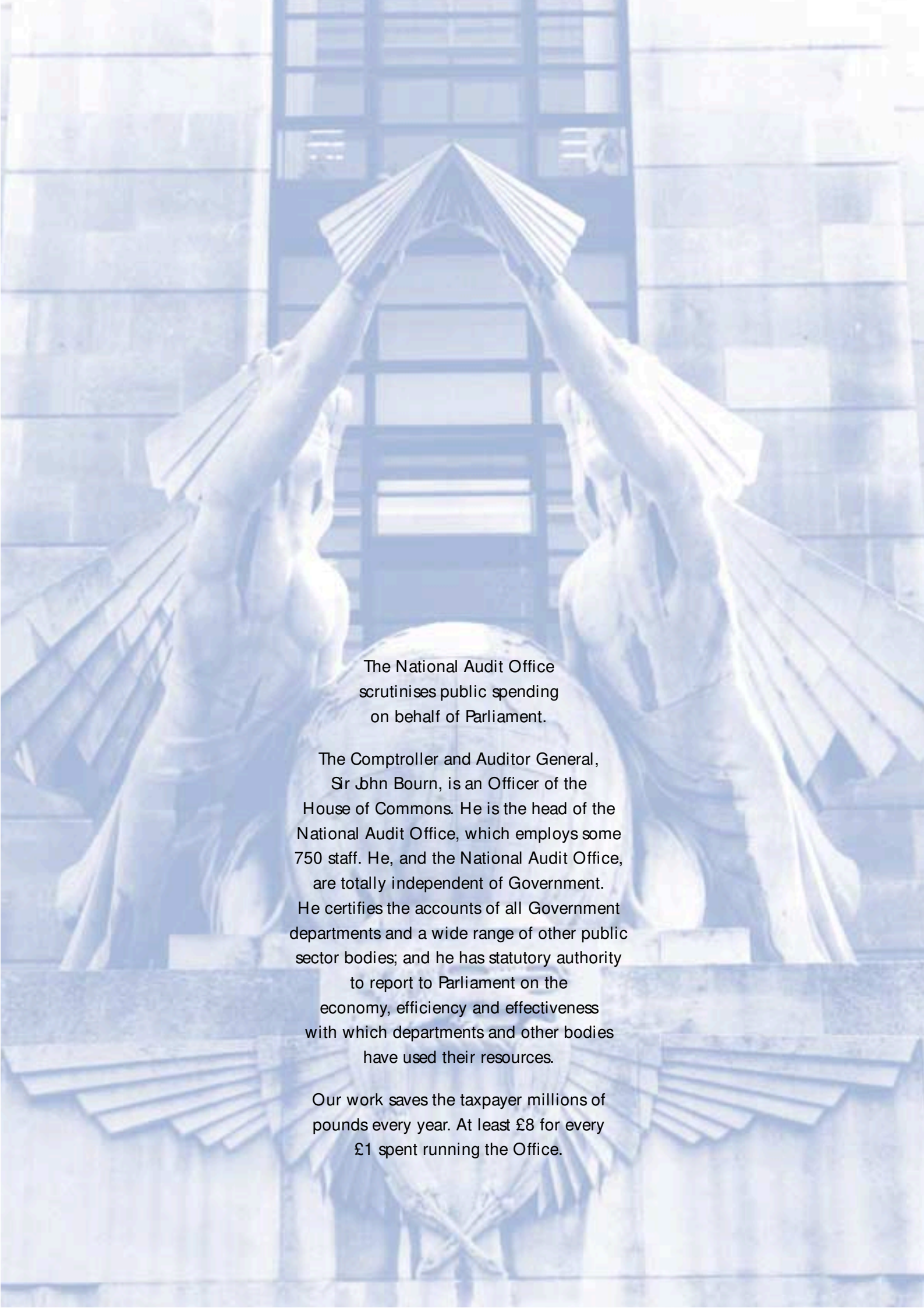


Government on the Web II

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL
HC 764 Session 2001-2002: 25 April 2002





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This report has been prepared under Section 6 of the National Audit Act 1983 for presentation to the House of Commons in accordance with Section 9 of the Act.

John Bourn National Audit Office
Comptroller and Auditor General 18 April 2002

This study was contracted out to a team from the London School of Economics and Political Science and University College London led by Professor Patrick Dunleavy and Professor Helen Margetts.

This report can be found on the National Audit Office web site at www.nao.gov.uk

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executive summary

- 1 The Government is now committing substantial sums of money to achieving the introduction of electronic services delivery and the development of e-government. In addition to the normal investment and revenue spending by departments and agencies on the development of IT infrastructure and on Web sites and Intranets, an additional £1 billion is being invested over the next three years from April 2001 to boost central government organisations' presence on-line. As part of this effort the Department for Transport, Local Government and the Regions is providing £350 million to promote e-government innovations among 388 local authorities in England. These major investments reflect the target set by the Prime Minister in spring 2000 that all public services which can be transacted electronically should be available on line for citizens and firms in 2005. The momentum of the current effort represents a substantial change from the situation charted in our December 1999 report *Government on the Web*.
- 2 The recent NAO report *Better Public Services Through e-Government* (HC 704, Session 2001-02) examined progress in improving the management of IT projects across the public sector and the potential gains to be made from electronic service delivery. This report focuses specifically on how government organisations have changed the way that they plan and provide Internet-based services and interactions since 1999. We look at in-depth case studies of Internet-based services in two Whitehall departments, HM Customs and Excise and the Department for Transport, Local Government and the Regions. And we analyse central policy and initiatives undertaken principally by the Office of the e-Envoy.
- 3 HM Customs and Excise has an established record of interacting electronically with businesses using Electronic Data Interchange, particularly for import-export declarations and trade statistics. VAT returns and payments are handled both through paper-based and electronic systems - 90 per cent of repayment transactions representing 95 per cent by value and 10 per cent of payments, representing around 55 per cent by value are made by electronic transfer. Introducing Internet-based electronic methods for handling VAT returns was initially piloted in a small-scale way but is now available to all businesses. The Department has put in place broad plans for achieving a major transition of its businesses from paper-based to Web-based systems. These e-government plans are at an early stage. Implementation is budgeted to cost £150 million over three years and will require complex changes in how Customs and Excise operates. A new e-Operating Unit has now been established, reporting to an e-Board and is further developing and revising the detailed programme to support this investment. The Department is still developing a detailed business case to support this investment and it expects a 'balanced scorecard' of benefits around customer service, effectiveness and cost efficiencies. A major risk of the the programme is take-up. Specific market research on which future services will be based has been started. Success will hinge on being able to persuade small and medium enterprises to adopt electronic methods of interacting with Customs and Excise.

- 4 In marketing its future online services to its customer base the department throughout 2000 and 2001 offered a basic website with little interactive or transactional content some of which was out of date. Web traffic data for www.hmce.gov.uk during this period has grown in line with normal trends and suggest a relatively strong demand for electronic information. A renewed site actually developed in 2000 was not implemented until the end of 2001 because the Department was engaged in rolling-out a new IT desk-top infrastructure. The new Web site (available at both www.hmce.gov.uk and www.customs.gov.uk) now represents its information and services on-line in a more structured way. Customs and Excise see this as a first step to achieving its wider ambitions. The Department is implementing a programme of further web site enhancement. Customer feedback on the new site has been positive.
- 5 The Department for Transport, Local Government and the Regions (DTLR) supervises a large number of executive agencies and non-departmental public bodies, whose electronic government plans fall outside our scope here. The Department's centre is a knowledge-based organisation developing government policy across a wide area covering transport, housing, planning, cities and communities, local and regional government and health and safety. It has a developed Web site which has been among the best used of central government sites for several years, plus an Intranet and a strategy for expanding electronic publication in systematic and innovative ways. It has put in place strong management for the Web functions and grown usage on its site well. However, the site needs to be continuously developed for the future. It especially delivers little information in interactive or personalised ways, compared with some private sector content aggregators.
- 6 The department also sponsors local government and controls a programme to encourage the 388 English local authorities to develop their e-government policies. It will deliver a substantial amount of public money to each council by 2004, as well as funding innovative projects and partnerships. The DTLR has modelled its programme closely on procedures adopted at the central level by the Office of the e-Envoy. Local authorities have been asked to complete implementing Electronic Government statements setting out their plans, and these have been scrutinised. A 'Best Value Performance Indicator' has been drawn up by the department which requires local authorities to count their services and those which are available electronically.
- 7 As yet the department have little information available about the existing state of development of local authority Internet-based services and the chosen performance indicator will provide little useful increment. In a census of local Web sites undertaken for this study in November 2001 the average local authority in England was found to be delivering just over a quarter of the basic features and facilities which are readily achievable on-line at the present time, with county councils the best performing group. Provision of information for citizens was patchy but links to other organisations were poor. However, some transactional features are spreading, reflecting the emphasis of existing government policy. We conclude that, DTLR's performance indicators cannot clearly measure improvements in the electronic availability of local authority services, or assure their take up or value for money.





- 8 The Office of the e-Envoy is the key central agency responsible for e-government. It is a policy-oriented organisation which runs a number of important campaigns, and which has also sought to encourage central (and local) agencies to develop their electronic services by a number of centrally-run projects and initiatives. The 2001 launch of www.ukonline.gov.uk as the government portal site has been the centrepiece of a substantial programme of campaign spending and infrastructure investment. The results so far have been mixed. The initial UK Online site was poorly designed and the transition from a previously well-used finder site (www.open.gov.uk) was not smooth. A site redesign in 2002 and changes in the contractual arrangements may help improve matters.
- 9 The Government Gateway is a second major project, designed to provide a central authentication service for government agencies to allow them to transact with businesses or citizens on-line for matters requiring confidentiality and reliable identification of users. There are a number of lessons which the Office needs to draw from the pilot projects using the Gateway through most of 2001. In particular given the substantial investment in the Gateway it will be important that a wide range of government departments use the technology.
- 10 The e-Envoy's Office also runs the programme designed to ensure that all central government agencies meet the Prime Minister's target for electronically available services by 2005. Its approach involves asking departments to prepare e-Business Strategy documents, roughly every six months. The Office then comments on these strategies and gives advice. The Office's control of funding approval gives it limited leverage on departmental plans. The only performance indicator currently in place to monitor progress up to 2005 asks departments to count their services and how many are deliverable electronically. Since all services count for one, no matter how large or small the volume of transactions may be, the current index generates results which are limited to the number of services offered not their use. Despite this, the 2005 target regime has been a useful incentive to encourage departments to offer services electronically. The next step will be to develop the target so that departments focus attention up to and beyond 2005 on the take-up of services delivered electronically.
- 11 The Office has relatively little up to date and good quality information about the development of central government on the Web. It has made limited progress on the recommendations of the Public Accounts Committee in 2000 that it should collect and publish systematic information on the development of government Web traffic, the take-up of electronic services, or the condition of government Web sites; and in developing a methodology for justifying expenditure on Web provision. A census of all central government sites undertaken for this study shows some area of considerable progress on basic features since 1999, and a few transactional capabilities developing. But there has been little progress yet on more sophisticated electronic publishing or interactive features. A second study undertaken of the usage of central departments' Web sites shows that there are marked variations between departments in the extent to which their Web traffic has grown, assessed against the background expansion of Internet usage in the UK.

Recommendations

On central policy-making we recommend that:

- The Office of e-Envoy should review its targets regime so as to incorporate explicitly requirements for departments and agencies to grow the usage of their Web sites and the take-up of their electronic services over time. Service priorities within the blanket 2005 target should be formally specified and published.
- The Office of the e-Envoy should put in place an information base that meets the Public Accounts Committee's 2000 recommendations. It must be able to identify the value-added achieved both by the Office's centrally run campaigns and projects and by the efforts of departments and agencies to develop their e-government policies and electronic service delivery. This information regime should focus on actual usage and take-up of electronic services.

On the Department for Transport, Local Government and the Regions we recommend that:

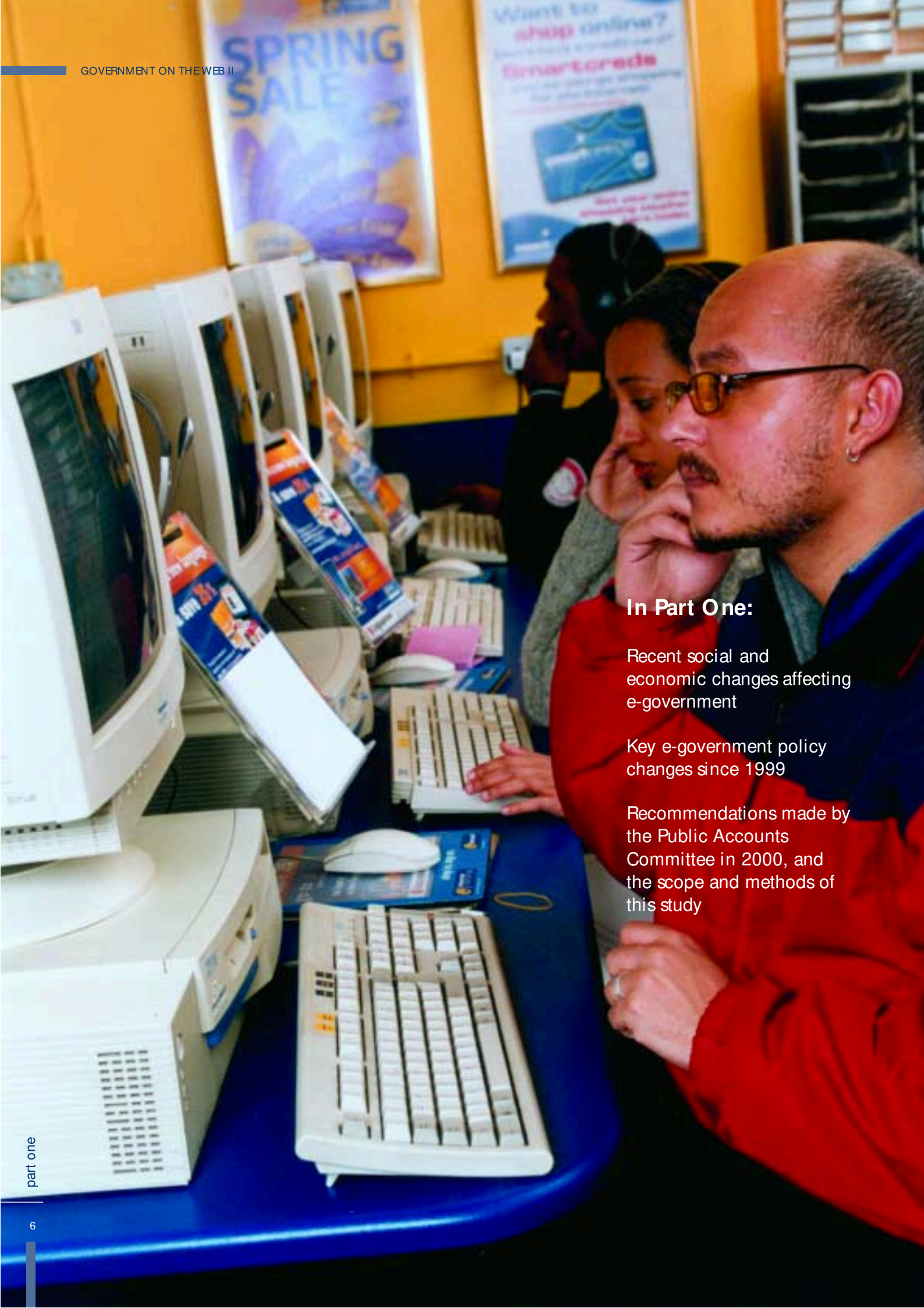
- The department should continue to assign a high priority to its Web site, including by investing in developing more interactive forms of electronic publishing.
- The department needs to strengthen its information base about the development of local government on the Web and of local electronic services. Its current main performance indicator in this area (called BVPI 157) is inadequate. After discussion with local government bodies the indicator should be replaced by one or more indicators based on measuring actual Web usage and the take-up of electronic services, and monitoring the development of local government Web sites. The department should prepare an 'end-of-term' report for Parliament showing what has been achieved by its programme to encourage e-local government.

On HM Customs and Excise we recommend that:

- The department should continue to develop its recently modernised Web site. Web provision must be kept properly resourced and up to date. Good information services and analysis of users' existing Web behaviours will need to form an integral part of the department's e-business plans if it is to successfully develop electronic services.
- Any programme of the scale and significance similar to the Department's current e-business plans, and the transition to electronic handling, carry significant implementation risks. The department has introduced a risk management regime and the whole programme will operate within the OGC gateway review process. The department should continue its approach to handle e-business development in stages.

For all public sector agencies, there are some useful lessons to be learned:

- As e-government and e-services policies mature, the focus of attention will tend to shift from simply providing access to services in electronic form to actively managing take-up and usage of these options by the public. All government sector agencies should put in place appropriate management information to regularly monitor usage of their Web sites and electronic services, and to 'play back' this information to the content providers and divisions responsible for originating Web materials and Internet services.
- Development of e-government is not just a matter of some big agencies implementing large-scale transactional facilities and the remainder operating basic Web sites. All public agencies need to pursue a balanced approach to developing electronic publishing and more interactive and more useful content for citizens and enterprises, alongside transactional facilities where appropriate.
- The type and range of electronic facilities expected on public sector Web sites will tend to grow over time. Our censuses of central agencies' and local authorities' Web sites (available on-line at www.governmentontheweb.org) provide helpful checklists of features that are currently feasible and show how widespread their use is at present in the public sector. Agencies should find it helpful to review how they are currently performing against these benchmarks.



In Part One:

Recent social and economic changes affecting e-government

Key e-government policy changes since 1999

Recommendations made by the Public Accounts Committee in 2000, and the scope and methods of this study

Part 1

The changing context of electronic public services

1.1 The Prime Minister has set a target of making all central government public services available over the Internet and the Web by 2005. This report examines progress in implementing electronic public services delivery via the Internet within UK central government over the last two years, since the National Audit Office's earlier *Government on the Web* report (HC 87, Session 1999-2000). Part 1 briefly introduces changes in the social and policy context for the study. Parts 2 and 3 look in depth at developments in two major Whitehall ministries, HM Customs and Excise and the Department for Transport, Local Government and the Regions (which has responsibility for promoting e-government in local authorities in England). Part 4 considers the central policy-making on e-government and assesses data on the extent of Web-based interactions across central agencies. This report should be read in conjunction with another recent National Audit Office report, *Better Public Services Through E-Government* (HC 704, Session 2001-02). That report examines central government procedures for managing major IT projects and reviews some of the broader opportunities, risks and challenges of encouraging citizens to interact electronically with government.

The wider importance of E-government

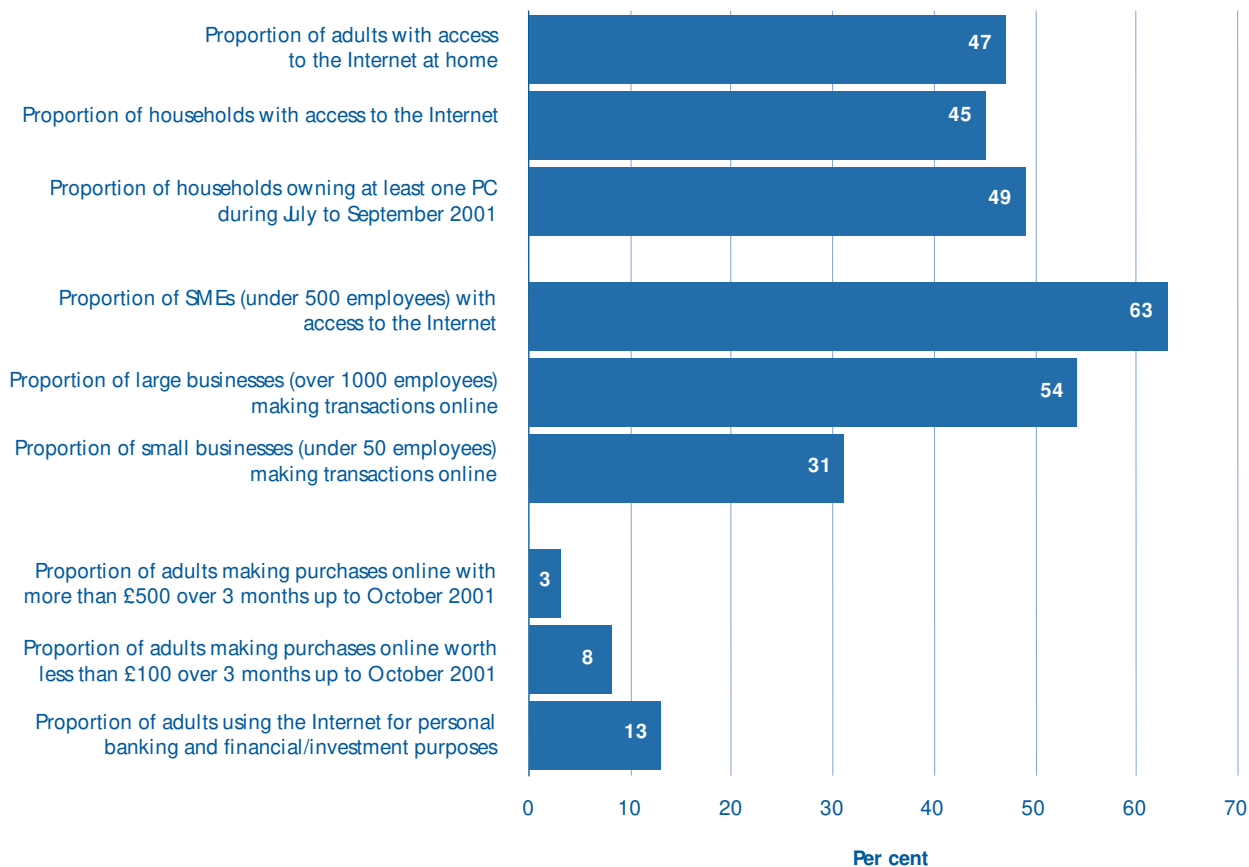
1.2 Amongst major European countries the UK has one of the higher rates of household and workplace access to the Internet. Nearly half of all British households have a PC and the vast majority of these are connected to the Internet - see [Figure 1 overleaf](#). Figures for Internet penetration continue to rise; Oftel found that 45 per cent of households were connected by January 2002, showing a renewed increase after a period of non-growth at around 39 per cent during much of 2001. The patterning of Internet access is strongly influenced by two main variables, occupational class and age cohort. People in the higher income and non-manual social groups are more than twice as likely to have a home PC with Internet access as similarly aged people in unskilled manual groups, although this differential has reduced since 1999. People aged under 35 are also much more likely to have home Internet

access compared with those aged over 55, while the over 65s are the age group most resistant to new technologies. The diffusion of this technology (home PCs plus an Internet connection) is currently less widespread than some other recent technological innovations, such as the use of mobile phones (used by over 70 per cent of people). The proportion of the population with digital television is also catching up, at around two fifths. But PCs so far remain the absolutely dominant way of accessing the Internet. Only 3 per cent of households currently connect to the Internet using other technologies. In the near future 'third generation' mobile telephones will also offer Internet access, although charges may be higher. Interactive digital television (iDTV) services already operate, especially oriented towards on-line shopping, but most do not yet provide full Internet access.

1.3 By autumn 2001 one in seven British consumers had established Internet bank accounts, and some on-line companies were successfully managing large numbers of customers, such as the leading digital financial services company Egg, with 2 million customers. E-commerce transactions also increased substantially; ONS data for 2001 suggested that 8.6 million adults bought online, up 28 per cent from the previous year. Government advertising in autumn 2001 put the volume of UK business traded on-line at £15.3 billion. Of those who have made any purchases via the Web in the last three months to October 2001, nearly one in seven have spent over £500 in total (Figure 1). Amongst large businesses Internet access was near universal, and it also reached three in five small and medium businesses by late 2001, with strong recent growth. However, less than a third of small businesses were purchasing goods on-line.

1.4 The government believes that the development of electronic public services can play an important role in making the UK a congenial location for e-businesses and e-commerce to develop. It has set a policy goal of Britain being 'the best place in the world for e-commerce by 2002', and the Office of the e-Envoy (within the Cabinet Office) is charged with taking forward this goal. If citizens and enterprises can interact electronically with government this may play an important

1 Key facts about Internet and Web use in the UK



Source: In sequence from top: (i) National Statistics Omnibus, ONS, 2001, Great Britain; (ii) OfTel, 2002; (iii) Expenditure and Food Survey, ONS, 2001; (iv) OfTel 2002; (v) ONS, 2001; (vi) ONS, 2001; (vii) National Statistics Omnibus, ONS 2001, July, Great Britain; (viii) National Statistics Omnibus, ONS 2001, July, Great Britain; (ix) ONS, 2001, July, Great Britain. Data not restricted to Great Britain above covers the UK. For details see references.

role in stimulating the growth and use of business-to-business Web services, and business-to-consumer Web sites. The ability to transact electronically and conveniently with government agencies can create useful additional incentives for citizens and small businesses to master new technologies, and it can help boost innovativeness and international competitiveness. The evidence of some other countries' successful e-strategies (such as that in Singapore) suggests that government participation can increase citizens' willingness to invest in learning new media skills and can encourage them to attempt e-transactions with businesses as well as with public sector agencies. Government policy support also influences businesses to appreciate the advantages of having effective Web sites, training staff in new media skills and being able to transact significant business over the Web. Strong government endorsement of the Web's value influences schools to teach students about it and increases the legitimacy of the Internet and e-mails as normal communication tools.

1.5 Some recent developments have suggested the continuing potential of Internet and Web-based services to change how people lead their lives. Key industries where cyber-sales now account for a significant market

share include the purchasing of books and CDs, PCs and software, travel, holidays, clothes and many areas previously developed by mail order. The recent rapid growth of Internet banking and investment services marks an important change. Supermarket shopping via the Internet has also expanded, although more slowly. So-called 'peer-to-peer' technologies, such as Web sites allowing people to swap and download music files between their computers, proved very popular in 2000, especially with younger people.

1.6 Not all recent developments have facilitated the introduction of electronic public services, however. The dot.com boom of 1999 and 2000 petered out in 2001, with many newly established Web-based companies going out of business, and all suffering marked declines in their stock market valuations, hence the phrase 'dot.bomb' companies. Web-based advertising budgets were severely pruned, partly reflecting a drying up of new dot.com company launches, partly increased advertiser scepticism about the effectiveness of banner ads in generating sales, and partly more pessimistic estimates of general economic growth. Private sector investors in 2001 grew much more sceptical about the business plans of dot.com companies reliant upon advertising revenues

than they had been a year or so ago. A business consensus now exists that Web-based business services will remain only one amongst several channels for consumers and businesses to make purchases. And solely e-based companies have become less important than enterprises which combine a 'clicks and mortar' operation. Finally the development of broadband connection in the UK remains extremely disappointing: less than 0.5 per cent of the population have access to a broadband connection. Consequently expectations of new broadband services developing (such as video downloads) have not so far been proven in practice.

- 1.7 The e-Envoy's Office believes that the development of e-government in the public services follows its own dynamic, and is largely independent of the widespread media coverage of the end of the dot.com boom. Yet recent private sector changes may have some effect on the attitudes of public agency chief executives. In 1999 a survey for the first *Government on the Web* report showed that senior public servants were very positive about e-government and expected major changes to occur over five years. They may now be somewhat more sceptical, since the pace of private sector organisational changes has slowed. However, the reduced private sector growth of Internet industries has eased the public sector's position in one key respect, by somewhat improving its ability to recruit IT and new media staff. At the height of the boom government agencies found it very hard indeed to match 'dot com' salaries.

Internet services and UK government modernisation

- 1.8 The development of electronic public services plays an important part in the current agenda for central government modernisation. 'Information age government' was one of five key pillars of the 1999 white paper on *Modernising Government*. In September 1999 the Prime Minister appointed an e- Envoy (Alex Allen) to advise him personally on the development of e-business and e-government issues. The Office of the e-Envoy (OeE) has subsequently expanded into a substantial organisation within the Cabinet Office. It has a current staff of 244 people, most of whom are working on e-government issues. In December 1999 the first NAO *Government on the Web* report found that the regime of central targets put forward by the Cabinet Office to promote e-government was undemanding. At that stage agencies were required to make 25 per cent of public services available electronically by 2002, 50 per cent by 2005 and 100 per cent only in 2008. The survey of permanent secretaries and chief executives included in the report showed that most felt that only the 100 per cent target was a demanding one. In June 2000 the Public Accounts Committee concurred that the target regime was likely to prove too slack. In March 2000 the Prime Minister



announced that the 100 per cent target for services to be available electronically would be brought forward to 2005. At the same time, the basis for defining the target and measuring progress towards it was changed. Instead of counting individual transactions and assessing the proportions of those transactions which were capable of being done online, the new method counted the number of complete services which were fully electronically enabled. This meant that a particular service would no longer count towards the achievement of the target unless each element of the service was enabled. The definition of 'electronic' provision was also tidied up to remove some previous anomalies. However, the target regime remained orientated towards agencies having in place a capability for electronic delivery, but not to securing actual take-up of electronic services by citizens or enterprises.

