthcare (Department of Health).

Recommendation 2. To reduce unnecessary duplication of pre-existing user-generated sites, COI should update the guidelines for minimum website standards by December 2007; departments should be strongly advised to consult the operators and users of pre-existing user-generated sites before they build their own versions.

Recommendation 3. Departments, monitored by COI, should research the scale and role of user-generated websites in their areas, with a view to either terminating government services that are no longer required, or modifying them to complement citizen-led endeavours.

Recommendation 4. To encourage innovation in the re-use of information by non-commercial users, UK trading funds should, in consultation with OPSI, examine the introduction of non-

¹¹ Office of Fair Trading (2006). *Commercial Use of Public Information*, www.offt.gov.uk/shared_offt/reports/consumer_protection/oft861.pdf.

¹² The Office of Public Sector Information (OPSI) is a part of the National Archives. It advises on and regulates the operation of public sector information re-use, including the management of Crown copyright. For more, see www.opsi.gov.uk.

commercial re-use licences, along the lines of those pioneered by the BBC's Backstage project and Google Maps.

Recommendation 5. To promote innovation, Ordnance Survey should, by the end of December 2007, launch its Open Space project to allow non-commercial experimentation with mapping data.

Recommendation 6. To promote innovative use of public sector information, the Department for Transport, with the support of the Chief Scientific Adviser's Committee, should complete the partially undertaken scoping and costing of a 'data mashing laboratory' and advise the Cabinet Committee of Science and Innovation on appropriate next steps.

Recommendation 7. To improve understanding, effective usage and take-up of government services, COI should examine options for more self-help fora for public services and publish guidance for departments on how and when to set up such fora by December 2007.

IMPROVING ACCESS TO PUBLIC SECTOR INFORMATION

Recommendation 8. To improve government's responsiveness to demand for public sector information, by July 2008 OPSI should create a web-based channel to gather and assess requests for publication of public sector information.

Recommendation 9. By Budget 2008, government should commission and publish an independent review of the costs and benefits of the current trading fund charging model for the re-use of public sector information, including the role of the five largest trading funds, the balance of direct versus downstream economic revenue, and the impact on the quality of public sector information.

Recommendation 10. To ensure the most appropriate supply of information for re-use, government should consistently apply its policy of marginal cost pricing for 'raw' information to all public bodies, including trading funds, except where the published economic analysis in recommendation 9 shows this does not serve the interests of UK citizens.

Recommendation 11. To improve the supply of government information for re-use, the Better Regulation Executive should promote publication of regulatory information, and should work with OPSI to encourage publication in open formats and under licences permitting re-use.

Recommendation 12. To ensure that OPSI can regulate the public sector information market effectively, government should review the fit between OPSI's functions and funding, and recommend options that will ensure it is fit for purpose.

PROTECTING THE PUBLIC INTEREST

Recommendation 13. To maximise the potential value of civil servants' input into online fora, by autumn 2007 the Cabinet Office Propriety and Ethics and Government Communications teams should together clarify how civil servants should respond to citizens seeking government advice and guidance online.

Recommendation 14. The Digital Inclusion Team should explore the potential for promoting digital and social inclusion through the partnerships proposed in recommendation 1 and report to the Sub-Committee on Electronic Service Delivery (PSX(E)), in line with recommendation 15.

FOLLOW-THROUGH AND NEXT STEPS

Recommendation 15. The Minister for the Cabinet Office, in conjunction with OPSI, should report to PSX(E) by December 2007 on departments' plans for implementing these recommendations, and by December 2008 on progress and results.

PART 1: INTRODUCTION

This is an external review by Tom Steinberg, Director of mySociety, and Ed Mayo, Chief Executive of the National Consumer Council, produced with support from the Prime Minister's Strategy Unit

The arguments and recommendations are those of the authors only, and do not reflect government policy

The review is about information created both by citizens and government and is not about individuals' private information, such as medical or credit records.

1. In February 2007, following a Policy Review¹³ seminar on 'The Power of Information', the Minister for the Cabinet Office, Hilary Armstrong, asked Tom Steinberg, Director of mySociety, to take forward a rapid review with Ed Mayo, Chief Executive of the National Consumer Council. Support for the review has been provided by the Prime Minister's Strategy Unit (see Appendix 1).
2. The commissioning of this review is consistent with issues raised by the Policy Review on Public Services and the recommendation that:

The government should support the development of new and innovative services that provide tailored advice to specific groups (for example the netmums.com website which provides a discussion and advice forum for mothers). These are outside government's direct influence, but government has a role to play in supporting them – for example by ensuring that they are not undermined by government programmes or websites with similar objectives, and have easy access to publicly available information.¹⁴

3. The terms of reference for the review are provided in Box 1 below.

Box 1: Power of Information Review – terms of reference

To explore new developments in the use of citizen- and state-generated information in the UK, and to present an analysis and recommendations to the Cabinet Office Minister as part of the Policy Review.

Sub Questions

What is already going on? How significant is it?

How can government catalyse more beneficial creation and sharing of information, and mutual support, between citizens?

What can be done to improve the way government and its agencies publish and share the data they already have?

Are there any notable information opportunities or shortfalls in sectors outside government that those sectors could work to rectify?

4. To inform the recommendations in this report, the review team has undertaken:
 - interviews with over 60 stakeholders in central and local government, business and public bodies (see Appendix 2);

¹³ Announced by the Prime Minister in 2006, the Policy Review was a large-scale review of future challenges for government. For more information see: www.cabinetoffice.gov.uk/policy_review/index.asp.

¹⁴ HM Government (2007). *Building on Progress: Public Services*, p. 38, available at www.cabinetoffice.gov.uk/policy_review/index.asp.

- a literature review into the current and potential benefits of online communities of support, political engagement and communication; and
 - three in-depth case studies to illustrate the costs and benefits of more online public sector information exchange. The topics were: the benefits of health communities (see Appendix 3), the impacts of publishing restaurant food safety ‘scores’ (see Box 16), and options for an online income tax self-assessment advice facility (see Appendix 5).
5. This report represents an external analysis of the issues, and does not represent government policy or the views of the Government. While the following analysis is informed by a UK and global context, many recommendations relate to policy issues that are devolved. Because of the need to focus, such recommendations in this report apply to England only. However, many of the underlying issues – for example, about the rise of online communities and the opportunity for public services to engage in new ways online – will apply in equal measure to all parts of the UK. The Review hopes this work will be a resource for each of the devolved administrations, as they explore specific strategies appropriate to their context.

CHANGES IN THE USE AND AVAILABILITY OF INFORMATION

- New tools online mean it is now as easy to create and distribute information online as it is to consume it
- Two groups of citizens have emerged as a consequence of the rise of the internet: people who make use of user-generated websites, and people who mix and ‘mash’ data to create valuable new information and services.

USE OF THE INTERNET HAS BECOME WIDESPREAD, IMPACTING ON CITIZENS IN DIVERSE WAYS

6. The majority of the population of the United Kingdom now uses the internet, albeit with some important exceptions (for example, socially excluded groups and those without access). Internet usage has grown from virtually zero in 1990, when the World Wide Web first emerged, to approximately 61% today.¹⁵ This is considerably faster than the historic growth rates of comparable communications technology, like radio or the PC. Furthermore, the UK now has the fifth largest broadband population in the world, with 12 million broadband households.¹⁶

Box 2: Historic growth rates

‘It took just 40 years for the first 50 million people to own a radio;
just 16 years for the first 50 million people to own a PC;
but just 5 years for the first 50 million to be on the internet’.

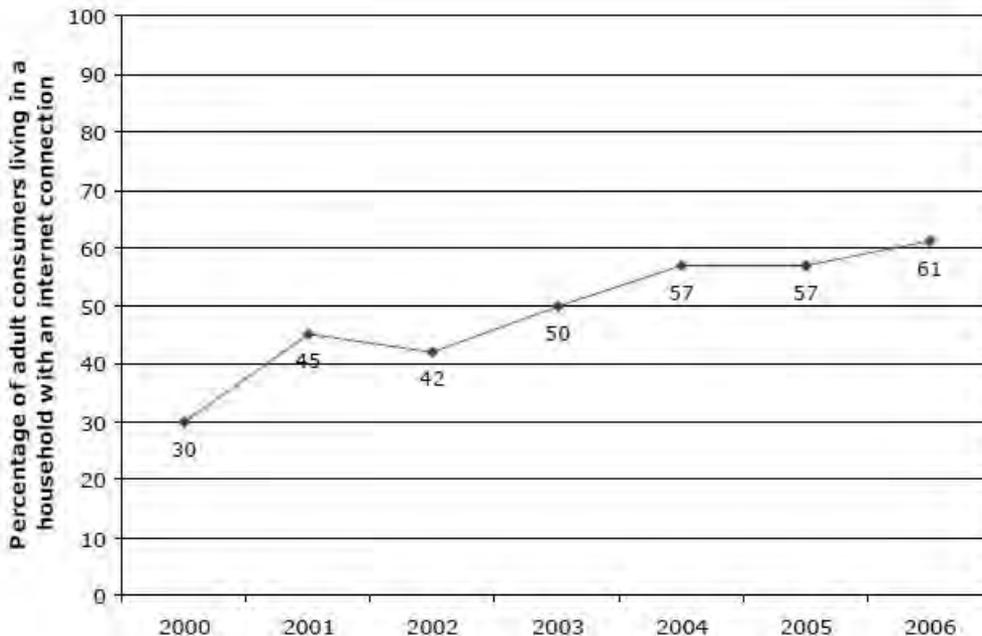
Remarks by the Rt Hon Gordon Brown MP, Chancellor of the Exchequer, to the Government Leaders Forum Europe, at the Scottish Parliament, 31 January 2007

¹⁵ Ofcom (2007). *The communications market 2007: nations and regions*, www.ofcom.org.uk/research/cm/cm07/uk.

¹⁶ eMarketer, March 2007, www.emarketer.com.

7. The internet has started rapidly and profoundly to affect social and economic relations in the United Kingdom. There is no better way to demonstrate the significance of the internet than to look at television. TV, resistant to moderation or abstinence campaigns from teachers and parents for 50 years, is now becoming measurably less and less popular among internet users.¹⁷ TV consumption is falling and internet usage is rising fast.

Figure 1: UK trends in internet take-up¹⁸



Source: Ofcom Communications Tracking Survey conducted by Ipsos-Mori. Base: All adults Q4 data for 2001–06.

8. This change in the way people use their time is affecting other things, such as the ways in which they make decisions. Internet users now consider search engines as important when researching products and services as personal recommendations from trusted friends.¹⁹ A recent research report by the Pew Internet and American Life research program called

¹⁷ Ofcom (2006). *International communications market report 2006*, www.ofcom.org.uk/media/news/2006/11/nr_20061129.

¹⁸ Ofcom (2007). *The communication market 2007: nations and regions*, www.ofcom.org.uk/research/cm/cm07/uk.

¹⁹ Henley Centre Report for AOL (2004). *Brand new world: how the internet is changing consumers' attitudes to brands and what marketers and advertisers can do about it*, available at www.aolbrandnewworld.co.uk.

‘The Strength of Internet Ties’²⁰ found that 60 million Americans claimed that ‘the internet has played an important or crucial role in helping them deal with at least one major life decision in the past two years’.

INCREASINGLY CITIZENS ARE MAKING THEIR OWN INFORMATION ON THE INTERNET, AND CONSUMING INFORMATION MADE BY OTHERS

9. Popular internet sites make it as easy to create information as to consume it. These tools include:
- fora and chat rooms that allow people easily to post questions and get answers on issues of common concern (e.g. The Thorn Tree travel forum²¹);
 - social networking tools that allow people to keep track of the interests and activities of their friends (e.g. MySpace and Facebook);
 - blogging and video sites that allow citizens easily to become writers, publishers and video producers (e.g. YouTube, Blogger); and
 - wiki-based sites that enable joint creation of large and diverse repositories of user-generated information on particular topics (e.g. Wikipedia).

Box 3: Wikipedia – an example of collaborative production

Wikipedia is one of the best-known and best-used sites on the internet. It is an online encyclopaedia that anyone can edit. Wikipedia is available in 249 different languages. Users employ a technology known as a ‘wiki’ to allow visitors to the site to add, remove, edit and change available entries, easily and quickly.²² Other wikis in a variety of areas are blossoming around the web, such as one for the 2007 World Economic Forum in Davos, Switzerland.²³

Previously, online collaborative systems were the preserve of specialist or professional communities. The changing use of technology has made collaborative production much easier and cheaper. In 2006, the English language Wikipedia registered its one millionth user account, and passed the 1.5 million mark for English articles.²⁴

There has been much debate about the accuracy of information published on Wikipedia. A qualitative comparison of the online Britannica and Wikipedia has been published. On 14 December 2005, the scientific journal *Nature* reported that, within 42 randomly selected general science articles, there were 162 mistakes in Wikipedia versus 123 in Britannica.²⁵ However, Encyclopædia Britannica, Inc. characterised *Nature*’s study as flawed and misleading, and called for a ‘prompt’ retraction.²⁶

²⁰ Boase, J. et al. (2006). *The strength of internet ties*, Pew Internet and American Life Project, www.pewinternet.org/pdfs/PIP_internet_ties.pdf.

²¹ thorntree.lonelyplanet.com.

²² The term ‘wiki’ is based on the Hawaiian word meaning fast (see en.wikipedia.org/wiki/wiki).

²³ World Economic Forum homepage, www.weforum.org/en/index.htm.

²⁴ Wikipedia, ‘History of Wikipedia’, en.wikipedia.org/wiki/History_of_wikipedia#_note-milestone_articles#_note-milestone_articles.

²⁵ Giles, J. (2005) ‘Internet encyclopaedias go head to head’. *Nature* 438: 900–901, www.nature.com/news/2005/051212/full/438900a.html.

²⁶ ‘Fatally Flawed: Refuting the recent study on encyclopedic accuracy by the journal *Nature*’, *Encyclopædia Britannica, Inc.* (March 2006), corporate.britannica.com/britannica_nature_response.pdf.