- 1.9 In April 2000, the OeE published *e-government: a strategic framework for public services in the Information Age*, which set out a number of actions, including the requirement for asking each central department to prepare an e-business strategy document setting out in detail how they were making progress in each of their main activity areas towards the 2005 target. The first round of these plans were submitted in October 2000, scrutinized by the e-Envoy's staff and then revised for a further round in July 2001. Some Whitehall departments set up new units specifically to oversee and prepare these rolling plans and to promote adoption of e-services within their departments. In addition the plan-making loop was partly joined up with the new set of public service agreements (PSAs) negotiated between the Treasury and each of the Whitehall departments for the period 2001-04. The services monitored for progress towards the 2005 target were directly linked with those agreed between departments and the Treasury in their PSAs and service delivery agreements (SDAs). A sum of money amounting to £1 billion was ear-marked for funding e-government implementation over these three years, subject to 'dual key' approval of departmental plans by both the Treasury and OeE. This amount is still a relatively small slice of the broader investment in information technology projects. Around 100 new IT investments are under way in central government at present, with a total cost of approximately £10 billion. In addition a range of electronic service delivery projects have been funded through the Invest to Save Budget and the Capital Modernisation Fund, which are managed by the Treasury with advice from the Office of the e-Envoy.
- 1.10 In January 2001, a new e-Envoy, Andrew Pinder, was appointed to head OeE. In his speeches Mr Pinder has emphasised the importance of implementing as a priority those e-services which have the greatest potential

to contribute to social well-being and economic performance, a view also communicated to departments in OeE's commentaries on their e-government plans. The Office has made a portfolio of investments in central services designed to help achieve higher take-up across government, discussed in detail in Part 4. In the 2001 iteration of the e-business strategy, the Office of the e-Envoy asked departments and agencies about take-up levels for their services. Most departments have so far very little evidence on take-up levels. However, the target regime set in 2000 still applies. It centres on agencies achieving 100 per cent electronic capability to deliver services electronically by 2005, and has not been amended or supplemented by OeE.

- 1.11 The approach adopted by the Office of e-Envoy within central government was copied by the Department for Transport, Local Government and the Regions (DTLR), which has responsibility for encouraging modernisation of local government. A circular to local authorities in April 2001 announced that £350 million would be made available over three years for councils to develop electronic services. Local authorities were asked to submit 'implementing electronic government' (IEG) statements on the basis of which funding would begin. The main measure of success for this programme is a 'best-value performance indicator' closely modelled on the approach used by the Office of the e-Envoy in relation to central departments and agencies.

Issues in the development of e-government - a debate

- 1.12 The approach to the implementation of e-government is evolving. As with many other innovations in management, commentators have tried to map the development of e-government into distinct phases. In this sub-section, we present two models of e-government. Both provide some insight into the development of online services, though the second is a more useful approach to understanding government. Neither is intended to represent the right approach or description of the government's strategy. Ultimately the approach which departments adopt will be largely determined by their individual circumstances and the public services they offer.
- 1.13 The dominant way of picturing the development of e-government in IT industry thinking in the UK and internationally is the so-called 'stages model', shown in [Figure 2](#).

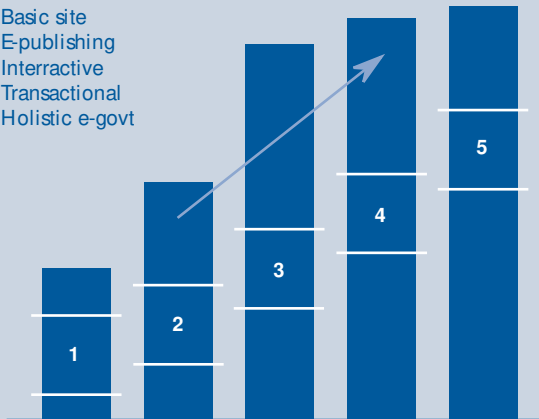
Box 1: E-government five stages

E-government is seen here as a process with five stages, which follow on from each other in increasing order of implementation difficulty, desirability for citizens, customers and society, and the levels of sophistication of systems which are demanded. The stages are supposed to be, in order:

- 1 **A basic site** holds electronic versions of the agency's major print documents for public consumption (sometimes dismissively called 'brochure-ware'). It gives basic information about the agency, or serves as an on-line advertising hoarding. Contact with the agency is by phone or mail, not e-mail. Site users cannot download forms or accomplish anything substantial on-line. The site has few pages.
- 2 **Electronic publishing** occurs when the agency develops its external Web site to be an important element of its overall communications strategy. The site becomes extensive, with many hundreds or thousands of pages, and the agency begins to put a substantial part of its information on-line, but in a linear, one-track fashion that has to be followed in the same way by all users. Citizens or firms can download forms to fill in and post back, but cannot do on-line submissions. The agency supports modest forms of e-mail contacts. But the external Web site still does not link in any significant way with the agency's back-office systems.
- 3 **Interactive e-publishing** is reached when users can personalise in a useful way how the site works for them via effective search tools. For instance, users can specify their address or postcode and see only relevant local information, culled from the agency's databases. The agency's external Web site links extensively to at least some back-office systems. All the agency's forms are downloadable, and some can be submitted on-line also. Extensive e-mail contacting of officials is encouraged and responses are timely and well-organised. Perhaps there are e-mail alerting services to let users know about new Web content. The agency also has a full or partial Intranet (a closed private network operating in a Web-like manner). All staff are routinely trained on how information is presented on the Web site and can answer questions from the public about it.
4. **A Transactional Web-site** exists when users can accomplish specific dealings with the agency on-line. Users can authenticate themselves to the agency and register their identities reliably. They can then undertake a complete transaction with the agency on-line, for instance, making secure payments for a service, fee, fine or tax. There are two levels of sophistication for such a transaction. One-off transactions, in which the system does not use prior information about the user, are simplest - for instance, paying council tax via a local authority Web site using a Girobank facility. In more complex applications users can interrogate the agency's databases at various levels of security, for instance, to track the progress of an application they have made, or to bid for a contract. The most difficult applications would let users manage their own 'account' or file with the agency, covering a whole set of dealings - similar to Internet banking and demanding high security. At this stage users can download and submit all forms on-line (although there may still be stages like issuing ID numbers or collecting signatures which are carried out via the mail). The external Web site links fully to most of the agency's back-office systems. The agency has a full Intranet for internal staff, linked to the Web site. It may also have an 'extranet' which offers many of the same facilities to outside organisations which work closely with the agency, for instance, other government agencies or contractors.
- 5 **Joined-up e-governance** is achieved when public sector Web sites can facilitate 'one-stop shop' services on-line for citizens. Sites provide transparent access not just to the agency where people have logged on, but across central government agencies as a whole. Where necessary they also connect with other fields or tiers of government, especially regional and local governments. Users can see their own files or accounts, and manage their relationships with the agency wholly via the Internet (and e-mail). Many agency processes use 'zero touch technologies', where transactions do not require any active intervention by a human employee to be accomplished. Agencies carefully research, analyse and anticipate the needs of their users, for instance by alerting them proactively to opportunities for them to improve their welfare or to meet given deadlines (so-called 'zero stop shops').

2 The stages of e-government model

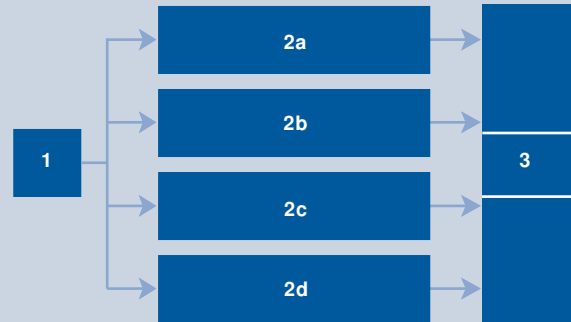
- 1. Basic site
- 2. E-publishing
- 3. Interactive
- 4. Transactional
- 5. Holistic e-govt



1.14 The stages model closely follows observations of how company Web sites have developed over time. After all, for private sector firms the ability to make money via electronic transactions is a vitally important touchstone of success. But some of the model's criteria of progress are more questionable within the public sector. The stages delineated seem to confuse issues about the *type* of agency being analysed with the separate question of how sophisticated that agency's e-government or digital public services strategy is. Many agencies do not undertake individual transactions with citizens because of their fundamental role. The stages model may erroneously lull them into feeling that they cannot or need not do much in delivering services electronically. The model seems to privilege certain kinds of agencies which do transactions, such as collecting taxes from or paying transfers to citizens and enterprises, or selling goods or services to the public. The stages model seems to imply that only 'machine bureaucracies' of a rather traditional kind can progress far with e-government.

1.15 An alternative approach (shown in Figure 3) allows for fewer and simpler judgements. Here stage 1, the basic site, is clearly identified as the starting point for public agencies beginning to put services on-line. As before it is the least sophisticated stage. Similarly the final stage 3 here, joined-up e-governance, is undoubtedly the most difficult hurdle to surmount. If it can be achieved, it would produce the most sophisticated systems and the best feasible results for citizens, firms and government. What is different in Figure 3 from the stages model is the pathways between the beginning and end points. Here agencies can make progress in all four remaining ways - by building-up full-scale electronic publishing, by pushing more interactive publishing strategies, by developing simple on-line transactions, or by 'account management' transactions (which require more systems development, investment and higher levels of security). There is no automatic reason why government strategy should favour any one of these routes over others for all agencies. Instead each agency should ask: 'Given the type of organisation that we are, and the kind of

3 Revised e-government model



- 1. Basic site
- 2a. E-publishing
- 2b. Interactive
- 2c. Transactional
- 2d. Account management
- 3. Holistic e-govt

functions that we have, our fundamental mission and role, how far can we and should we move towards fully electronic or digital operations? The general rationale for government moving towards digital methods focuses on:

- the potential of moving to lower marginal cost forms of doing business, thereby saving public money or creating resources for service improvement;
- responding to public preferences; and
- offering quality of service and extension of service improvements to citizens, enterprises and other clients.

1.16 Some of the main drivers for change towards electronic services and some of the main inhibitors on change are shown in summary form in Figures 3 and Figure 4 with a short explanatory comment on each. (In addition, the NAO report *Better Public Services Through E-Government* discusses the potential rewards and risks involved here in more detail). The main forces promoting e-government using the Internet are partly the active demands from citizens and enterprises to find government information, communicate with agencies and accomplish transactions electronically. But there are also powerful pressures inside government to match innovations by private sector firms or civil society organisations, to modernise processes and achieve savings and continuous efficiency gains over time, and to accomplish the substantial service improvements which the Internet and Web make feasible. The main forces inhibiting change in government stem partly from societal pressures to avoid creating any new form of social inequality in services access, and from high public expectations about the privacy and security of confidential information held by government. There are also substantial risks involved in managing the investment and change processes involved in setting up large-scale e-public services. In addition, however, these changes are likely to be impeded by:

- various forms of strong organisational constraints within the public sector, including inertial resistance to new methods;

4 The main drivers for e-government change

Main driver	Comment
Growth of Internet/Web usage	A critical mass of Internet users is needed to sustain the Web provision of government services. Access levels in the UK seemed to flatten out in 2001 at around 40 per cent of households with home access, but now seem to have started to expand again. Access continues to grow amongst small businesses and is nearly universal for medium and large firms.
Citizens or firms demand Internet access to government	Usage of Web sites can be easily measured (see Part 4), but potential demand for electronic services is harder to gather from surveys. Users interested in new technology may overstate their willingness to use new services. Others may indicate reluctance because they have little idea what electronic services would be like. Evidence from the private sector suggests that heavy marketing and close attention to the transition may be needed to effect lasting shifts in consumers' behaviour.
Quality of service potential	Web access offers distinctive advantages for users in terms of immediate access, the ability to browse catalogues and databases, search interactively, and tailor your search to your individual needs and circumstances.
Extension of service potential	Government Web sites should be 'always on', 24 hours a day, 7 days a week, 365 days a year. On all public sector Web sites examined for this study at least 45 per cent of weekly traffic occurs outside office hours (defined as 9.00am until 6.00pm on weekdays). On many sites the proportion is well over half of traffic, even up to two thirds.
Potential for reducing government costs	Web accesses on well-used sites can have very low to negligible marginal costs. If citizens or firms electronically input information then the need for government to employ keying-in staff is reduced. Greatly improved real-time data becomes available, and there are opportunities to progress risk-based regulation, analysis and inspections services to new levels of efficiency. 'Zero touch technologies' offer the prospect of achieving fully automated dealings without needing any human staff interventions.
Crises in policy or communication	Properly set-up Web sites can accommodate high peak loadings and provide direct access to immediately up-dated information. Crises often provide a stimulus to develop Web facilities, for example, the UK Passport Agency crisis in summer 1999.
Central political support from government leaders and finance ministry	In many liberal democracies PMs or Presidents have imposed central targets and deadlines for progress on e-government, in order to ensure that collective benefits for government as a whole are obtained and to counter possible inertial or 'channel rivalry' problems (see Figure 5 for these). Central initiatives can lead to the creation of centrally provided infrastructure, offering economies of scale to departments planning to implement e-government. Finance ministries may see e-government as a source of cost-savings or public sector productivity increases.

- difficulties changing the organisational culture of established agencies; and
- possible 'channel rivalry' problems where managers or staffs used to conventional service delivery resist the 'disintermediation' effect of the Internet, its tendency to cut out intermediaries, in this case between government and citizens or enterprises.

The possibility of these forms of impediments is one key reason why in most advanced liberal democracies central political figures (usually the Prime Minister or President) have required their civil service and government bureaucracies to meet demanding across-the-board milestones for progress in e-government. This approach has been strongly emphasised in the UK also, especially since 1999.

The approach of the current study

1.17 The starting points for this study are the report and recommendations of the Public Accounts Committee on 'Government on the Web' in June 2000 and subsequent

government policy changes. **Box 2** shows the main Committee recommendations, which essentially called for an improved target regime linked to department's service delivery agreements and annual plans; better central monitoring of how far targets were being met; and improved staff training and performance in implementing Web sites by departments and agencies.

1.18 As with the previous report in this series we used a range of methods, including in depth case studies of two major departments and of central policy-making by the Office of the e-Envoy; comprehensive censuses of the facilities included in all central government executive agencies' Web sites and of all local authority sites; analysis of central departments' Web site statistics and usage trends; and visits and interviews conducted in four overseas comparator countries, the United States, Australia, the Netherlands and New Zealand. Appendix A sets out these methodologies in detail.

5 The main inhibitors of e-government change

Main driver	Comment
The 'digital divide' and the risk of creating new forms of social exclusion	In liberal democracies there are concerns about potential worsening problems of social exclusion through the creation of 'two-tier' provision offering superior services only to Internet-connected groups. Vigorous digital access strategies can counteract this risk, as with the UK government target to offer Internet access to everyone who wants it by 2005. Electronic kiosks in all public offices, libraries, town halls and community centres and cyber café facilities can help those without home access. Cost savings from growing e-services can free staff resources to focus on new ways of helping people not on-line. Outreach workers with portable PCs can visit people at home. Web-enabled 'one stop shops' can offer joined-up access to all government services at a very local level, e.g. in high streets or on problem housing estates rather than in remote government office enclaves.
Low take-up by citizens or firms of e-public services	Citizens or firms will not switch over to e-services just because they are interested in using the Web. They need hard incentives to do so in terms of extra convenience, time saved, cash discounts, or superior services. All new e-services will require a clear marketing strategy and they will often need significant marketing activity. Poorly designed e-services can easily fail, with investment and marketing fixed costs lost.
Capital investment and human resources costs of setting up e-services	Electronic publishing via the Internet is relatively cheap. But Web-enabling large back-office systems and achieving new business architectures for major new electronic services can require heavy IT infrastructure spending, as well as reorganization and re-training costs.
High costs of multi-channel services provision	Failure to close the digital divide or to persuade citizens and firms to migrate to e-service methods may lock governments into maintaining higher marginal cost forms of access even after e-services develop.
Privacy and security issues	For government agencies to offer secure Internet transactions, there are various technical issues to resolve. There are also problems of perception; regardless of actual risk, privacy and security problems are perceived by public opinion as more associated with the Internet than other forms of communications.
Authentication/ identification issues	Various solutions are feasible for establishing that someone accessing a Web site is who they say they are, including: public key infrastructure identification by trusted third parties; downloadable identifiers; mailed-out identifiers; and swipe card technology.
Inertial resistance to new technology in public agencies	Internet developments move very fast, but public agencies often work with long planning periods and risk-averse mind-sets that are inimical to flexible, 'build and learn' responses.
'Channel rivalry' problems inside government agencies	People who make their livelihoods from conventional services do not welcome the Internet's 'disintermediation' effect. Travel agents may oppose holiday firms selling direct on-line, and car dealers oppose manufacturers undercutting dealer prices. Similar responses may occur where agency staff or managers fear that e-services entail reorganizations which threaten their existing jobs, roles or ways of working.
Other cultural blocs on public sector organizations' responses	The absence of dynamic competition between agencies, various political accountabilities and sensitivities, and relatively inflexible personnel systems may mean that new media and e-based approaches are resisted as not relevant to public sector conditions.

Box 2: PAC Recommendations on *Government on the Web*, June 2000

Progress in Achieving Government on the Web

- 1 We look to the Cabinet Office to give a strong lead from the centre to encourage departments to make more rapid progress (paragraph 11).

Targets to Promote Government on the Web

- 2 We look to the Cabinet Office to ensure that only those services delivered by telephone which fully draw on Web-based technology are counted as contributing to the targets (paragraph 17).
- 3 We recommend that in monitoring the achievement of the target to make 100 per cent services provided to citizens available electronically the Cabinet Office measure not only availability of services electronically but also the extent to which citizens take up these services (paragraph 18).
- 4 We look to the Cabinet Office and departments in preparing new Service Delivery Agreements and Public Service Agreements to include in them strategies for achieving the Government's electronic transaction targets (paragraph 19).
- 5 We encourage the Cabinet Office to continue with their drive to bring about cultural change across departments so that electronic communications becomes much more the normal way for departments to do business (paragraph 23).
- 6 We urge the Cabinet Office to pursue the issue of determining a robust methodology for justifying the expenditure which departments and agencies invest in web-based technologies (paragraph 27).
- 7 We encourage the Cabinet Office to give priority to training staff so that the full potential of government on the web in terms of better quality and cost effective services for citizens is realised (paragraph 28).

Increasing the Benefits of the Web to Deliver Higher Quality Services to Citizens

- 8 We look to departments and agencies to make more progress and in particular to be more innovative in exploring ways of offering more services on-line (paragraph 33).
- 9 We emphasise the importance of the Cabinet Office having more reliable information on the existence and quality of government Web sites so that they can target their efforts in promoting good practice (paragraph 40).
- 10 The Cabinet Office will monitor how often government Web sites are updated (paragraph 46).
- 11 We welcome the Cabinet Office's decision to introduce a new Web search facility - the Government Portal - later in the year which is intended to make it easier for

citizens who do not know which department to contact to identify the government Web site most appropriate for their information seeking needs (paragraph 47).

Joining Up Government

- 12 We emphasise the importance of electronic systems being more integrated so that departments responsible for complementary services to citizens can provide them in a fully joined up way (paragraph 53).

Managing Increasing Volumes of Electronic Transactions

- 13 We look to the Cabinet Office to encourage departments to introduce measures such as electronic document management systems which can help them manage the increased volume of e-mails (paragraph 58).
- 14 We expect departments to respond more quickly to e-mails from the public unless the issues raised by the correspondence are especially complex (paragraph 59).
- 15 We encourage departments to make greater use of facilities which track communications from the public electronically so that citizens can benefit from a quicker and better service when they contact departments (paragraph 60).
- 16 We expect departments to give sufficient attention to simplifying and streamlining their systems and forms so that citizens see a real advantage in accessing government services on-line (paragraph 61).

Realising Cost and Efficiency Savings

- 17 We expect departments and the Cabinet Office to make more progress in ensuring that the significant savings which are available from providing more of departments' services and operations on-line are realised (paragraph 66), including the impact on staffing and patterns of reemployment (paragraph 67).

The Risk of Social Exclusion

- 18 We reinforce the importance of the Cabinet Office and departments doing all that is possible to avoid social exclusion arising as more government services are delivered on-line, by making it easier for those at risk of being disadvantaged to access government Web sites (paragraph 71).

Progress in Using Intranets to Improve Communications

- 19 We encourage the Cabinet Office to continue with their drive to ensure that Intranets are established across departments (paragraph 23).

HM CUSTOMS AND EXCISE

NEW KING'S BEAM HOUSE

SEA CONTAINERS
HOUSE

In Part Two:

The key e-business issues facing Customs and Excise

The department's e-business strategy

The department's Web site

Main conclusions and lessons learned

Part 2

Dealing with business - HM Customs and Excise

- 2.1 Government agencies dealing with businesses on a large scale have already heavily invested in pre-Internet forms of electronic communication. In particular, public sector organisations have used electronic data interchange (EDI), dedicated private networks facilitating large-scale electronic transactions, with their biggest business partners. EDI systems have been in place for many years and can handle high transaction volumes at very low individual transaction costs. Introducing Web-based systems may not offer government agencies or the large businesses dealing with them radical opportunities to reduce their costs compared with continuing with EDI systems, especially when heavy development and organisational learning costs are sunk in systems and processes of this kind. However, EDI systems provide less incentive for small and medium sized businesses to interact electronically with government. The greatest opportunities for cost savings through the development of Internet-based solutions therefore lie in moving paper-based systems and processes onto Web-based interactions with the large numbers of medium and small enterprises which do not currently link electronically to government.
- 2.2 In this part of the report we focus on Her Majesty's Customs and Excise as a business-facing case study. The department has 22,000 staff collecting around £140 billion from businesses and making around £40 billion of payments to businesses through 24 million transactions with business each year in value added tax (VAT), excise duties and tariffs. In addition, Customs and Excise has significant interaction with businesses through its role facilitating trade and the movement of goods. So Customs and Excise is a crucial player in the government's e-business strategy. We look at the key e-business issues facing the department, the development of its current e-business strategy, and its web site at www.hmce.gov.uk before drawing conclusions and recommendations (Appendix B on page 69 provides background information on how Customs and Excise is organised and operates, for readers unfamiliar with the department).

e-business issues facing Customs and Excise

- 2.3 The department's experience with IT has been quite different for two of its business areas, import-export and VAT.

- For import-export, Customs and Excise was an early leader in government computing (particularly EDI), developing a computerised system to process export trade statistics in 1963 and an import cargo system in 1971. The department's EDI-based customs declaration processing system, the Customs Handling of Imports and Exports Freight (CHIEF) was implemented in 1994 and solutions of this type are now widely used throughout the world. The system controls and records UK international trade movements (by land, sea and air). It links Customs offices around the country to ports, airports and thousands of businesses and is integrated with commercial processes to facilitate the movement of goods across national frontiers. CHIEF is provided free to all traders, with a choice of three routes for EDI input, either via third party agents, or by attachment to internet e-mail or to older standard messaging systems. Virtually all traders (99.8 per cent) now use this system



for import declarations and 20 per cent of traders for export transactions. The system handles the vast bulk of revenues collected at ports and airports, amounting to £14 billion of revenue each year via 16 million transactions. CHIEF also facilitates the collection of international trade and transport statistics and controls the import and export of restricted goods. Other important EDI services include an Intrastat return service for collecting economic statistics, which deals with 40 per cent of traders. Since June 2000, this system has included an Internet service for which some 3,000 of the largest traders (10 per cent of the total) have registered.

- Customs and Excise have had significant success with EDI in the import-export area. Here the department's ICT staff and top managers regard externally facing Web-based technologies as having less transformative potential directly for these activities than for the rest of its business. The key effect has largely been achieved already by the department's business process changes which formed part of the original move to electronic systems. The EDI-based customs declaration system CHIEF is not currently Web-based although Customs are evaluating migration options. Take-up of the CHIEF import system is virtually universal as electronic declarations are standard for most imports. Smaller companies for whom it is not financially viable to purchase the necessary industry software use a registered agent, who submits electronically. In its current form Customs and Excise believe that there is not a strong incentive to invest in new web technology, but opportunities to incorporate it will be taken as part of normal business changes. The New Export System to be rolled out in 2002 will have a Web-based front end (using standard XML schemas). After that time, Customs expect that take-up of the electronic service will exceed the current level for exports of 20 per cent. Although there will be some additional costs for electronic messaging, the electronic service is already being marketed as faster and more streamlined than the paper-based version and the option to submit a paper version will only be available for certain ('standard full pre-entry') procedures. Electronic declarations will either continue to be submitted to Customs via the Community Systems Providers who currently provide such services in all the major ports and airports; or direct to Customs, for example by e-mail or via the Customs website over the Internet. The department feel that the key lesson from the success of their import-export system is that the information they require should wherever possible form part of businesses' standard processes and information needs for importing and exporting.
- The implementation of universal electronic VAT services presents different issues for the department. There are 1.65 million VAT-registered traders, ranging from large multinational corporations to

sole traders. At the time of writing (December 2001) virtually all businesses register for VAT manually, and file VAT returns on paper by post. VAT payments and repayments are made by means of cheques and electronic transfers (although on-line paperless direct debits are to be introduced from early 2002). Information from paper forms is keyed into Customs and Excise databases manually. 90 per cent of VAT repayments by the department are made by electronic transfers to businesses' bank accounts. Around 2,500 staff are involved in processing activities, about 2,000 of them concerned with VAT. The Department see bringing VAT on-line as offering benefits in terms of cost, service quality and compliance. Cost economics depend on achieving high levels of take-up of electronic services. In addition to the processing staff, around 6,500 VAT staff work on tax compliance and assurance, including the 160,000 VAT audits that are carried out each year. There are potential diseconomies of running both manual/paper-based and electronic services in tandem. The business case for bringing VAT on-line requires, the department either to look to the phased introduction of mandatory electronic communication in high volume transactions, or be able to achieve high level of voluntary take-up by providing packages of accessible and attractive e-services. The current priority focuses on the latter course.

- 2.4 There are a number of important constraints affecting Customs and Excise's plans for their customer or client base. First, larger companies already have EDI accesses developed in many areas of their business processes and internal systems. The size of a company is an important factor in predicting which of Customs and Excise's customers will be on-line, even though Internet penetration rates among businesses have increased significantly during 2001. An International Benchmarking Study in April 2001 suggested that 81 per cent of UK businesses were now on-line, up from 63 per cent in 2000. The Internet penetration rate still varies according to a firm's size. An Oftel survey in February 2001 suggested that Internet penetration for small businesses was 59 per cent (with a further 9 per cent in the process of connecting) while the rate for medium sized businesses was much higher at 92 per cent. However, complete Internet penetration may not be needed because intermediaries (such as accountants or high street professionals) could offer small businesses access to e-services.
- 2.5 Customer segmentation refers to a strategy of dividing up potential users who are more or less likely to accept interacting with Customs and Excise on-line, focusing on segments of the market which offer the most chance of developing on-line accesses, and also developing different approaches to maximise take-up in different market segments. The Department tracks the views of the traders they have dealings with using a 'business needs

survey' which gives a broad view of how the industry sees the department every two years. The latest survey was launched in November 2001 and is due to be completed by the end of April 2002, so at the time of writing, the latest available data was from the 1999 survey. At that time 40 per cent of traders reported that they wanted to transact with Customs and Excise electronically, while 80 per cent said that they liked the current system. Analysis of Web site usage statistics to try and model what use traders might make of on-line services and what they are willing to do electronically, could help here. And the department will be launching a programme of market research early in 2002 as part of the development of new customer-focused Web-based services.

- 2.6 A second major constraint on Customs and Excise's strategy for doing business on-line is that the security of information is of particular concern for their customers and for the agency itself. The government's version of an industry-led system of 'trust rating' material to be held electronically gives scores which run from 0 (the lowest security level) to 3 (the highest level). Most of Customs and Excise's information exchanges (such as the provision of trading statistics) are rated as level 1, whereas information with significant financial implications such as the VAT return are rated as trust level 2, for which the most appropriate method of authentication is digital certificates. Customs and Excise therefore require traders to acquire digital certificates before they can be offered secure VAT registration, filing or payment on-line. The current kind of digital certificates used by the UK government is that for 'trusted third party recognition'. Certificates of this kind are not at present extensively used by any non-government organizations in the UK. The only way that they could be obtained by firms was by purchasing them in person from the British Chambers of Commerce and now, more recently, on-line from the company Equifax plc.
- 2.7 Customs and Excise launched a pilot experiment to file quarterly VAT returns on-line on the Government Gateway during 2001 with an initial set of 1,000 traders signed up. Subsequently, however, over two-thirds of the initial set of traders dropped out of the pilot. The key problem hinged around the question of security. Companies had to buy digital certificates in order to participate, which costs £50 plus VAT if purchased from the Chambers of Commerce, although Equifax subsequently entered the market with their certificates costing £25. Customs and Excise offered an incentive of £50 to businesses for participating in the on-line pilot, but even that initially gave firms sending in on-line VAT returns no positive financial incentive. Even with on-line certificates, Equifax report that the limited transactions that a single certificate user can perform has been a significant impediment to take up. The company found that the most frequent negative response when completing registration requirements was 'Why do I need to do all this if all I can do is file my VAT return?'

Despite the drop-out from the initial pilot group, businesses continued to register for the pilot and by November 2001 a total of 980 businesses were registered for using the VAT pilot on the Gateway (and therefore had obtained a certificate).

- 2.8 It is not clear how many firms had tried to register for on-line VAT returns and failed to do so. Of the 980 registrees 662 filed their VAT returns on-line by October 2001. By November 2001 the Gateway system had securely handled over £500 million of VAT payments, and provides an end-to-end electronic service from point of submission through the department's back-office systems to the customer's bank account. By February 2002 around 2,500 users were registered for VAT returns on-line. Customs and Excise are currently working with the Office of the e-Envoy and other Whitehall departments on a more flexible approach to security problems.
- 2.9 To examine how other large business-facing organisations are tackling analogous problems we conducted some interviews with senior personnel in major UK retail banks and examined trends in that sector. This evidence suggests that business-facing government agencies like Customs and Excise are right to be concerned about security, because businesses are different from individuals in their approach to electronic service delivery. Banks offering Internet services have found that while personal customers are reasonably willing to divulge confidential information over the Internet, businesses are less so. In particular, companies often have strong concerns about staff inside their organisation gaining access to confidential information which they did not have previously. HSBC Bank suggested that a significant proportion of their business customers see security concerns as a barrier to using on-line banking. A number of banks have developed different solutions to the issue of security. For example, HSBC is using a type of digital certificate that can be downloaded by businesses via Web browsers after verification through multiple password and pin-number access. Barclays' business banking division is now piloting an Internet solution for its larger corporate customers that supplies all businesses with card-readers and individual users with smart-card access to the service. Both banks' solutions allow differential access privileges. Most of the banks have also long provided their business customers with a dial-up service with dedicated software, which many customers perceive (perhaps misguidedly) as more secure than an Internet-based application. They continue to offer this service in tandem with Internet banking. Another distinctive feature of the business market is that companies have widely varying needs. Banks have found that the incentives required for large and small businesses to transact on-line will be very different. Large companies, for example, can easily absorb the cost of a digital certificate. But for micro-

businesses a certificate fee of £50 a year can be a significant disincentive. The main banks have found that paying even £10 monthly for dial-up electronic banking services can discourage firms from adopting them.

Customs and Excise's current e-business strategy

- 2.10 Like all central government departments, Customs and Excise must develop electronic service delivery to meet the government-wide targets that all services should be capable of being conducted electronically by 2005. The departmental Public Service Agreement (PSA) and Service Delivery Agreement agreed with the Treasury for the period March 2001 to April 2004 additionally specify 60 per cent availability of services electronically by spring 2002, 75 per cent by spring 2003, and 87 per cent by spring 2004. Customs and Excise are one of only two departments to have actual take-up or usage targets for electronic services delivery specified in their PSA. Customs and Excise must persuade 35 per cent of their customers into using on-line methods by spring 2004 and 50 per cent by 2005.
- 2.11 Unless take-up of e-services is high, Customs and Excise's e-government targets may have implications for its more general productivity growth targets. The PSA and the Service Delivery Agreement for 2001-4 state that the department should improve value for money by achieving average annual productivity gains of at least 2.5 per cent a year until 2004, without detriment to either accuracy of administration or customer satisfaction. One way Customs intend to meet this PSA commitment is to release posts from support for deployment to activities which directly contribute to key departmental outcomes. Customs and Excise anticipate that through the introduction of information age government opportunities will be created to recycle resources. The Department will need to overcome some of the diseconomies in running manual and electronic systems in tandem, particularly for VAT. Initial calculations by the department suggest that the take-up of electronic services by customers would have to be much higher than in its Treasury-set target, possibly closer to 80 per cent - now a design figure to which the department are working. Achieving the target of 50 per cent take-up of electronic services would inevitably mean continuing to operate with 50 per cent paper-based services. However, Treasury officials involved in the setting of the PSAs and SDA for Customs and Excise indicated to us that the Treasury itself did not make an explicit link between productivity growth targets and electronic service delivery and considered that it was for Customs and Excise's management to decide how productivity targets might be achieved.
- 2.12 The central planning tool used by the Office of the e-Envoy has been to ask departments to produce e-business strategy documents. The first version of Customs and Excise's e-business strategy (produced in October 2000) considered three alternative organisational change options for achieving central e-government targets. The first was the radical idea of setting up a new 'dot.com' organisation (modelled on the dot.com, Web-only firms) which would operate independently of the current department, with purely e-enabled procedures. This idea was similar to the launch of the Internet bank Egg, which was set up at arms length and with its own management structure by the long-established Prudential insurance company. But this option was rejected as a 'too high cost an approach', as was the second option, a wholesale rebuilding of the complex maze of existing Customs and Excise inter-connecting IT systems. The department opted instead for a third option 'to build elements of a HMCE "dot.com" organisation plus elements of a total HMCE rebuild'. New web-enabled front-office systems would be constructed and treated as a new channel, while business processes would be re-engineered to operate in an e-business environment. These new systems would be linked to existing Customs and Excise's back-office systems via what is called 'middleware', software that sits between two sets of systems processing database access calls. Where possible or necessary, back-office systems would be streamlined and restructured but in general, those that were operational would remain.
- 2.13 In their general guidance for the first e-business strategy the Office of the e-Envoy focused on 32 different services identified, of which 15 concerned the provision of information to customers, 11 the collection of revenues, 4 the collection of statistics, and 2 the regulation of taxation (Appendix B, Table B.2). The Office of the e-Envoy did not ask for any details of the transactions load under each heading, and in line with its general policy there was no discussion of the levels of actual usage or take-up of electronic services to be achieved by the department. Instead the Office of the e-Envoy made clear that progress was to be measured simply by counting the number of services which could be ticked as electronically enabled or available at any given date. This particular performance indicator meant that achieving electronic collection of the excise duty on tobacco (paid by only 7 very large companies in under 250 transactions a year) would have exactly the same 'weight' in terms of being seen to achieve electronic services delivery as if Customs and Excise could get its 7 million VAT returns submitted on-line. **Figure 6** summarises how Customs and Excise's first e-strategy document filled in the Office of the e-Envoy's table for the earlier dates. (Every service was ticked for 2005). The department reported that they had already achieved 27 per cent electronic capability in mid 2000, would attain 63 per cent electronic capability (under

this particular counting method) by 2002, and would deliver all their services in an electronic form by 2005. On this counting scheme the worst performing aspect of the department's activities in 2000 was the provision of information, followed by the collection of revenue. The collection of statistics was the most successful 'electronic' area. By 2002 just under half the provision of information activities were planned to be electronically available, and just over half the collection of revenue functions.

2.14 Customs and Excise's second e-business strategy was produced in July 2001. The department saw the document as a strategic analysis, and the first stage of a detailed business planning process beginning in October 2001 and lasting for around six months. The new e-business strategy was written at a high level. In terms of content and layout the document was much more fluid than that of the first strategy and did not include the detailed business case. It repeated a central objective 'to migrate the majority of the customers to the new environment by 2005', but made no reference to the central targets or any milestones on the way to 2005. The strategy proposed the creation of a new 'E-Operating Unit' to 'pull through change for the Department', 'enabling us to grasp new opportunities at a new pace.' The E-Operating Unit will report to the Director Logistics, who is also Customs' designated e-champion. People with commercial sector expertise have been recruited to work in the E-Operating Unit, which will exist alongside the rest of the department's business apparatus rather than replacing it. The Unit's head (appointed in September 2001) envisages that the unit will have around 60 to 70 staff in total, reporting to an 'e-board' of six to ten people (also including external people from the private sector). Chaired by the Chairman of Customs and Excise, the new Board met for the first time in December 2001. The planning process involves in succession the production of a business architecture, followed a technical architecture, a high-level organisational design, a revised business case and a migration plan. A Service Design unit of 20-25 staff will deal with business architecture and operate a 'Design Forum' at which all ICT projects will be evaluated (or re-evaluated) and either authorised for funding or scrapped. There will be

a unit of 10 staff dealing with marketing and with the Customs and Excise Web site. A Programme Management team of 27 will take ownership of projects authorised by the Design Forum.

2.15 Customs and Excise plan to use the e-business strategy as an opportunity to effect more fundamental business re-engineering of their organisation as a whole, thereby overcoming some of the challenges to cost-effective electronic service delivery noted above. Over the last 15 years Customs and Excise staff have handled progressively greater workloads within falling personnel numbers. This has been achieved primarily through the strong development of risk management approaches to tax assurance work, regulation and many areas of law enforcement and the development of more automated systems for processing data. Instead of trying to audit or inspect all transactions, Customs have concentrated their attention on traders and problems chosen on a risk assessment basis, producing a progressively greater targeting of administrative effort. Electronic delivery of services can potentially extend this pattern of development, allowing faster and more complete acquisition of data in real-time. The change could make feasible more sophisticated programmes for spotting anomalies or finding similar cases or identifying potential problems. And it should provide much more accessible information easily available on-line, so that traders wishing to be compliant can get accurate and immediate help with their problems. As a result it may be feasible to secure efficiency savings amongst staff undertaking tax assurance, regulatory and informational work more generally as well as supporting compliance and improved service quality.

2.16 A key area of uncertainty remains as to why the department's customers will want to move over to undertaking VAT transactions electronically. Customs wish to ensure that when e-services are offered to their customers they should work first time, without the risk that false starts will alienate potential users. They also wish to ensure that the new facilities should offer businesses an improved 'quality of experience' in managing their relations with the department. Part of the reason for not 'going to market' earlier with new Internet-based services has been to ensure that new

6 The number of services enabled for electronic delivery in Customs and Excise's statements for 2000, 2002 and 2005, by type of function

Date	Providing information	Collecting revenues	Collecting statistics	Regulation	Total	Per cent achieved
2000	2 of 15	1 of 11	3 of 4	0 of 2	5 of 32	27
2002	7 of 15	6 of 11	4 of 4	1 of 2	18 of 32	63
2005	15 of 15	11 of 11	4 of 4	2 of 2	32 of 32	100

departmental systems can be satisfactorily incorporated into third party software and services, such as popular accounting software packages. The chances of high take-up are significantly improved if access to Customs can become a facility within existing well-used software and business systems. In addition, Customs may have to offer incentives to increase take-up, for example by offering flexibility in payment dates to fit with businesses' cash flow or increasing Customs and Excise's advisory role if returns are filed electronically. Although the cost and business implications of such incentives would need to be assessed. The success of CHIEF in getting nearly all import declarations and many export declarations carried out in an electronic way offers a possible model here.

2.17 The Office of the e-Envoy has evaluated the second Customs and Excise strategy and given feedback, which was 'very positive'. The Office feels that the department is focusing on the business outcomes it wants to achieve. It is using e-enablement as a driver for business change and with the establishment of the E-Operating Unit it now has the right level of skills and top management involvement right up to the Chairman. The traditional EDI system provided by CHIEF has been operational with almost maximum levels of take-up for some time - and will contribute to Customs and Excise's meeting the 2005 target. But it is clear that if the department is to achieve full electronic availability, plus the take-up targets set by the Treasury and their own stated aim of increasing electronic communications with traders, electronic VAT returns and registration processes will be vital. All the departmental staff we interviewed agreed that 'the VAT/SME market place is the one to crack.' The 2001 departmental report states that Customs and Excise will meet its targets for increasing its electronic communications by making available VAT declarations for completion on the Internet and bringing in online VAT registrations by 31 March 2002. A pilot for on-line registration is due to start in January 2002 and will coincide with Customs and Excise publishing their whole e-government strategy to the trader community and re-launching their Web site in a new format. This recognises the importance of building a complete e-environment as part of the incentive for VAT traders to move their dealings with Customs and Excise on-line. Uncertainty still surrounds the question of how to make VAT transactions secure. However, the current service relies on the Gateway for authentication. As a major business-facing department Customs and Excise will be a key member of future central initiatives, such as a possible business portal (see Part 4) and any further central developments on meeting government departments' security needs for on-line services.

2.18 In line with the experience in many other departments, Customs and Excise does not yet have a complete picture of the costs of completing basic administrative tasks to assist decision-makers in determining the scope of possible efficiency savings through growing e-services. Some pointers do exist to the emerging business case. The cost of processing a combined VAT return and cheque under current manual systems is known to be £1.16 each time. This is in line with accepted benchmarks of around £1 to process a single transaction in banking services. Industry research suggests that the processing of such financial transactions electronically costs around 25p via a bank automatic teller machine (ATM) and less than 10p over the Internet. Applying these figures to Customs and Excise's VAT returns load of over 7 million transactions a year suggests that there are potential savings to be achieved. In addition Customs and Excise identify 240,000 errors each year in the submission of VAT Export Sales Lists from businesses. Each error costs £1.50 to correct (or around £360,000 a year). Savings could be made here if lower levels of error could be achieved with businesses using direct input via the Web. There may also be opportunities to reduce phone enquiries and traffic through better Web services. Currently the department's National Advice Centre handles around 480,000 calls per year with an average call time of just over 5 minutes each. It employs 306 staff. However, the phone service also provides a quality of immediate and interactive advice that could be hard to match using electronic means. The revised business case for e-service requirements will need to take into account the costs of the current services as well as the more qualitative aspects. However, net benefits can only be optimised from developing e-services if running manual and e-processing systems in tandem is kept to a minimum. The detailed planning will need to demonstrate how this goal can be achieved.

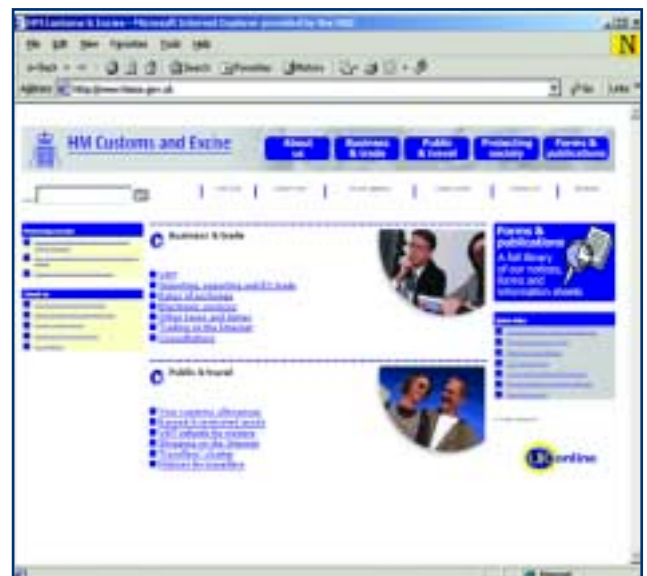
2.19 The Customs and Excise e-business strategy also recognises that effective customer segmentation will be central to growing e-services, so that services are targeted at correct trader groupings. The department currently divides up its customer base (for instance, by trade class, size and risk level). However, a much finer granulation is needed for e-business customer segmentation, and this work is being undertaken.

The Customs and Excise Web site

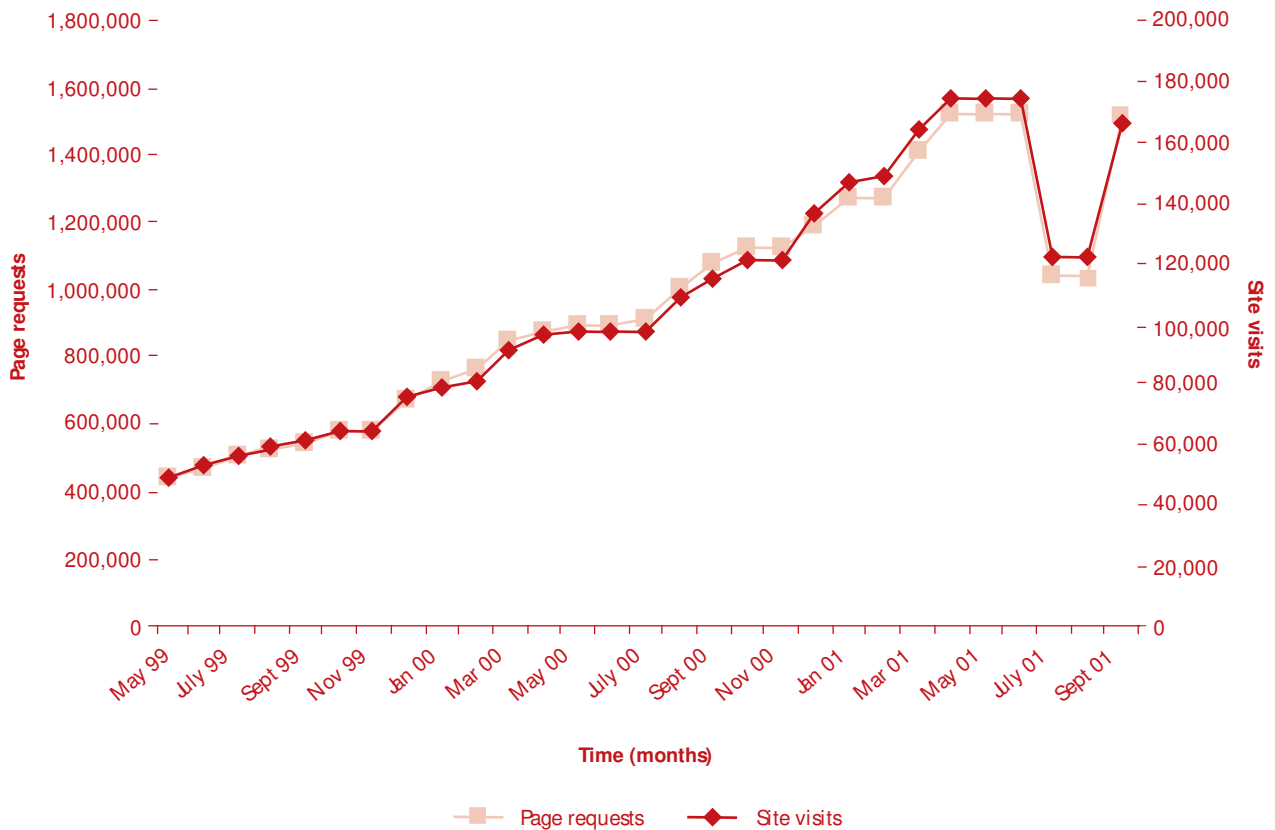
2.20 Customs and Excise's management attention to date has been focused on the governance and business architecture changes required for effective e-services to be introduced. The department's existing Web site offers the potential to develop knowledge about its customer base and their Web behaviours through analysis of Web usage. Customs and Excise first developed a Web site in 1998. The original site created continued in its original form with only minor improvements until mid December 2001. During 2000 a new site was developed in partnership with the Web services company Parity. However, this new site was not implemented immediately because the department was engaged in rolling-out a new IT desk-top infrastructure. During 2001 there were 12 staff working on development of the new as yet unimplemented Web site: 4 on corporate publishing, 4 on web site development and 4 on content management. Work was also undertaken on methods of handling structured e-mails, so that they can be built into the content management system: the department are concerned to avoid a 'flood' of unstructured e-mails. Meanwhile two staff maintained the publishing function of the original site.

2.21 The Customs site has the Web address or URL (universal resource locator) of: www.hmce.gov.uk. Although typing in the words 'Customs' and 'UK' into the major Web search engine Google does produce the Customs and Excise site as the first item found. In other countries it is relatively easy for users to guess the Web names of their agencies (www.customs.gov for the USA, or www.customs.gov.au for Australia, for example). As part of the Web site upgrade in January 2002, Customs took the opportunity to implement www.customs.gov.uk as an alias to the existing URL. In the period 1997-2001 the departmental Web site expanded greatly in its size. However, it was in clear need of upgrading throughout 2001.

2.22 On the Web site in use throughout virtually all of 2001 we sought information as a new business owner on whether we needed to pay VAT. In June and again in November the information given on the site was elementary in character, with most Web pages being reproductions of non-Web leaflets. In June we found broken links between pages and mis-directions within documents. There seemed to be major 'version control' problems, with various pages advising different VAT liability thresholds without being inter-related. A link in the basic VAT information leaflet to the department's local and regional offices instead led to a page on a national advice service, suggesting that the basic leaflet has not been updated to take account of recent Customs and Excise reorganisations. All information seemed to be provided listwise. We found no interactive or question-and-answer facilities on the site, and no opportunities for users to tailor the information given to



7 'Page requests' data (left axis) and 'site visits' data (right axis) for the HM Customs and Excise' website between January 1999 and September 2001



Source: HMCE Web site at www.hmce.gov.uk/stats

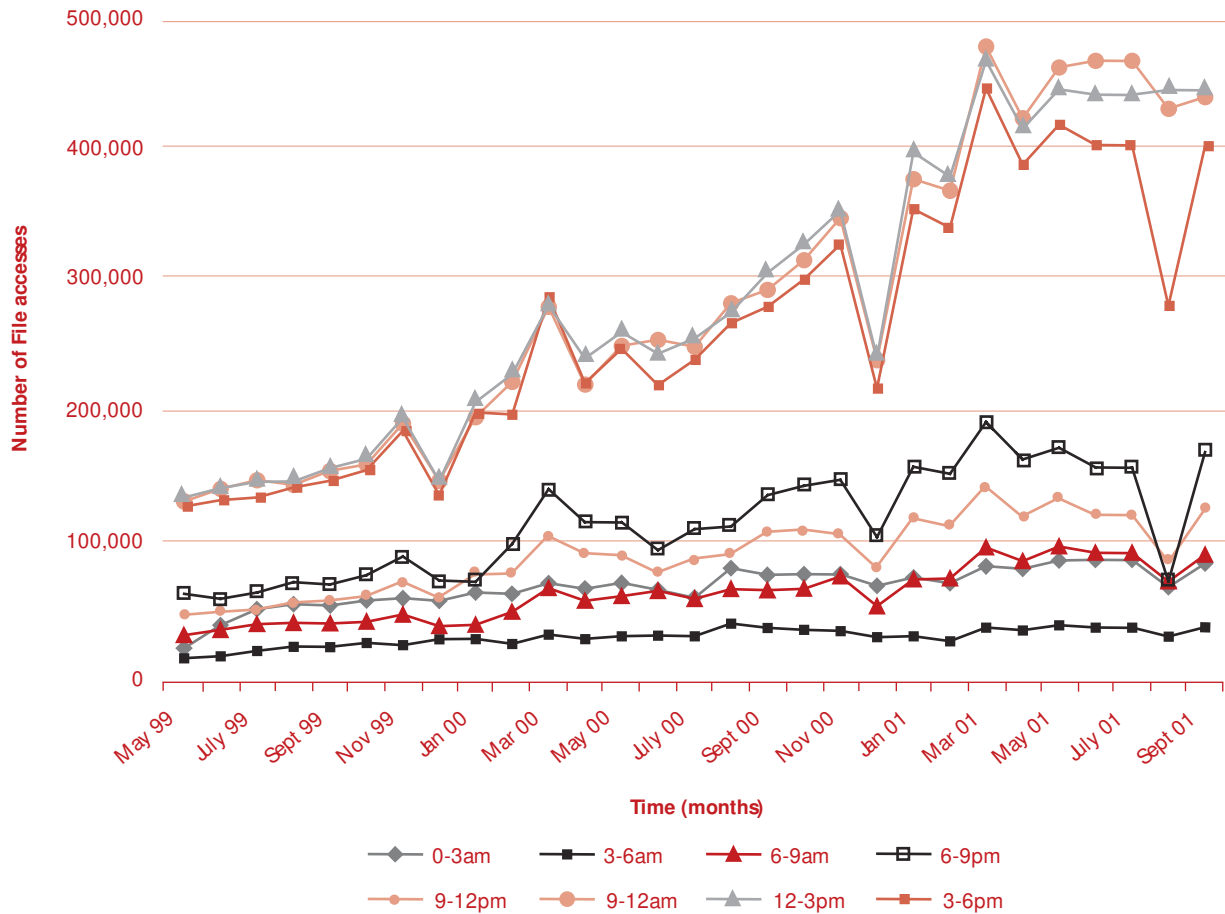
their needs, although taxation rules lend themselves to this method of exposition. There were few buttons provided for on-line forms: although some electronic copies of forms could be downloaded they were quite hard to find. The only interactive or transactional facilities were: an offer of electronic VAT returns via the Government Gateway; the depositing or retrieving of trade data with the Intrastat online database, used by 3,000 customers a month; the CHIEF declaration procedures; and some limited feedback facilities, such as the opportunity to e-mail a general enquiries address. The search engine on the site throughout most of 2001 was especially problematic - complex to use, yet incapable of finding even the basic search terms we submitted.

place. An improved search engine is included which can recognise different wording forms (for instance, 'registering for VAT' as well as the more official-sounding 'VAT registration'). The new site also groups electronic services together in a more accessible way. There are still areas that could be improved. For example, the system of directing enquiries still relies on people clicking on a small map, while elsewhere users have to page through a long list of postcodes to find whom to contact on VAT. In both these cases users now expect a more interactive solution where they just enter their postcode and are then directed to the right contact points. But the overall impression made by the new site is now more consistent with the department's plans to develop electronic services.

2.23 As noted above in mid December 2001 Customs and Excise addressed these issues by re-launching their Web site in a new design. It is now more clearly laid out and presents useful, up to date information for businesses and citizens in separate, well-signposted sections, and with much more accessible explanations for users. After a while the information tends to peter out in screens showing departmental leaflets, but the arrangement of the site and the content provided is greatly improved. It will be important to maintain the current consistency and integrity of information as budgetary and legislative changes take

2.24 As noted earlier, Customs and Excise do not at present make internal use of their web statistics in their thinking about electronic services. However, they were able to provide us with data going back to May 1999 and which are graphed in **Figure 7**. Usage of the www.hmce.gov.uk site rose modestly to a steady monthly figure in mid 2001 of around 1.5 million page requests per month, or about 174,000 user visits a month. These figures are reasonably credible amongst government departments, but they suggest that only a small proportion of department's client group are actually using the site. **Figure 8** shows how the usage statistics

8 The time of day for file accesses to the HM Customs and Excise website between May 1999 and September 2001



Source: HMCE web site at www.hmce.gov.uk/stats

broke down across different portions of the day. They demonstrate that the most intensive usage of Customs and Excise's site took place predominantly during UK office hours. There were over thirteen times as many visits between the peak hours of 9 am to 12 pm as during the lowest usage hours of the day, 3 am to 6 am. These figures suggest another challenge facing Customs and Excise in common with other business-facing agencies, that of *concurrency* - the usage of any electronic provision is likely to be far more concentrated within working hours. This characteristic of business banking has already been identified as a problem by the

banking sector, because any electronic services have to be supported by significant additional server capacity to cope with peak demand - which will then stand idle at other times. However, the Customs and Excise site has performed satisfactorily at times of peak usage during the year, such as Budget times. Notwithstanding the limited nature and quality of the old www.hmce.gov.uk site, it is notable in Figure 8 that the number of office hours page impressions grew by around two and a half times from early 1999 to mid 2001. These figures seem to demonstrate a clear demand from Customs' users for electronic information.

Conclusions and recommendations

2.25 The considerable size of Customs and Excise's transaction load, administrative operations and revenue collection operations make the department a crucial player in the government's strategy for electronic service delivery. The department had an early success with delivering the import-export function electronically. At the time of writing over half of VAT payments and most VAT repayments, by value, are made electronically, but the Department is still at the pilot stage in bringing VAT returns on-line. Customs believes that the simplicity of the VAT return makes it more difficult to move users away from the paper-based process. The department has set out ambitious plans for the future, particularly to growing the electronic take-up of services and to providing an integrated suite of services for businesses. A major process of re-engineering the department has begun.

2.26 Overall, Customs and Excise have £150 million allocated for their latest e-business strategy, roughly £50 million per year. Detailed figures for new spending are not available at present, but Customs and Excise envisage that most expenditure will be spent on new e-business capabilities (mostly Web based). The main investments to be made will support business registration, returns, payments, refunds, and statements of account, and also cover advice and education and complaint handling. Other significant areas of expenditure will be on enhancing the skills of personnel in the department and providing internal systems for e-learning and electronic 'human relations' facilities. It remains to be seen whether the funding available will be sufficient to achieve the department's aims. Customs and Excise have established a process for developing a

more detailed business cases for individual projects, and are starting to implement it. Banks have found that Internet solutions for business customers are comparatively expensive and may not pay back in terms of cost savings or new revenue streams for many years. Those that offer on-line business banking have undertaken the investment only after extensive preparations and developing comprehensive business cases. Similarly the banks active in this area carry out frequent and extensive analysis of their Web usage statistics, seeing them as a vital part of any management information report. The department have not sought to analyse through web usage data their customers' appetite for using electronic provision, in order to work out how take-up of electronic services might be maximised. The economics of electric collection of VAT with only partial take-up remain unclear.

2.27 The management team in charge of change is confident, committed, keen to make a controlled but emphatic transition in Customs and Excise's fundamental methods of working. Until recently Customs and Excise's existing Web provision provided few incentives for businesses to try and transact with them. Some welcome Web site improvements have been delivered from mid December 2001, and department officials also envisage that Web developments will be used to achieve a series of 'quick wins' during 2002. It will be important for the department to progress in a balanced fashion in future, growing its current Web usage in a pro-active way and expanding its whole portfolio of Internet services and information *at the same time* as investing heavily in the management and business architecture changes needed to facilitate the introduction of transactional services.



In Part Three:

The role of the Department for Transport, Local Government and the Regions and progress in implementing e-government in its headquarters

The department's policy for encouraging local authorities in England to develop electronic services and e-government

How far local authorities have already developed their Web sites

Our main conclusions and recommendations about the department's policies



DTLR

Department for Transport,
Local Government and the Regions

Part 3

Dealing with citizens and local authorities - the Department for Transport, Local Government and the Regions

3.1 The Department for Transport, Local Government and the Regions (hereafter DTLR) was created in June 2001 in the Whitehall reorganisation following the general election. Previously its administrative groups formed the major part of the Department for the Environment, Transport and the Regions. The main change made in the reorganisation was that environment responsibilities were moved across to the separate Department of the Environment, Food and Rural Affairs. DTLR's remit is primarily within England, and our focus here is on the department centre, excluding the major executive agencies and non-departmental public bodies which it also supervises. We examine: the department's e-government strategy; DTLR's policies designed to promote e-government within local authorities; the existing stage of development of local government Web sites; and our conclusions and recommendations. (Appendix B provides more background on the organisation of DTLR for readers unfamiliar with it).

The development of e-government in the Department

3.2 The department has developed its e-business strategy and submitted it to the Office of the e-Envoy in two rounds. The first was completed in 2000 and the second in autumn 2001, somewhat later than other departments because of the extensive changes in DTLR's make-up following the General Election in June 2001 and the subsequent machinery of government changes. The strategy emphasises making information and transaction services available via its Web site in an accessible and customer-focused way. A major project is under way to put in place an electronic document and records management system, which is due to go live in January 2004. The DTLR centre (commonly known as DTLR(C)) envisages being able to deliver electronically information requested by the public under the Freedom of Information legislation, when it is activated for Whitehall, which may not be until 2004-5 now. As a policy-making and service delivery organisation DTLR(C) also sets store on developing an effective knowledge management system. It already operates an Intranet (called Infonet) and is developing core staff skills needed to fully benefit from the Intranet and the Web site. The department has been one of the leaders in developing 'electronic communities of interest' across Whitehall and has an electronic briefing system in place, which links to the government's wider 'knowledge network'. It also places a lot of emphasis upon the development of partnership relations with external agencies and communities that the department is centrally concerned with. A key recent development has been the 'Info4localgovernment' e-mail alerting service. People who register their interest in one or more aspects of local government are thereafter automatically updated about Web page references giving new policy announcements or departmental publications. The service was well launched with effective publicity in the local government press during 2001 and it now has 13,000 subscribers. (In comparison the much more heavily funded UK Online Web site, run by the Office of the e-Envoy as a whole-of-government portal, has been operating for longer and has 40,000 people registered).