10. Using these tools, citizens have increasingly changed their role from passive recipients of information provided by experts, to active producers of information themselves, and consumers of information made by other citizens. This information varies from recipes and photos to parenting advice, tributes and eulogies at times of bereavement.
11. Such creation and sharing of information across electronic networks is not new. Rather, it is a phenomenon that has only just achieved a scale of consequence for policymakers. Online communities have existed since before the World Wide Web as far back as the 1970s. They included email communities of self-help in the fields of health, education, job searching and so on, normally shared between experts in a few universities.
12. What used to be of esoteric interest to a handful of academics is now a mainstream part of the lives of millions of Britons. User-generated sites like YouTube,²⁷ Bebo²⁸ and MySpace²⁹ regularly occupy slots in the league tables of top websites in the UK. Even major sites that have a heritage of professionally authored work, such as the BBC and the newspaper websites, now all contain varying amounts of user-created information.
13. Amid this explosion of user-generated sites there is much that is of little or no relevance to government: online chat about bands, films, socialising and so forth is rightly considered none of the public sector's business. But there are sites that clearly relate directly to major government agendas and that are highly popular. MoneySavingExpert,³⁰ for example, is a site dedicated to helping people save money and get better deals on all sorts of goods and services. Its forum has 180,000 members and millions of visitors each month: easily on the scale of friendly societies or trade unions. One of the principal catalysts for this review was the need to find out how government should learn to live in a world that contains such remarkable new bodies.

THE INTERNET IS INCREASING THE VALUE OF INFORMATION CREATED BY GOVERNMENT

14. The over 100,000 public bodies in the UK produce a huge range of information. These vary from school league tables to tide timetables, and from the Tube map to the Census.
15. Computers allow public sector information to be re-used and combined to make new services that were never envisaged when the information was originally collected. This generates social and economic value of diverse kinds.
16. One of the most remarkable examples of how much new value can reside inside what is essentially old information is the seemingly mundane field of postcodes. Originally, postcodes were allocated and recorded simply to help the Post Office deliver letters and parcels. These days the database describing which postcodes are to be found where in the UK underpins countless websites, from that of National Statistics to those of pizza-delivery companies. Every day new uses are found, generating extra value at no additional cost to the public sector.

²⁷ youtube.com.

²⁸ bebo.com.

²⁹ myspace.com.

³⁰ moneysavingexpert.com.

THESE TWO CHANGES HAVE CREATED TWO NEW GROUPS OF CITIZENS

17. The changes described above have facilitated the rise of two new groups of citizens. The first group comprises people who create information on the internet. The second group is composed of people who take information from various sources, including government, and mix it together to make new tools and services. The next two sections look at these two groups.

THE FIRST NEW GROUP COMPRISES PEOPLE WHO TAKE PART IN USER-GENERATED WEBSITES

18. The diversity of issues and activities covered on user-generated websites is more or less as great as the diversity of the people who use them. Some human needs are very common, though – for example, the experience of raising children – and consequently some very large user-generated websites have grown up around these. Two such sites in the UK are Netmums and Mumsnet (see Box 4).

Box 4: Netmums (www.netmums.com) and Mumsnet (www.mumsnet.com)

Netmums is an online community for mothers and fathers with (or expecting) young children. The site claims 275,000 registered users spread across a 'family of local websites', in which 'each local website is edited and maintained by a local mum with support from a central team'. The founders argue that local content is important because only 'local mothers can truly access and provide the local information essential to life as a mum to young children'. The site provides advice and support for parents about bringing up their children, along with local listings of other services.

The site is similar to Mumsnet, another popular online site providing parenting information, along with reviews of products and services. Mumsnet claims around 10,000 posts and comments on an average day. Janice Turner, a columnist for *The Times*, wrote recently that she could not 'see how the Government could improve on Mumsnet. Indeed, the fact it is run from one woman's back bedroom in North London makes it infinitely more trustworthy'.

Box 5: Consumer advocacy – extract from a report by the Welsh Consumer Council (forthcoming)³¹

'The nthell:world³² web forum is one of the earliest examples of an independent effort mobilised by consumers against the actions of a single company. Formed in 2000 by NTL customer Frank Whitestone, it is a consumer lobby community, which set out to provide a public sounding board for customers disgruntled by the company's service. Currently numbering over 25,000 members, nthell:world became an influential force because its focus concentrated, laser-like, on just one service provider (now Virgin Media), offering a space for customers to vent, share and highlight poor-quality provision. In what has become a public relations risk, company representatives who type '[Company Name] sucks' into Google will often find that just such grassroots campaigns have been started against them.

'Although the body of customer experience passing through the nthell:world represented bad publicity in high definition, in recognition of the positive contribution the site's users were making to

³¹ Welsh Consumer Council (unpublished report, forthcoming 2007). *Advocacy 2.0: Consumer empowerment and representation on the new net*.

³² www.nthellworld.co.uk/home.php.

improving its services, NTL's CEO Simon Duffy met the site's owners in 2005 to discuss integrating 33 nhell: world into the company's own customer service offering – ensuring urgent problems highlighted on the forum were routed into the organisation's existing infrastructure. Founder Whitestone later sold the site to NTL and joined the company as staff'.

19. People become regular users of such websites because the sites contain the sort of things they need to run their own lives: hints, tips, suggestions, moral support, stories, and reviews and so on, written and shared with other members of the public. Often advice dispensed in such fora trumps official guidance in terms of popularity simply because it is written in language that means something to users and has the name of a real person attached.
20. Parenting is not the only area where user-generated sites are helping people to help each other. Communities encountered by this review ranged from one with just a few dozen people using email to share and manage the experience of being a student with Asperger's Syndrome to another called TheStudentRoom,³⁴ which had over 8 million posts, mainly about homework and university applications.

THE SECOND NEW GROUP IS PEOPLE WHO RE-USE INFORMATION TO BUILD NEW TOOLS AND SERVICES (INCLUDING GOVERNMENT)

21. Another new group of citizens that has emerged out of the rapid technological change in the last half decade consists of information re-users, more colloquially and widely known as 'data mashers'. This group includes businesses, non-profit organisations and normal internet users who want to mix and combine information to generate valuable new forms of information and new services.
22. Some of the most desirable information for this new group is data generated by government, especially geographic information, which can often be used like a glue to bind together disparate information.
23. Certain of these re-users are companies, some of which have grown to considerable size. The internet company uSwitch,³⁵ founded in 2000, helps people compare utilities providers. It combines private sector information with quantities of public sector information to deliver its services. It was recently bought for over £200 million.
24. At the other end of the scale is mtraffic,³⁶ a minimalist yet highly useful site for accessing the BBC's traffic reports on a mobile phone, which registers over 10,000 visits a month. It was built as a volunteer project by programmer Tom Dyson, one of the 1,300 members of the BBC's Backstage project. Backstage uses non-commercial data licences to encourage a community of data mashers who exist outside the commercial market.
25. The key challenge demonstrated by these examples is that the value inherent in certain sorts of information is now recognised as changing every day, and, largely speaking, is increasing. It is no longer true that only a big department or large company can generate important benefits using information. The cost-benefit calculations that historically

³³ Thread discussing contents of meeting on Cable Forum: www.cableforum.co.uk/board/10/27095-cableforum-and-ntl-to-meet.html.

³⁴ www.thestudentroom.co.uk.

³⁵ uswitch.com.

³⁶ mtraffic.org.

underpinned what information is collected, who can use it, and how it is paid for are rapidly becoming outdated.

PART 3: WHY THESE CHANGES MATTER

- The changing value of public sector information matters to government because there are substantial potential economic and social benefits to citizens from exploiting it
- Engaging with user-generated sites and data mashers can help government deliver better services, and help citizens to help themselves.

INFORMATION PRODUCED BY THE PUBLIC SECTOR HAS ECONOMIC VALUE

26. Public sector information can generate economic value of two broadly different kinds:
 - direct value: revenue generated for government by selling access to public sector information; and
 - commercial value: revenue generated by companies who make use of public sector information.
27. One of the most easily measured forms of economic value generated by public sector information is the direct revenue earned by parts of the public sector selling information. In 2006, the Office of Fair Trading (OFT) estimated revenues from the public sector information market at £590 million per year.³⁷
28. Companies pay for public sector information because it helps them make or save money. The Met Office, for example, is aware that ‘every year UK companies lose thousands of pounds because of the weather – from late or absent staff, delayed deliveries, surplus or insufficient stock to cancellation of projects’.³⁸ Consequently, it offers services, built on public sector information, that help businesses make informed decisions that prevent the loss of company money.
29. Companies that use or re-use public sector information can generate revenue, part of which is later paid to government in the form of corporation tax. Estimating how much is paid in tax, or how much could be, is difficult but important. According to an economic study commissioned by Ordnance Survey, its geographic information underpins an impressive £100 billion of activity in the UK economy. It is easy to see that without good-quality mapping, postcodes or land ownership information, large parts of the economy would be unable to function at all (i.e. anything that required delivery, or sale, rental or purchase of property).

INNOVATIVE USE OF PUBLIC SECTOR INFORMATION HAS SOCIAL VALUE

30. It can be easy to forget that government releases and uses public sector information to help large numbers of people. This review has identified a range of studies in which the direct benefits of high quality information were measured.

³⁷ Office of Fair Trading (2006). *Commercial Use of Public Information*, www.offt.gov.uk/shared_offt/reports/consumer_protection/oft861.pdf.

³⁸ www.metoffice.gov.uk/services/business.html.

31. In a study involving 200,000 patients,³⁹ it was shown that, by providing clear and useful information when dispensing medication, pharmacists could improve patient adherence and persistence with medication advice by 16–33%. This both increased the welfare of patients, and saved government downstream costs of further unnecessary treatment.
32. A recent study of the effects of publishing heart surgery mortality rates showed the effect on later mortality rates to be at worst neutral and at best helpful to 26,000 patients studied.⁴⁰

INFORMATION CREATED BY CITIZENS HAS ECONOMIC VALUE

33. Several studies have shown that using the internet increases customer knowledge and collective consumer power, leading to improved quality of goods and services, innovation and often lower prices. Research in 2003 found that use of price-comparison sites yielded an average saving of 16% on electronic goods.⁴¹ Similarly, much of the travel holiday industry has been transformed by the internet, driven by the effect of information on consumer decisions (see Box 6).

Box 6: How the internet has transformed the holiday industry

A Burst Media survey of over 2,000 web users who planned to travel in the next three months found that nearly half (47.2%) of respondents who intended to use the web to plan their upcoming travel said the internet would be their primary travel resource.⁴² In 2006, 20.1% of UK survey respondents booked their most recent holiday online, compared to 16.8% in 2005 and 12.4% in 2004.⁴³ These changes are reducing the need for travel agents and improving the direct information base on which travellers are able to plan. Furthermore, the emergence of new websites allowing traveller feedback on certain travel venues and experiences can place pressure on the providers to improve over time.

INFORMATION CREATED BY CITIZENS HAS SOCIAL VALUE

34. There are few historical precedents for the hundreds of thousands of people who come together out of a shared interest on single websites like Netmums. The precedents that do exist – corporations, friendly societies and trade unions – have all clearly had impacts on, and have raised questions about, the role of government. Despite the huge technological changes over the past 150 years, it is possible to detect the echoes of these earlier social institutions in current development, for example in helping:
 - parents to raise healthy, well-educated, socially well-adjusted children;

³⁹ Dr Grace Lomax, presentation to Patient Compliance, Adherence and Persistence Conference, 2005.

⁴⁰ Bridgewater, B., A. Grayson, N. Brooks, et al. (2007). 'Has the publication of cardiac surgery outcome data been associated with changes in practice in Northwest England? An analysis of 25,730 patients undergoing CABG surgery under 30 surgeons over 8 years', *Heart*, June 93(6): 744–748, available at www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=17237128&dopt=Abstract.

⁴¹ Baye, M. R., J. Morgan, et al. (2003). 'The value of information in an online consumer electronics market', *Journal of Public Policy and Marketing* 22(1): 17–25.

⁴² Burst Media via Marketing Vox, February 2007, www.burstmedia.com.

⁴³ British Market Research Bureau's (BMRB), Target Group Index (TGI) Survey of GB 2006, available at www.bmrb-tgi.co.uk/main.asp?p=130.

- shoppers to avoid paying more than the going market rate for goods and services; and
 - the sick to recover, or cope with and manage their conditions.
35. Various academic studies have examined whether participation in different sorts of user-generated websites, normally online communities, has any positive impact. Most of the studies that have any measurable outcomes have shown some positive effect of participating in user-generated websites. For example, one study found a positive correlation between the amount of participation on online communities of fellow patients and the psychosocial well-being of women with breast cancer.⁴⁴
 36. Similarly, a US Health Department study found that use by HIV patients of their Comprehensive Health Enhancement Support System ‘not only helps HIV patients keep track of their condition and alert their doctors when they are having problems, but it also has helped lower their average treatment costs by \$400 a month’.⁴⁵
 37. Furthermore, and contrary to expectations, a study of 2,500 users of a Swedish commercial parenting site found that it was disadvantaged parents who received most support via the website. This support came in the form of finding people they could trust and ask for advice.⁴⁶ A remarkable 68% of users in the survey identified themselves as at or below average national income.
 38. Of course, the objectives of citizens who operate user-generated websites do not match the objectives of government. Indeed, much of the media coverage of user-generated sites has focused on cases in which user-generated websites display information perceived as harmful or illegal. This review is aware of the potential to use any technology for good or bad purposes. Appendix 4 provides some examples where the creation and distribution of information online can actually be harmful. While this potential for harm does exist, it does not negate the potential for the same technology to be used in ways that promote positive social and economic outcomes.

PART 4: THE CHALLENGES FACING GOVERNMENT

- There are significant new opportunities for government to capitalise on the new widespread ability to collect, re-use and distribute information
- Government has not yet fully engaged with the new generation of ordinary citizens wishing to use its information as ingredients in a new range of services
- Government can contribute indirectly to improve the lives of citizens by doing more to supply its information to the operators of user-generated websites
- Government needs a new strategy and vision for engaging with citizens and re-users of its information.

⁴⁴ Rodgers, S. and Q. Chen (2005). ‘Internet community group participation: psychosocial benefits for women with breast cancer’, *Journal of Computer-Mediated Communication* 10(4): article 5.

⁴⁵ Hellinger, F. J. (2002). *Focus on Research: HIV Disease*, Agency for Healthcare Research and Quality, United States Department of Health and Human Services, available at www.ahrq.gov/news/focus/fochiv.pdf.