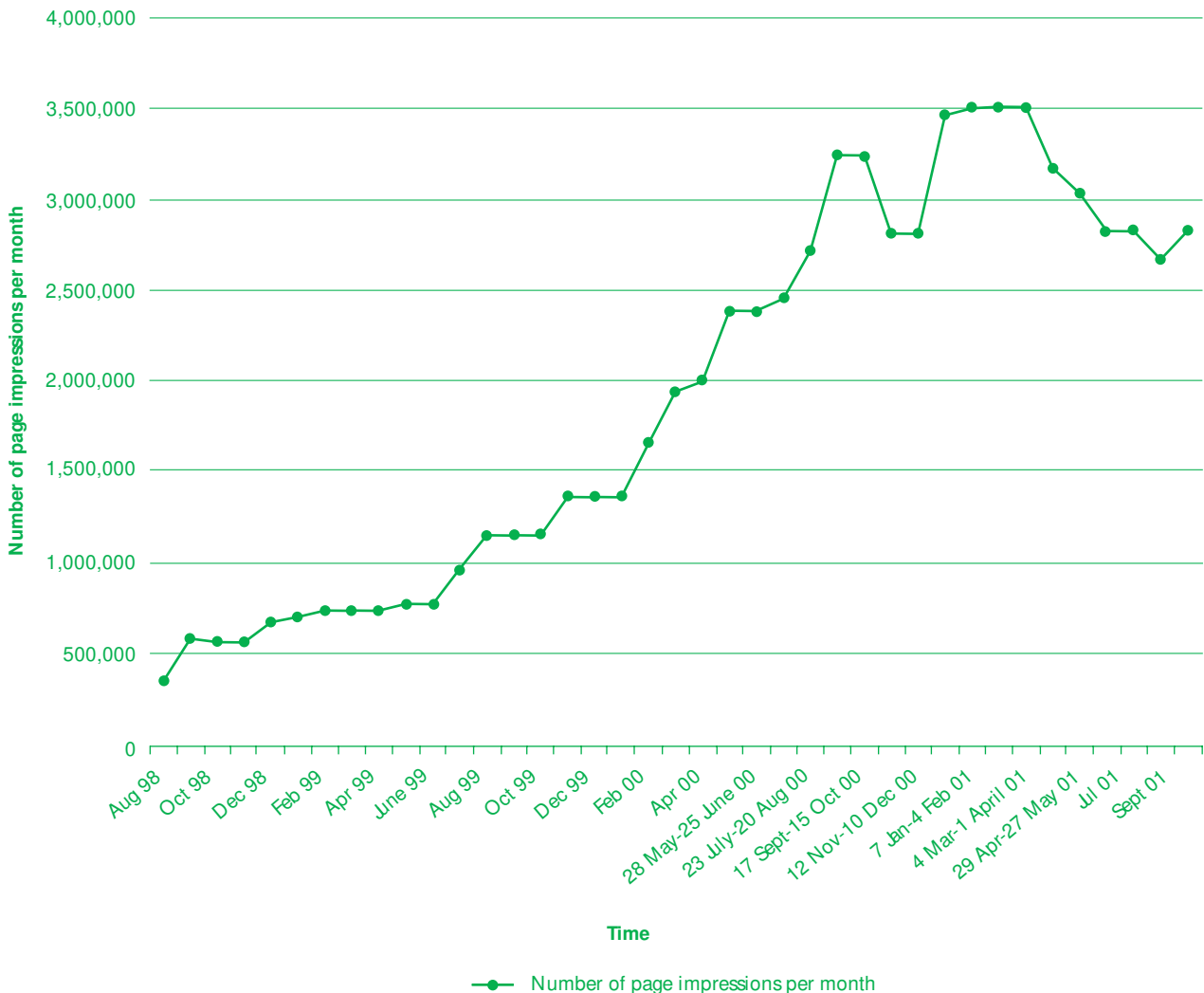


3.3 The department's external Web site is at www.dtlr.gov.uk. Because of the government reorganisation this name is not yet established with citizens at large, as the previous www.detr.gov.uk address was just beginning to be. Although the old 'DETR' name still diverts to the new 'DTLR' one, a key problem of adopting site names using initials is that they go completely out of date if departments are renamed, a fairly frequent occurrence in Whitehall. Users who type in more intuitive names, such as www.transport.gov.uk or www.localgovernment.gov.uk or www.regions.gov.uk will get nowhere. The department has historically made very limited use of Web aliases, unlike some other government sites such as the Number 10 Downing Street site. However, the department Webmaster has pursued an active policy of ensuring that the site is visible to the private sector commercial search engines, an important issue now that many new sites take time to be recognised. This approach has repaid dividends with high public

visibility. Research by the DTLR Web team on the search terms which lead to users accessing their site has shown that people reach it using many different words. The best-used phrase typed in was 'Highway Code', which all new driving test candidates must master.

3.4 The department's Web site has consistently been one of the most used central government sites. **Figure 9** shows that its overall usage grew strongly in the DETR period from under 500,000 page impressions a month in 1998 to over seven times as many in April 2001. After the machinery of government changes after the General Election in June 2001 when, amongst other changes, responsibility for Environmental protection transferred from DETR to Department for Environment, Food and Rural Affairs, accesses to the DTLR site have been about a fifth lower than before. But there are signs that recent traffic is recovering its previous upward trend. In comparisons with other government Web sites the DETR/DTLR site has consistently ranked around third in

9 The growth of Web traffic on www.detr.gov.uk (up to May 2001) and on www.dtlr.gov.uk thereafter, number of page impressions



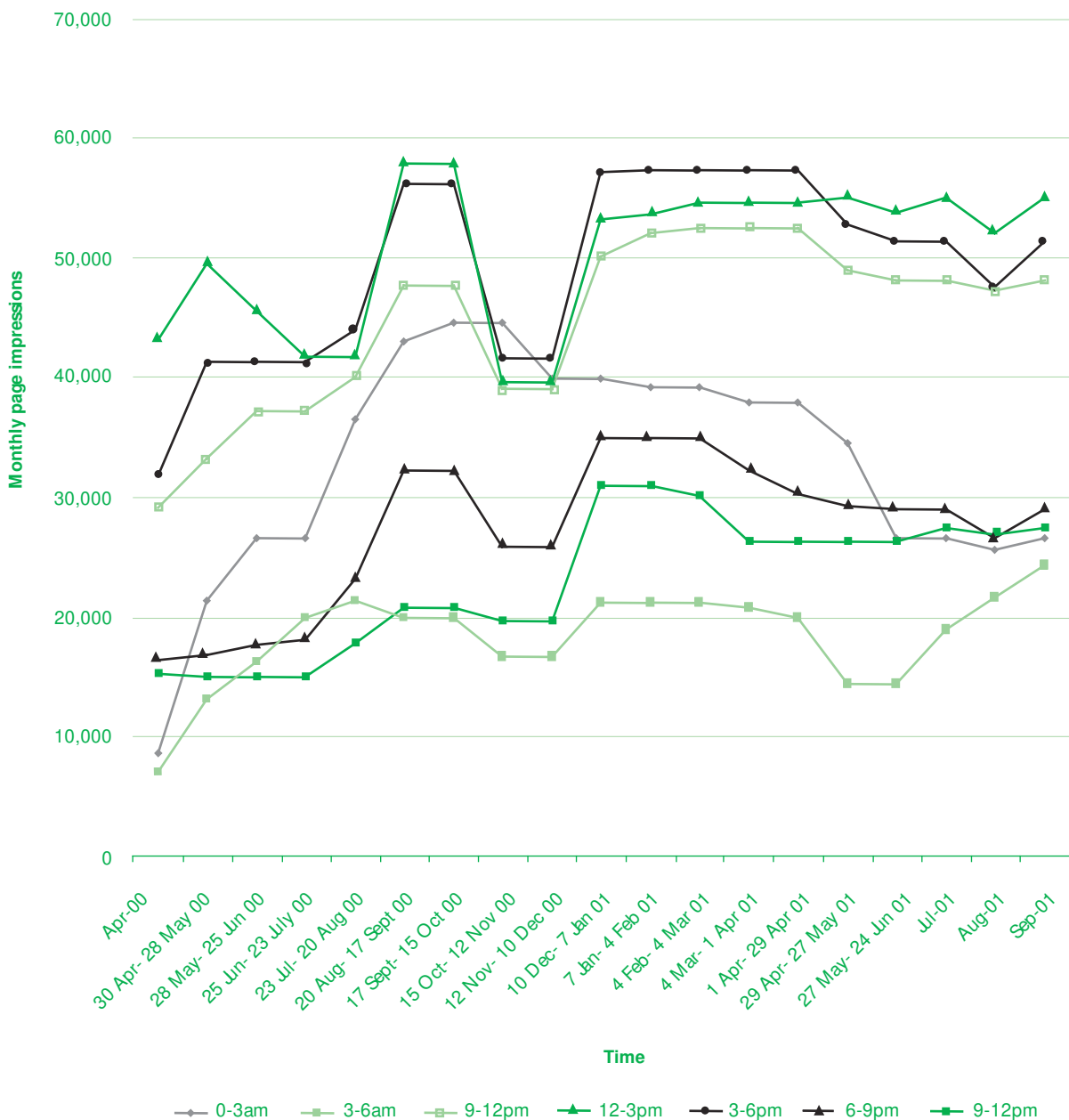
terms of the volume of page impressions. With more than 3.5 million page impressions a month DETR was a major government site. Even after the environment-related traffic moved away, DTLR still has a very substantial site with more than 2.9 million page impressions monthly.

environment topics were attracting relatively more click-throughs from citizens rather than from businesses. But overall, even in its new manifestation the DTLR site gets a majority of its traffic overnight and at weekends - in fact 64 per cent of all accesses occur outside office hours.

3.5 Looking at the breakdown of the DTLR traffic across time-bands in **Figure 10** shows that there is not a stark contrast between office hours accesses and those at other times (unlike HM Customs and Excise). The transition to the DTLR site has apparently opened up a larger and more consistent gap between office hours and out-of-hours accesses, perhaps suggesting that the

3.6 The foundations of this successful operation were laid in early 2000 when the department convened a team to study how they should respond to the first NAO *Government on the Web* report. This body concluded that DETR (as it then was) should upgrade its Web management provision. A professionally qualified Web Manager was recruited and took charge of a Web site

10 The growth of Web traffic on www.detr.gov.uk (up to May 2001) and thereafter on www.dtlr.gov.uk in different time bands, in page impressions



team with seven staff, a budget for contract processing of HTML materials and a development budget for the site. The Web manager established a training course tailored for staff in the main DTLR(C) groupings, which would allow them to create pages suitable for the department's Web site. Some 60 staff took up the training but only five have used their skills in providing content for the site. In addition, five executive officers work full time on Web publishing within the main policy divisions. A system of priorities for Web publication was established, with the Web team and contractors undertaking more complex work outside the scope of content providers' competences. The central team managed the Web site carefully to ensure its overall integrity. There are currently around 50,000 files on the site. DTLR's site is not strikingly designed but it is serviceable and gives a good overall picture of the department's activities. It provides citizens and businesses with a wealth of useful information.

3.7 The DTLR Web site operation is well costed, shown in **Figure 11**, and accounts for just under £0.5 million, around two thousandths of DTLR(C)'s overall running costs. In addition, however, the department also has an Electronic Publishing Strategy Unit with three staff (costing £140,000 annually) and a pump-priming fund of £250,000 to finance innovations in electronic publishing over three years, giving costs per year of £390,000 for this aspect. A team of seven staff maintains the DTLR Intranet (called Infonet) at an annual cost of £185,000 and with a development budget of £90,000 over three years, giving a cost per year of £275,000. Thus the overall Internet-orientated spending by DTLR amounts to just over £1 million a year, or around 0.4 per cent of DTLR(C)'s running costs.

3.8 Some features of the department's external Web site could be improved. Under DETR the home page was quite baffling or onerous for citizens to use, simply because of the extended range of the department's responsibilities. A modest redesign of the site and the reduction of functions under DTLR have eased this problem considerably. But the current site does not have a very effective search engine. It contains very few audio files for downloading and few non-English facilities (mostly in Welsh concerning some UK-wide responsibilities of the department). DTLR has central responsibility for urban policy and the problems of non-English speaking ethnic minorities have recently been in the forefront of discussion about the causes of riots in some towns of northern England. There are a few video files on the site (of various departmental TV campaign advertisements). Nor has DTLR yet developed any facilities for selling materials via the Web site. However, there are many document and form downloads freely available. No information on the site is presented in a way which lets users select or personalise the information they receive. Material is overwhelmingly set out in a listwise way. For instance,

people cannot yet input their postcodes and just see material which relates to their locality, such as information about the performance of their local councils. This approach contrasts sharply with the much more accessible style of the leading private sector content aggregator, www.upmystreet.com which gives its users quite a comprehensive view of their locality based on their postcode. Ironically this commercial site relies heavily on public sector information which is not effectively aggregated inside government at present. Finally the statistical information about the DTLR site and its usage was pretty basic until the summer of 2001 when the Webmaster made new hosting arrangements which included better use of the same analysis software. The information on Web traffic played back to the main groupings within the department has historically been rather minimal. But new research is being undertaken to ensure that user behaviours are properly analysed and fully taken into account in a forthcoming major redesign of the site planned for 2002.

11 DTLR expenditure on its external Web site in 2000-01

Expenditure category	Cost in £
Web team (8 staff)	243,100
Content providers in groupings (equivalent to 5 FTEs)	133,400
Web site hosting and development costs	104,000
Total Web site costs	480,500

NOTES

1. The numbers do not include a share of central costs for staff involved.
2. Numbers are rounded to the nearest hundred.



3.9 The department now clearly identifies its Web site and associated e-government operations as one of several first-rank means of communicating both with citizens at large and with businesses, local governments and a wide range of non-governmental organisations active in the regional, planning, housing, urban policy and transport fields. Both the Web site and the Intranet teams have recently begun to be run within the Communications division. Their management lines of responsibility and budgets are well-specified and linked closely to the development of the overall e-business strategy. The 'next generation' Web site arrangements and the introduction of content management software should make it easier for content providers within DTLR(C) to produce materials for the site, and for the central teams to manage that information. The department believes that the new site will be a major step forward, enabling it to make better use of its information assets and fully meet its e-government targets. There is appropriate and regular top management and ministerial attention to e-government issues. Two areas where perhaps DTLR(C) should focus more in future are: first, developing its own Internet-based information services, rather than focusing primarily on the services being developed by its agencies; and second, persuading managers in the main headquarters groupings to let their staff acquire sufficient training in new media skills, rather than there being a permanent shortfall in such provision.

Departmental policy for encouraging e-government amongst local authorities

3.10 The importance of local government in achieving overall improvement in the performance of the public sector was recognised in the Modernising Government white paper of spring 1999, which also emphasised that 'information age' government was as relevant for councils as for central agencies. The Local and Regional Government group within DTLR(C) has primary responsibility for this area of policy. Its 'local government Online' campaign has a very broad remit. It covers not just the Web-based provision of services directly to citizens but also the Web-enabling and better networking of councils' back-office systems, the provision of Web-enabled call centres and one-stop shops, improvements in e-access, the development of e-democracy initiatives, cultural changes in councillors' and local authority staff attitudes, and e-procurement. The department provides around four fifths of the funding available to local authorities in the form of an annual block grant. In addition it regularly top-slices amounts of money off this substantial sum to be used to encourage local authorities to pursue particular initiatives or innovations which ministers believe can improve the overall effectiveness of the local government sector. The department also plays a role in establishing and supervising the legal framework within which local government operates and in setting performance

standards against which local authorities performance is judged by the Audit Commission. And its research and advice are widely influential within the sector. In recent years DTLR has stressed the importance of partnership with local authorities. It has tried to tone down earlier overtly directive ways of operating, in favour of bringing a consensus of local authority opinion along behind its initiatives, especially the modernising government agenda. Hence DTLR tends to avoid being directly prescriptive on detailed operational matters. It seeks to make more initiatives jointly with local government bodies, especially the influential Local Government Association (LGA) which represents all councils, and its subsidiary the Improvement and Development Agency (IDeA) which has been asked by the LGA to lead on the implementation of e-government. IDeA is expected to provide a focus for working with local e-champions, co-ordinating resources within local government on a national scale, promoting and sharing ideas and best practice, and taking forward key national initiatives for councils. The Audit Commission inspects local authorities' management and operations to ensure that they are delivering 'best value' for local citizens, and publishes regular reports on how councils are doing. (National Inspectorates answering to other Whitehall departments additionally cover particular policy areas relevant for local government).

3.11 Within this overall apparatus e-government issues are a relatively recent addition to DTLR's policy aims. Funding of £350 million has been secured from the Treasury for encouraging local authorities to develop their Internet presence, to make services available on line and to meet the government's wider definition of 'electronic' provision, which includes telephone call centres or one-stop shops where these are backed by IT support. The money forms part of the department's Spending Review settlement for 2001-4. It is linked to one component of the Public Service Agreement which sets DTLR a target of getting all (100 per cent of) local government services available electronically by 2005. Another PSA target requires the department to secure annual improvements in the efficiency of local government of 2 per cent a year in the review period. The £350 million will be spent over the three years 2001-4, mostly in the last two years. Just under half, £160 million, will be spent in the form of fixed parcels of money delivered to each local authority, not varying in response to their population size, local needs or detailed performance. However, councils must submit a planning document in a form which DTLR sees as satisfactory (see next paragraph). This element of funding is heavily biased towards small district councils, mainly in rural areas, which have a relative lack of e-government capacity in the department's view. The remaining monies will be spent on encouraging the development of particular technologies or solutions; on national projects which are designed to provide 'building blocks' that can subsequently be taken up by any council; and on encouraging councils to work in local or sub-regional IT partnerships.

- 3.12 The main departmental policy tools for ensuring that this money is well spent are closely modelled on the procedures used within central government by the Office of the e-Envoy. Councils were asked to appoint e-champions at officer level (achieved by six out of seven authorities in July 2001) and at member level (achieved by three in four councils by the same date). As a condition of securing funding, a circular to local authorities in April 2001 asked them to prepare an 'Implementing Electronic Government' (IEG) statement and to submit it by the summer to the department. After delays in some cases, all local authorities in England did submit IEG statements. These plans went to the Modernising Local Government teams within DTLR, which consists principally of staff seconded to the department from local authorities. The department judged two thirds of the IEG statements as satisfactory, but felt that nearly three in every ten statements were satisfactory while none the less having 'significant weaknesses which were drawn to authorities' attention'. A small number of councils (25) were asked to revise their whole plans and resubmit them in response to DTLR feedback. The April 2001 circular promised that a national e-government strategy document for local authorities in England would be produced in September 2001, but it is now planned for April 2002.
- 3.13 The main way in which DTLR will find out about the state of local government's efforts on e-government is through a Best Value Performance Indicator (BVPI) number. This indicator closely follows the design of the Office of e-Envoy's performance monitoring index, which asks central departments to enumerate their main interactions with citizens and then to count what proportion of these interactions are capable of being completed electronically (see Part 4). In the same way, BVPI 157 asks councils to identify the services they transact or information they exchange with the public, and then to count how many of these in each year are electronically enabled. Thus if a council distinguishes say 40 interactions, of which 24 are enabled, it will rate its overall target attainment at 60 per cent. How councils enumerate their transactions and declare them either enabled, partly enabled or not enabled is largely up to them. They will have to justify their counting procedures as part of the normal audit and inspection rounds. The Audit Commission has issued some guidance for BVPI 157 (in Newsletter 20) in agreement with the DTLR. This advice concentrates on clarifying what is meant by 'the public' and it does not specify which services should be included. Authorities have the discretion to split up the elements of their services for BVPI 157 purposes as they see fit. So it seems unlikely that consistent results will be obtained. For this indicator each transaction also counts the same as every other, no matter how large or small are the number of dealings with citizens or local enterprises involved. There are no other DTLR performance indicators relating to e-government issues, so BVPI 157 carries the whole load. As yet neither DTLR nor the Audit Commission collect any information about the volume of Web traffic on council Web sites or the actual usage of Web sites or take-up of electronic services across local authorities.
- 3.14 In devising their policies for encouraging local authorities DTLR seems to have been conspicuously short of systematic information. Staff from the Modernising Local Government team have consulted widely with local councils and given advice. They have also sought to extract lessons from the initiatives and innovations made by the more pioneering councils. But their observations are somewhat scattered and have not been aggregated or developed into any well-developed model of how local governments are setting about e-government developments, and what the main drivers for change or barriers to development may be in this setting. Pulling in the first round of IEG statements has created a stock of knowledge about each council's e-government stance for the department. But it was not clear to us how much systematic information could be extracted from these plans. The DTLR's research division went out to tender in early 2002 for a project to explore the influences shaping councils' e-government policies. If well-handled the project may produce useful information by mid 2003.
- 3.15 The Department has also gained insights from competitive processes fostering local innovation. The Beacon Councils scheme provides extra funds to authorities which can demonstrate the excellence or innovation of their service provision, and six councils were supported for developing 'accessible services' provision in 2001. The department also funded 25 local government on-line 'pathfinder' schemes in particular councils, where authorities have been awarded extra funding to develop particular implementations of electronic services in ways which it is hoped will then be easily copied by other local authorities. This scheme aims to avoid 'reinventing the wheel' and is still in its early days. Its prospects for success are hampered by the quite high level of fragmentation of IT systems in local government, both across different policy sectors and across around 400 established private sector suppliers. Most local government IT systems are supplied to particular directorates within an authority. Only a few councils (like Liverpool) have integrated the running of their IT contracts with one company.
- 3.16 The Department has little reliable or systematic information available about the state of development of local authority Web sites. One valuable source of information has been *Better Connected*, an annual publication from Socitm (the Society for Information Technology Management). It is based on an appraisal of each local authority's Web site by a group of experts. They look in depth at a set of situations where citizens might want to find information or conduct transactions on-line. Socitm have analysed their results using the stages model discussed in Part 1 (see paragraphs 1.12 to

1.15) and give a synoptic overall 'grade' for each council Web site. The *Better Connected* reports have run for four years now and provide a useful framework against which to measure progress. In 1999 the Socitm team concluded that local authority sites were predominantly basic and brochureware. In 2000 they found that more substantial electronic publishing was beginning. And in 2001 the survey found that a few local government sites now displayed interactive features and the ability to do a number of transactions on line: one locality was graded as transactional overall. The reports are sold as part of a general Socitm subscription and copies go to the vast majority of local authorities. The Socitm surveys are widely quoted and seen as useful. Some staff in the local councils we visited for this study queried the ratings of their own authority and argued that the evaluations made were too subjective.

3.17 The Audit Commission as yet has no systematic information on the stage of e-government development across local authorities, and has not given advice to local authorities about how to ensure value for money in this area. However, the Commission began work on e-government issues in the spring of 2001. The project focuses on three key issues: why e-government matters; how well councils are positioned to deliver; and how they can move forwards. The Commission team consulted with local authority and other stakeholders in December 2001 on their preliminary ideas. It published a briefing paper on its initial results in February 2002, and intends to issue a national report in July.

The development of local government on the Web

3.18 To fill this information gap we undertook a census of all local government Web sites in England, seeking to collect objective information on which facilities were and were not already available to citizens. We drew up a list of questions about possible features of the sites which are feasible now, and indeed are being provided

on at least some local sites. We talked with the Local Government Association, Socitm, the Audit Commission and DTLR officials about this coding frame. We also visited seven local authorities of different sizes and types to gain an understanding of how Web-based service development happen on the ground. We looked at a large number of sites to see where the boundaries of good practice now lay. The coding frame which emerged from this process formed the core of our study. (It is available for free download on the Web at www.governmentontheweb.org, which also gives the basic results for each question). We used a team of post-graduate researchers from the London School of Economics to code up to 172 variables about each site. The census method is also described in Appendix A on page 67 below, but it is worth noting here that our coders were experts in understanding Web sites. They were looking for a huge range of features which they knew how to recognise. They spent a long time on each site, around 1 to 1.5 hours, and their approach was carefully cross-checked. So our methodology was deliberately generous to local authorities in recording whether features were present or not. An average citizen, accessing the same site for a very short time and untrained in public sector Web design, would have a much smaller chance of finding any given feature than did our coders.

3.19 **Figure 12** shows that all but 13 local authorities in England did have a Web site in November 2001. In all 375 council sites were found. Different categories of council cover different service mixes. Counties and districts divide local service functions between them in much of more rural England, but unitary and metropolitan authorities handle all local service for their areas. (Some strategic transport and other functions are handled at the London-wide or metropolitan level). The use of Web sites is considerably better developed amongst councils than that amongst central government agencies taken as a whole. It reflects the fact that every local authority has multiple direct dealings with citizens, firms and many non-governmental organisations in its locality.

12 Local authority sites surveyed in the census of English local authorities

Type of authority	With Web sites	No Web site	Percentage with sites	Main responsibilities
District councils	227	10	96	Local planning, environmental services, tax collection, leisure services
Unitary authorities	45	2	96	All services
Metropolitan councils	36	0	100	All local services
County councils	34	1	97	Education, libraries, social services, highways, public transport, strategic planning
London boroughs (and City)	33	0	100	All local services
Total authorities	375	13	97	

NOTE

One council did have a site address but the site was still 'under construction'. It is counted as no site here.

In addition the survey established that council Web sites are highly visible. When the formal name of the local authority was entered in full into the search engine Google nearly all sites came up listed first, and over nine tenths did so on the MSN search facility - an excellent performance. Most council sites also have intuitive names, which have a good chance of being guessed by local citizens. However, a considerable minority of councils use either hard to guess abbreviations or 'insider' initials which are non-intuitive. Some councils with basically intuitive names have unnecessary dashes or stops in their site addresses, which are calculated to render their sites hard to find if citizens try to type the names into their browsers without using a search engine. Similarly off-putting are added acronyms which citizens are not likely to use, like DC for district council.

3.20 The main outlines of the census findings are shown in detail in **Figure 13**, differentiated by the extent to which facilities are present on local authority Web sites and by service area. We group general site features together with citizenship and revenue features; the 'human services' areas cover education, libraries, leisure services and social services; and the 'urban or environmental services' span across planning, housing, highways, public transport, environmental health and waste. The basic patterns which emerge show that general and citizenship features are most widely distributed, closely followed by the human services area, but that the urban services lag a long way behind in the presence of features. In addition, local authority sites are quite diverse. There are very few features which are present on most council sites - such as the ability to find the names of councillors and wards, and an A to Z of council services. Even features like a press release section or a description of the council's current activities are present only two thirds of the time. However, half of the library authorities provide on-line public access to their catalogue of books, and somewhat fewer let citizens reserve or renew books on-line - the best disseminated electronic service we found. Just over a quarter of authorities let citizens pay their council tax on-line. Downloadable forms were hard to find, especially in some service areas that would seem tailor-made for such a facility, such as making planning applications (35 per cent), registering births, marriages and deaths (4 per cent) or applying to be on the electoral register (2 per cent). On-line submission of forms was even more rare, but around one in ten housing authorities were accepting repair notifications on-line. Anomalies abounded. For instance, 40 per cent of education authorities posted teaching job vacancies online, but only 10 per cent allowed application forms to be downloaded. One of the best-provided e-mail

facilities (included by three fifths of councils) was an option to comment on the authority's Best Value Performance Plan, an opening unlikely to be taken up by very many citizens. On the other hand, local government is clearly better than central government in providing some kinds of information. For instance more than half of the sites give e-mail addresses for senior officials.

3.21 The performance of local government sites in linking to other neighbouring public sector sites was in general poor. The chief bright spots here were that half of the council sites did include a link to the central government portal at www.ukonline.gov.uk and 60 per cent gave links to other neighbouring local authorities. In addition, 56 per cent of education authorities gave links to OFSTED and over two fifths to the National Grid for Learning. However, nearly three quarters of council sites had no contact information for NHS Direct and over two thirds none for the local Health Trust. Three fifths had no contact information for local police forces and over half none for any local MPs. Linkages to private sector sites were generally also poor or very poor - only one in twelve registrars for marriages gave contact information or links to hotels or other venues for marriage ceremonies, and only one in fifty registrars for deaths helped citizens to contact funeral directors. Little use was made of maps in helping citizens to find out which ward they were in, where school catchment areas were, or how to find council offices and facilities like schools, libraries and social services centres. The overwhelming preponderance of information was presented in a listwise, text-based form.

3.22 We constructed a number of indices showing how local authorities performed across the full range of facilities coded in our surveys, and in the three broad policy areas used above. The overall index in **Figure 14** was constructed by asking how many of 165 positive features coded in our census were present in each local authority site. The average score across all local authorities was 27 per cent, with the middle half of councils having scores between 34 per cent and 21 per cent. One in four councils had scores of 20 per cent or less, and a similar number rated 35 per cent or more. The only lower outliers doing very poorly were the 13 authorities with no Web site at all. There were 30 upper outliers doing exceptionally well however, with scores of 41 per cent or more. Two of the three top-scoring Web sites were London boroughs, Camden on 62 per cent and Brent on 56 per cent, with Lincolnshire County Council also achieving joint second with 56 per cent. A breakdown of this overall score across all 388 councils can be accessed on the Web at www.governmentontheweb.org.