⁴⁶ Sarkadi, A. and S. Bremberg (2005). ‘Socially unbiased parenting support on the internet: a cross-sectional study of users of a large Swedish parenting website’, *Child: Care, Health and Development* 31(1): 43–52.

GOVERNMENT EFFORTS TO RESPOND SO FAR

39. Government is aware that the internet is changing the face of the UK economy and society. Various government agencies are looking into issues around information use and re-use (see Box 7 below) and government has already made a number of policy changes in response to the evolving nature and value of information, including:

- *Cross Cutting Review of the Knowledge Economy* (2000),⁴⁷ which made recommendations regarding information subject to Crown copyright, and encouraged a shift to marginal cost pricing as a default position for the sale of information
- *Transformational Government: Enabled by Technology* (2005),⁴⁸ which made recommendations to design IT services more around the citizen, and move to a shared services culture
- *Service Transformation* (Varney Review) (2006),⁴⁹ in which Sir David Varney advised the Chancellor on ways to make the channels through which services are delivered more responsive to users, including improving Directgov and Businesslink so they become the primary information and transactional channels for citizens and businesses
- *Commercial Use of Public Information* (2006),⁵⁰ in which the Office of Fair Trading made a number of recommendations, including changing accounting practices to ensure that public sector information providers generate as competitive a market as possible in information.
- *Electronic Government Services for the 21st Century* (2000),⁵¹ in which the Performance and Innovation Unit took a strategic view of which public services should be delivered by electronic means and looked at the options for securing delivery of these services, including the respective roles of the public and private sectors.

Box 7: Parts of government with information policy remits

The Office of Public Sector Information (OPSI) advises on and regulates the operation of public sector information re-use, including the management of Crown copyright.

The Advisory Panel on Public Sector Information (APPSI) advises ministers on information policy issues that will encourage and create opportunities for greater re-use of public sector information.

The Ministry of Justice is responsible for the 'digital dialogue', which is examining how central government can strengthen consultation and interaction with citizens using ICT.

The Department of Transport is responsible for the Science and Innovation Ministerial Committee's

⁴⁷ HM Government (2000). *Cross cutting review of the knowledge economy*, para. 1.15, www.hm-treasury.gov.uk/spending_review/spending_review_2000/associated_documents/spend_sr00_ad_ccrcr0ntents.cfm.

⁴⁸ HM Government (2005). *Transformational Government: Enabled by Technology*, www.cio.gov.uk/documents/pdf/transgov/transgov-strategy.pdf.

⁴⁹ Varney, D. (2006). *Service Transformation: A Better Service for Citizens and Businesses, a Better Deal for the Taxpayer* (Varney Review), www.hm-treasury.gov.uk/media/53D/F2/pbr06_varney_review.pdf.

⁵⁰ Office of Fair Trading (2006). *Commercial Use of Public Information*, www.offt.gov.uk/shared_offt/reports/consumer_protection/oft861.pdf.

⁵¹ Cabinet Office (2000). *Electronic Government Services for the 21st Century*, www.cabinetoffice.gov.uk/strategy/downloads/su/delivery/e-gov.pdf.

Data Grand Challenge on realising the benefits of (particularly real-time) data within and outside government.

The Better Regulation Executive is looking at information as a regulatory tool, including focus-group work and a series of case studies.

The Government Communications Group is analysing the government's digital and social media capability.

The e-Government Unit is responsible more generally for ensuring that IT supports the business transformation of government itself, so that government can provide better, more efficient public services.

40. Despite these positive moves, this review has found that there remains a need to push through reforms to ensure that the full benefits of information creation and re-use outside of government are exploited.

GOVERNMENT HAS SO FAR INTERACTED LITTLE WITH USER-GENERATED WEBSITES

41. To date, government has not yet adequately engaged with most user-generated sites or non-professional re-users of its information. Part of the reason for this low level of engagement is likely to be risk aversion in light of the less controlled environment that user-generated websites represent. Websites on which anyone is allowed to participate are, by definition, less controlled than sites to which only the operator can contribute. This means that users may use sites in ways that are incompatible with government objectives or ways of operating. For example, civil servants may fear that, by providing relevant information for the users of a site, they might attract criticism toward government or themselves. Similarly, civil servants may be concerned that engaging in less controlled online fora may mean that bad or anti-social behaviour by other users could reflect poorly on government.
42. It is possible that government has not adequately engaged with user-generated sites simply because these new, large-scale user-generated sites have emerged too quickly for government to establish ways of connecting to them. For example, the managers of two different user-generated sites interviewed as part of this review each reported over 20 meetings with parts of government that wanted to engage with them but that simply did not yet have the contracting policy, processes and guidelines in place for collaborative work.⁵²

THERE ARE BARRIERS TO RE-USING INFORMATION PRODUCED BY GOVERNMENT

43. Research from the Statistics Commission⁵³ and the Office of Fair Trading shows that many users of public sector information report barriers to accessing the information that they need in order to add value.
44. Common sorts of barriers include:
- information that is too hard to find;

⁵² Stakeholder interviews (see Appendix 2).

⁵³ Statistics Commission, 'The use made of official statistics', Report No. 33, March 2007.

- information that is in the wrong format, making it hard or impossible to re-use;
- information not being made available when it is needed;
- not knowing that a certain piece of information exists in the first place;
- use of the information being constrained by licensing terms; and
- information that is too expensive.

Box 8: Example of a barrier to re-using public sector information

'I got in touch with the Stern report team, because I wanted to re-publish it in a format that people could easily read and discuss on the internet. I couldn't make the person at the other end of the phone line understand why I didn't want the report in 600 page PDF format. So I said I wanted to be able to read it on my phone. He told me to get a better phone'.⁵⁴

45. These barriers create costs, as well as other problems for both information users and government. The Office of Fair Trading estimates that improved availability of information to re-users could double the direct market value of public sector information to £1.1 billion per year,⁵⁵ and has made a detailed series of recommendations to help government do this – recommendations that this review endorses.
46. Much of this improvement is expected to come from better exploitation of public sector information that is already available at marginal cost, but that may not be very widely known or easy to access. Public sector information is often not considered valuable because the public sector body that creates it does not perceive its value and so does not try to make it easily available. Similarly, it is often not considered valuable or exploited because nobody outside government is aware that the valuable information exists.
47. The review also uncovered other reasons for under-exploitation of information:
 - unhelpful officials lacking knowledge, which leads to blockages or delays in processing requests because they are seen as low priority and difficult to follow through; and
 - confusion about the copyright status of public bodies and their information, and where to apply for a licence; this can delay negotiations.
48. Reiterating the importance of these factors, a research paper⁵⁶ commissioned by the Department for Transport has identified a 'silo mentality' in government that can impede better exploitation of public sector information (i.e. the inability to see the benefits of distributing information to others). Genuine concerns include data confidentiality, loss of formal and informal controls over data access, and data integrity. Despite these concerns, this review did also discover instances of good practice, one of which is described in Box 9.

⁵⁴ Stakeholder interview (see Appendix 2).

⁵⁵ Office of Fair Trading (2006). *Commercial Use of Public Information*, www.of.gov.uk/shared_of/reports/consumer_protection/oft861.pdf.

⁵⁶ RAND Corporation report prepared for the Office of Science and Technology's Data Grand Challenge: Marsden, C., J. Cave, et al. (October 2006). *Better re-use of public sector information: evaluating the proposal for a government data mashing lab*, Rand Corporation.

Box 9: The Statute Law Database

The Statute Law Database, created by the Department of Constitutional Affairs (now the Ministry of Justice), is an official and authoritative online database of revised UK primary legislation and is available free of charge to the public. The database can be found at: www.statutelaw.gov.uk Launched in late December 2006, it contributes to the new Ministry of Justice's aims of improving access to justice.

In this case, the government department in charge reached the decision that the social value that accrued from the public being readily able to find out the laws under which they are governed outweighed the possible direct revenue generation from selling access.

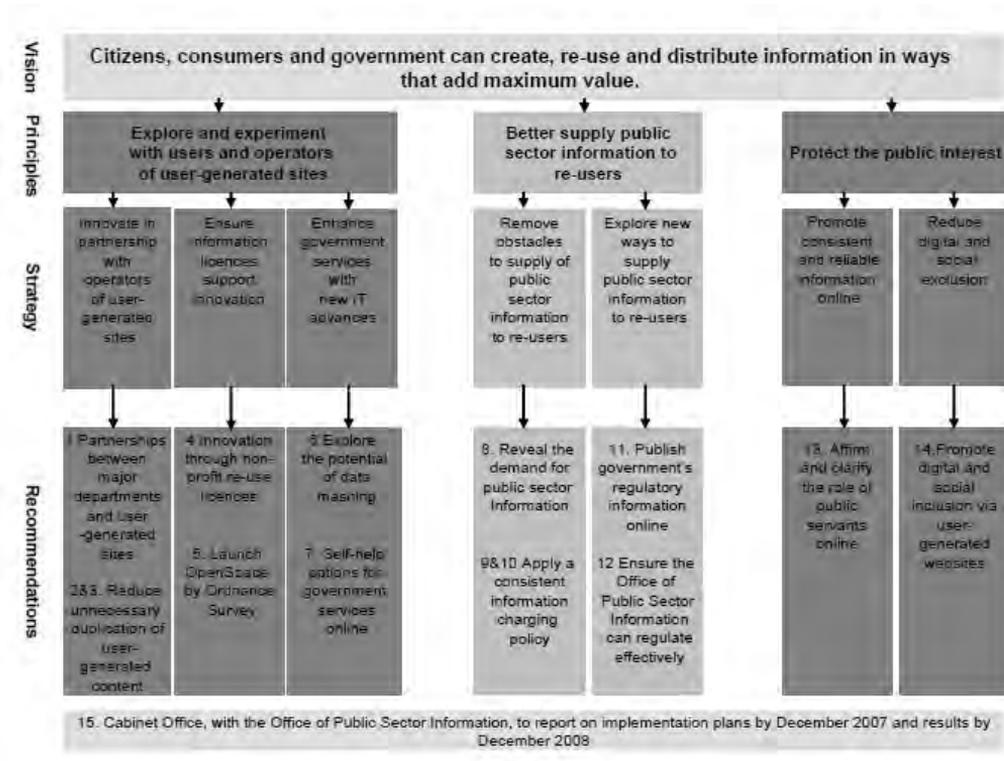
Through strong departmental leadership and an innovative approach, which considered the long-term public benefit, the Department of Constitutional Affairs, now the Ministry of Justice, both created a public asset and brought acclaim for the department. It acted responsively to public demand, and the decision was applauded by information and law campaigners. The decision was described as a 'sea-change' in the way government information is made available to the public.⁵⁷

A NEW VISION AND STRATEGY

49. This report argues that government needs a new approach to public information of all kinds. If it is to capitalise on the emerging opportunities described above, government needs a clear vision and strategy. This review proposes a simple vision: that citizens, consumers and government can create, re-use and distribute information in ways that add maximum value.
50. The proposed strategy for achieving this vision involves government both addressing the barriers described above and actively taking the opportunities arising from the recent developments in the evolution of the internet. This report recommends a strategy through which government:
 - welcomes and engages with users and operators of user-generated sites in pursuit of common social and economic objectives;
 - supplies potential re-users with the public sector information they need, when they need it, in a way that maximises the long-term benefits for all citizens; and
 - protects the public interest by preparing citizens for a world of plentiful (and sometimes unreliable) information, and helps excluded groups take advantage.
51. Figure 2 below shows how the vision, strategy and specific recommendations of this report relate to one another. Each of the following chapters covers one of the key strategic areas.

⁵⁷ Comment by Jim Wretham, OPSI in 'Government looks at data shake-up', *BBC News site*, 12 January 2007, news.bbc.co.uk/1/hi/technology/6255321.stm.

Figure 2: Vision, strategy and recommendations



PART 5: EXPLORING NEW OPPORTUNITIES

Government should explore emerging opportunities to empower and benefit citizens in partnership with user-generated website operators and users.

To begin this process, government should:

- pilot ‘Power of Information’ partnerships between major departments and user-generated websites to explore the potential benefits for citizens;
- introduce standard non-commercial licences to encourage more innovation in the re-use of the most valuable sorts of public sector information;
- explore the possibilities for establishing or commissioning a government ‘data mashing laboratory’; and
- introduce more self-help fora to improve understanding, effective usage and take-up of government services by users, particularly among the most disadvantaged.

52. The previous chapters suggest that there are various opportunities for better exploiting information to benefit UK citizens. This chapter makes recommendations about experiments to develop an understanding of how government can usefully participate in the new world of information production and distribution.

GOVERNMENT SHOULD EXPERIMENT WITH 'POWER OF INFORMATION'
PARTNERSHIPS WITH SUITABLE AND INTERESTED USER-GENERATED SITES

Recommendation 1. To improve service delivery and communication with the public, the Central Office of Information (COI), in partnership with the Office of Public Sector Information (OPSI), should coordinate the development of experimental partnerships between major departments and user-generated sites in key policy areas, including parenting advice (Department for Education and Skills), services for young people, and healthcare (Department of Health).

53. There are several types of collaboration between government and the operators of major user-generated websites that could potentially be of real value to the users of those sites. These include, but are not limited to:
- gathering feedback on different aspects of service provision;
 - consulting citizens on different options for changes in service delivery;
 - signposting information and services to specific groups of users who indicate particular needs;
 - developing a citizen-friendly language; and
 - identifying gaps in service delivery.
54. The idea that there might be mutual benefits is not new. Many user-generated website operators have never had much involvement with government. However, there are some who have tried many times to engage, finding that government departments are unable to respond quickly and flexibly. The Central Office of Information (COI),⁵⁸ in partnership with the Office of Public Sector Information (OPSI), should coordinate the development of experimental partnerships between major departments and operators of major user-generated websites in key policy areas, including parenting advice (Department for Education and Skills (DfES)), services for young people, and healthcare (Department of Health) to realise the benefits listed in the paragraph above.
55. COI and OPSI should liaise with the relevant departments to form a small project panel, whose task it would be to approach the managers of these web communities to discuss the possibility of collaboration. The exact details of the collaboration should not be predetermined by OPSI, COI or the relevant departments. Departments should carry out detailed discussions with the user-created website operators and identify mutually beneficial options. Government should not prejudge the exact nature of mutual benefits and should approach negotiations with an open mind.
56. In carrying out these discussions, departments should:
- work carefully with the operators and users of pre-existing sites to develop appropriate forms of interaction between government and users, and strongly heed any warnings about engagements that might deter users or harm the sites;

⁵⁸ The aim of the Central Office of Information (COI) is to enable central government and public sector bodies to secure policy objectives through achieving maximum communication effectiveness and best value for money. COI's objectives are to improve the effectiveness of and add value to government publicity programs. COI achieves this through consultancy, procurement and project management services across all communication channels. For more, see www.coi.gov.uk.

- engage primarily through named civil servants who are open about whom they work for, and who become regular members of communities over a period of time;
- consider how to fund initial engagements – some large sites are run by very small, overstretched organisations, and it should not be assumed that they can afford even to make the time to discuss engagement without some support; and
- evaluate these engagements in realistic time frames (i.e. no less than one year from start).

GOVERNMENT SHOULD ENSURE IT DOES NOT DUPLICATE THE EFFORTS OF PRE-EXISTING USER-GENERATED SITES

Recommendation 2. To reduce unnecessary duplication of pre-existing user-generated sites, COI should update the guidelines for minimum website standards by December 2007; departments should be strongly advised to consult the operators and users of pre-existing user-generated sites before they build their own versions.

57. The corollary of embarking on partnerships with existing successful user-generated sites is that government does not attempt to replicate them and crowd them out of the market. The community of professionals who run user-generated websites in the UK has provided the review team with various examples where parts of the public sector have attempted to replicate their work (see Box 10).

Box 10: Duplication from the perspective of user-generated site operators

Netmums describe a sense of frustration that government departments have tried to 'pigeon-hole' them as potential contractors or promoters of government services, rather than seeing them as partners in providing a better service. Also DfES operates a user-generated parenting site called ParentsCentre59 which Netmums see as duplicating their service to some extent.

The non-profit organisation Patient Opinion, which seeks to enable patients' sharing of healthcare experiences and to influence health policy, has expressed concern that government may be replicating their service. They report that the first time they heard about the parallel and government-led 'user voice' function was through a published article.⁶⁰

58. This is poor practice, for several reasons:

- Building a community of users on websites is a slow, difficult process with a very high failure rate. Duplicating efforts means investing in a very risky proposition
- This may be considered to be anti-competitive behaviour, which can make it harder for companies to attract capital, or for non-profit organisations to attract volunteers or funding
- Government could often achieve its own aims of working with service users more cheaply by working with pre-existing sites.

Recommendation 3. Departments, monitored by COI, should research the scale and role of user-generated websites in their areas, with a view to either terminating government services that are no longer required, or modifying them to complement citizen-led endeavours.

⁵⁹ www.parentscentre.gov.uk.

⁶⁰ society.guardian.co.uk/e-public/story/0,,2054474,00.html.

59. Given the spectacular growth in the number and size of user-generated websites, it seems unlikely that every government information service is now as essential as it once was. In order to reduce future duplication of online services between government and user-generated sites, the review recommends that relevant departments, monitored by COI, should research user-generated websites in their areas, with a view to either terminating government services that are no longer required, or modifying them to complement citizen-led endeavours.

GOVERNMENT SHOULD PROMOTE INNOVATIVE RE-USE OF PUBLIC SECTOR INFORMATION BY GRANTING NON-COMMERCIAL LICENCES

Recommendation 4. To encourage innovation in the re-use of information by non-commercial users, UK trading funds should, in consultation with OPSI, examine the introduction of non-commercial re-use licences, along the lines of those pioneered by the BBC's Backstage project and Google Maps.

60. The internet has created a new group of information users: people who mix and combine information to create new services of benefit to society. This culture of 'data mashing' has been led by enthusiasts and small businesses, empowered by visionary information-access programs from internet pioneers like Google and the BBC. In the past, few individuals or small organisations had the technology or skills to access and re-use public sector information. Today, the power of cheap computers and the wide availability of free software make mixing and mashing information quicker and easier.

Box 11: Data mashing

(e.g. mapping and transport data) to produce new products or services. 'Mash-ups' most commonly combine mapping data, such as that provided by Google, with data from another source. For instance, the website [Chicagocrime](http://chicagocrime.org)⁶¹ combines mapping data with information from the Chicago police department to create a free, automatically updated map of crime incidents in the city.

In the same way, the innovative American retail website Zillow⁶² combines mapping data with information on local land value and house price sales to create a service that accurately estimates the value of a home at a given address.

61. Two things are worth noting about this new group of users. First, by virtue of their status as individuals or organisations wishing only to experiment, not build final products ready for market, they often do not have the resources to pay for expensive data. Second, in the past, larger organisations have found it difficult to engage with small numbers of individual developers. These developers want information delivered rapidly and possibly with no ultimate business use in mind. This difficulty has been exacerbated by the tendency on the part of some public sector information providers to seek licence negotiations, rather than simply sell information from a price list.
62. However, private sector technology companies decided a new approach was needed to engage with these groups of enthusiasts and developers. Seeing these individuals as a potential source of innovation for new products and services, they began to open up their

⁶¹ chicagocrime.org.

⁶² zillow.com.

internal information to individuals for free, using non-commercial licences. Examples include Google Code,⁶³ the Yahoo Developer Network,⁶⁴ and Flickr Services.⁶⁵

63. Online retailer Amazon was among the first to spot this opportunity. An article in *Business Week* describes the early 'epiphany' of founder Jeff Bezos: 'If the new computer set up allowed folks inside to be more creative and independent, why not open it up to outsiders, too?' Consequently, in 2002, Amazon began offering outside software and website developers access to selected Amazon data, such as pricing trends, gradually adding more and more. Now Amazon is in a situation where it sees constant innovation from more than 200,000 outside web developers, up 60% from a year ago.⁶⁶
64. Innovation in this area need not be limited to the private sector. The BBC is frequently cited as an innovator. In 2005, it launched a project, called BBC Backstage, to encourage non-commercial re-use of various types of information normally unavailable to outsiders. Popular types of content provided by the BBC as part of Backstage include traffic reports, weather data and the TV programming guide. The site has a development community of around 1,300 users and has resulted in a number of innovative projects, including a mobile phone traffic news system in the UK, mtraffic.
65. The BBC justifies its investment in BBC Backstage because it encourages innovation, and because the service helps to develop 'niche applications' that the Corporation itself might not develop. It provides the various types of content through easy-to-use non-commercial licences.
66. Ordnance Survey has also begun experimenting with non-commercial licensing. In October 2006, the organisation announced the creation of OS OpenSpace, a service that would have allowed users to apply to gain access to OS mapping data for 'non-commercial use only'. At the time of the announcement, OS claimed that the application would 'minimise barriers for individuals to access high quality data' while also exposing OS data 'to a wider community' and would allow 'the development of new ideas targeted at niche groups'.⁶⁷
67. However, the service was never launched, and is currently on hold. Interviews with OS suggested that the major barrier to launching the application came from its relationships with smaller suppliers, who resented the possibility of non-commercial re-users obtaining free access to information that they had had to pay for as part of their commercial arrangements.
68. Similar barriers will exist for other public sector information holders, and in particular other UK trading funds, in attempting to experiment with non-commercial licences. Ordnance Survey found that those consumers already licensing their mapping data strongly objected to the idea of similar information being given away for free to others, even if on a non-commercial basis. The same objections are likely to be found elsewhere, and a mechanism will have to be found to migrate non-commercial licence users onto commercial licences if they decide to use the information for commercial gain.

⁶³ code.google.com.

⁶⁴ developer.yahoo.com.

⁶⁵ www.flickr.com/services/api.

⁶⁶ 'Jeff Bezos's risky bet', *Business Week*, November 2006, www.businessweek.com/magazine/content/04_41/b3903462.htm.

⁶⁷ *Introducing OS Openspace*, presentation by Andy Radburn, October 2006.

69. These concerns about competitiveness are serious and deserve attention. However, there are significant counterarguments that have led this review to continue to press for non-commercial licences.
70. The first argument is that the cost-recovery policy for trading funds already encourages and allows de facto price discrimination. For example, companies are charged different amounts for the use of certain Ordnance Survey datasets, depending on how many users they will have within the purchasing body. It does not actually cost Ordnance Survey more to serve more terminals, so price discrimination based broadly on the size of an organisation is already accepted policy.
71. Second, and more broadly, government already recognises the unique value of projects undertaken on a non-profit basis, and rewards such activity through tax reductions for registered charities. Charities might be economically characterised as organisations that produce disproportionate levels of public good and positive externalities from resources deployed. Information turned into new public services by non-commercial users is at the extreme end of such possible good, because its benefits can be shared almost infinitely at no marginal cost.
72. This review found little evidence that other UK public sector information holders, apart from Ordnance Survey, were attempting to follow the BBC and private sector organisations in pursuing not-for-profit licences to promote innovation. This is a substantial missed opportunity, which will only get bigger as it becomes easier to mix and re-use information on the internet.
73. This review recommends that UK trading funds, in consultation with OPSI, examine the introduction of non-commercial re-use licences, along the lines of those pioneered by the BBC's Backstage project and Google Maps.
74. Finally, given the central importance of mapping data in this area, Ordnance Survey should find ways to address the concerns of its existing customers, and launch its OpenSpace project. If timing permits, the launch of the OpenSpace project could be a way of piloting the proposed non-commercial re-use licensing approach prior to wider adoption.

Recommendation 5. To promote innovation, Ordnance Survey should, by the end of December 2007, launch its OpenSpace project to allow non-commercial experimentation with mapping data.

INNOVATIONS WITHIN GOVERNMENT

Recommendation 6. To promote innovative use of public sector information, the Department for Transport, with the support of the Chief Scientific Adviser's Committee, should complete the partially undertaken scoping and costing of a 'data mashing laboratory' and advise the Cabinet Committee of Science and Innovation on appropriate next steps.

75. As well as encouraging innovation and data mashing by non-profit organisations, government could establish or commission its own efforts in these areas. Various proposals for a government 'data mashing laboratory' have been circulating since 2006. A government data mashing laboratory would establish a dedicated environment for the sharing of public sector information inside government and the experimental generation of new value from pre-existing information.

76. The idea of establishing such a laboratory has been considered as part of the Department for Transport's Data Grand Challenge. This is a project of the Science and Innovation Ministerial Committee, designed to realise the benefits of (particularly real-time) data within and outside government and, in particular, improving access to data held across different government departments and from external sources. A detailed paper on the data mashing laboratory was produced by officials at the Department for Transport (DfT) during 2006. It suggested the creation of a £10 million, two-year pilot project. Currently this initiative has stalled.⁶⁸
77. Following the initial proposal, a DfT-commissioned paper examined the concept of a data mashing laboratory. The resulting research identified a number of barriers to good information sharing within government.⁶⁹ The paper's author, Chris Marsden, suggested that the concept came from the observation that many of the more pioneering approaches to exploiting information in the private sector were too advanced for government. Instead, government needed a 'safe space' where officials, public sector information holders and outsiders could access public sector information and information from the private sector, and experiment with the creation of new data products.
78. This review recommends that, as the Department for Transport re-examines this issue, it should bear several factors in mind:
- Any successful innovation space must have fluid links to individuals and bodies outside government
 - Given the extremely low cost of data mashing, it should consider whether the full £10 million is absolutely necessary at the start
 - It should consider whether the lab actually needs to be a physical place at all
 - It should consider whether participants in the lab need themselves to be civil servants.

SELF-HELP FORA FOR GOVERNMENT SERVICES ONLINE

Recommendation 7. To improve understanding, effective usage and take-up of government services, COI should examine options for more self-help fora for public services and publish guidance for departments on how and when to set up such fora by December 2007.

79. Earlier chapters of this report have demonstrated the significant potential for engaging citizens as users and co-producers of public services. Government is aware of this issue. Numerous reports have made the case for engaging more closely with the consumers of public services by allowing them more 'voice' and the ability to shape the services they are using. Sir David Varney's recent review on service transformation argued that:

'deep insight into customer needs, behaviours and motivations, plus the ability for citizens and businesses to have better information on the services on offer, are all important for the design of public services that support the Government's desired policy outcomes'.⁷⁰

⁶⁸ Department for Transport (2006) internal thinkpiece, *Proposal for a government data mashing lab*.

⁶⁹ RAND Corporation report prepared for the Office of Science and Technology's Data Grand Challenge: Marsden, C., J. Cave, et al. (October 2006). *Better re-use of public sector information: evaluating the proposal for a government data mashing lab*, Rand Corporation.

⁷⁰ Varney, D. (2006). *Service Transformation: A Better Service for Citizens and Businesses, a Better Deal for the Taxpayer* (Varney Review), www.hm-treasury.gov.uk/media/53D/F2/pbr06_varney_review.pdf.

80. Equally, the Government's Policy Review document *Building on Progress: Public Services*⁷¹ argued that: 'The Government has an important role to play in helping citizens to make the most of their ability to influence the way in which they receive services. This includes using the internet and other technologies to enable citizens to shape services in ways and at times convenient to them'.
81. This review is particularly interested in ways of providing opportunities, using the internet, to help citizens help each other to use public services online. Charles Leadbeater, an expert on these issues, recently wrote that 'reform should start to be guided by an ethic of participation and self-management'.⁷²
82. One way of putting these principles into practice is to examine the possibility of investing in online self-help fora. In particular, there is good evidence from the private sector that technology companies have led the way in providing online spaces and fora. On these fora, their customers can discuss how to use their goods or services. Examples of firms using content generated by users to improve their customer focus and service include Google's numerous Google Groups about its various services⁷³ and Microsoft's Knowledge Base.⁷⁴ If the companies do not provide or host such a service, third parties or enthusiasts are likely to fill the gap. Put simply, if you have a problem with a computer or a mobile phone, there is probably a forum, run by users of that product, that can help you fix it.
83. Private companies see three main benefits from engaging with and supporting online fora that discuss their products. First, such fora help consumers: web-based fora have become an excellent source for users of a service to provide useful tips, advice and support to other users. Second, such fora save companies money: users who find help online are less likely to call expensive phone lines. Third, fora improve innovation: online areas in which users can provide feedback, complain or identify problems allow companies to identify and fix problems in their products more quickly.
84. There is a significant opportunity for government to use online fora to allow users of services to help each other navigate and understand public services. Such fora could either be hosted by a government agency, or run independently but facilitated with relevant materials to help customers. Citizens frequently find public services confusing to navigate and understand. This is especially true of administrative tasks, such as filing tax returns, acquiring a driver's licence, applying for benefits, making a planning application or finding the right entity to complain to about a service.
85. Online self-help fora offer citizens a number of potential benefits. First, they could help users who are having difficulty coping with a complicated form or process – for filling in tax returns or applying for a benefit. Second, they can provide reassurance that any such process has been completed correctly. Third, they can provide an extra source of advice for significant decisions, in which users simply wish to talk to someone who is 'like them', making the same decision. Finally, they allow users to comment on the quality of the service itself.