13 Local Authority Features ranked by percentage and service group

Key

■ Basic site
 ■ Interactive
 ■ E-Publishing
 ■ Transactional
 ■ Account Management

General and revenue features		Human Services features		Environmental Services features	
Feature	%	Feature	%	Feature	%
Universal Over 90%					
Site listed in first place in Google search	98				
Consistent colour scheme	97				
Consistent size and style	97				
Logo branding	96				
Site listed in first place in MSN search	91				
Widespread 70-80%					
General enquiries email address	88	Details of school term dates	70		
Publishing of BVPI	85	A list of library addresses	70		
An AZ of council services	84				
Site listed in first place in Lycos search	79				
A general search facility for the site as a whole	76				
A list of the Council's departments sections or divisions	73				
Becoming widespread 50-69%					
Description of the council's current activities	67	Addresses of local leisure facilities	67	% of online rent payments made through Girobank	69
Press release section	67	Links to schools' own web sites	65		
Site was updated in the last week	64	Email addresses for schools	61		
Information on how to join the electoral register	54	Link to DFES	61		
Email addresses for senior officials	52	Link to other local authorities	60		
Link to UKOnline	51	List of local events	59		
IEG plan published	50	Link to OFSTED	56		
		List of local social services providers	54		
		Online enquiry facility for libraries	53		
		List of local adult education providers	52		
Significant 30-49%					
List of name and addresses of LEA schools	43	Online search of library catalogue	45	Link to railtrack.com	44
The Council's mission statement	42	Link to the National Grid for Learning	42	Facility to review a list of current planning applications	40
A list of local MP's names and addresses	42	Search facility for schools by catchment area	42	Link to DTLR	38
Council's opening times	41	List of teaching vacancies	41	Download forms for planning applications	34
A list of the council's functions	39	Facility to renew a library book online	38	A list of local road repairs	33
Email enquiry facility for electoral register enquiries	38	Facility to reserve a library book online	37		
The council's future strategy	37	Link to childcare link	31		

General and revenue features		Human Services features		Environmental Services features	
Feature	%	Feature	%	Feature	%
Significant 30-49% continued					
Online feedback facility for BVPI	37				
A what's new to the site section	37				
Email addresses for non-senior officials	36				
Link to local police authorities	30				
Few 10-29%					
Download a form to join the electoral register	28	A link to local theatres	27	Link to the Environment Agency	22
Report a street fault online	28	A list of local adult education courses	24	Links to other nonprofit environment agencies	21
A description of the council's legal responsibilities	28	Submit an online complaint about social services providers	24	Download bus timetables	20
Link to NHS Direct	27	A location map for local libraries	22	Conduct search for planning applications by dates	19
Council's address	26	Conduct search to find out about local events	19	Find bus journey through a searchable journey planner	19
MPs' email addresses	26	Address and telephone number of local theatre	19	Find train journey through a searchable journey planner	19
Pay council tax online	24	Link to local cinema	19	Send a detailed enquiry about bus journeys and prices	18
A section providing regular updates or news	21	Search for the addresses of local libraries	18	Download train timetables	18
Link to local health trust	20	Address and phone number of local cinema	13	Link to DEFRA	18
Surgery hours for wards	20	Map of school locations	12	Address and telephone number of local housing associations	15
Pay business rates online	20	Search for local social services providers	12	Submit online complaint form to environmental health	15
Council address and map	18	Search for location map of local libraries	12	Submit an online request to environmental health	15
Name and email address of councillors	18	Download application forms for teaching vacancies	10	Search for train fares using online search facility	14
Searchable name and email address of councillors	18	Search for adult education providers	10	Link to the trainline.com	13
List of MP's constituency boundaries	18			Address and telephone number of Citizens Advice Bureau	12
Link to the local fire service	16			Link to the Highways Agency	12
Link to Learning and Skills Council	16			Search for bus fares using online search facility	11
Link to Citizens Advice Bureau	16			Search for road repairs	11
Text only version of the site	16			Link to local housing associations	10
Website updated within last month	14			Link to nationalrail.co.uk	10
Details of MP's surgery hours	14				
Names and addresses of registry offices	13				
Name of electoral wards	12				
Search for the name and address of electoral wards	11				
Material in languages other than English	11				
Name and map of electoral wards	10				
Rare 0-9%					
Life events section	9	Location map of local adult education providers	9	Pay rent online	9
Link to crime reports	9	Search for adult education courses	9	Send detailed email enquiries about train times and fares	9
Address and phone number of local hotels	6	Link to teachernet	9	List of when household waste will be collected	7
Address and phone numbers of other Local Authorities	5	Download applications for adult education courses	9	List of housing available to rent	6
List of councillors' names	5	Make online applications for teaching vacancies	7	Search for planning applications using post code or street names	6
Facility to sign up for news letters to be sent by email	4	Download a form to complain about a social services provider	5	Address and phone number for national rail	6
Search to find electoral wards	4	Link to the people's network	5	Search for when household waste will be collected	6
Search to find councillors' names	4	Address and phone number for the DFES	5	Links to Countryside Commission	6
Report crimes online	4			Links to Environment Agency	6
				Address and phone number of the DTLR	5

General and revenue features		Human Services features		Environmental Services features	
Feature	%	Feature	%	Feature	%
Rare 0-9% continued					
Name and office map for the registry office	4	Address and phone number for the Learning and Skills Council	5	Download a form to apply for housing benefit	4
Download a form to register a birth	4	Address and phone number for OFSTED	4	Set up a direct debit to pay rent	4
Download a form to apply for a marriage licence	4	Search for school names and addresses	4	Address and phone number of the Land Registry	4
Download a form to register a death	4	Search for local adult education providers	4	Link to local estate agents	4
Address and phone numbers for places of worship	4	Address and phone for the National Grid for Learning	4	Buy bus tickets and travel cards online	4
Technology for users with special needs	4	Download application for social services	3	Buy train tickets and travel cards online	4
Pages carrying HM government crest	4	Download complaint form and complain on line to social services	3	Pay parking fines online	4
Useful search to find council's address and map	3	Search a map of local leisure facilities	3	Download form to apply for available housing	3
Search for constituency boundaries	3	Book a leisure facility online	3	Address and telephone number for the Highways Agency	3
Address and phone number of NHS direct	2	Request a service from social services online	3	Address and telephone number for DEFRA	3
Site updated within last 3 months	2	Apply for adult education courses	3	Address and telephone number for the Environment Agency	3
Site updated over 3 months ago	2	Apply for adult education courses and pay fees online	3	Search for name and addresses of housing offices	2
Search to find council address	2	Address and phone number of Adult Learning Inspectorate	1	Name and location map of housing office	2
Search of constituency boundaries	2	Link to Adult Learning Inspectorate	1	Search for available housing by location and accommodation type	2
.bin electoral register online	2	Address and phone number for childcare link	1	Apply for housing benefit online	2
Search for name and addresses of registry offices	2			Download form and report road repairs	2
Address and phone numbers of Funeral Directors	2			Apply for available housing online	1
View business rates accounts online	2			View rent account details online	1
Download Audio files	2			Submit planning application online	1
Name and address of web manager	1			Address and telephone number of Land Registry	1
Facility to sign up for press releases to be received by email	1			Address and telephone number of local builders	1
MP's office details and location map	1			Address and telephone number of local architects	1
Search for local registry offices	1			Address and telephone number of local estate agents	1
Address and telephone number of florists	1			Address and telephone number of other travel companies	1
				Register for email alert about road repairs	1
				Download form to report road repairs	1
				Complain about missed household waste collections by downloading form or online	1
				Download form to request service from environmental health	1
				Address and telephone number for Countryside Commission	1
				Address and telephone number for English Nature	1

14 Average percentage scores for the presence of Web features on the sites of different types of local authority, November 2001

Type of Authority	All features	General Revenue features	Education / libraries/ leisure/ social services features	Planning/ housing/ roads/ transport/ waste/ environmental health features
County councils	38	42	42	18
London boroughs	34	39	36	23
Metropolitan boroughs	31	43	32	17
Unitary authorities	28	39	25	16
District councils	23	31	22	14
All	27	35	30	16
<i>Number of features covered</i>	<i>165</i>	<i>76</i>	<i>38</i>	<i>52</i>

NOTES

Cell entries show the mean percentage score (actual features as a percentage of features coded for) - achieved by local authorities in each type.

We computed the score for each local authority for the presence of 166 Web features on their site, and then for three groups of these features. We then computed the average (mean) scores for all authorities within each type of local authority, for all the features and for each of the three sub-groups.

3.23 Looking across types of authorities the mean score for the 36 county councils was highest at 38 per cent, and that for district councils was lowest at 23 per cent. Most media commentary on Web provision tends to focus on larger urban councils, especially those which provide one or two high-profile transactional services. There are three possible explanations for counties' above average performance:

- they have a more limited range of services, which may lend itself more to on-line provision;
- counties are much larger authorities than district councils, especially the rural districts, and thus have a better resource base; and
- many counties made positive efforts to build stronger links to local citizens during the mid 1990s area reorganisations of local government, in order to ensure that they survived as a tier. These initiatives often included introducing an effective Web site, providing an early start for subsequent development of e-services.

Many of the district councils which were clearly lagging were small authorities, often in more rural areas. Metropolitan authorities and London boroughs and unitary authorities were all above the national average, but unitary authorities scored lower.

3.24 Looking at the different broad policy sectors covered by our coding scheme, the best-performing aspects of Web sites involved general site features, such as accessibility, general information about the council and citizenship, closely followed by libraries, education and leisure services - see **Figure 15**. There was then a considerable gap with most other services scoring much less well than the national average for all site features. On

the worst service areas the average local authority was three times less likely to have the site features we coded for than in the best service areas - a wide variation.

3.25 Turning to the regional patterning of local authorities' performance, there is a clear gradient. The strongest area of e-government progress overall is in London, followed at a distance by the South East - see **Figure 16**. Local authorities in other regions had somewhat fewer electronic features and facilities on their Web sites than the South East, but the regional differences were not marked except for regions with the lowest average scores, the North East and the West Midlands. This pattern may reflect patterns of PC ownership, and perhaps also the proportion of knowledge workers who are in the private sector, since this group is most likely to use e-services in their work and to make demands for e-services from their local councils.

3.26 The overall pattern of features on local authority Web sites underpins the argument in Part 1 about the importance of electronic publishing and interactive publishing as well as transactions. There is room for doubt that simple electronic processing of one-off transactions offers many advantages for local authorities. For instance, the ability to process council tax payments on-line and to accept credit card payments may offer some cost savings when compared with over-the-counter cash payments and perhaps compared with processing cheques sent by post. But the most successful local authorities at raising council tax are those which encourage citizens to take out direct debits, and some finance staff worry that one-off electronic payment may reduce the incentives for direct debiting. The most successful local e-tax service is thus likely to be one which ensures that people paying

15 Average percentage scores for all local authorities in England across different services areas, November 2001

Service area	Mean score (%)	Number of features coded
General site features	35	70
Libraries	34	8
Education	32	20
Leisure services	27	6
All services	27	166
Highways	19	6
Public transport	19	16
Social services	18	4
Environmental services	15	7
Revenue	13	6
Planning	13	9
Waste collection	11	2
Housing services	9	12

on-line (perhaps because they have recently moved into an area) are followed up quickly and appropriately incentivised to complete a direct debit. Similarly, because direct debits are very low cost to administer once they are in place, it is not clear how many citizens will want to inspect and manage their council tax accounts on-line. Careful market segmentation is likely to be needed to ascertain that overall cost savings can be achieved through investing in this area.

- 3.27 The greatest potential for local government services on the Web arises from the fact that unitary councils especially deal with many different services, and ones which citizens will tend to use and reuse in a short time period. Central government agencies are inherently single function bodies, which citizens will out of necessity visit infrequently. For instance someone who completes a passport application on-line may not need to return to the Passport Agency site again for a decade. Thus citizens accessing central government sites are permanently likely to know little about how the sites are organised or what issues are involved in their interactions with the agency. They will usually have to start from scratch each time. In addition, users will have little possibility of learning more about central government e-services in other areas, of doing 'collateral learning', unless the government portal can attract users' attention on the way into an agency's site. By contrast, citizens logging on to good local government sites, which provide a wide range of electronic services and information, may know a great deal more about how things are organised at local level. And they may be able to do collateral learning more

16 The average scores for the presence of Web features, across all local authorities within the Government Regions for England, November 2001

Government region	Mean score in percent
Greater London	34
South East	29
Eastern	27
Yorkshire and Humberside	27
England as a whole	27
South West	26
North West	26
East Midlands	25
West Midlands	23
North East	23

NOTES

We computed the score for each local authority for the presence of 166 Web features on their site. We then computed the average (mean) score for all authorities within each government region.

easily. For instance, someone may look up a routine matter on the council's site, like which kind of recycling materials are being collected in a given week, or checking a bustimetable. But they may then notice on the council's home page that a local planning consultation affecting their area is under way, or find out that further education courses are registering for the new year.

- 3.28 If local authority sites develop across-the-board facilities to provide information about their services and their areas they can be much more visible than sites for any central agency. If they also grow links to local business, community organisations and leisure facilities (for things like cinemas, theatres, music venues and entertainment), then the chances improve that council home pages will be included in many more citizens' lists of 'favourites' or 'bookmarks'. The overall usefulness of a site is also critical for either word-of-mouth dissemination or 'viral' marketing. Local authority sites with properly organised and developed links pages could also become crucial local portals by which citizens would access public sector agencies as a whole. At present this potential is still in embryo. It is disturbing that half of councils do not even link to www.UKOnline.gov.uk yet. Neither the Office of the e-Envoy nor DTLR see it as feasible to restrict government funding for local e-government to those local authority Web sites carrying a UK Online link, as a quid pro quo for funding. But the longer term potential for local authority sites to provide key windows into the whole public sector is considerable.

3.29 These findings have great resonance for policy-making by the Department for Transport, Local Government and the Regions on encouraging e-government by local authorities. They first of all establish a useful bottom-line against which progress in future years may be more precisely gauged. The data already suggest that there are a few areas where the 2005 target for all local public services to be electronically available is likely to be well met, given current progress - such as public library catalogues on-line. There are other areas where progress so far has been rather slow, but where a one-off transaction capacity should be in place in most areas, given the emphasis of current central government and DTLR policy - such as paying council tax on-line. But there are many other areas, especially in the fields of information-giving and interactive presentation of materials, where progress to date has been almost non-existent and where central government backing and support has not been prominent. The overall low scores for local authorities in our census suggest the importance of councils pursuing electronic publication strategies which are systematic and comprehensive, and which maximise the market reach and appeal of the local authority 'brand' as a whole.

Conclusions and recommendations

3.30 The Department for Transport, Local Government and the Regions has a reasonably effective and well managed external Web site which plays an important role in its overall communications strategy and which has been sensibly budgeted and allocated funds for development. The Web site has attracted a good numbers of users and shows fairly buoyant trends over time. The department centre's main electronic service functions focus on information provision and exchanges and it has a consistent policy in place. There are plans for a redesign of the Web site in 2002 and for progress to be made in electronic records and document management. DTLR also has an Intranet and has made some investment in innovations in electronic publishing.

3.31 DTLR still has a long way to go in developing its site to its full potential, especially in presenting information more interactively and in closely analysing and responding to users' behaviour and needs. The department could find it helpful to examine how its communication budget is split across conventional and new media. It needs to be able to show that its current split with relatively small resources devoted to new media and Internet-based efforts is the most cost-effective one. Existing innovations, such as the 'Info4localgovernment' service, are a useful start, but they should be extended and improved.

3.32 On promoting e-government for local councils the department believe that the IEG statements and funding made available, along with the introduction of BVPI 157, have encouraged councils to develop services online. DTLR judge that local government is making good progress towards ensuring that 25 per cent of services are capable of being delivered electronically by 2002. In their view the BVPI 157 performance indicator has encouraged authorities to categorise how they interact with the public across all their services. Councils have moved to identify and improve their state of readiness in relation to the 2005 target of 100 per cent services availability in one 'electronic' form or another (either online, or via E-enabled call centres or one-stop shops).

3.33 Yet we found that policy-making on encouraging e-government amongst local authorities has so far been based on remarkably little systematic information. A substantial amount of specific, targeted funding will be committed to promoting local authority efforts in this area, over the next two years particularly. The department's existing main performance indicator, the

BVPI 157 measure, cannot produce consistent information on how much effective progress is being made. Even if service availability in electronic form could be better measured, what surely matters are the take-up levels of available local e-services and facilities by citizens or enterprises. The apparatus of IEG statements also produces discursive information which it is not easy to analyse.

3.34 As current policy stands, we conclude that the department has insufficient information in place or in prospect to be able to offer Parliament assurance that the funding being committed (£350 million in all over three years) will be productively and appropriately spent. We recommend that:

- The department should develop measures for regularly and systematically monitoring how local government Internet-based services are developing, and regularly review policy in the light of the findings. Our census of Web sites shows that low cost techniques for doing so are readily available. Broader aspects of 'local government online' initiatives may also need to be monitored.
- DTLR should discuss and develop with local government bodies one or several performance indicators for measuring the actual take-up of local government on-line services, which can be put in place as soon as possible to supplement or replace BVPI 157.
- After appropriate discussions with stakeholders, and consistent with its approach to encouraging more freedom for local authority decisions, the department should formulate and put in place feasible broad targets for local governments to increase usage of their electronic services continuously over time and especially by 2005. Local authorities should be given appropriate formal indications of central government's priorities for services to be provided electronically and of achievements to aim for in different policy sectors.
- The department should deliver to Parliament a systematic 'end of term' report in 2005 on the measures taken to promote better e-government and electronic service provision amongst local authorities. It should set out objectively the successes achieved and the areas of less progress. And it should estimate the likely benefits put in place against the funding costs incurred by central government and implementation costs by local authorities.



In Part Four:

The role of the Office of e-Envoy (OeE)

Progress on some key OeE initiatives to provide central facilities for e-government

The targets regime and performance indicators used by the Office of the e-Envoy to monitor policy implementation

How far central government departments and agencies have developed their Web sites and Web traffic

Our main conclusions and recommendations on central policies



Part 4

Central policy on e-government issues

4.1 Since 1999 the UK's policy-making for e-government has strengthened considerably. In comparative terms, the UK now commits more resources centrally for promoting the development of electronic public services than other similar countries, and has a developed set of central institutions. We consider the overall role and set-up of the Office of e-Envoy, its cross-government facilities and projects, and its targets regime, in the light of data on how central government Web services have developed.

The Office of e-Envoy

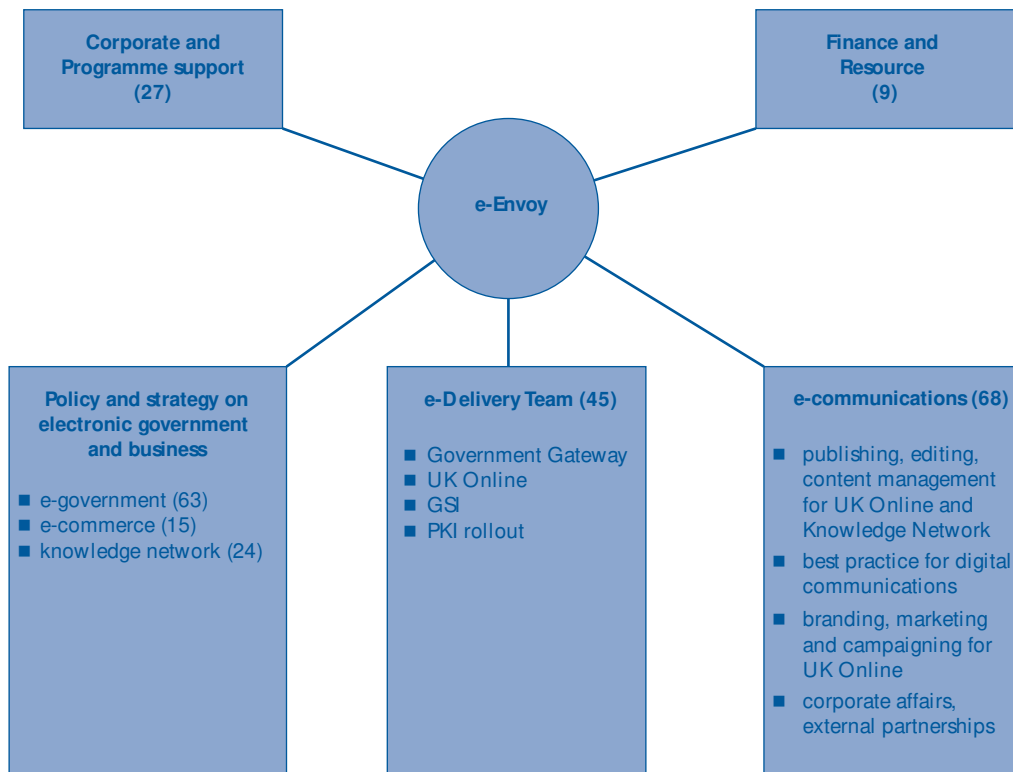
4.2 The Cabinet Office has overall responsibility for coordinating government modernisation, including government services on the Web. Until autumn 1999 its e-government role was exercised by the Central Information Technology Unit (CITU). Then the Office of the e-Envoy (OeE) was set up to play the lead role in the government's wider drive to 'get the UK on-line', and in September 2000 CITU was absorbed into OeE. The Government Secure Intranet (GSI), originally developed by CITU, is now managed by OeE. Following the separate creation of the Office of Government Commerce, OeE also took over some responsibilities of the former CCTA, the Central Computer and Telecommunications Agency. CCTA maintained the first UK government finder Web site at www.open.gov.uk until the summer of 2001. It also used to host many central government web sites (an activity scheduled to end in March 2002).

4.3 OeE has three core policy objectives (set out in detail at its www.e-envoy.gov.uk site):

- to make the UK the best environment in the world for e-commerce by 2002;
- to ensure that everyone who wants it has access to the Internet by 2005; and
- to achieve the target for electronic service delivery, by making all government services available electronically by 2005.

4.4 The Office is headed up by the e-Envoy himself, who reports direct to the Prime Minister, although OeE also works with the e-Minister located in the Department of Trade and Industry. The Office is housed in a modern building in Victoria and grew rapidly to nearly 250 staff by October 2001 (including civil servants and longer-term contract personnel). **Figure 17 overleaf** shows the internal organisation of the office and the staff numbers working in each section. Nearly half of OeE staff work on central policy for electronic government and business, covering e-government (including security issues), e-commerce, and the Knowledge Network (a computerised system for sharing and delivering on-line government briefings and statistics among government departments and agencies). A further large group of staff work on e-communications, with responsibility for publishing on the new government portal Web site called UK Online and for the 'Knowledge Network', external communications (including marketing and branding) and helping departments improve existing online communications. The e-Delivery Team (currently headed up by a contractor) now has full responsibility for the implementation of all central infrastructure projects and initiatives including UK Online, and an authentication system known as the Government Gateway (described below). The e-Delivery Team works with an additional 95 staff from SEMA and Cable and Wireless which support the Government Gateway, originally built by Microsoft, and (until November 2001) with an average of 15 staff from Syntegra (BT's ICT and professional services business) working on UK Online. The Team does not manage the take-up of individual electronic services or integration with departments' or agencies' back-end legacy systems, both of which remain the responsibility of departments. The distribution of staff is shown in Figure 19. Overall 119 staff (24 on the Knowledge Network, 45 on electronic delivery and 50 on e-communications) are working directly on the implementation of specific services. Some OeE officials suggested to us that the office would not (or should not) exist beyond 2005, when its e-government targets have been achieved and appropriate policy and standards have been set in place. Officially the Office's role will be reviewed when the e-agenda is firmly embedded in the work of every part of government.

17 Organisation Chart for the e-Envoy's Office



NOTE

Figures in brackets show the number of staff in each unit

Source: Office the e-Envoy

4.5 The overall annual running costs of the OeE for 2001 were £22.3 million: approximately a third of this total went on staff, a third on external consultants and a third on 'other' items. The most significant 'other' cost is marketing for the UK Online initiative, covering the portal site and other associated campaigning activities promoting Internet awareness and usage, e-access, e-government and e-commerce. However, these running costs do not include the development costs of OeE's main capital projects, the UK Online portal, the Government Gateway or the Knowledge Network. All three are funded from the government's Capital Modernisation Fund (CMF) at a total cost of £60 million for three years from 2001 to 2004. (In addition the Inland Revenue contributed £15 million from its own CMF bid to developing the Government Gateway). The Government Secure Intranet (GSI), which provides the government e-mail system and other on-line services (see below), is funded chiefly by subscriptions from user departments and the OeE cover only some central costs of around £0.6 million a year which are not passed on to users. Thus the overall annual expenditure of the OeE averaged over three years and including the development of its main capital projects, is around £52 million.

4.6 Other parts of the Cabinet Office have influenced various aspects of e-government policy since 1999 by producing reports. The Performance and Innovation Unit (PIU) issued *e-Government Services for the 21st Century* in September 2000. Once they report, PIU teams break up, but the report's 43 recommendations were taken up by other bodies, half of them by OeE. The e-Envoy and e-Minister have oversight of the process of following up implementation of all the recommendations. The Modernising Public Services Group issued its first annual report *Citizens First* in September 2000, and now works within the Centre for Policy and Management Studies. The Social Exclusion Unit reported on the digital divide, but responsibility for this policy area has now moved to the Department for Education and Skills.

4.7 The Treasury is the other central agency with significant responsibility for e-government developments, as part of its wider role promoting improvements in the quality and effectiveness of public services. It has no units focusing solely on e-government issues. But Treasury agrees three-year Public Service Agreements (PSAs) or Service Delivery Agreements (SDAs) with departments. These commit each department to achieve the target of 100 per cent availability of all government transactions

by 2005. In the case of HM Customs and Excise which reports directly to Treasury ministers, there is also a target for achieving 50 per cent take-up of electronic services by 2005. Only one other Whitehall department has take-up targets built into their PSA or SDA. Treasury officials see the monitoring of progress against the enablement targets for electronic service delivery as primarily OeE's responsibility and do not specifically link them to departments' productivity targets. In their view, e-enablement should be an integral part of departments' corporate strategies: 'e-enablement is just one element of cost saving'. The Treasury also plays a role as dual keyholder with OeE for money allocated in the 2000 Spending Review for central government and local authority e-government initiatives.

Cross-government facilities and projects

4.8 There has been a major investment since 1999 in new, central projects and facilities, including the launch of a new government portal and of a mechanism for citizens and enterprises to authenticate themselves to public agencies.

The government portal at UK Online

4.9 In the private sector portal Web sites (such as www.yahoo.com) developed to direct users to many different links, providing information in a sophisticated way, organised into categories, and with appropriate search engines to permit easy use. They often offered additional free services such as e-mail facilities. More recently more specialised search engine sites have emerged with very sophisticated capabilities (such as www.google.com). Both types of sites have become important commercial players since the middle 1990s.

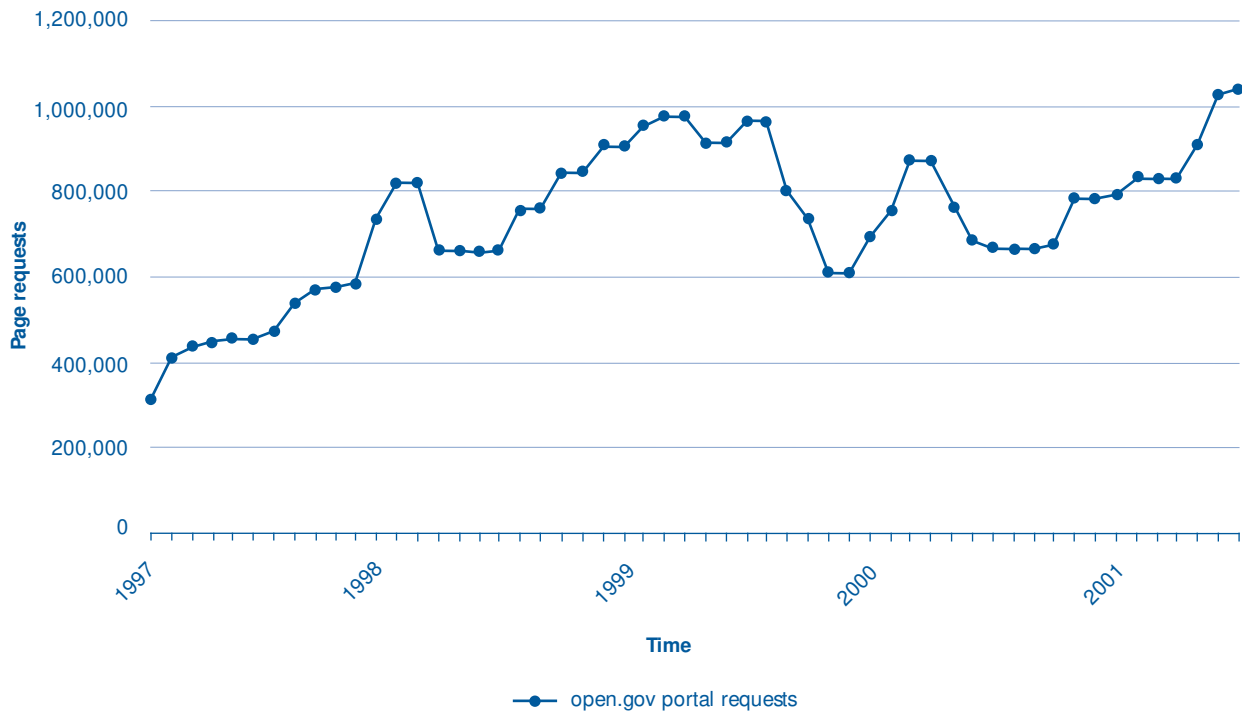


4.10 There were no parallel services for the public agencies in the UK for a long period, although the agency CCTA did provide a simply designed 'finder' site, called www.open.gov.uk which was reasonably well used and provided links to other government Web sites. But both government ministers and civil servants recognised that this site did not have a strong 'brand' presence with citizens or enterprises (partly because of its non-obvious name), nor any strong user facilities of its own - hence the decision to build a new portal site. The new site was seen as a service linking the public to government as a whole, not only via providing accessible links information but additional summary text, guidance, news and background articles.