⁷¹ HM Government (2007). *Building on Progress: Public Services*. p. 37, available at www.cabinetoffice.gov.uk/policy_review/index.asp.

⁷² Charles Leadbeater (2007). 'The DIY state', *Prospect Magazine*, January.

⁷³ groups.google.com.

⁷⁴ support.microsoft.com.

86. There are a number of administrative tasks that could benefit from user fora. In particular, there are opportunities to introduce such online fora in various specific public services, including:
- HM Revenue and Customs self-assessment tax returns (see Appendix 5);
 - driving licence applications;
 - benefits and tax credit applications;
 - user complaints about government services;
 - application for or renewal of car tax.

PART 6: IMPROVING ACCESS TO PUBLIC SECTOR INFORMATION

- Government should provide better access to the public sector information it holds.
- To help government respond to rapidly changing demands for public sector information, a web-based channel for aggregating information requests should be set up.
- Government has a policy of charging very little (i.e. ‘marginal cost’) for providing public sector information to those that want to re-use it. However, trading funds (like Ordnance Survey) are excluded from this policy.
- There are arguments for and against moving to a different charging regime for the re-use of public sector information held by trading funds; economic analysis is required to determine whether a change would be appropriate.
- Except where this economic analysis suggests otherwise, government should consistently apply its policy of marginal cost pricing.

REVEALING THE DEMAND FOR PUBLIC SECTOR INFORMATION

Recommendation 8. To improve government’s responsiveness to demand for public sector information, by July 2008 OPSI should create a web-based channel to gather and assess requests for publication of public sector information.

87. It is relatively easy to suggest changes that would give citizens and organisations better access to information held by government. These include:
- republishing information in open standards or as web services;
 - changing when information is published to suit the needs of those requesting it;
 - rewriting licences in situations where they currently prevent innovative re-use; and
 - presenting databases in ways that suit the needs of re-users.
88. The problem is not how to make information available, but rather where to allocate scarce resources in order to do so. This review argues that mandating all government departments or agencies to publish information in a certain way is likely to be expensive, unreliably implemented, and of dubious value for money. Instead, government should endeavour to improve the speed and efficiency with which they respond to demands from individuals and organisations to publish information.
89. Currently there are few incentives for individual government agencies to ensure that the information they produce is being widely and productively used. This is partly because they

must bear the cost of sharing, and partly because few public organisations are primarily set up to provide information. To address this, the review recommends that OPSI create a single web-based channel to aggregate and openly publish requests for public sector information. The channel should be a new part of a pre-existing website, rather than a whole new site. It should work as a low-cost, open way of bringing together all the publicly filed requests for changes in the publication of public sector information.

90. This kind of web-based channel would allow users to read and endorse other requests for government information. There could also be an option to leave supporting evidence for why the information would be valuable. Furthermore, OPSI should carry out a rolling assessment program of the requests filed. In cases where releasing information would seem to be in the public interest, OPSI should write to the information holder in question and ask for a response to the proposal, including the cost implications. OPSI would also ideally report, as part of its annual review, on the number and nature of requests and the responses from information holders.
91. This approach would have the following effects:
 - motivating government agencies to be more transparent about the choices they face around resource allocation;
 - helping government agencies to be more transparent about the publication decision-making processes; and
 - helping government agencies prioritise their responses to requests for information over time, allowing them to plan and budget accordingly.
92. The web-based channel would also help reveal where previously untapped value lies in the information held by government. In order to achieve all these goals, OPSI should ensure that public sector information providers link to the new channel.
93. The longer-term benefits of a web-based channel revealing the demand for public sector information are likely to include:
 - users and organisations building products and services, free or paid for, that would not otherwise have existed (i.e. more innovation);
 - better business and personal decisions made through wider availability of information in forms people want; and
 - clear demonstrations of how working with information re-users (demonstrating a ‘co-production’ approach) can work in practice, possibly resulting in other analogous approaches across government.

RECONSIDERING INFORMATION CHARGING POLICY

Recommendation 9. By Budget 2008, government should commission and publish an independent review of the costs and benefits of the current trading fund charging model for the re-use of public sector information, including the role of the five largest trading funds, the balance of direct versus downstream economic revenue, and the impact on the quality of public sector information.

Recommendation 10. To ensure the most appropriate supply of information for re-use, government should consistently apply its policy of marginal cost pricing for ‘raw’ information to all public bodies, including trading funds, except where the published economic analysis in recommendation 9 shows this does not serve the interests of UK citizens.

CURRENT POLICY ON CHARGING FOR PUBLIC SECTOR INFORMATION

94. There is an ongoing debate over the extent to which government should charge citizens, NGOs or businesses for a licence to re-use the public sector information it collects. At present, government policy⁷⁵ is that public sector information holders that choose to make public sector information available should charge for re-use of ‘raw’ data (see below for definition) at ‘marginal cost’. In situations where government produces information that has been modified to add value, departments are required to charge at market rates. Recommendations 9 and 10 above pertain exclusively to the pricing of raw data.

Box 12: Defining ‘raw’ data

‘Raw data...was defined in the Review of Government Information as ‘information collected, created, or commissioned within Government which is central to Government’s core responsibilities. The supply of selected components of a raw data package, exactly as in the package is raw data supply, but the supply with further analysis, summarisation etc, or of data at a different level of aggregation to that used by Government, is not raw data for the purposes of this report but is value-added information’. Raw data is not synonymous with raw material, or with unchecked data. For example, the raw material for value-added services may, or may not, be raw data’. (HM Treasury, ‘Charges for information: when and how’ [2001])⁷⁶

95. The policy of charging marginal cost for the bulk of government information is relatively new, and originated in the Government’s ‘Cross Cutting Review of the Knowledge Economy’ (2000). The rationale for a policy change was that:
96. ‘The current policy of average cost pricing creates a significant barrier to the re-use of information because it requires parts of government, where this is not core business, to make assessments and attributions of relevant costs and negotiate individual contracts in an area in which many departments and agencies are ill-placed to operate. Marginal cost pricing would remove this burden from both the department concerned and the private sector’.⁷⁷
97. An exception to this policy is made for a class of public bodies known as trading funds. The Cross Cutting Review of the Knowledge Economy concluded that marginal cost pricing was appropriate for ‘departments and agencies (other than trading funds)’ but not for trading funds.⁷⁸ Because of the decision to exempt trading funds from marginal cost pricing and other historic decisions, there are some bodies that charge for most of their information (e.g. Ordnance Survey) which appear similar to other bodies (such as National Statistics) that do not charge.

⁷⁵ HM Treasury (2001). *Charges for information: when and how*, www.hm-treasury.gov.uk/media/A74/FF/charging_for_info.pdf, p. 9.

⁷⁶ Office of Fair Trading (2006). *Commercial Use of Public Information*.

⁷⁷ HM Government (2000). *Cross cutting review of the knowledge economy*, para. 1.15, www.hm-treasury.gov.uk/spending_review/spending_review_2000/associated_documents/spend_sr00_ad_ccrco ntents.cfm.

⁷⁸ Office of Fair Trading (2006). *Commercial Use of Public Information*

TRADING FUNDS

98. Trading funds collect most of the useful and economically valuable UK public sector information, with the Cross Cutting Review suggesting that they currently take in 92% of all government public sector information revenue.⁷⁹ The largest trading funds by revenue are Ordnance Survey, the Met Office, the UK Hydrographic Office, HM Land Registry and Companies House.⁸⁰
99. In common with other trading funds, these bodies operate on a 'cost recovery' basis. This means they are required to partially fund their operations and the collection, maintenance and updating of public sector information by charging their users for the re-use of the public sector information they hold. Because they charge, they do not have to be supported entirely by the taxpayer. This review estimates that sales by trading funds to non-government customers generate between £100 million and £200 million a year, including revenue from both statutory and non-statutory information services.
100. There are various different funding models for UK trading funds. Ordnance Survey funds almost its entire operations from direct commercial revenue, although diverse parts of government make up about half of its clientele by value. The Met Office, on the other hand, relies on a subsidy from the Ministry of Defence for around half of its income.

INDIRECT ECONOMIC BENEFITS OF SHARING PUBLIC SECTOR INFORMATION

101. The amount of money generated by direct sales from trading funds is thought to be much smaller than the wider value of public sector information to the economy. Whenever an organisation or an individual uses some public sector information to generate a service that is then sold on, public sector information generates new economic value, although not necessarily for UK-based companies.
102. In its recent report, the Office of Fair Trading argued that there was some £500 million of untapped economic value in the whole UK public sector information market, on top of the £590 million currently generated. According to the study and to interviews conducted by the review team, this is a 'conservative' estimate, and is certainly considerably smaller than other estimates that put the value at between 0.8% and 8% of the entire economy (c. £10–100 billion).⁸¹

ARGUMENTS FOR AND AGAINST CHARGING FOR PUBLIC SECTOR INFORMATION

103. It has been argued that lowering the cost of accessing and re-using some or all public sector information could generate tax returns from new business that may exceed the direct revenue lost through forfeiting a proportion of the licence fees. This review recommends that this important, but as yet unsubstantiated, argument be examined through the proposed independent review of the costs and benefits of the current trading fund charging model. This section sets out some of the competing factors that need to be examined.

⁷⁹ Office of Fair Trading (2006). *Commercial Use of Public Information*, para. 4.7. This includes both statutory and non-statutory information revenue.

⁸⁰ Office of Fair Trading (2006). *Commercial Use of Public Information*, www.oft.gov.uk/shared_oftr/reports/consumer_protection/oft861.pdf.

⁸¹ Office of Fair Trading (2006). *Commercial Use of Public Information*, Annex G, p. 19.

Box 13: Arguments for moving to non-cost-recovery pricing for raw information

- Rapid technological changes since 2000 have made it much easier and cheaper to re-use public sector information, and have generated new classes of information re-user, including individuals, enthusiasts, small companies and third sector bodies. These new users now have the tools to re-use the information, but are often unable to access it due to cost barriers. This is especially common in the field of geographic information, such as postcodes.
- While arguing for cost-recovery pricing for trading funds, the Cross Cutting Review argued more widely that, in the short run, 'marginal cost pricing may bring considerable extra social benefits: information is a good for which this marginal cost is in many cases near to zero (once information is collected only the costs of reproduction, etc. are additional); there are also prospects that demand would grow rapidly in response to lower prices (information being an experience good) and as basic information is repackaged in innovative ways'. According to Derek Clarke, the South African Mapping Agency 'did indeed find that the number of organisations consuming its data increased by 500%' when it abandoned its previous charging policy.⁸²
- Some empirical evidence exists to suggest both that the total size of the US re-use market is much larger than in European countries, and that certain types of markets for public sector information re-use (e.g. weather derivatives) expanded much more quickly in the US than in Europe. However, it is not possible from available research to determine whether this was related more to other factors, such as the size of the US.

Box 14: Arguments for maintaining the status quo

- In the absence of economic analysis, the size of any economic gain from making some or all data available at marginal cost is unknown. By contrast, the direct income saved by not making the taxpayer fund trading funds can be calculated quite easily and is substantial (for example approximately £60 million a year for Ordnance Survey).
- Data quality may suffer. The need for trading funds to make a return on capital gives them an incentive to meet customer needs. Simultaneously, the cost-recovery model generates money required to invest in improving data and keeping it up to date. Anecdotal evidence from the US suggests that the quality of many types of US public data is lower than in the UK, although the review was unable to identify specific studies showing this, or the costs to the US economy of lower-quality data.
- Even if much more revenue is generated by companies re-using public sector information, it might not be by companies paying tax in the UK.
- If trading funds do not receive direct compensation for the service they provide through cost recovery, and if they are not obliged through statute or regulation to provide those services, their natural incentive is to make those optional services inaccessible, thus reducing the total information available for public use and re-use.

104. Government's existing charging policy in relation to trading funds is founded on the assumption that the wider benefits of a marginal cost model for re-use are small, compared to the data-collection costs and surpluses generated by trading funds. Existing government policy also assumes the benefits that accrue will primarily be private, and that the public should not have to pay for public sector information through general taxation. However,

⁸² Question and answer session with Derek Clarke, Head of the South Africa Mapping Agency, 8 March 2007, *Guardian Technology* 'Free our data blog', available at www.freecourdata.org.uk/blog/?p=106.

there is enough evidence (see below) to argue that these assumptions are now sufficiently out of date for them to require a detailed re-examination:

- Ordnance Survey's OXERA study⁸³ estimated that its data underpinned £100 billion of economic activity in the UK. If the current charging regime is reducing the size of possible economic activity by even a single percentage point of GDP, the tax income forfeited could dwarf the entire £50–60 million that is currently saved by having Ordnance Survey sell information on a cost-recovery basis.⁸⁴ This clearly warrants closer examination
- Making a return on capital does create positive incentives for good customer service. However, the incidences of unproductive barriers to innovation recorded by the Office of Fair Trading's report *Commercial Use of Public Information* raise concerns. It is perhaps unsurprising that any charging model creates non-cost barriers in terms of delay and bureaucracy, and narrows the prospective market to clients capable of entering into contract negotiations. The scale of these barriers under the current charging model is not known and is of concern
- The huge number of new data mash-ups that have grown up across the internet in the last two years demonstrates new value being generated from information re-used every day
- HM Treasury's (HMT) decision to make mainstream public sector information available at marginal cost has seen some striking successes. For example, the free website uSwitch⁸⁵ (based on public sector information) has created so much value that it was recently purchased for £210 million
- The historic division between personal use of public sector information (traditionally free) and uses that benefit or affect a wider group of people (traditionally licensed) is collapsing. Individuals increasingly expect that they should be able to share valuable information with friends and family without engaging in a licensing arrangement originally designed for businesses.

POSSIBLE ALTERNATIVE CHARGING REGIMES

105. There is a major precedent that is often cited by those arguing for changes in the trading fund cost recovery model. In the United States, public sector information is collected by agencies funded from general taxation, and made available to commercial and non-commercial users for free. Publicly funded data collectors do not re-sell value-added public sector information products. Furthermore, recent changes in charging policies within the South African and Canadian mapping agencies have moved both towards the US model, rather than the cost-recovery model currently used in the UK.
106. International examples alone do not sufficiently justify changing the UK model. The review was told several times in interviews that there were disadvantages to the US approach. The most substantial, and often repeated, was that the economic benefits might not offset the fall in government income currently received from trading funds, resulting in

⁸³ Oxford Economic Research Associates Ltd (Oxera) Report for Ordnance Survey, *The economic contribution of Ordnance Survey GB*, September 1999.

⁸⁴ Prime Minister's Strategy Unit calculations based on Ordnance Survey's accounts.

⁸⁵ www.uswitch.com.

a significant net revenue loss for the government. There were also concerns about inferior data quality as a result of this charging regime.

RECOMMENDED WORK

107. Acknowledging the indirect value of public sector information and the need to ensure that charging arrangements are best serving the UK economy, the Cross Cutting Review recommended that 'further work should be undertaken by the Treasury and the DTI [Department of Trade and Industry] on the economics of information pricing with a view to developing further the evidence base and to inform future policy decisions'.⁸⁶
108. This recommendation has not yet been implemented. No reliable economic analysis has been undertaken to estimate the costs and benefits of different charging regimes. This has been of particular concern, since technological changes have moved in a direction that challenges rather than supports the status quo by increasing the value that can be generated from any one piece of information.
109. Various options for reform of the cost-recovery trading funds are possible – not simply a blanket change in the charging for all products and services from all trading funds. Options include providing some or all information for free, pricing at marginal cost or pricing at an intermediate level between cost recovery and zero. The one thing that these various options have in common is that they are likely to increase the market for public sector information re-use at the expense of lower direct revenue to government from sales. The correct model will maximise net benefits.
110. If economic analysis dictates that some reform of trading fund pricing models is desirable, it will be necessary to re-examine the statutory functions of those trading funds. This would prevent changed charging models from reducing the amount of valuable public sector information produced.

MOVING TO AN EVIDENCE-BASED UK CHARGING REGIME

111. This review does not believe that there is a case for exempting trading funds from the presumption of marginal cost pricing on a blanket basis, without critically examining on a product-by-product basis whether the exemptions are in the public interest. Current policy for non-trading funds is to assume that marginal cost pricing generates the most economic and social value for the UK.⁸⁷ Deviations from the marginal cost presumption ought only to occur when there is clear reason to believe that the public interest is best served by charging.
112. This review also agrees with the OFT that the Government should commission a review of the economic case for moving to a marginal cost pricing model. This should further develop the evidence base and inform future policy decisions. This report recommends that such a review:
 - be published by HM Treasury;

⁸⁶ HM Government (2000). *Cross cutting review of the knowledge economy*, www.hm-treasury.gov.uk/spending_review/spending_review_2000/associated_documents/spend_sr00_ad_ccrcontents.cfm.

⁸⁷ HM Treasury (2001). *Charges for information: when and how*, available at www.hm-treasury.gov.uk/media/A74/FF/charging_for_info.pdf.

- pay particular attention to the different market situations of the biggest five trading funds as separate pieces of analysis;
- be sufficiently resourced to examine the specific cases of the different re-use markets for different products;
- include best estimates of the economic activity generated by changing the pricing of raw public sector information, and the likely impact on tax revenues in the UK;
- include best estimates of revenue lost to government and the economic impact of any increase in taxation; and
- provide an international economic analysis of different public sector information re-use markets in comparable countries. This should include an analysis of comparative qualities of public sector information.

PUBLISHING GOVERNMENT'S REGULATORY DATA ONLINE

Recommendation 11. To improve the supply of government information for re-use, the Better Regulation Executive should promote publication of regulatory information, and should work with OPSI to encourage publication in open formats and under licences permitting re-use.

THE INTERNET CAN HELP PEOPLE GET BETTER VALUE FOR MONEY

113. A significant body of literature describes the losses that citizens incur because they lack information when making decisions, particularly purchasing ones. These losses come about, for example, when citizens cannot obtain enough information to evaluate the quality of a good or service before purchase.
114. Several studies have shown, for example, that using the internet increases customer knowledge and collective consumer power, ultimately leading to lower prices. Research in 2003 found that an average saving of 16% was achieved on electronic goods when price comparison sites were used.⁸⁸ Similarly, much of the travel holiday industry has been transformed by the internet, driven by the effect of information on consumer decisions.
115. In economic terms, what happens when someone buys a good or a service without enough information to get a good deal is that they suffer 'consumer detriment'. Consumer detriment occurs particularly where people make infrequent purchases, of high value, and where the quality is hard to judge in advance. Box 15 below highlights the very real cost to citizens of a market in which the internet has not yet helped reduce this problem.

Box 15: 'Consumer detriment' in the car industry

Car servicing is an example of the very high economic cost that the UK bears from markets in which the sellers have considerably more information than buyers. Since 1985, there have been studies of the market that have found consistent problems and complaints, with mystery shopping confirming widespread evidence of poor standards, mis-selling and overcharging. Consumer detriment in the car servicing industry is estimated at £4 billion a year.⁸⁹

⁸⁸ Baye, M., R. J. Morgan, et al. (2003). 'The value of information in an online electronics market', *Journal of Public Policy and Marketing* 22 (1): 17–25.

⁸⁹ Johnstone, J. and A. Kozakova (2006). *Imperfect Markets*, National Consumer Council.

The internet is only just starting to push the information balance in favour of the consumer. Academic research from the US, published as long ago as 2001, examined 300,000 car purchases, and discovered that customers who used an online service to inform themselves paid on average 2% (\$450) less.⁹⁰

BETTER PUBLIC SECTOR INFORMATION MAY ENABLE REDUCED REGULATION

116. The economic policy of the UK is based on an assumption that well-functioning markets in goods and services generate wealth and well-being. Whenever the suppliers of a good or service have better information about it than the citizens consuming it, markets work less efficiently than they should. As one study notes, 'If citizens are to be given more choice in public policy and services, they must be provided with information in forms they are aware of, can find easily and are readily understandable when they are reached'.⁹¹ Government has several options at its disposal to help achieve this.
117. The traditional approach has been to regulate – e.g. to force the suppliers either to lower the price they offer or to provide evidence that they are supplying at market rates. This has inefficiencies and costs because it requires government itself to search for all the necessary information to make appropriate decisions. It can also have unintended consequences (e.g. hindering one supplier and inadvertently providing a competitive advantage to another).
118. Another approach is for government to supply citizens with all the information they need to make their own decisions, which collectively influences the quality and price of supply. In such cases, sharing information can empower citizens to make better decisions. The *UK Government's Approach to Public Service Reform* (2006) and *Building on Progress: Public Services* (2007) both describe facilitating 'choice' and 'voice' as practical, often more efficient, alternatives to top-down traditional regulation. This approach still means costs for government in collecting and sharing the information necessary to empower citizens; but it is lighter touch and often (though not always⁹²) more cost effective than regulation. Boxes 16 and 17 below show how this works in practice.

Box 16: Scores on the Doors

Scores on the Doors is a scheme whereby food safety information is made available at the point of sale, supported by web-based information systems. Several local authorities have already introduced Scores on the Doors schemes, and the Food Standards Agency (FSA) is now working with three groups of local authorities in London, the Midlands and Scotland to evaluate different pilots. Key issues for this evaluation will include the relationship between the ratings scheme and legal compliance, as well as the level of consistency between different schemes. Over the next two years, the FSA will test different models, and will seek to make a recommendation for one preferred scheme nationwide.

⁹⁰ Zettelmeyer, F., F. S. Morton, et al. (2006). 'How the Internet lowers prices: Evidence from matched survey and automobile transaction data', *Journal of Marketing Research* 43(2): 168–81.

⁹¹ Dutton, W. H., M. Peltu (2006). *Engaging with the Google generation: What Web 2.0 means for connecting government and citizens*, Summary of a workshop held at the Oxford Internet Institute on 19 December 2006 (Unpublished).

⁹² It is very important before embarking on an 'information provision' approach to reducing consumer detriment to ensure that it is actually the most effective option in the market. Sometimes the provision of information is simply 'burdensome'. For example, the Administrative Burdens Measurement exercise of 2006 revealed that almost a third (32%) of all administrative burdens constituted requirements to provide information to third parties.

Schemes similar to Scores on the Doors operate in the United States, Australia, New Zealand and parts of Europe. A study of one scheme⁹³ in Los Angeles found that both consumer and supplier behaviour changed after the ratings became public. The proportion of restaurants receiving 'good' scores more than doubled, sales at these establishments rose by 5.7% (while sales fell at restaurants with poor ratings) and food-borne illness fell by 13%.

Box 17: Decreased mortality following publication of hospital mortality rates

Recent medical research suggests that mortality dropped following the publication of information showing mortality rates for heart surgeries by hospital, and by individual surgeon.⁹⁴

Better citizen-generated information may enable reduced regulation

119. The rise of user-generated websites signals another and potentially more efficient and cost-effective option for government. Government has long relied on not-for-profit agencies from the third sector to supplement its own information provision to citizens (e.g. the Citizens Advice Bureau service). However, the rise of user-generated sites provides a vehicle whereby citizens can collect and share information themselves, in a focused, low-cost way, reducing the information asymmetry between them and suppliers of goods and services. One of the best known of all such sites in the UK is MoneySavingExpert.

Box 18: MoneySavingExpert (www.Moneysavingexpert.com)

MoneySavingExpert is a journalistic consumer finance website set up by specialised broadcaster/journalist Martin Lewis, to show people how to save money on financial services, retail and other consumer products. The site reports over 2.5 million unique users each month, with 1.3 million people receiving the weekly email. The site has a very popular forum which has over a million readers a month and 180,000 members. One of the site's many campaigns involves helping consumers to campaign against bank overcharging. Since November 2006, over 3.3 million template letters have been downloaded to this end, with thousands sharing tips and reporting successes.⁹⁵

120. The changes in citizen information use do not just affect those who create and use information on user-generated sites. For example, in the case of Scores on the Doors, government can maximise the benefits of the already published food safety information by making it more easily available for other sites to re-use.

121. In practice, this could mean government working in collaboration with those that provide websites such as Toptable.⁹⁶ Under such arrangements, government would help provide information about the safety of pubs and restaurants on the sites that citizens already use

⁹³ Jin, G. Z. and P. Leslie (2003). 'The effect of information on product quality: Evidence from restaurant hygiene grade cards', *Quarterly Journal of Economics* 118(2): 409–51.

⁹⁴ Bridgewater, B., A. Grayson, N. Brooks, et al. (2007). *Has the publication of cardiac surgery outcome data been associated with changes in practice in Northwest England? An analysis of 25,730 patients undergoing CABG surgery under 30 surgeons over 8 years*, *Heart*, June 93(6): 744–48, available at www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=17237128&dopt=Abstract.

⁹⁵ Prosser, D. (2007). 'The consumer champion behind growing rebellion', *Independent*, 23 February, available at money.independent.co.uk/personal_finance/invest_save/article2287042.ece.

⁹⁶ www.toptable.co.uk.

in great numbers to make their decisions about where to go. These websites all use the power of user opinion and user reviews to improve consumer experience.

THE LIMITATIONS OF MORE INFORMATION

122. While potentially useful, it is important to acknowledge that providing more information or supporting peer-to-peer information sharing is not a panacea. Its effectiveness will often depend on how customers interpret and use the information provided. For example, on food safety, outlets at the worst end of the scale may not be concerned about poor ratings if it ultimately does not influence the decisions of their customers. Therefore, there remains a need for existing enforcement in some instances. Nevertheless, supporting more user-generated websites may provide government with a highly efficient and cost-effective way of significantly improving the lives of citizens.
123. Information relating to regulation should not always be published in every case. However, there should be a presumption in favour of publishing, unless there is a strong case for claiming that it would do more harm than good. Government should ensure that it is available in a form that makes it easy to bring this information to the sites that normal users already visit every day.
124. Consequently, this review recommends that government should publish regulatory information on the internet in a format that consumers find easy to understand and that citizens and organisations can easily re-use and re-combine with other information. More specifically, the review recommends that the Better Regulation Executive promote publication of regulatory information, and should work with OPSI to encourage publication in open formats and under licences permitting re-use.

Box 19: Reputation systems – extract from a report by the Welsh Consumer Council⁹⁷

‘Among the simplest means of online consumer self-expression is the indication of opinion through ratings. Ratings allow numerical data from individual contributors to be crunched to provide aggregates and patterns representative of a whole.

‘Product scores given by Amazon users provide median ratings that people use to judge the quality of a book or CD; review spaces give customers the opportunity to expand on their numerical expression (their poor ratings and statements⁹⁸ [about a product] provided a valuable counterpoint to the product manufacturer’s positive marketing campaign⁹⁹).

‘The simple technology of submitted averages lets consumers become self-informing communities. The Tripadvisor¹⁰⁰ website allows customers to make judgements about the appeal of hotels and resorts, based on scores assigned by previous holidaymakers; mandatory feedback from eBay¹⁰¹ users assigns karma scores, on which judgements are made as to the trustworthiness of buyers and sellers; users of the Yahoo! Shopping retail gateway and price-searching service can likewise benefit from each other’s merchant ratings.¹⁰² Consumers are no longer reliant on individual reviews by magazines and critics, but, when collected, have become a resource to inform themselves’.

⁹⁷ Welsh Consumer Council (unpublished report, forthcoming 2007). ‘Advocacy 2.0: Consumer empowerment and representation on the new net’.

⁹⁸ www.amazon.com/exec/obidos/ASIN/B000BS6VWC/metafilter-20/ref=nosim.