4.11 In September 2000 the Prime Minister launched UK Online as the main government initiative to enable everyone to make the most of the internet. This was backed up by a series of TV and press advertising campaigns and from January 2001 a new central government Web site at www.uk.online.gov.uk. OeE undertook extensive research for this site, which was to be a rapid application development (RAD) pilot in its first year. The pilot site was developed by Syntegra to an OeE design, and was managed by a project team within OeE. The site allowed for on-line public consultation to drive improvements from the second year onwards. However, some practical difficulties emerged with this approach which the OeE's contract could not accommodate. For example, there was no stated requirement for the site to be updated by OeE - only by Syntegra staff responding to requests on a two-weekly change schedule. (An exception to this was News items, which were posted daily by Syntegra.) The initial design included large areas of static branding which used up space on users' screens. The OeE design for the



18 Usage statistics for www.open.gov as a central government portal 1997-2001



NOTE

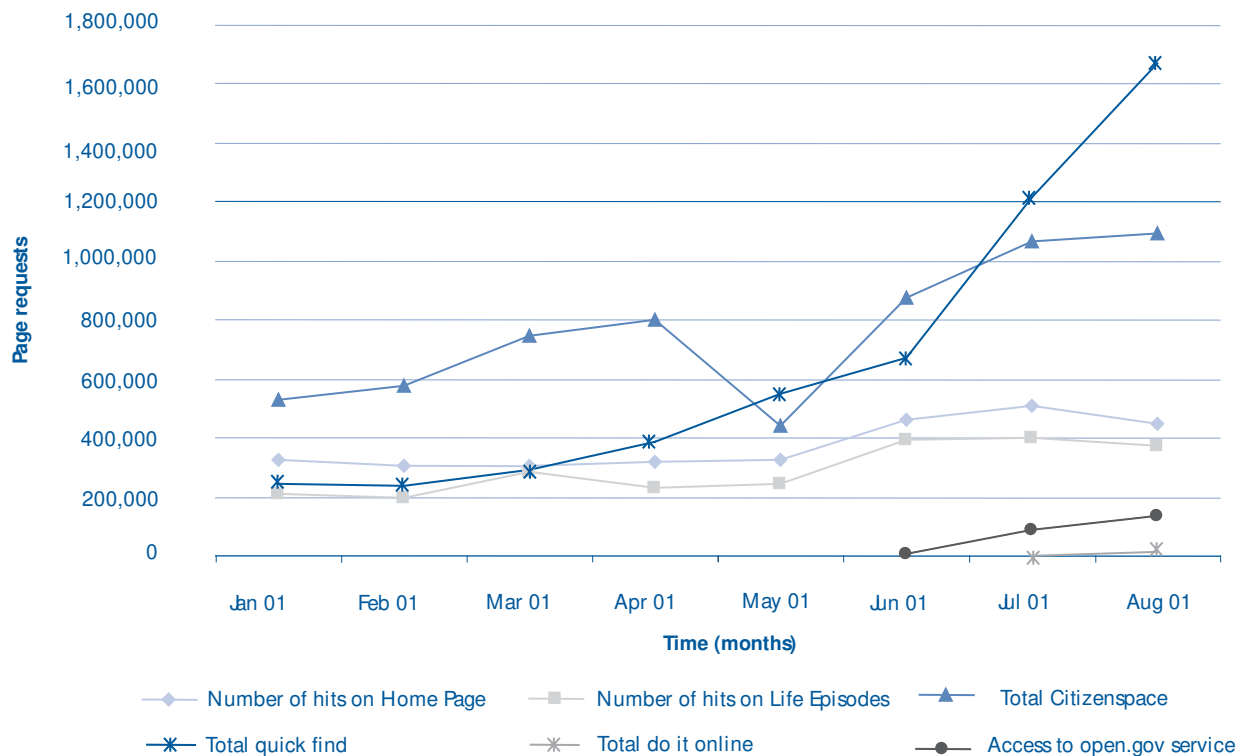
The data are median-smoothed to show basic trends.

Source: CCTA

homepage (including look-and-feel) was initially dominated by six 'life episodes' boxes giving relevant government agency links and external sites, but only on specific topics (initially covering: 'going away', 'learning to drive', 'having a baby', 'death and bereavement', 'dealing with crime' and 'moving home'). Other important facilities, such as 'finder' pages linking to central agencies and local authorities, were not obvious and users had to click-through a number of pages to reach them from the home page. From February 2001 there was a prominent link to 'Quick find' on the home page which took users directly to a search page where these features were available. Users were initially asked to register and 'personalise' the site with their preferred language (English or Welsh) and country within the UK. By November 2001 only around 40,000 people had registered. Conventional wisdom in the new media industry is that perhaps half of users will drop out rather than proceed with such a registration stage. The main point in registering was for users wanting to post comments on the site's discussion forum called 'Citizen Space', which allows people to comment on government policy on-line with others and to access government consultations or complain about a service. All users can see the discussion forums. A feature entitled 'Do it Online' also gave users the possibility to complete a passport application form electronically (which will then be posted to you for signature). It also

connects to the Girobank bill payment service and a button that takes people to various commercial services for notifying change of address on-line. A news service gives news updates and government press releases, also well handled at the No. 10 Downing Street Web site but with a different focus. The design of the search engine on UK Online was derived from consultation internal to OeE, and configured to CCTA's earlier 'open.gov' search engine design. It was not very effective, often generating over 1,000 results for each search, with entries not helpfully sorted. For example, keying in 'Office of the e-Envoy' returned 743,385 matches on one of our searches, from which it was very hard to find the Office's homepage. A 'rebuild' of the UK Online site was launched in late January 2002, with a better-designed and more useful homepage. The search engine has been improved to deliver more intuitive results, such as pointing first to government agencies' basic sites in response to users entering the agency name. Life episodes have grown to 11 but are now reached via a single, much smaller panel on the new homepage. From January 2002 a new contract provider took over as Web site hosts for www.ukonline.gov.uk and provided content management tools. In the future design and day-to-day content management for the site will take place at OeE. Another company, Sapient (consultants on e-business) will take over a shorter-term contract for some design elements.

19 Usage statistics for the five main activities available on www.ukonline.gov



NOTE

Total page requests for all parts of the site amounted to 4.6 million in August 2001.

Source: Office the Envoy

4.12 In 2001 the transition from the earlier CCTA 'open.gov' finder site to the more ambitious www.ukonline.gov.uk portal site was not as well handled as it might have been. Press stories reported from February 2001 that the CCTA's open.gov site would be closed completely in the summer, and users logging on there began to receive a similar on-line notice before being transferred to the UK Online home page. If users did not persist and look around the UK Online site it was not obvious that it contained similar directory facilities to the open.gov site they were accustomed to. In July 2001 the newly established e-Delivery Team took over management of UK Online site within OeE and reviewed progress. The open.gov transferees were now routed straight to the UK Online finder pages, thereby by-passing completely the poorly designed UK Online home page and its registration procedure. Belated publicity that the government was not after all closing down its chief finder site had some effect in reassuring users. The open.gov name and logo familiar to its existing users were resurrected and placed prominently on the UK Online home page.

4.13 Assessing the success or problems with UK Online has been difficult because of the limitations of the usage statistics initially available to OeE. The Office has now changed their statistics provider and more information will

be available in future. However, **Figures 18 and 19** show basic 'page impressions' data for both the 'www.open.gov.uk' and the www.ukonline.gov.uk sites. By 2001 the design of the 'open.gov' site was looking very dated, having been static for two years. None the less it was still attracting over 1 million page impressions per month by the time of the transition. By August 2001, the 'quick find' feature of ukonline.gov.uk was attracting over 1.6 million page impressions, although the site's home page was receiving only 451,000 page requests. The reason for this disparity appears to be that previous users of the open.gov site are linked straight through to the organisational listing located on UK Online's 'Quick find' facility and do not pass through the portal homepage or get to see the enhanced facilities provided there. These statistics and the low number of registered users on UK Online show that usage is still far from what might be expected of a central government portal. By autumn 2001 the total usage figures for UK Online in terms of page requests for the five main parts of the site add up to 4.6 million page impressions a month - but this figure includes multiple requests for pages generated by users visiting more than one part of the site (see paragraph 4.30). This is likely to be particularly the case with users of the 'Citizen Space' section. It was closed for a time as part of the normal restrictions in the general election campaign period (when public comment on issues of partisan



sensitivity might risk being perceived as officially sanctioned), producing a sharp dip in UK Online activity. The e-Delivery Team within OeE has an aspiration that UK Online should achieve 50 million page requests per week or 2 million unique users a week. In the light of performance so far, these numbers look challenging.

4.14 The UK Online portal site is part of the wider UK online initiative. The initiative, which is a drive to enable everyone to make the most of the internet, had a number of campaigns in 2001 (only the last two of which were run by the Office of the e-Envoy). These included:

- A campaign for self assessment on the internet undertaken by the Inland Revenue (www.inlandrevenue.gov.uk).
- A campaign for consumers to shop with confidence on the internet - undertaken by the DTI (www.consumer.gov.uk).
- A campaign aimed at both parents and children on the subject of child safety on the internet run by the Home Office (www.wiseuptothenet.co.uk for Parents and www.thinkuknow.co.uk for children).



- A campaign to publicise the UK online centres run by the DFEE (as it was then) was the only campaign not to have featured a supporting website for people to visit if they wanted more information about either the centres or the campaign (www.dfes.gov.uk/ukonlinecentres/).
- A campaign for UK online for business particularly aimed at small and medium enterprises run by the DTI (www.ukonlineforbusiness.gov.uk/).
- The campaign to publicise the services available on the UK online portal (www.ukonline.gov.uk/).
- A general awareness campaign for the UK online strategy (www.letsallgeton.gov.uk/).

4.15 The www.ukonline.gov.uk site makes limited use of aliases which might redirect users typing in words similar to or alternative to the main site address - in contrast to the 10 Downing Street site which has more than 30 aliases. There appears to be some scope still to incorporate the full www.UKOnline.gov.uk site address into more government adverts, brochures and publicity and to take other pro-active steps to attract Web traffic. For instance, we noted in Part 3 that although all English local authorities will receive dedicated funding for e-government development from Whitehall, only half of councils' home pages currently link to UK Online. It might be thought that a condition of central funding would be that all local authority sites prominently incorporate such a link, and a similar approach might be extendable to other public agencies. The OeE consider this approach would need to be balanced against the government's strategy to reduce the conditions attaching to central government funding of local authorities.

4.16 A broader component of the UK Online strategy is to set up 6,000 UK Online centres by 2002, by which time all 4,300 UK public libraries are also to be online, with support for users available from trained library staff. Other centres will be provided in colleges, community centres and local companies. This programme is run by the Department for Education and Skills and information is given at www.dfes.gov.uk/ukonlinecentres/. The aim of the programme is to attract new Internet users and is distinct from directing existing internet users to the government portal site, so its 2001 TV advertisements did not include the Ukonline government portal Web address. However, the way that Internet addresses operate means that a user in say a public library wanting to follow up the TV adverts and typing (say) 'www.ukonline' into their Internet browsers will get nowhere. In December 2001 OeE launched a TV and press campaign (with a freephone number to handle enquiries) to support its 'Lets all get on' campaign. The associated website (www.letsallgeton.gov.uk) aims to explain why everyone in the UK should make the most of the Internet. There was also a prominent link to the campaign site in the January 2002 redesign of the home page for www.ukonline.gov.uk. The 'Let's all get on' site provides the first clear overview of the government's campaign to get business and society on-line, and includes links to another differently named site www.ukonlineforbusiness.gov.uk run by the Department of Trade and Industry. An advertising campaign for 'UK online for business' in autumn 2001 aimed at small medium enterprises publicised the site as a business portal. Companies were urged to take advantage of the £15 billion now spent online in the UK, and various business advice and business benefits were offered (such as a useful business planning facility, case studies and global research evidence). By

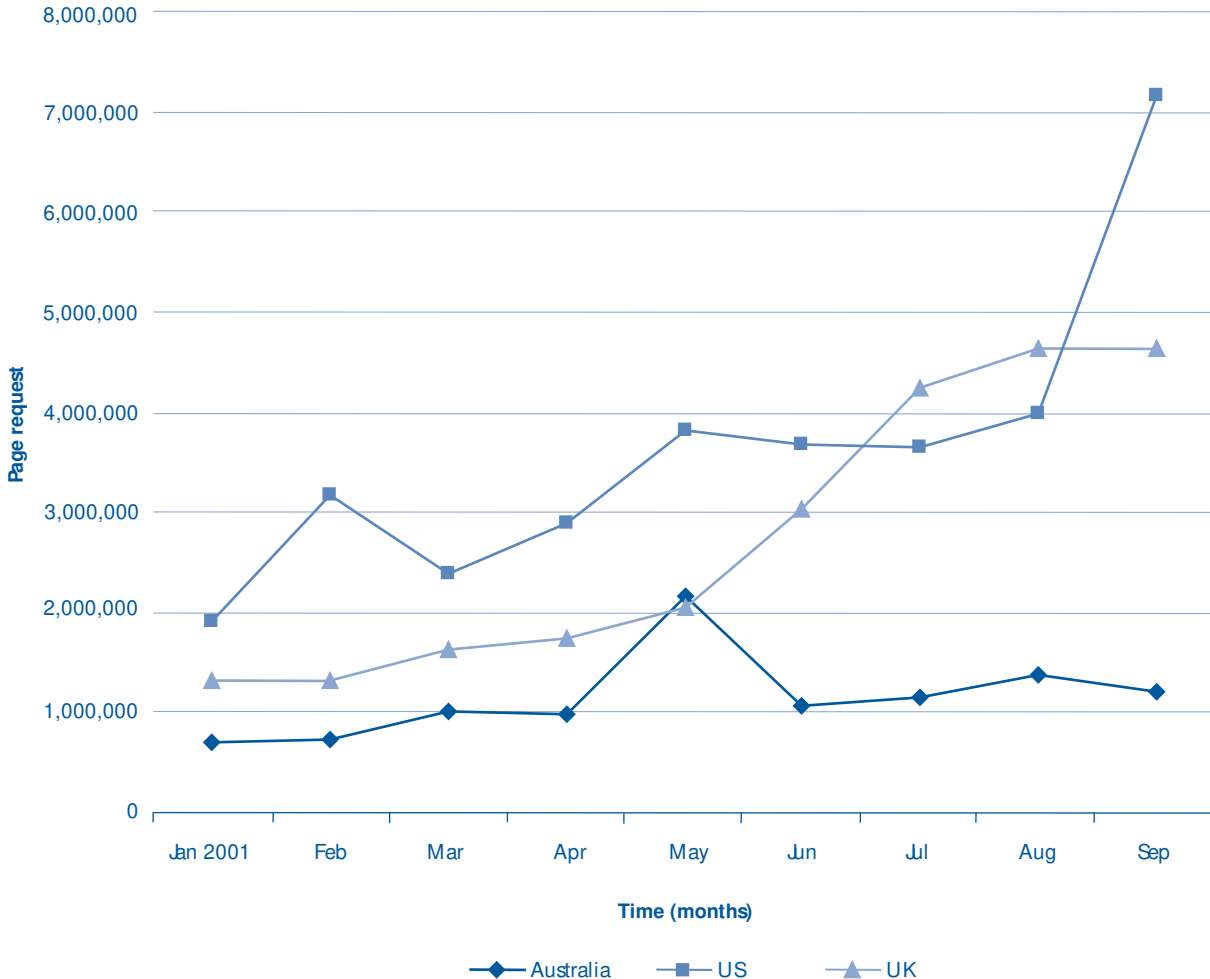
early 2002 www.UKonlineforbusiness.gov.uk was not yet a parallel to the more substantive if still fragmented transactional offerings on the Australian government's 'business entry point'.

4.17 Looking at some similar overseas public sector portal sites suggests that the comparatively high investment in UK Online has yet to pay off. In the USA, the official web portal to US government information, FirstGov, was created in September 2000 under contract to the US General Services Administration, at a modest initial cost of \$4 million and with no budget for marketing or branding until June 2001, although it has subsequently been enhanced. By August 2001, FirstGov received 4 million page requests to its home page, 2 million visits and 700,000 unique visits per month. Over 35,400 pages now link to FirstGov (compared to 19,000 to ukonline.gov.uk) and a wide range of agencies now use the site's search engine. The site was widely acclaimed for its response to the terrorist attacks of Tuesday, 11 September 2001. A special section, called 'America Responds to Terrorism', went live on www.firstgov.gov by early Wednesday afternoon. Within a few hours of the attacks, the major commercial Internet search sites

such as AOL's Government Guide, MSN, MSNBC, Yahoo, and Google had special hot links to FirstGov. As a result during September 2001 usage of FirstGov rose to over 7.1 million page requests, over 2 million visits, and over 1.3 million unique visitors (of course, for a home population more than four times larger than that of the UK). Twice daily information was added on a wide range of crisis-related topic areas.

4.18 In the Netherlands a government portal site called www.overheid.nl has received little publicity. But it grew from an average daily number of unique user visits of 4,500 (135,000 users a month) to around 10,000 by October 2001 (300,000 users a month) with an average visit length of 9 minutes. These data equate to around 1 million page requests a month, for a population much smaller than the UK. The Australian Commonwealth government portal at www.fed.gov.au receives around 1 million page requests monthly, for a population less than a third of that in the UK. (Australia also has a separate whole-of-government entry point covering both the Commonwealth and states levels at www.gov.au). **Figure 20** shows the UK Online usage levels compared with those of the national government

20 Page request access to central government portals in UK, US and Australia since January 2001



sites for USA and Australia. Care has to be taken in making a direct comparison because the UK numbers represent usage levels for all the parts of the site shown in Figure 19 above - while the data for Australia or the US are only for people visiting the site homepages.

The Government Gateway

4.19 The Office of the e-Envoy have also developed a centralised 'authentication engine' to ascertain users' identities online, a project, called the Government Gateway. This project was originally initiated by the Central IT Unit. (It is quite distinct from the rather similarly named 'Gateway' process launched by the Office of Government Commerce for assessing procurement projects at critical stages). The first phase of the Government Gateway facility was launched in January 2001, at a cost of £15.6 million (plus VAT). Its aim is to provide a central identity authentication service that enables the online submission of transactions and financial data to government. From the spring of 2002 further phases are planned to provide an online payments facilities and secure e-mail. Transaction requests are first validated, and then routed to departments via the Government Secure Intranet (GSI). By December 2001 five services had been piloted on the Gateway, four aimed at business-type customers:

- Electronic submission of VAT returns (HM Customs and Excise)
- Electronic payment of Integrated Administration and Control Systems (IACS) Area Aid applications (Ministry of Agriculture, now DEFRA)
- Electronic submission of PAYE returns (Inland Revenue)
- Corporation tax (Inland Revenue) and one at citizens:
- Electronic submission of self-assessment forms (Inland Revenue)

However, these initiatives have been disappointing so far. One thousand traders initially signed up for the pilot to submit VAT returns on-line, but two-thirds subsequently dropped out and the end-achievements of this test are not clear (see Part 2). Only 1,350 farmers out of a potential 80,000 (around 1 per cent) had registered on-line for the electronic IACS application by November 2001. This low figure is mainly due to the service's launch period coinciding with travel restrictions of the foot and mouth crisis. The service required farmers to travel substantial distances to relevant offices to buy a digital certificate. Results from the electronic submission of income tax self-assessment forms may be better because the Inland Revenue adopted a password/pin number access method rather than Customs and Excise's use of public key infrastructure (PKI) certificates. Customs and Excise are working with the Office of the

e-Envoy and other Whitehall departments on a more flexible approach to security problems (See Part 2). Some 160,000 out of a possible 9 million income taxpayers had registered via the Gateway by November 2001 (under 4 per cent), and OeE believe that of those registered around 75,000 by the end of January 2002 actually submitted forms on-line. There are now 390,000 registered users on the Gateway.

4.20 The Government Gateway technology has been influential in international IT circles, and there are plans for its main contractor (Microsoft) to market it overseas, from which the UK government will derive a return. However, it is unclear how many other central departments in Whitehall will agree to use it. Inland Revenue now use the Gateway for corporation tax and Customs and Excise for duty deferment, but it is too early to assess usage. The OeE E-Delivery Team is in talks with various departments and has a 'relationship' team of six staff responsible for the task of signing them up for development, architecture and 'joined-up' projects. For example, the Department of Work and Pensions (DWP) plan to introduce use of the Gateway for Child Benefit transactions in 2002. And projects involving the Home Office, the NHS, the Department of Trade and Industry and other agencies are in development.

Other Central Initiatives

4.21 For a time the e-Envoy's Office also took over management accountability for the **Government Secure Intranet (GSI)**, which aims to provide completely reliable electronic communications and secure internet facilities both between agencies at central level and also with local government and non-departmental public bodies. However, responsibility for the procurement of the second version of GSI (known as GSI2) will be a partnership between the Office of Government Commerce and the Office of the e-Envoy. Usage of GSI has expanded across organisations and staff since our last report in 1999. But the growth of additional services or content beyond e-mail and directory facilities has proceeded rather slowly. The procurement process for GSI2 will start in March 2002 with a planned completion date of March 2003. Development plans for GSI2 are more expansive. The e-Delivery Team is working to a plan that includes a 'hub and spoke' model allowing interconnections with local authorities and third parties. They aim to have a hundred local authorities on GSI2 by spring 2004.

4.22 Some other policy initiatives by the e-Envoy's Office will be essential to further development of electronic service delivery across departments and agencies. In particular, the issue of security and authentication has the potential to delay or block electronic transactions which involve the submission of various forms and payments to government (see Part 2) or the updating of personal

information about citizens. The government has provided a set of requirements to the industry-led, co-regulation 'Trusted Third Party' (or 'T') scheme for ranking transactions according to their security risk. The Office of the Information Commissioner have indicated that many transactions that include the transfer of sensitive information that government holds about citizens should be ranked at level 3, the highest level (defined as having a risk potential to harm people's lives or substantial financial commitment). This level requires face-to-face registration. Out of 500 transactions surveyed across central government and local authorities, 10 to 20 per cent might need a form of authentication. This issue is being considered by a Security and Authentication unit (currently six staff) within OeE's Technology and Strategy team. The solution that is commonly accepted throughout the IT industry is introduction of an open Public Key Infrastructure (PKI) and the use of digital certificates, despite the low take-up of digital certificates in the VAT pilot. Government policy is that digital certificates must be left to the market to provide - the key problem being that so few other organisations are using them, although some large companies such as Reuters are using certificates for some customer-facing products and services. The Security and Authentication team is investigating various options, including the possibility that government will use those initiatives already developed in the banking sector. E-banking experts point out that although banks are developing procedures for authentication (that is, confirming who a customer is) the next stage is establishing electronic procedures for permissions (that is, confirming what a customer can do). While authentication may be common across banks and government, both banks and government recognise that the issue of permissions is specific to the services being delivered. Commercial and liability issues with authentication also present a number of issues that will require resolution.

- 4.23 Another potentially very important central initiative is achieving common standards for all government information, so that it can be shared across government agencies centrally and locally, an issue handled by the inter-operability team in OeE's Technology and Strategy Division. They have worked on both an e-interoperability framework (launched in September 2000) and a metadata framework (launched in May 2001). They will be merged in Version 4 of the interoperability framework which is due to be published in Spring 2002. The metadata framework would involve all government agencies 'tagging' all their Web pages and data using common standards - specific forms or documents, for example. Although not yet a well-appreciated element of e-government policy, metadata could be crucial in the future to developing joined-up governance. For example, if a central portal is to provide locally tailored information in response to a user's request, then metadata would be the only alternative to

'hardcoding' URLs from all local authority sites in the code of the portal. Hardcoding leads to subsequent problems for updating and maintenance would quickly emerge in the form of broken or out-of-date links. Each of the 'life episodes' on the site have their own sponsor department (for example 'Having a baby' was originally sponsored by the Department of Health) but they are now updated by the E-Communications Unit of OeE, whose staff cannot always be aware of developments on other sites. Without metadata, by now some links to NHS Direct on this part of the UK Online site do not take users straight to specifically tailored information. There are only very limited mechanisms for ensuring that the metadata framework is implemented, which will involve considerable work on behalf of departments, agencies, local authorities and other public bodies. The policy is reliant on their efforts and those of the members of the working groups which OeE convenes. But not all departments and interests sit on these bodies, which are necessarily small in membership. For example, local government is represented by some council officers with particular expertise, by the professional society of IT managers in local government (Socitm) and by the Improvement and Development Agency for local government (IDeA). An awareness-raising effort is required across much of government to promote awareness of these issues beyond front line IT staff.

- 4.24 'Interoperability' is being facilitated through a new site (located at www.govtalk.gov.uk), which has been created for users across government to receive information and share ideas. A team of seven OeE staff (three civil servants and four consultants) is pushing the policy forward via a number of working groups, consisting of representatives of various parts of the public sector and including private sector representatives: its minutes are published on the 'Govtalk' site. The interoperability team are working with the Public Record Office, which is leading work with departments to achieve electronic records management for all newly created records by 2004. The interoperability team considered that once their policy documents were produced they would be handing over to the E-Delivery Team for implementation at some stage.

Other central sites

- 4.25 Web sites can be excellent crisis management tools for government, allowing agencies to meet pressing needs for up to date information and taking some load off call centres. The Civil Contingencies Secretariat was created in July 2001 with the aim of ensuring that UK government is sufficiently resilient to meet any crisis. It reports to the Cabinet Secretary and is part of the Cabinet Office. The Secretariat has now absorbed the News Co-ordination Centre (NCC), a small unit originally set up in 1999 to meet the possible public communication challenges of the Millennium date change period. NCC develops all means of public communication, including Web sites, in response to

pressing situations. It has six staff during non-crisis times and 20 per shift during a crisis. The unit has been activated four times since autumn 2000 to deal with the fuel emergency and widespread floods in 2000, and the spread of foot and mouth and post September 11th issues in 2001. There were some presentational problems in deciding what to call the site (for instance it was considered unacceptable to label foot and mouth as a crisis). An un-obvious site name has been adopted at www.co-ordination.gov.uk. The URL does reflect the fact that the News Coordination Centre label was already established with journalists, and linked to from well-established sites like No.10 Downing Street, UK Online and the main Whitehall departments. NCC seeks to work in concert with the established Web sites of the relevant agencies, rather than to replace them. The NCC site set up during the foot and mouth crisis was advertised in all newspapers and involved 30 to 40 staff over the whole period, with two staff shifts per day. It received 59,000 page requests in March 2001 and an average of 10,000 per month for the subsequent three months. NCC contacted BBC Online on a regular basis to request that the crisis site was linked to the key news stories - an interesting and rare proactive strategy for disseminating awareness of a government site. The News Coordination Centre's role depends upon the particular crisis and how much key departments ask for assistance. NCC have no enforcement powers and can only offer staff, suggestions, use of their site, and advice on best practice. Another central site, www.openbritain.gov.uk was used for the purposes of reassuring tourists during the foot and mouth crisis. The site was launched as part of wider publicity campaign, stressing that Britain was 'open for business'. At the end of May 2001 a further campaign which advertised the URL or site address in the UK and US newspapers sent usage numbers up to 90,000 page requests over two weeks, around a fifth of total usage. By the end of its life the site had received 525,000 page requests, and was seen as better used than a parallel telephone call centre, which was advertised more widely.

4.26 Of other Web sites central for government, the most influential is probably that for No. 10 Downing Street (now at www.pm.gov.uk). It has been greatly professionalised, with a news ticker, video archive, broadcasts and the possibility to register for email updates. The site received an average of 3 million page requests per month from January to August 2001, rising dramatically to 5.5 million requests in September 2001 (in response to the terrorist attacks of September 11th) and over 10 million in October 2001. Like the US FirstGov site, by November 2001 the No.10 site was refocused towards the 'war against terrorism'. At times nine out of the ten highlighted news stories on the front page related to this issue, in addition to many of the other items such as prime ministerial speeches. Officials in departments observed that No. 10 'does its own thing' with respect to its web site. They saw little co-ordination between most departmental



initiatives and the No. 10 site, other than including a link to Downing Street where appropriate. However, staff at the No. 10 site point to close co-ordination with relevant departments in recent months on issues such as post September 11th news and advice, the foot and mouth crisis, on-line events around the Chancellor's annual budget, and on-line 'policy forums' with some senior departmental ministers.

E-government targets and performance indicators

4.27 Within OeE a Strategy and Service Delivery section of around 20 staff is charged with the key task of monitoring the e-business strategies produced by all the Whitehall departments and their agencies. The Office originally intended these documents to be updated by departments and reviewed by OeE every six months. The first set of strategies were produced in October 2000, and the second in July 2001 (because of post-general election changes) for final assessment in early November. Prior to this strategy process in early 2000 OeE discussed specific milestones for achieving the 2002 and 2005 targets with departments. OeE asked departments to define transactions based on set criteria and linked to their Public Service Agreements/Service Delivery Agreements, which tended to exclude small services from the lists. The key transactions for individual departments were all given the same weight in assessing progress towards electronic service availability, without according any influence or priority to transaction volumes. Providing a very small scale transaction on-line would have the same 'weight' in terms of achieving electronic service delivery targets as enabling a heavily used, high-volume transaction. This feature was clearly apparent to departmental officials, who pointed out what they saw as its anomalous operations in our case studies (see Part 2 especially). In their second e-strategy documents in 2001 departments were encouraged by OeE to be less target-bound and more discursive, with fewer formulaic tables of transactions to be offered electronically. But the e-Envoy's office stress that the two strategy statements should be read in conjunction with each other and so the previous pledges

that individual transactions will be electronically available still hold. By autumn 2001, the main pressure from the e-Envoy's office came from bilateral discussion with departments of their own specific e-business strategy - through 'policy, politics and rhetoric' as one official described it. OeE feel that online provision of services is now firmly embedded in departments' planning processes, with explicit commitments from departmental boards and ministerial approvals.

4.28 In addition to negotiations over e-business strategies, the e-Envoy's office convenes a number of forums at various levels of government to stimulate e-government activity. At the highest level, the e-Champions Forum brings together senior officials drawn from the Management Boards of all departments and charged with advancing e-government. Below them an 'e-Strategists' Working Group' of departmental representatives meets to discuss common issues. The Office's financial control is limited to their role as dual keyholder with the Treasury on £350 million of funding for developing e-government services across local government and their involvement with the release of the rest of the £1 billion resulting from SR2000 for the progression of a list of central government projects. There is a Government Websites team within the OeE e-Communications Unit, which issued *Guidelines for Government Websites* to departments in December 1999 and again in autumn 2001. OeE gave departments and agencies guidance on the appropriate use of statistics and indices for measuring access to their sites. The team has conducted two surveys of government web provision, one on the aspects and the other on the existence of government websites. Both surveys reported in November 2000. MORI was commissioned to survey the aspects of 30 government websites (15 Ministerial and 15 other sites) through checking 217 onscreen features and through interviews and questionnaires on management issues. The team also conducted follow-up interviews with all surveyed sites to agree future action. This was followed by a program of examining individual sites and agreeing future action with webmasters. The team also reviewed all URLs in the gov.uk domain as a cleansing exercise to confirm if they were live, duplicates, mistaken or odd registrations, or out of date. The surveys confirmed the existence of over 1000 central government websites and nearly 500 local authority websites grouped by subject or type with notes on speed of download, technologies that could indicate a lack of accessibility or updates of information and the results fed into revised web guidance. However, OeE has somewhat out of date and incomplete information about the condition of central government Web sites, the take-up of electronic services at present across central departments and agencies, and the extent to which the claims made in the e-business strategy documents correlate with the actual progress of on-line services.