⁹⁹ www.crest.com/prohealth/home.jsp.

¹⁰⁰ www.tripadvisor.co.uk.

¹⁰¹ www.ebay.co.uk.

¹⁰² help.yahoo.com/l/us/yahoo/shopping/ratings/shop-68.html.

ENSURING OPSI CAN REGULATE EFFECTIVELY

Recommendation 12. To ensure that OPSI can regulate the public sector information market effectively, government should review the fit between OPSI's functions and funding, and recommend options that will ensure it is fit for purpose.

125. The main organisation responsible for ensuring access to government's information is the Office of Public Sector Information. It regulates all organisations that produce information licensed under Crown copyright. The sort of regulatory work it carries out includes running the Information Fair Trader Scheme, examining formal complaints from private sector data users made against public sector information providers, and watching for anti-competitive behaviour. This last task is extremely important, as many of the biggest providers of public sector information are – at the very least – market dominant.
126. Evidence suggests that OPSI may be under-resourced and unable to perform its regulatory duties properly. The recent OFT report on *The Commercial Use of Public Information* argued: 'Comparing the size of OPSI and the size of the sector it regulates with the established economic sector regulators and the size of the market sectors they regulate, OPSI appears very small, with both fewer financial resources and fewer staff.'¹⁰³
127. The Information Fair Trader Scheme (IFTS) has 16 members, including Ordnance Survey, the Met Office and the Environment Agency, and has made significant improvements to information-trading activities. The OFT has recommended extending the scheme to all public sector bodies with a licensing income of more than £100,000 – a change that would bring some 300 local authorities within the scope of the IFTS and OPSI's remit. However, the benefits of this change are only realisable if OPSI is given the necessary resources to run the IFTS properly.
128. The OFT has also recommended the assessment of the cost allocation and finance regimes of agencies that are part of the Information Fair Trader Scheme. OPSI is currently not equipped to do this and there remains no routine audit of agencies' cost allocation and finance regimes, making it difficult to establish whether these agencies are distributing their information to re-users appropriately. OPSI is working with UK audit bodies to remedy this situation, but the limits to its capacity remain of considerable concern.
129. For OPSI to regulate effectively, government needs to be confident that it is fit for purpose. Consequently, the review recommends that government examine the fit between OPSI's functions and funding, and come up with options to make it fit for purpose.

PART 7: PROTECTING THE PUBLIC INTEREST

Government has a role to play in protecting the public interest.

Some specific actions it can take to do so include:

- promoting consistent, reliable information and enabling public servants to respond to citizens seeking government advice and guidance online; and
- helping excluded groups take advantage of new internet developments.

¹⁰³ Office of Fair Trading (2006). *Commercial Use of Public Information*, www.offt.gov.uk/shared_offt/reports/consumer_protection/oft861.pdf.

PROMOTING CONSISTENT, RELIABLE INFORMATION

Recommendation 13. To maximise the potential value of civil servants' input into online fora, by autumn 2007 the Cabinet Office Propriety and Ethics and Government Communications teams should together clarify how civil servants should respond to citizens seeking government advice and guidance online.

130. It is currently unclear when and how government, and particularly public servants, should engage with citizens in online spaces, whether run by the government or by third parties. Public servants' reluctance to engage with citizens online is understandable, given issues surrounding propriety, political neutrality and the personal risk that information provided could be used against the particular public servant.
131. However, there is a need to move beyond a position of pure risk aversion if government is going to work with user-generated site users and operators. One important step towards this will be to clarify the rules about the permissible behaviour of civil servants in online spaces – not least whether such engagement is permissible at all.
132. The review has found numerous positive examples of public servants entering into online public spaces to leave information, give updates, and point to services and so on. Examples were also provided of where risk aversion went too far, possibly as far as withholding information of importance to the safety of citizens.

Box 20: Institutional risk aversion exacerbating rather than mitigating risks to citizens

'I was once on holiday in a foreign country where some very active political unrest started kicking off. I won't tell you where for fear of identifying the person I'm going to talk about, but the situation was serious enough for the Foreign Office to issue a travel advisory. I got chatting to this guy in a bar who worked at the British Embassy, and he was saying he was very frustrated that his bosses wouldn't let him go and post something on the Lonely Planet forum. He knew perfectly well that was where all the travellers were looking for information and discussing the situation. 'We should be in there, part of that conversation, or what's the point?' he said. And he was absolutely right'.
(Stakeholder interviews)

133. Clear guidelines about acceptable forms of public servant engagement online help mitigate situations such as that described in Box 20 above and create confidence that benefits are realisable.

TACKLING DIGITAL EXCLUSION THROUGH USER-GENERATED WEBSITES

Recommendation 14. The Digital Inclusion Team should explore the potential for promoting digital and social inclusion through the partnerships proposed in recommendation 1 and report to the Sub-Committee on Electronic Service Delivery (PSX(E)), in line with recommendation 15.

134. There are significant benefits accruing from the new IT tools available. However, these benefits may not reach all citizens. In particular, those unable to access the internet (whether because of lack of internet access or inadequate ICT skills) are unlikely to experience the benefits of the information shared online. Furthermore, even if they can access it, the information available online may not cater to the needs of certain disadvantaged groups.
135. Digital and social exclusion are not the same thing. Social exclusion happens when people or places suffer from a series of problems, such as unemployment, discrimination, poor

skills, low income, poor housing, high crime, ill health and family breakdown.¹⁰⁴ Digital exclusion means lack of access to digital technology or the inability to enjoy the benefits of the internet and other digital technologies (e.g. through lack of ICT skills).

136. Many of those who are socially excluded are also digitally excluded. In particular, many of those who suffer specific social disadvantages also lack the skills to engage with technology. It is estimated that 79% of those on means-tested benefits lack practical ICT skills.¹⁰⁵ Furthermore, Ofcom has found that 15% of people are ‘involuntarily excluded’ from communications services, largely on account of cost.¹⁰⁶
137. There are initiatives already in place to ensure that everyone can have internet access, along with the skills to make use of it. These include the Government’s commitment to give all school-age children access through internet-connected computers in schools, and the UK Online network¹⁰⁷ of centres providing free access across the UK.
138. This review supports the current government efforts to ensure that all citizens benefit from the recent advances in information technology. It may be that there are certain steps that government can take to promote participation even further. For example, it could encourage more government and user-generated content online that is attractive to those who are currently digitally excluded.
139. Addressing social exclusion is a much bigger issue than addressing digital exclusion; and it is one that cannot be solely – or even mainly – addressed by improving access to information online. However, for socially excluded people who do have internet access, there may be options to empower them and promote social inclusion using the kinds of online ICT tools and online innovations described in Chapter 1. Box 21 below, and the study of a Swedish commercial parenting site (see paragraph 37 above) illustrate how this can be done.

Box 21: Homeless UK (www.homelessuk.org)

Launched in 2005, Homeless UK provides a website containing information about more than 8,000 services, including hostels, advice and support services. Registered local services are able to access information about available vacancies in hostels and housing projects.

Some of the benefits (described by the Digital Challenge Team¹⁰⁸ – a project management team set up to implement the Inclusion Through Innovation report¹⁰⁹ – include:

- improved access to supportive services;

¹⁰⁴ Social Exclusion Unit (2006). *What is social exclusion?* archive.cabinetoffice.gov.uk/seu/pageac0b.html?id=96&pId=27&url=page.asp?id=213.

¹⁰⁵ Digital Inclusion Team (2007). *Digital inclusion landscape in England*, www.digitalchallenge.gov.uk/links-and-resources/research/The%20Digital%20Inclusion%20Landscape%20In%20England.pdf.

¹⁰⁶ Ofcom (2006). *International communications market report 2006*, www.ofcom.org.uk/media/news/2006/11/nr_20061129.

¹⁰⁷ www.ufi.com.

¹⁰⁸ digitalinclusion.pbwiki.com.

¹⁰⁹ Office of the Deputy Prime Minister (2005). *Inclusion Through Innovation: Tackling Social Exclusion Through New Technologies*. A Social Exclusion Unit Final Report, available at archive.cabinetoffice.gov.uk/seu/downloaddoc2c05.pdf?id=768.

- prevention of homelessness by providing information at an early stage;
- increased knowledge of homelessness services; and
- homeless people (and those at risk) being able to get the help they need, when they need it.

140. In line with these kinds of opportunities, the review recommends that the Digital Inclusion Team¹¹⁰ explore the potential for promoting digital and social inclusion in partnership with operators of user-generated websites. To achieve this, the Digital Inclusion Team should be consulted when the partnerships mentioned in recommendation 1 are established. The review recommends that the Digital Exclusion Team explore the potential for promoting digital and social inclusion through the partnerships proposed in recommendation 1 and report on progress to the Sub-Committee on Electronic Service Delivery (PSX(E)) by December 2007.

PART 8: FOLLOW-THROUGH AND NEXT STEPS

Recommendation 15. The Minister for the Cabinet Office, in conjunction with OPSI, should report to PSX(E) by December 2007 on departments' plans for implementing these recommendations, and by December 2008 on progress and results.

IMPLEMENTING THE REPORT'S RECOMMENDATIONS AND INTENT REQUIRES LEADERSHIP AND A CLEAR TIME FRAME

141. This review has recommended a number of specific steps to ensure that government maximises the benefits for citizens from new developments in the use and generation of information on the internet.
142. The specific recommendations are intended to signal the need for government to become more open. This includes openness to internet technologies that empower citizens to co-produce information with government. It also means openness in terms of sharing the information that government possesses, so that its re-use can benefit citizens.
143. Such openness is not cost free. As mentioned above, sharing government's information (particularly that held by trading funds) can mean sacrificing revenue in the short term for longer-term benefits. However, the potential benefits from sharing information often outweigh the costs, and, where this is the case, it should be shared.
144. Clear leadership will be required to effect the proposed changes. This review recommends that government mandate a specific policy lead to drive the recommendations forward and report back to government on progress. Over the longer term, this leadership needs to challenge government agencies to make the cultural shift required.
145. Two agencies currently appear to be well placed to provide the kind of leadership mentioned above. One organisation, the Office of Public Sector Information, has already been asked to act as a centre of influence and excellence with respect to the sharing of government's information. The Cabinet Office appears particularly well placed as a natural coordinating entity to further government's response to the opportunities arising around citizen publishing online.

¹¹⁰ www.digitteam.org.uk.

APPENDICES

1. LIST OF THE TEAM

EXTERNAL REVIEWERS

- Tom Steinberg, Director, mySociety
- Ed Mayo, Chief Executive, National Consumer Council

STEERING GROUP

- Conrad Bird, Government Communications
- Alex Butler, Central Office of Information
- David Halpern, Prime Minister's Strategy Unit
- William Perrin, Delivery and Transformation Group
- Daniel Roulstone, Better Regulation Executive
- Michael Warren, Government Communications

SECRETARIAT

- Steve Waldegrave, Deputy Director, Prime Minister's Strategy Unit
- James Crabtree, Policy Adviser, Prime Minister's Strategy Unit
- Amalie Kjaergaard, Delivery and Transformation Group, Cabinet Office
- Francesca Sainsbury, Policy Adviser, Prime Minister's Strategy Unit
- James Taylor, Prime Minister's Strategy Unit

2. INTERVIEW LIST

- Ministers and ministerial office staff (5)
- Departmental officials (30)
- Non-departmental civil servants (12)
- User-generated website operators (9)
- Private sector online entrepreneurs (10)
- Academics and other experts (6)

3. CASE STUDY: THE POWER OF INFORMATION IN HEALTHCARE

INTRODUCTION

Few policy areas illustrate the potential power of information more clearly than healthcare. The internet is becoming a valuable source of information for patients prior to visiting a doctor; by those in search of a second opinion; and by friends and relatives trying to inform themselves

about the condition of someone they know. The wide availability of health information online also arguably has profound implications for the relationship between patients and medical professionals. It also offers the potential for users of health services to provide information to one another about both their medical conditions and their experiences of using the NHS.

INFORMATION MATTERS IN HEALTH

There is strong evidence that better information results in improved health outcomes. Better information in the hands of patients has a number of positive outcomes, including an increase in patients' quality of life and feelings of psychological wellbeing. Equally, information can help to drive up standards. In a recent example, a report published in the medical journal *Heart*¹¹¹ in 2007 found that information provided in performance league tables about coronary bypass surgery led to lower death rates after major heart operations.

Information is particularly important for chronic and long-term care. Some 45% of the adult population in Britain have at least one long-standing medical condition. Many of these conditions, including diabetes, can be dealt with by intelligent self-management.

However, it would be naïve not to acknowledge the fact that significant risks do exist in this area. Much of the health information produced online is of poor quality, unverified and potentially unreliable. Certain online sources of information also promote poor health outcomes contrary to government policy and good medical practice (e.g. pro-anorexia sites – see Box 22 below). This has led to calls by some (including the Picker report¹¹²) for accreditation of information providers.

Box 22: Pro-anorexia websites

'Pro-ana' refers to a concept or community that promotes or supports anorexia as a choice, rather than an eating disorder. 'Pro-ana' groups are common on the internet, and share advice through message boards and online communities. Doctors view the sites as supporting patients in their illnesses. A 2006 Stanford University study¹¹³ found that 61% of the visitors to these sites used them to obtain tips on weight loss and purging techniques, as well as on how to hide their food-avoidance tactics from friends and family members. Beat (formally called the Eating Disorder Association) states that the real danger of 'pro-ana' sites comes when 'a visitor affected by an eating disorder has at last found someone who really understands the way they feel about themselves'.

¹¹¹ Bridgewater, B., A. Grayson, N. Brooks, et al. (2007). 'Has the publication of cardiac surgery outcome data been associated with changes in practice in Northwest England? An analysis of 25,730 patients undergoing CABG surgery under 30 surgeons over 8 years', *Heart* June 93(6): 744–48.

www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=17237128&dopt=Abstract.

¹¹² Coulter, A., J. Ellins, et al. (2006). *Assessing the quality of information to support people in making decisions about their health and healthcare*, Picker Institute Europe, Oxford, available at www.pickereurope.org/Filestore/Downloads/Health-information-quality-web-version-FINAL.pdf.