4.29 To provide a better picture of e-government change we undertook two studies. The first looked at the usage data across all central departments' existing Web sites over time. The second repeated and updated in October 2001 a census of all central department and agency Web sites, originally carried out in 1999. These exercises entailed very modest costs when set against the scale of resources now being deployed in the e-government area, but they generated more solid and quantitative information than we believe has been available to OeE. The two studies also follow up a recommendation of the Public Accounts Committee in January 2000 that more and better information on government Web provision should be collected by the Cabinet Office.

4.30 In the summer of 2001 we wrote to all Whitehall departments asking them to send us details of their Web traffic data back to 1999 or earlier where available. Any well-run Web site for such major organisations should be closely monitored on a weekly or monthly basis. This data should form an important part of the organisation's management information system. Modern automatic traffic-recording has very modest annual costs for reputable systems from firms like Webtracker, Webtrends and others. So every government Webmaster should have statistics at a minimum on the following numbers:

- *Hits.* A hit is the transfer of a single bit of information from the Web site to a user. Web designs have moved over time from pages involving only a few bits of information to current pages composed of many separate bits (such as graphics, icons, data assembled from a database, and different text elements). The transfer of any one of these bits and pieces counts equally as a hit. Companies often quoted hits data in the dot.com boom period, but they are essentially meaningless. We have reviewed hits data for all the sites analysed in this report, but we do not quote them because hit numbers are so artificially influenced, mostly by site design changes.
- *Page requests or page impressions.* Essentially a request or impression occurs when a user clicks to download a whole new page from the site. Pages also vary greatly in length. Some Web sites inflate page requests in artificial ways, for instance, building in unnecessary click-through pages before users can reach the homepage. But this is still the most widely available volume indicator of some use.
- *User sessions.* A session starts when a user logs onto a site. But many Internet Service Providers (ISPs) will also count a new session if the same user is still there 20 or 30 minutes later. Session lengths are not standardised and vary across different ISPs. None the less this is the best indicator of the reach of a Web site - but we found that very few government departments have data on user sessions.

- *Time on site.* This is the average time that users spend on a department or agency Web site, including those who click on and off the home page en route to somewhere else, as well as those who look around extensively. Time on site in the commercial sector is often very short (around 5 minutes), reflecting users' often restless surfing behaviour. But on government sites it can be much longer (around 10 minutes would be a norm) or even very long indeed (20 to 30 minutes on some sites).

None of these indicators is perfect. But the last three taken together will give very useful and immediate feedback to any organisation about how its Web site is being used. A competent Web manager should also break down the information across all the component parts of the Web site. Then every month she should alert all sections or divisions within the organisation which originate content for the site about how the usage numbers for their section are developing. Content providers should know clearly which of their pages or topics are attracting visitors and which are not, and how their access numbers are trending. This whole set of procedures is vital if the problems of 'desert' sections on sites or of dated pages are to be avoided (see the recommendations of the 1999 *Government on the Web* report). If any department or agency is to actively grow its Web traffic over time and to effectively segment its users then excellent Web trends data is indispensable.

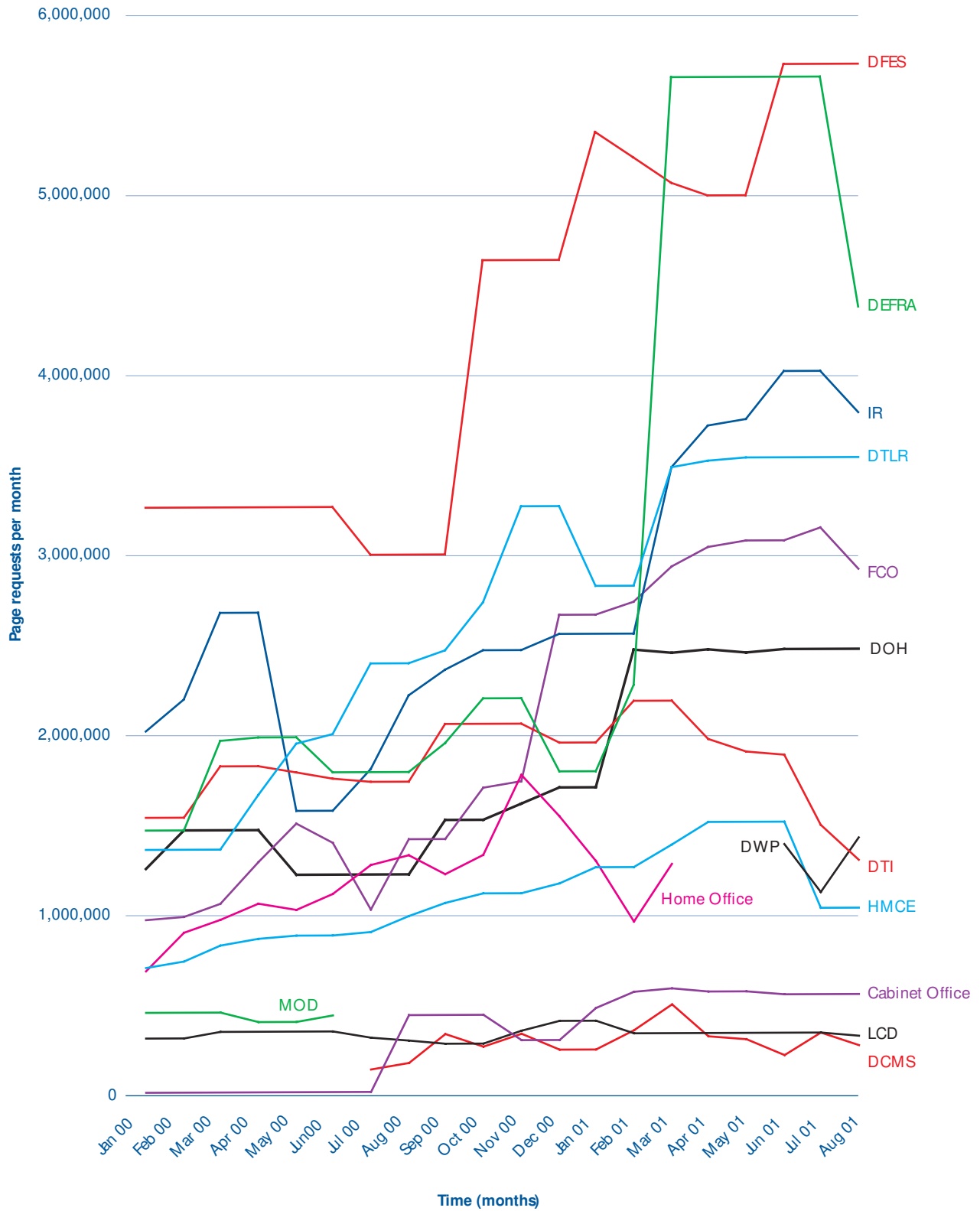
4.31 Despite OeE's 1999 guidance on the use of metrics and access statistics we found few departments where all the basic indicators above were being collected. Even fewer were playing back the information they did have to sections within their organisation in any way that could form a useful and reliable part of their management information systems. Some major departments seem to lack any useable information. The Treasury responded to our request for Web traffic data by saying that they had none at all, for any time period. The Department of Work and Pensions could only send log files of their Web traffic - a vast mass of completely unanalysed information which would have taken a lot of effort to process. Even departments that did have over-time data mostly had it in pre-modern forms. Normally it was only for some of the indicators listed above, and there were often discontinuities in the systems used for monitoring traffic, reducing the data's comparability over time. Several departments (such as the Department for Transport, Local Government and the Regions) adopted new monitoring methods around the same time as our queries for data reached them.

4.32 **Figure 21** therefore covers only the 14 departments which had useable Web traffic data for some part of the period. We focus here on page requests or page impressions. We have cleaned-up these data considerably, including going back to departments to iron out apparent anomalies, and median-smoothing the data to omit one-off kinks. Consequently these data are reasonably comparable over

time, within any one department. However, readers should not make any fine-grain comparisons of traffic volumes across the departments shown, because the monitoring or recording systems in use vary considerably. None the less, some large-scale differences between the traffic volumes of government Web sites do emerge. The Department for Education and Skills has been top site for most of this period, but DEFRA (previously the Ministry of Agriculture) soared to prominence during the foot-and-mouth crisis in 2001. Some sites (such as the Department for Transport, Local Government and the Regions) were consistently near the top and grew their traffic steadily. Others, such as the Foreign and Commonwealth Office and the Department of Health started in the middle of the pack but grew strongly later on as a result of adding new features. The Cabinet Office has gone from almost nothing to small numbers of users. Sites with apparent declines in traffic for at least part of the period included the Home Office, DTI and Customs and Excise. Three sites with small numbers seemed to have weak or no growth trends - the Lord Chancellor's Department main site, the Department of Culture, Media and Sport, and the Ministry of Defence (for the short period for which the department has any data). But some departments (such as the Lord Chancellor's Department and MoD) also have well-used service orientated Web sites distinct from their main Web departmental - a site, covered here.

4.33 **Figure 21** is a little difficult to interpret here, because it is not easy to control visually for the different starting points of the Web sites in terms of traffic volume or see their different growth rates over time by eye. Even converting the raw data into index numbers could be misleading, because growth rates will automatically tend to be higher in numbers starting from a small base. We should naturally expect to see the highest percentage growth on the smallest or youngest sites, and least growth with already large and mature sites. **Figure 22** graphs the change in departments' Web traffic over the 20 months January 2000 to August 2001, against their initial traffic volumes at the beginning of the period. The expected relationship does apply to some large and 'mature' sites, notably the DFES and the DTI site. But for most sites the general relationship is in fact the other way round. The large sites are growing faster, and smaller sites are often stagnating. The DEFRA and MAFF growth in 2001 may be mainly a crisis-only phenomenon produced by foot and mouth, but even excluding it would not alter the pattern much. If government Web sites are to remain 'competitive' in attracting Web traffic it is important that their rates of growth should keep pace with that of the overall UK Web traffic. It is clear that some departments' Web sites are effectively stagnant. Others are growing their traffic over time, but by less than the background growth of UK Web traffic as a whole. Relatively few Whitehall departments are clearly increasing their 'market share' by growing Web traffic faster than the background expansion of Internet traffic.

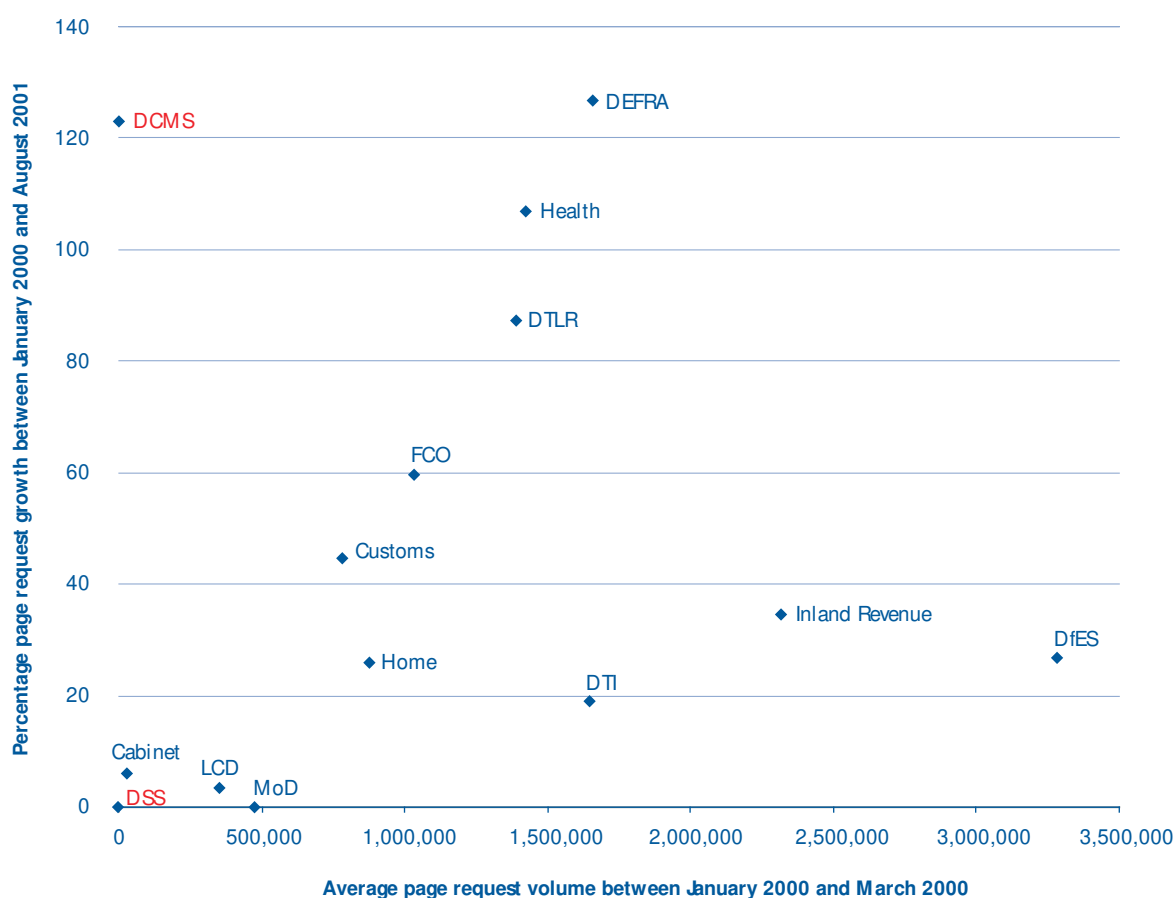
21 Trends in page requests for central departmental web sites in 2000 and 2001



NOTE

Whitehall Departments not shown (such as HM Treasury) failed to supply useable data. Incomplete lines (as for MOD, the Home Office and DWP) indicate that departments had useable data only for a part of the period.

22 The percentage growth of page requests on central departments' websites between January 2000 and August 2001 by their average traffic (in page requests) between January 2000 and March 2000



NOTE

The two sites shown in red are those for which we have percentage growth data but incomplete starting data.

4.34 Our second method of data collection was a census of the content on all central government Web sites, covering 376 organisations in all shown in **Figure 23**. The coding frame and methods used are fully described at www.governmentontheweb.org but essentially we asked post-graduate student researchers at the LSE to log onto all central government Web sites and to code objectively the presence or absence of 102 site features. We rechecked codings for consistency. As with the local

government sites census these findings should be interpreted with caution. They represent features or facilities which could be found on sites by dedicated and trained researchers committing on average around 50 minutes to finding a long list of features and working in a systematic way. The data are hence likely to give a very generous view of whether ordinary citizens would easily or reliably find the same features.

23 Organisations included in the census of central Government Web sites

Type of organisation	Number surveyed	Number now with Web site	Percentage with Web site	
			2001	1999
Whitehall departments ¹	26	24	92	86
Other bodies ¹	31	31	100	77
Next Steps agencies ¹	88	73	83	53
Executive bodies (NDPBs) ¹	231	182	79	59
Total	376	310	82	60

NOTE

1. A list of the organisations in each category is given at Appendix C.

24 Results from the Census of Central Government Web sites, October 2001

Key

■ Basic site
 ■ Interactive
 ■ E-Publishing
 ■ Transactional
 ■ Account Management

How often features were found across all central Web sites	Feature	2001	Per cent of Web sites 1999	Change
Universal Features Over 90%	Description of the organisation's current activities	96	90	+6
	Consistent colour scheme	96	na	
	Consistent font size and style	96	na	
	Telephone number and address	94	80	+14
	Logo branding	94	na	
	Downloads of the organisation's documents	90	41	+49
Widespread Features 70 - 80%	General email enquiry service	88	41	+47
	What's New section	79	66	+13
	List of organisation's activities by topic area	78	na	
	Links to other government bodies	75	51	+24
	Press releases	72	17	+55
	Archive for press releases (% of sites with releases)	72	58	+14
	Site update information	71	71	0
	Annual reports	70	20	+50
Features Becoming Widespread 50 - 69%	List of publications arranged by subject or date	64	na	
	Non-governmental organisations	62	47	+15
	Links to supervising government bodies	60	45	+15
	Search engine	58	38	+20
	Explanation of agency's statutory responsibilities	57	53	+4
	Mission statement	55	61	-6
	List of organisation's sub-units or divisions	50	65	-15
	Contacting the webmaster	50	32	+18
Features on a Significant Minority of Sites 30 - 49%	Senior officials' areas of responsibility listed	46	na	
	Links to private firms	43	na	
	Link to international organisations	40	na	
	List of organisation's regional offices	38	na	
	Regional information given	38	33	+5
	Information on the organisation's future strategy	37	22	+15
	E-complaints service	35	na	
	Senior officials' biographical details	34	na	
	Travel directions for reaching organisation's offices	33	23	+10
	Organisation chart for agency	33	na	
	Site Map	31	19	+12
	Email ordering facility for organisation's documents	30	na	

How often features were found across all central Web sites	Feature	Per cent of Web sites		
		2001	1999	Change
Features on Few Sites 10 - 29%	UK Online link	27	na	
	Performance indicators for agency	26	na	
	Senior officials' email addresses	25	7	+18
	Electronic fill-in and submission of forms	24	14	+10
	Senior officials' telephone numbers	22	16	+6
	A-Z listing of organisation's services	20	na	
	E-purchasing on site	19	na	
	HM Government Logo	19	na	
	Free email news service	18	na	
	Facility for citizen consultation	17	6	+11
	Separately branded portal giving tailored information	16	na	
	Senior officials' address details	16		
	Links to foreign governments	15	na	
	Search facility for publications by title or subject	15	na	
	Email response pledge information	15	4	+11
	Search for documents	15		
Staff directory	15	6	+9	
Text only version of the site	13	6	+7	
Facility for managing accounts or finding the status of transactions	10	na		
Very Rare Features 0 - 9%	Dedicated email news service for specific client groups	8	na	
	Facility to input post code and receive relevant information	6	na	
	Web site usage statistics	6	na	
	Postcode search facility of any kind	6	na	
	Email news service requiring subscription payment	5	3	+2
	Chat room or forum service not requiring password	5	na	
	Technology for users with 'special needs'	5	na	
	Chat room or forum service requiring password	2	na	

NOTE

na = not available because item was not coded in 1999 census

4.35 The number of central government organisations without a Web site decreased from 125 in 1999 to 66 now, although there were offsetting increases in the number of organisations to be surveyed. There have consequently been substantial increases in the numbers and proportions of executive agencies and non-departmental public bodies maintaining a Web site. Those organisations without a site are chiefly small government bodies which have few if any dealings either with citizens at large or with firms and enterprises, normally because they are units which provide a specialist service within government itself. All the major Cabinet departments have well-developed Web sites.

4.36 **Figure 24** summarises the distribution of different kinds of features across the organisations surveyed in 2001, and shows comparable data from 1999 where it is available. The frequency of finding some of the fairly basic features included in our 1999 census has increased strongly, especially the ability to download documents, send e-mails to a general enquiry address, and access press releases and agencies' annual reports. Nearly half of agencies' sites have acquired these features in the last two years. Other changes have been more modest, including increases in the availability of search engines, site maps, press release archives, e-mail addresses for senior officials, defined e-mail response times, a contact route to the Webmaster, links to other governmental bodies and non-government organisations, on-line public consultation facilities, and travel directions for reaching agency offices. Typical of such changes is that the proportion of agencies with sites allowing users to fill-in and submit forms on-line has improved from one in seven to one in four.

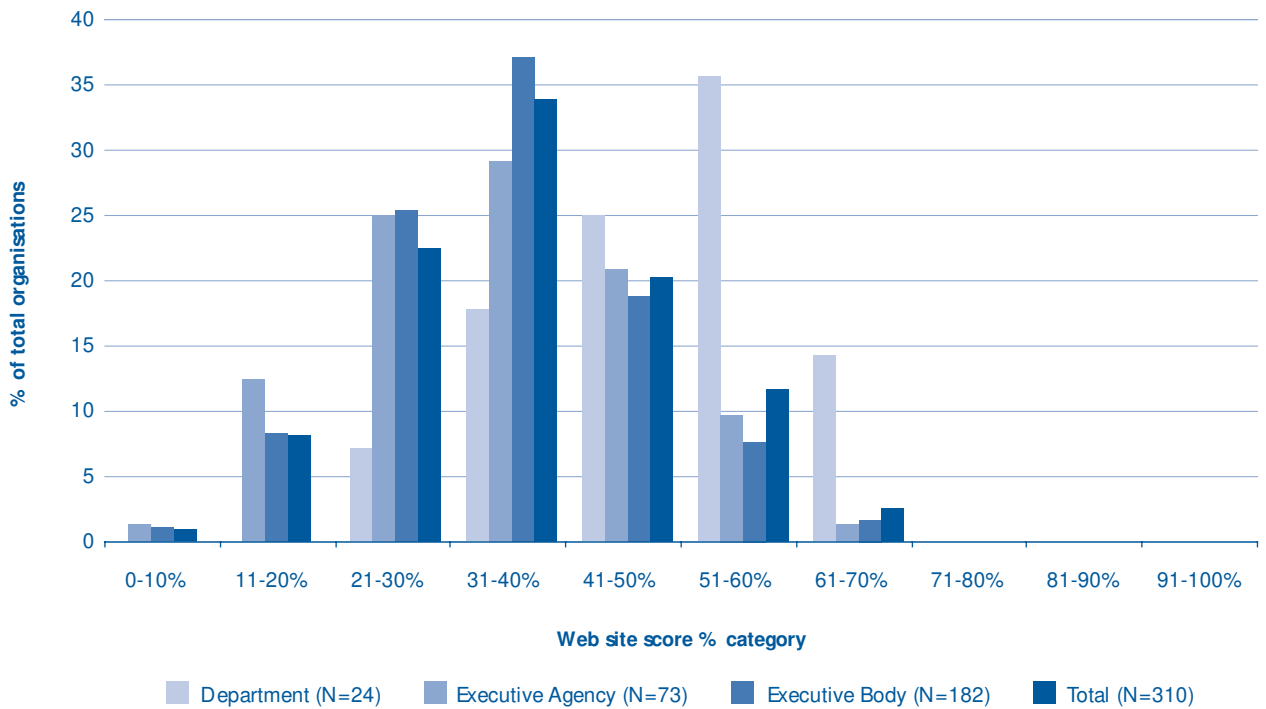
4.37 However, the performance of central government Web sites in terms of facilities remains patchy. **Figure 24** shows that the only features which the vast majority of government sites have are basic details of how to contact the organisation involved and what it does, plus the ability to download documents, and a reasonably consistent look and feel. Four fifths of sites will also have a general e-mail enquiry service, on-line press releases and annual reports, a breakdown of the organisation's activities and links to other government agencies. But at least one government site in every five will lack such basic facilities. Around two-thirds to a half of sites add other electronic publishing features, a search engine and means of contacting the Webmaster. However, we would put the usefulness of

most search engines on government sites as low. In response to quite basic search terms fundamental to the department's mission, the engines often generate listings of myriads of obscure press releases or internal departmental documents. They did not anticipate and link to basic pages that most citizens using such search terms might be trying to find. Reasonably comprehensive repertoires of basic Web publishing features are present in less than half of government sites. Apart from submitting forms on-line, most other interactive services are provided in only a minority of Web sites, often by less than one in ten. Information on public sector sites is overwhelmingly organised in a list-wise fashion, meaning that users must page and click through large volumes of material in an order set out by the agency, rather than being able to search for information that is tailored or personalised to their needs. For instance, only one public Web site in 16 re-presented relevant information in response to users' inputting a postcode. E-mail alert services were similarly scarce.

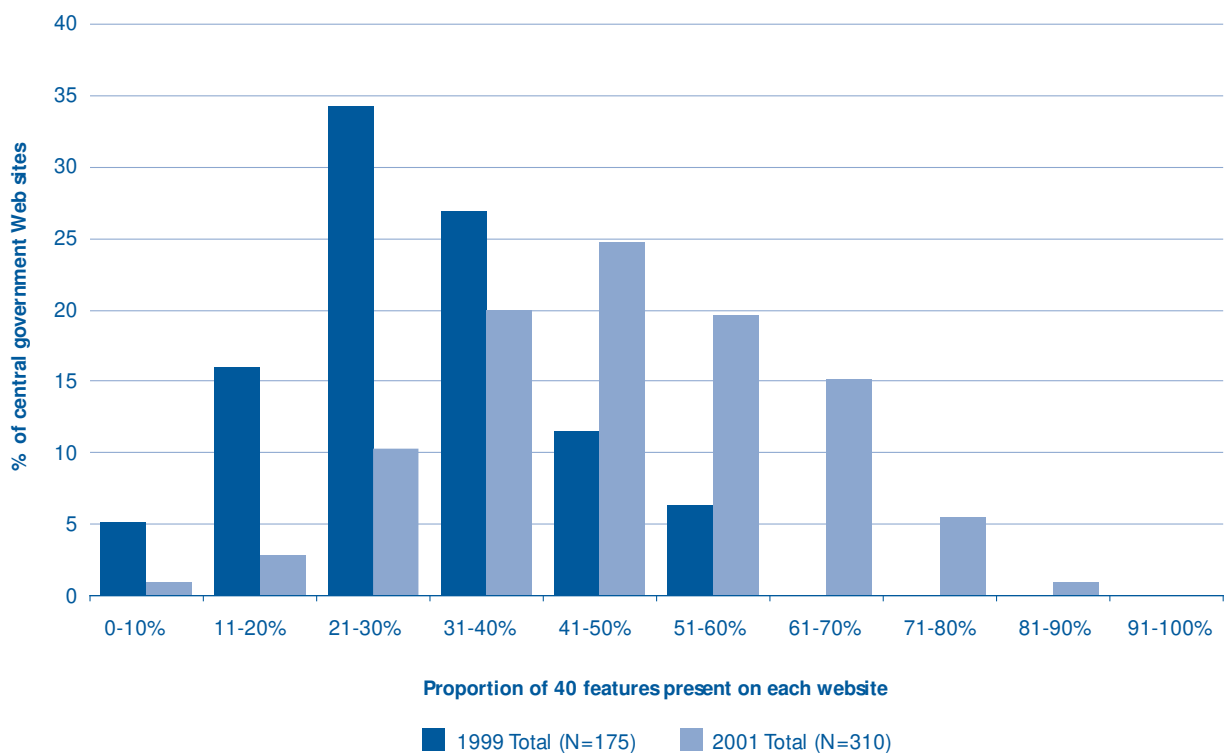
4.38 In order to get a more synoptic view of how government Web sites were performing we coded how many times each agency or department scored positively across all of the 91 performance variables in the 2001 census. **Figure 25** shows the results of this analysis, broken down between the different types of organisation. Whitehall departments clearly had the best Web sites, with the most frequent (modal) category having 51 to 60 per cent of the features coded. Both executive agencies and non-departmental public bodies fell significantly behind: the modal category for both sets of sites has only 31 to 40 per cent of the features coded.

4.39 We also looked in more detail at 40 variables coded in a comparable way across the 1999 and 2001 censuses, again computing a score for each agency based on how many of these features were present. **Figure 26** shows that in 1999 the modal government organisation had only 21 to 30 per cent of these features, but by 2001 the whole distribution had shifted rightwards, putting the modal category as 41 to 50 per cent of this unchanged set of more basic features. In addition, of course, the number of central organisations with a Web site increased strongly from 175 coded in 1999 to 310 in 2001. Not only have many more central government Web sites been established but in addition all those now in place are objectively better in their basic features than was the case in 1999. This is solid evidence of worthwhile progress.

25 Distribution of total Web site scores across all categories for central government organisations in 2001
(scored from 91 variables)



26 Distribution of Website scores across all government organisations between 1999 and 2001
(based on comparable variables)



Conclusions and recommendations

4.40 The recommendations made by the Public Accounts Committee in its June 2000 report on 'Government on the Web' provide a useful framework for considering the extent of progress made in implementing e-government policies at the centre. Box 2 on page 15 above provides the full list of these recommendations, which we have re-grouped into four main headings in **Figure 27**. The Committee emphasised the importance of a clear cultural lead from the centre, which incorporates providing a lead, encouraging cultural change across departments, driving forward the establishment of intranets across departments and prioritising the training of staff with e-government expertise. They also concluded that there would need to be central delivery of joined-up initiatives, in particular a central government portal. The Committee emphasised the importance of collecting information centrally, including specifically the coverage of 'take-up' as well as monitoring the availability and the quality of government web sites. They also pointed to the importance of provision from the centre of a cost/savings methodology for e-government, so that potential benefits from electronic service provision could be realised. Other recommendations related to departments in general rather than to central agencies (notably recommendations 8 and 14 to 16). Some aspects referred to by the Public Accounts Committee have been developed outside the scope of OeE's remit and of this report: responsibility for leading government departments to introduce Electronic Document and Records Management Systems (recommendation 13) lies with the Public Record Office. And overcoming social exclusion (recommendation 18) is being managed by the Department for Education and Skills.

4.41 Central policy since 1999 has clearly given a strong cultural lead in promoting e-government, backed by the commitment of substantial resources. The expansion of the e-Envoy's Office; the strengthening of central policy initiatives; key funding initiatives aimed at increasing electronic provision; and the involvement of the Treasury have all contributed to a far higher awareness of e-government across local and central government. There have been some promising developments in some areas. The Cabinet Office has clearly given a strong lead from the centre (recommendation 1) and is encouraging (via 'policy, politics and rhetoric') departments to embark upon cultural change (recommendation 5). Some ambiguity over the use of the telephone as an 'electronic' transaction has been removed (recommendation 2).