¹¹³ Wilson, B.A., Peebles, R. et al. (2006) 'Surfing for Thinness: A pilot study of pro-eating disorder web site usage in adolescents with eating disorders' *Pediatrics* 118 (6): e1635–e1643

PEOPLE INCREASINGLY SEEK INFORMATION ABOUT THEIR HEALTH, MUCH OF IT ONLINE

Accessible, quality health information is a vital part of healthcare. It is also increasingly being demanded by patients.

More and more British people are seeking information about their own health, and many are doing so online. Health information is increasingly available online, from both the NHS and other sources. Research carried out in 2005 suggests that the internet is the second most popular source of health information (after doctors).¹¹⁴ In 2005, for example, 35% of British internet users sought health information online during a 12-month period.

Patients no longer want information provided only by medical professionals. For example, research demonstrates that many people find that exchange of experiences with other patients and ex-patients is the most reassuring and efficient way of getting information.¹¹⁵

As a health information provider, the internet clearly benefits from several unique characteristics: first, it can be accessed 24 hours a day; second, users can remain anonymous; and third, with increased ICT availability and decreased cost, the internet can reach a large section of the population.

HIGHLIGHTING INNOVATION

There is already significant evidence of innovation and information sharing in the area of health, by the public, the private and the third sectors. Examples include:

- Mihealth¹¹⁶ is a web-based information system that supports breast cancer sufferers, their families and carers through a combination of generic, local and evidence-based information, as well as direct lived experiences and personalised resources. These tools, which support patients' self-management and improved self-care, include: Midiary, a personal diary that enables patients to keep track of hospital and other appointments; and Mimoodstates, which helps patients to record their mental and physical well-being on a daily basis
- Patient Opinion¹¹⁷ seeks to enable patients to share their positive and negative experiences of healthcare, ranging from the temperature of the food served, to the professionalism of the nursing staff. This, in turn, provides independent feedback to the NHS and helps patients identify the 'best' healthcare providers for their specific needs, thereby empowering patient choice while (arguably) helping to improve the NHS by highlighting areas in need of improvement
- Jooly's Joint¹¹⁸ is an online support network of over 10,000 people with Multiple Sclerosis. It provides a platform for people across the world to discuss and share their thoughts on living with MS, and so provides personalised reassurance and help in coping. This is reinforced by Julie Howell, who founded the website after being

¹¹⁴ Office of Fair Trading (2006). *Commercial Use of Public Information*.

¹¹⁵ Bessell, T. L., S. McDonald, C. A. Silagy, J. N. Anderson, J. E. Hiller and L. N. Sanson (2002). 'Do internet interventions do more harm than good? A systematic review', *Health Expectations* 5.

¹¹⁶ www.mihealth.info.

¹¹⁷ www.patientopinion.org.uk.

¹¹⁸ www.joolysjoint.com.

diagnosed with MS at the age of 19. As she says, 'JJ has been incredible in helping me develop as a person, in developing my understanding of life'

- NHS Choices¹¹⁹ is a new website announced by Health Secretary Patricia Hewitt in April 2007. When launched, it will help patients choose the best place to go for treatment, thereby intensifying competition between NHS hospitals in England. This, it is hoped, will lead to improved service delivery.

4. EXAMPLES OF HARMFUL INFORMATION ON USER-GENERATED SITES

RATEMYTEACHER

The appearance of user-generated sites such as Ratemyteacher¹²⁰ provides an example of how pupils can give feedback on education. However, media interest has focused on the potential for negative feedback to spiral out of control. The charity Teacher Support Network has produced a fact sheet for teachers, advising on how to deal with online bullying. The NASUWT teachers' union has shown government education officials evidence of online bullying on such message boards. The Department for Education and Skills is currently updating its guidance on responses to cyber-bullying, and is working with a range of websites to address the issue.

IS HEALTH INFORMATION ONLINE ACCURATE?

Nearly half of all women recently diagnosed as having breast cancer turned to the internet for information on health.¹²¹ Although clinicians, researchers and healthcare consumers are concerned about the accuracy of online health information,¹²² a 2006 study in the *British Medical Journal* found that most posted information on breast cancer was accurate.¹²³ Perhaps more importantly, most false or misleading statements were rapidly corrected by participants in subsequent postings. An examination of 4,600 postings found only 10 (0.22%) to be false or misleading. Of these, seven were identified as false or misleading by other participants and corrected within an average of 4 hours and 33 minutes (maximum 9 hours and 9 minutes). Consumers are satisfied with their online experience and are making choices based on the information that they encounter.¹²⁴

¹¹⁹ The NHS Choices website is due to be launched in 2007.

¹²⁰ www.ratemyteacher.co.uk.

¹²¹ Satterlund, M. J., K. D. McCaul and A. K. Sandgren (2003). 'Information gathering over time by breast cancer patients', *Journal of Medical Internet Research* 5(3): 5.

¹²² Biermann, J. S, G. J. Golladay, M. L. Greenfield and L. H. Baker (1999). 'Evaluation of cancer information on the internet', *Cancer* 86: 381-90; Price, S. L, W. R. Hersh (1999). 'Filtering web pages for quality indicators: an empirical approach to finding high quality consumer health information on the world wide web', *Proceedings of the AMLA Symposium*.

¹²³ Esquivel, A., F. Meric-Bernstam and E. Bernstam (2006). 'Accuracy and self correction of information received from an internet breast cancer list: content analysis', *British Medical Journal*, 2 March.

¹²⁴ Fox, S. and L. Rainie (2000). *The online health care revolution: how the web helps Americans take better care of themselves* in Washington DC: Pew Internet and American Life Project: Online.

5. CASE STUDY: OPPORTUNITIES TO PROMOTE AND IMPROVE ONLINETAX RETURNS THROUGH USER FORA

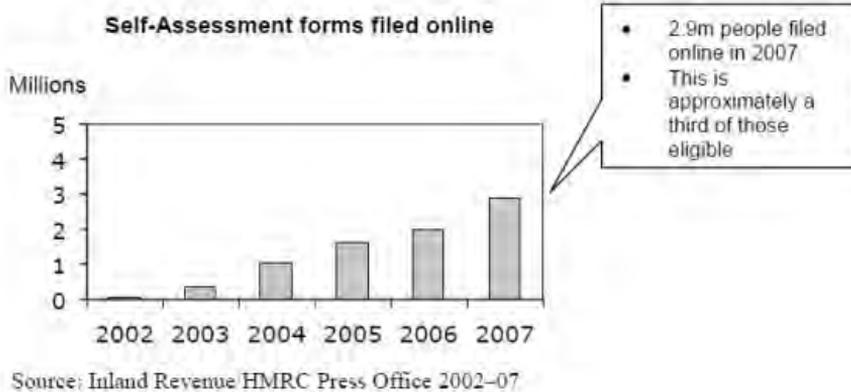
INTRODUCTION

Over 9 million British people file their personal tax returns annually, under the self-assessment program run by Her Majesty's Revenue and Customs (HMRC). In 2006–07, 9.5 million self-assessment forms were sent out and 2.9 million returns were filed online. Online self-assessment is one of the most prominent and most successful government programs to put public services online. Filing income tax returns online was identified by the European Union as one of 12 critical citizen services that should be put online throughout the European Union.

Given the importance of the online tax returns program, and the need to encourage more citizens who currently file their taxes on paper to do so online, this seemed a particularly useful case study area to explore whether government (particularly HMRC) might employ user self-help fora to improve its services.

THE HISTORY OF ONLINE TAX RETURNS

HMRC, then called Inland Revenue, announced its decision to put self-assessment online in 2000–01. The self-assessment program includes small businesses, individuals, and individuals filing through advisers, such as accountants and tax specialists. Uptake of the service has been slow but steady. In 2002 only 76,000 filed online, rising to more than a million in 2004. Last year around 3 million filed online. (see Figure 3 below). However, take-up of HMRC's online filing has been relatively low compared to other countries. In 2004, it was 17%, compared to 44% in the US and 83% in Australia.¹²⁵



OBJECTIVES OF ONLINE TAX RETURNS

The online self-assessment program has three main benefits. First, it is more convenient for taxpayers. Filing online is quicker and easier than filling in long, cumbersome forms and reduces

¹²⁵ National Audit Office (2005). *HM Revenue and Customs, Filing of Income Tax Self Assessment Returns*' Report by the Comptroller and Auditor General, HC 74 Session 2005–2006, available at www.nao.org.uk/publications/nao_reports/05-06/050674.pdf.

compliance costs. Second, the process of filing online is significantly faster and more accurate than the traditional paper-based route. By filing online, the most common mistakes can be avoided, as the system is designed to check for errors, as well as to perform the tax calculation for the user.

Third, online filing saves the Government money. If 50% of self-assessment forms were returned online, then, according to HMRC, savings of over £40 million a year (from 2011–12) could be possible.¹²⁶ HMRC estimates that the cost of processing a tax return is reduced from £22 for a paper form to £13 if the return is filed electronically, because the costs of data entry are eliminated and simple errors made by taxpayers in completing the form are rectified.¹²⁷

COMPLEXITY

To maximise these three benefits, HMRC plans to increase the number of taxpayers filing online. Increasing the number of those filing online, however, will be challenging. It is reasonable to assume that those ‘early adopters’ who initially decided to file online were those with the best IT skills. The remaining group, who have not filed online, are therefore likely to need increased support and encouragement. In order to realise these potential benefits, HMRC recognises the need to ensure that taxpayers are supported through what can be a complicated and confusing process.

In March 2006, HMRC published a review of its online services by Lord Carter of Coles.¹²⁸ The review identified difficulties with the ‘human experience’, in particular problems with telephone helpdesks, including complaints over jammed lines and advisers who were unable to answer questions, or who gave incorrect advice.

Equally, a report by the National Audit Office in June 2005 found that ‘although the HMRC website contained comprehensive information to help taxpayers file returns accurately, taxpayers did not always find the information they were seeking’.¹²⁹ It also indicated concern over the knowledge of call centre staff and the accuracy of the answers given to putative filers’ queries. Taxpayers, often with technical and highly specific queries, found that they had to make more than one call and then explain the problem again and again as they were put through to different people.

OPPORTUNITY

With independent personal finance advice websites like MoneySavingExpert becoming more popular, it is clear that people are becoming more comfortable finding financial information online. Given the need for HMRC to increase the numbers of people using its service, as well as the combined complexity of tax in general and specific problems associated with online filing,

¹²⁶ National Audit Office (2005). *HM Revenue and Customs, Filing of Income Tax Self Assessment Returns* Report by the Comptroller and Auditor General, HC 74 Session 2005–2006, available at www.nao.org.uk/publications/nao_reports/05-06/050674.pdf.

¹²⁷ HMRC (2007). *Budget 2007: Regulatory Impact Assessments*, available at www.hm-treasury.gov.uk/media/7E7/C5/bud07_ria_632.pdf.

¹²⁸ Lord Carter of Coles (2006). *Review of HMRC Online Services*, available at www.hmrc.gov.uk/budget2006/carter-review.pdf.

¹²⁹ National Audit Office (2005) *HM Revenue and Customs, Filing of Income Tax Self Assessment Returns* Report by the Comptroller and Auditor General, HC 74 Session 2005–2006. www.nao.org.uk/publications/nao_reports/05-06/050674.pdf.

this raises the question of whether there are opportunities to find new ways of helping and supporting taxpayers.

Research of internet-use patterns has shown a significant and growing trend for users to source information through a range of informal user-generated sources, ranging from wikis through to moderated fora, chat rooms and blogs. The private sector has embraced the potential for engaging customers in innovative ways, in order to provide cost-effective and comprehensive customer support and advice. Notable examples have been in computing, where companies have used the ability of a diverse customer base to answer enquiries, which are often technically complex and highly specific, in simple, accessible language. Good examples of this include Apple's support fora,¹³⁰ Dell's Ideastorm forum¹³¹ and Microsoft's Knowledge Base.¹³²

Following the private sector in developing user-support fora could provide a number of benefits for government. A well-run, informative forum could provide users with helpful information, while simultaneously helping to reduce demand for other, more expensive forms of customer support. However, on the other side, HMRC and others would need to think carefully about the potential problems associated with such an approach. Steps would have to be taken to ensure that information was accurate, for legal and other reasons. This, in turn, would involve some expenditure to moderate fora and ensure the content is accurate. There is a risk that users would use the forum to criticise the service itself, creating bad publicity.

Box 23: How a government online forum could help taxpayers with self-assessment

Imagine a user who, while trying to complete her online tax self-assessment, is confused over how to register multiple sources of income. She searches the frequently asked questions section of the HMRC site, but the advice available doesn't capture the specific nature of her question. Rather than turn to an external source of information, she instead clicks on the link to the HMRC's new user-support forum. This links to a searchable series of fora, categorised by different groups of users (e.g. partners or self-employed). A simple word search reveals a series of users encountering similar problems, but none quite captures her specific query. She posts a short description of the issue, and another user responds, drawing attention to an answer he wrote to a similar query, which she can use to complete her form. An HMRC moderator later checks the factual accuracy of the second user's answer and edits the entry on the common problems section of the relevant user-category forum.

¹³⁰ www.apple.com/uk/support.

¹³¹ www.ideastorm.com.

¹³² support.microsoft.com.

re: The Power Of Information. That's great! The power of blogging, eh? Wow. Good luck with the new job. Left by Bill Evjen on Nov 24, 2004 9:00 AM. # re: The Power Of Information. Thanks Bill, so far it has been pretty cool. No developing just yet, learning the environment. Yet the flow of information is far from perfect. The media are very selective about where they invest their time and money, and the cult of 'instantaneity' that technology encourages can flatten information into a homogenous stream of violent images and instant analysis. Nor is news reporting independent of the events under observation. Wars have always involved propaganda offensives alongside military ones. Much military strategy nowadays is directed towards capturing not just territory but headlines. Aid agencies also get caught up in the media game. In Somalia, the first resort of Information is currency and resource and tool for good or bad purposes, depending on your proclivities. And information has the very interesting quality of moving around on its own, despite what the powers-that-be might want. "Can't stop the signal" is what Mr. Universe, the consummate information man, gives as his last words in the movie "Serenity". It's a box, like Pandora's, that can never be closed again once open. That's why Adam and Eve were ostensibly thrown from the garden of Eden, remember; they ate from the tree of knowledge.