4.42 There is also substantial evidence of progress in delivering joined-up initiatives in a centralised way, seeking to exploit economies of scale and to avoid wasteful effort in duplicating resources for the public sector, especially since the establishment of the e-Delivery Team within the Office of e-Envoy. Since late 2001 the UK Online site represents some progress towards a central government portal for the United Kingdom public sector as a whole. In January 2002 a new version of the portal was launched, but for much of 2001 the UK Online site's design was problematic and usage numbers still lag behind what might be hoped. Similarly the Government Gateway delivers substantial technical advances, but its success depends on usage levels for applications which use it being successfully developed and consolidated. It is important that policy-makers recognise that there is no necessary e-government logic of development that will grow usage of e-services unless users perceive clear and evident benefits from accessing in this way. In the USA during 2001 on-line submissions of income tax fell back appreciably after some accountants warned clients that electronic submission gave the Internal Revenue Service access to more data about taxpayer affairs than paper submission, increasing the likelihood of investigation and the chances of officials claiming more tax from citizens. If government is to grow the take-up of electronic services which reduce its costs or improve its efficiency, it is important that users of e-government services also share in these benefits.

4.43 The PAC recommended that the Cabinet Office should monitor take-up, have more reliable information on the existence and quality of government web sites, and monitor how often government web sites are up dated. Some action has been taken on these recommendations. The OeE's key performance indicator since spring 2000 has been the proportion of services which are electronically available. Amongst Whitehall departments only two departments are being asked formally to consider take-up as part of the Public Service Agreement targets. In its guidance and in discussion with departments, OeE makes clear that the 100 per cent target remains the foundation of the government's online strategy, while also stressing the importance of ensuring that key transactional services are available online and being widely used. While the target for getting all services delivered electronically by 2005 has been a useful way of encouraging departments and agencies to deliver an electronic capability, it is becoming increasingly important that the target is supplemented by, for example, targets for the take-up of services offered electronically. In addition the OeE has relatively little up to date, good quality information about central government on the web. OeE as yet collects no systematic data which would identify the most important transactions in terms of take-up, transaction volume or the monetary value of displacing them onto the web.

27 The extent of progress on the Public Accounts Committee's recommendations

Strong Progress

Clear cultural lead from the centre of government (PAC Recommendations 1, 2, 5, 7 and 19)

Significant dedicated resources (staff and money) have been committed. The government-wide profile of e-government has clearly been raised. OeE provide assistance to departments and agencies through bilateral discussions and guidance on government web sites. Some ambiguities of the previous targets regime have been removed and the delivery timetable has been shortened by 3 years.

Moderate Progress

Central delivery of joined-up initiatives (PAC Recommendations 11 and 12)

The Government Gateway and new UK Online central portal have been created and considerable resources allocated. Usage figures for the Gateway and UK Online site have been slow to develop. The extent of departmental involvement with central projects remains somewhat unclear.

Little Progress

Having reliable information on the existence and quality of government Web sites

(PAC Recommendations 3, 9, 10)

The OeE performance indicator since Spring 2000 has been the proportion of services which are electronically available.

OeE does not collect any systematic or regular information on:

- Web traffic data on central government sites;
- transaction volumes on government Web sites;
- quality ratings of public sector Web sites, or the frequency of updates; or
- the market visibility of government online facilities or services.

DTLR has copied the OeE performance regime exactly for local government. The key 'Best Value Performance Indicator 157' is inadequate. DTLR collects no systematic data on local authority Web sites. Checks that extra funding committed will produce genuine change seem inadequate.

Costs/benefits methodology for e-government

(PAC Recommendations 4, 6 and 17)

Initial work in this area in 2000 yielded little. Case studies of e-government changes in four departments were initiated in summer 2001. But no central work on cost benefit or cost assessment methodology has yet been carried out. Hence OeE cannot yet systematically establish that electronic services delivery is generating savings of public money or quality of service improvements.

4.44 A final Public Accounts Committee recommendation stressed the importance of central policy-makers developing a useful methodology for measuring the costs and the savings or benefits of e-government provision. Progress has only been limited since the publication of *Government on the Web* in December 1999. Electronic targets are now included in Service Delivery Agreements and Public Service Agreements - but there appears to be no formal linkage between these targets and either expenditure or departments' productivity targets. In early 2000 the Central IT Unit and the Treasury did commission a report from PA Consulting into the broad costs of funding e-services' delivery. The consultants reviewed some issues and barriers, noted the need for clear measures of success and recommended the establishment of a central organisation to lead e-government issues. The report formed part of the background to the 2000 spending review, but did not result in specific guidance. In September 2000, the Performance and Innovation Unit of the Cabinet Office published a report, *e-gov - electronic government services for the 21st century*, which included a methodology for e-business planning and prioritisation. During 2001, analysts in the Treasury realised that work on the costs and benefits of electronic services was not going on systematically in government, although it could be important for the future. So the Treasury and the e-Envoy's Office have initiated a project (originally due to report in November 2001). It asks four departments to carry out such an analysis for one electronic service project each: Inland Revenue (self-assessment of income tax for individuals), DEFRA (CAP payments to farmers), Driver Vehicle Licensing Agency (driving license authorisation) and Department for Work and Pensions (individuals' payment of retirement pensions). Treasury officials observed that to undertake this exercise and work out a 'cost per unit delivery, the case study departments would need to quantify some basic costs for administrative tasks, data which has rarely been available across Whitehall. The problems in the UK in estimating the costs and benefits of electronic services delivery have not been solved either in comparable governments, and they have considerable parallels in business. But there is scope for major central departments to make progress, which could be very valuable to other central agencies and local authorities considering how to assess a wide range of possible e-government changes.

4.45 If the Office of e-Envoy is to offer more assurance to government and Parliament that e-service development monies are being productively spent, and if it is to increase its useful assistance to departments and agencies in implementing e-government changes, it is

important that it should develop a range of performance indicators which will work effectively in measuring progress in developing electronic transactions at stages before 2005. On current trajectories, progress in developing e-government usage will also continue to need to be measured for many years after 2005. The existing target of 100 per cent availability of electronic services by 2005 should be retained but supplemented by a set of principles which identify priority cases for electronic services development. Within these principles OeE should negotiate agreed targets for increasing the number of Web and electronic service users with all agencies and departments. OeE should put in place a set of performance indicators for monitoring and gauging progress which are comprehensive, evidence-based, and focused on the achieved take-up and the development of user numbers for electronic services and general Web sites. Agency targets should take account of the existing condition of each agency's back office systems and Web services and project forwards developments at least in line with overall UK development of Web and Internet traffic and transactions. The Cabinet Office and OeE should also ask departments and agencies to implement the PAC's 2000 recommendations on monitoring and regularly reporting on Web site usage and take-up of electronic services. They should also put in place monitoring reports to periodically assess the development of facilities across central government Web sites as a whole, which can be achieved at modest cost. OeE should prepare an annual report on progress, not least to feedback information to departmental and agency decision-makers and to create a public source of pressure for improvements to parallel that given in private discussions about agencies' e-business strategies.

4.46 It is important also that the Office of e-Envoy demonstrate that its own direct implementation work on central facilities and central policy development aspects is paying back effectively against the sums of public money committed. There is a clear need for OeE to specify targets and milestones for the assessment of central initiatives, including the UK Online portal site, the Government Gateway authentication system, the GS2 second stage government intranet, and possible future central initiatives (such as the possible future take-over of all government Web-site hosting and operations control by OeE). OeE needs to adjust its style of operation and reporting from its current self-image as a campaigning agency with a limited end-state goal and an 'insider', government-to-government brief. OeE needs to behave as the substantial regulatory and implementation agency which it now has become. In this role it needs to be more effectively accountable and to run programmes which are externally assessable against clear intermediate performance indices.

Appendix A

Methodology

- A.1 The changes involved in the introduction of e-government processes cover a wide range of areas, and we accordingly deployed a set of different methods to assemble an overall picture of progress since the 1999 *Government on the Web* report.
- A.2 *Case studies of major departments* are helpful in generating insights into the different kinds of problems encountered by citizen-facing and by business-facing government departments. We chose new case study departments, different from those used in 1999, so as to broaden the coverage of areas. Our business-facing agency was HM Customs and Excise, and the citizen-facing agency was the Department of Transport, Local Government and the Regions, which also has an extensive government-facing role in relation to local authorities. We visited the departments, assembled key departmental documentation, collated Web statistics, sought cost data and other information on e-government provision, and interviewed a range of officials. We also twice undertook a systematic analysis of each department's Web site with several different coders and conducted sample 'mystery shopper' experiments to assess facilities, design and effectiveness. We also interviewed some outside stakeholders or personnel from other organisations in depth, including for Customs and Excise two private sector banks (HSBC Bank plc and Barclays plc) chosen as comparators, and for the Department of Transport, Local Government and the Regions people from local government organisations at national level.
- A.3 *Analysis of central policy* entailed undertaking the same investigations in the Office of the e-Envoy, focusing on the Office's central initiatives and on its procedures for influencing other central departments' decision-making. We interviewed staff from closely related areas in other departments.
- A.4 *A census of all central government Web sites* was conducted during October 2001 to establish firm data on the progress being made by government agencies in terms of making available facilities over the Internet. The sites covered included those for all UK or English departments, Next Steps agencies and executive non-departmental public bodies, covering some 381 agencies in all. It did not cover advisory bodies. This study replicated the census undertaken in 1999, with 41 objectively coded variables being repeated from the previous survey, and an additional 80 variables covering new issues or facilities. The coders were 10 post-graduate students of the London School of Economics, who were trained in implementing the survey, and used consistent equipment in an LSE computer classroom and the Internet Explorer 5 browsers to access the sites. Pilot forms were replicated and results from coders cross-checked to ensure consistency. The full coding frame and basic results for all items are available for free download at www.governmentontheweb.org. Appendix C gives a full listing of the central government agencies covered.
- A.5 *A census of all local authority sites in England* was also undertaken in the same way to assess progress on the Department of Transport, Local Government and the Regions' programme to get local authority services onto the Internet and the Web. Our coding frame included 171 objectively codable variables covering all main service areas and was administered in November 2001 for all 388 councils. To prepare for this survey we also assembled documentation, undertook site visits and conducted interviews with several senior officials in seven local authorities, covering different types of council and types of area. We are grateful to the local authority staff involved for their help and assistance. We also discussed the coding frame with DTLR and Audit Commission staff and personnel from local government national organisations, including the Local Government Association and the Society of IT Management (Socitm). The full coding frame and all the basic results are available for free download at www.governmentontheweb.org
- A.6 *Analysis of UK government departments' Web traffic* was undertaken in September 2001. We wrote to 26 central government departments seeking data on their Web site trends over time. Where this data was available at all, we assembled it into consistent series and analysed the resulting patterns, which are discussed in Part 4. We also discussed data for earlier CCTA periods with staff from the Office of Government Commerce in Norwich. Obtaining consistent and usable data from Whitehall departments proved to be exceptionally difficult, and we could not extend this analysis more widely to executive agencies or non-departmental public bodies within the available time or resources.

A.7 *Overseas comparators* were useful in putting the UK's substantial e-government policy commitments in context, looking at cumulative experience elsewhere, and surveying best practice and different approaches to e-government. We examined progress in e-government policies in several comparable countries via Web sites analysis. For four countries (the United States, Australia, New Zealand and the Netherlands) we assembled documentation, undertook site visits and interviewed senior officials and leading personnel in ICT firms. Our country cases were chosen for a number of reasons. The United States has a well-developed set of federal government Web sites serving the most Web-active population in the world. Australia has long been seen as a leader in promoting government on the Web. The Netherlands has a strong tradition of in-house public sector ICT and Web services provision in a more European and corporatist style. And New Zealand has recently launched an ambitious e-government programme. In each country we looked at central policies for achieving e-government change. To inform our UK case studies we also examined Customs systems in three countries, and surveyed their policies for encouraging local or regional government modernisation.

Appendix B

The administrative background for case study departments in this study

B.1 This Appendix brings together some background information about the administrative and managerial context for the main organisations covered in Parts 2, HM Customs and Excise and Part 3, the Department for Transport, Local Government and Regions.

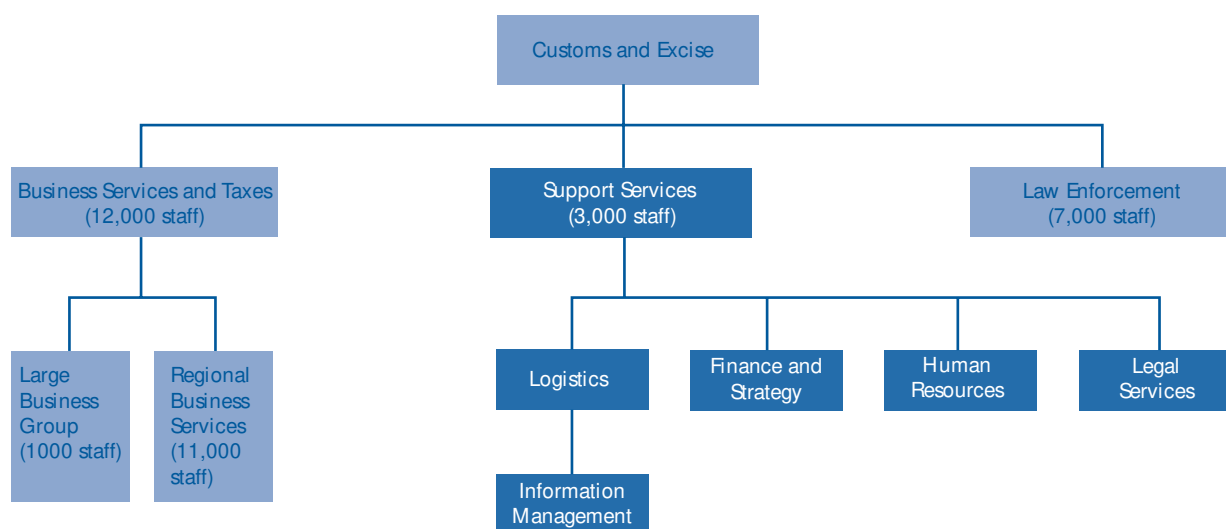
Customs and Excise's organisation and operations

B.2 Her Majesty's Customs and Excise is one of the oldest government departments. Its functions can be traced back to 1203 when one-fifteenth duty was placed on all imports and exports, to be paid to the Exchequer rather than local fiefdoms. In modern times it has been organised as a non-ministerial department with a controlling board headed by a Chairman, and its long historical heritage means that its internal governance arrangements are relatively complex. Like the Inland Revenue, Customs and Excise reports to HM Treasury, and since the late 1980s it has been run on 'Next Steps' principles.

B.3 Customs and Excise is responsible for collecting around £140 billion of repayments in revenue each year. The department's organisation is shown in Figure B1. Around

12,000 staff work on VAT collection and compliance activities. Other main areas of taxation include a series of excise taxes on specific products or services, including oil, alcohol, tobacco, betting, gaming, bingo and gaming machines; specific duties or taxes on insurance premiums, airport passengers and landfill sites; and duties on imports. In addition the business area of operations covers the collection of important statistics. The second main area concerns law enforcement and import and export prohibitions. There are around 3,000 staff who provide central support services, including 660 staff working on information technology services (Figure B1). IT staff numbers have declined following a non-exclusive Private Finance Initiative contract signed in 1999 with ICL to run the department's main IT systems. The department's staff total has remained relatively constant over recent years (an average of 22,000 over the five years to 2000), with annual operating costs of £918 million in 1999-2000 and a provision of £977 million for 2000-2001. Running costs account for some 90 per cent of its total expenditure. Most staff work in main headquarters offices located in London, Southend, Liverpool, and Manchester, and supporting seven standard planning regions throughout the UK, the biggest in the South East.

B1 Organisation Chart for Customs and Excise



B2 Information technology staff years and associated running costs in Customs and Excise, from 1996 to 2002

	1996-7	1997-8	1998-9	1999-2000 Estimated	2000-01 Forecast	2001-02 Forecast
Staff years	920	960	970	920	660	660
Running costs (£m)	25	27	28	27	22	22

Source: HMCE Departmental Report 2000 p. 29. Staff figures are rounded to nearest ten and costs to the nearest million.

B.4 All the information and communications technology (ICT) services in the department fall under its Information Management Division (part of the Logistics area). The centralised mainframe system is run from Southend, while web site services are managed from Manchester under the control of a Knowledge Management Officer. The department's staffing and running costs dedicated to information systems and information technology services since 1996 are shown in **Figure B2**.

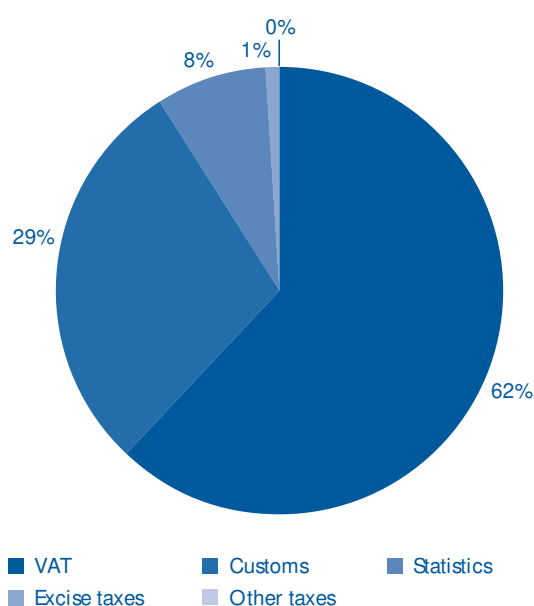
B.5 In September 1999 Customs and Excise signed a major, non-exclusive private finance initiative (PFI) contract with ICL, set to run for ten years with the option to extend for a further five. The deal involved the transfer of 350 staff to ICL, explaining the drop in Customs' IT staff in 1999-2000 in Figure B2. The partnership with ICL is based around conventional information technologies, networks and infrastructure services rather than web-based technologies. ICL have operational responsibility for the department's existing desktop, telephony and data network, including an upgrade of the entire infrastructure during the first 18 months of the contract. The company is also responsible for the development of new solutions and processes to enable business change, such as the conversion of paper documentation into secure 'electronic folders'. During 2001, some problems arose as it became clear that the infrastructure could not easily support extensive e-mail access to all staff. However, a departmental Intranet and external e-mail system were rolled out on this infrastructure to all 22,000 staff. By December 2001, around 11,000 staff also had the potential to access the Internet and Web pages, that is one in two staff. The current rollout for extending this access will mean that all staff should gain Internet access by April 2002. The new PFI contract provides for regular technology 'refreshes' every three years.

B.6 Customs and Excise's workload consists overwhelmingly of tax-raising and regulatory operations. The department's 24 million transactions a year break down as shown in **Figure B3** by volume (and in more detail in Annex Table B.1 at the end of this Annex). Three fifths of this total are VAT related. The VAT return is a straightforward form containing only 8 boxes of information sent back four times a year by 1.6 million

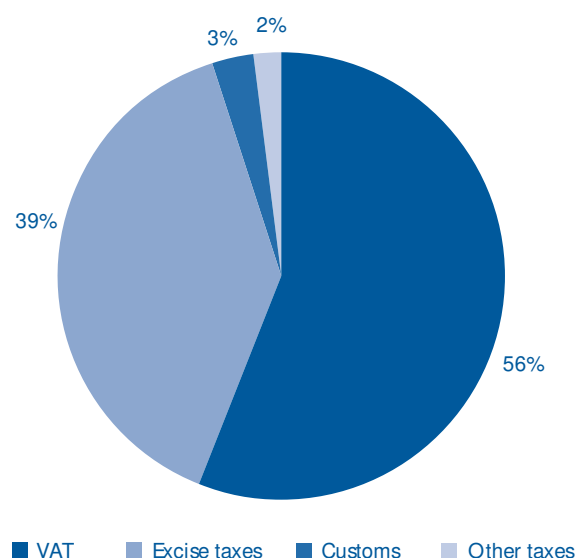
VAT-registered businesses (making in all 7 million dealings a year). In addition 5 million VAT payments are made by firms to Customs and Excise each year, of which only 1 in 20 is by direct debit. The department makes 2 million repayments to cover VAT already included in businesses' input costs: 80 per cent of these repayments are direct electronic transfers to companies' bank accounts. On-line paperless direct debits are due to be introduced early in 2002. VAT Registration is a more complex transaction but takes place far less frequently on a more 'one-off' basis. There are in all around 570,000 registrations, de-registrations and change of registration details every year. Customs transactions account for nearly three tenths of the transactions total, with around 4 million import dealings and 3 million export dealings. The final substantial part of the transactions total involves statistics returns, with 1.8 million Intrastat (the statistics collection system) returns and 0.2 million Export Sales Listings forms. All the excise taxes, plus taxes on insurance premiums, airport passengers and landfill, are included in the 'Other' group in Figure B3. They account for only a tiny part (under 1 per cent) of the number of transactions because they are paid by very few traders, many by fewer than 1,000 firms and one (gaming machine licenses) by only one firm. Turning to the breakdown of transactions by value, however, a completely different picture emerges, shown in **Figure B4**. Net VAT payments (after excluding repayments) account for just over half of the total transactions' value, and excise taxes for two fifths. Customs duties make up only one fortieth of transactions' value, and all other taxes for much the same.

B.7 Customs and Excise has dealings with around 1.7 million businesses including all those which pay VAT (almost all with turnovers exceeding £51,000 annually) and those which import or export. The VAT client group is extremely varied, with around 10,500 large businesses and a huge 'tail' of 1.3 million small and medium sized enterprises (SMEs), those with a turnover of less than £600,000. Around 90 per cent of HMCE revenue comes from the small number of very large companies (around 1,000 firms that are focused on by HMCE's large business group), while the other 10 per cent comes from the numerous SMEs.

B3 Customs and Excise's transactions by volume, 1999-2000



B4 Customs and Excise's transactions by value, 1999-2000



B.8 Our two final Annex Tables cover more detailed data on Customs and Excise's transactions, and on how the department sees the availability of its services on-line.

The Department for Transport, Local Government and the Regions: organisation and operations

B.9 DTLR has a wide-ranging set of roles, as captured in its current Public Service Agreements, covering transport, housing, planning cities and communities, local government, regional government; and health and safety. DTLR is responsible for policy development and for service delivery in these areas, either directly through its ten executive agencies or through other organisations which it sponsors or funds. It sponsors a number of executive - non-departmental public bodies and two nationalised industries with responsibilities in these areas. The department funds via the block grant 388 local authorities in England, which deliver a wide range of services to citizens and businesses. DTLR has responsibility both for the framework of central Government policy towards local Government and for developing, with the Office of the Deputy Prime Minister, policy towards regional government in England. A key non-departmental public body in respect of Local Government is the Audit Commission, which is responsible for 'best value' inspections which are designed to establish whether local government services are being operated efficiently and effectively.

B.10 The Department has 13,300 staff working across all ten of DTLR's executive agencies. A number of the department's largest agencies are in the transport field. The Driver and Vehicle Organisations handle the licensing and regulation of vehicles and drivers, including supervising the driving test. These are substantial organisations. Their important roles in dealing with citizens make them very significant bodies for the development of e-government across the UK. But the issues here are complex and require separate treatment. So the DTLR agencies do not fall within our brief for this report - which is confined to the operations of the department headquarters, often referred to internally as DTLR(C) the 'C' standing for 'centre'.

B.11 Some 3,500 staff work for DTLR(C), mostly located in modern offices in central London. The annual running costs for DTLR(C) were around £270 million for 2000-01. Internally DTLR is organised into nine main groupings covering:

- Transport strategy, roads, local transport and maritime
- Railways and aviation
- Local and regional government
- Housing, urban policy and planning
- Neighbourhood renewal
- Finance

- Legal
- Communications
- Strategy and corporate services group

The head of each grouping is a member of the department's Board which is chaired by the Permanent Secretary and is the main management decision-making body.

B.12 The primary responsibility for developing policy on electronic services delivery and liaising with the Office of the e-Envoy, the Office of Government Commerce and other bodies now lies with the E-business Strategy Unit within the Strategy and Corporate Services group. This group also includes the IT Service Divisions for the department. The bulk of the department's IT provision is contracted out. The operation of the external Web site

and now of the department's Intranet rest with the Communications Divisions in a separate group. Both the external site and Intranet are mainly managed in-house, although with the use of consultants and contractors. The E-business Strategy Unit reports to an E-Business Strategy Committee, which in turn reports to the Board, and which links to an IT network for the department's executive agencies and a forum for the non-departmental public bodies. The senior official most concerned with the e-business strategy is the department's E-business Champion (previously called the Information Age Champion) who reports to the E-Business Minister. The champion represents e-government issues in senior policy debates and also has responsibility for the wider modernising government agenda within the department.

Annex Table B.1: Workload for HMCE key transactions, 2000

Business Area	Transaction Type	Number of Traders	Number of Transactions	% Total Transactions	Value (mn)	% total value	Value per transaction (mn)
Value	VAT return	1,600,000	7,000,000	29.2		0	0
ADDED	Advice VAT number	190,000	190,000	0.8		0	0
Tax	Vat registration	190,000	190,000	0.8		0	0
(VAT)	VAT registration certificate	190,000	190,000	0.8		0	0
	VAT deregistration	190,000	190,000	0.8		0	0
	VAT payments	1,300,000	5,000,000	20.8	80,100	88.2	0.016
	VAT repayments	300,000	2,000,000	8.3	-29,400	-32.4	-0.015
	TOTAL VAT		14,760,000	61.5	50,700	55.8	0.003
Insurance	IPT return	1,054	3,800	0.02	1,100	1.2	0.29
PREMIUM	IPT registration	<15	<250	0.00		0	
Tax (IPT)	TOTAL IPT		3,800	0.02	1,100	1.2	0.29
Airport	APD return	253	2,913	0.01	500	0.6	0.17
Passenger	APD registration	<15	<250	0.00		0	
Duty (APD)	TOTAL APD		2,913	0.01	500	0.6	0.17
Landfill Tax	Landfill Return	1,141	4,500	0.02	400	0.4	0.09
	Registration	20-25	<250			0	
	TOTAL Landfill Tax		4,500	0.02	400	0.4	0.09
Excise	Beer Duty	400	5,940	0.02	3,000	3.3	0.5
	Tobacco	7	<250	0	8,400	9.3	
	Wines & Spirits	450	5,400	0.02	3,000	3.3	0.6
	Oils	63	876	0	19,900	21.9	22.7
	REDS	800	9,600	0.04		0	0
	Betting	1,700	20,400	0.08	440	0.5	0.02
	Gaming	32	<250	0.00	70	0.1	0.3
	Lottery	1	<250	0.00	650	0.7	2.6
	Bingo	260	3,120	0.01	100	0.1	0.0
	Machine Licences	20,000	166,000	0.7	150	0.2	0.0
	TOTAL EXCISE	23,713	211,336	0.9	35,710	39.3	0.17
Customs	Imports	N/A	4,000,000	16.7	2,400	2.6	0.0
	Exports	N/A	3,000,000	12.5	N/A		
	TOTAL CUSTOMS		7,000,000	29.2	2,400	2.6	0.0
Statistics	Intrastat	33,000	1,800,000	7.5		0	0
	ESLs	72,000	232,000	1.0		0	0
	TOTAL STATISTICS	105,000	2,032,000	8.5		0	0
TOTAL HMCE			24,014,549	100.0	90,810	100.0	0.004

Source: Customs and Excise data, processed to show each transaction as percentage of total transaction volume and value by the study team

Annex Table B.2: Customs and Excise's view of progress on electronic service delivery in the first e-business strategy document (Spring 2000)

Commitment	Category	Enabled Now	Enabled 2002	Enabled 2005
VAT Return	Provide information	Pilot training	✓	✓
	Collect revenue	Pilot training	✓	✓
Insurance Premium Tax	Collect revenue	X	X	✓
IntraStat	Provide information	✓	✓	✓
	Collect statistics	✓	✓	✓
EC Sales List	Provide information	X	✓	✓
	Collect statistics	✓	✓	✓
Climate Change Levy	Climate Change Levy	X	✓	✓
Customs Exports (3rd country)	Provide information	X	✓	✓
	Collect statistics	X	✓	✓
VAT Registration	Provide information	✓	✓	✓
	Regulate	X	✓	✓
Excise Duties	Provide information	X	✓	✓
Beer Duty	Collect revenue	X	✓	✓
Wine and Cider	Provide information	X	✓	✓
	Collect revenue	X	✓	✓
Tobacco Products Duty	Provide information	X	✓	✓
	Collect revenue	X	✓	✓
Warehousing	Provide information	X	X	✓
	Collect revenue	X	X	✓
Amusement Machine	Provide information	X	X	✓
	Collect revenue	X	X	✓
Licence Duty	Provide information	X	X	✓
	Collect revenue	X	X	✓
Hydrocarbon Oil Duty	Provide information	X	X	✓
	Collect revenue	X	X	✓
Excise Movements	Provide information	X	X	✓
	Regulate	X	X	✓
Customs - Transit/Exports	Provide information	X	X	✓
	Collect statistics	✓	✓	✓
Customs - Imports	Provide information	X	X	✓
	Collect revenue	✓	✓	✓
Totals	Total number of categories/ commitments = 32	No. of Enabled Categories = 8	No of Enabled Categories = 19	No of Enabled Categories = 32
		ESD Capability = 27%	ESD Capability = 59%	ESD Capability = 100%

Appendix c

Organisations covered by Web census

Whitehall Departments

Department for Environment, Food and Rural Affairs	Cabinet Office
Crown Prosecution Service	Department for Culture, Media and Sport
Ministry of Defence	Department of Transport, Local Government and the Regions
Department for Education and Skills	Foreign and Commonwealth Office
Department of Health	Department for International Development
Law Officer's Department	Lord Advocate's Department
Lord Chancellor's Department	Privy Council Office
Northern Ireland Office	Department for Work and Pensions
Serious Fraud Office	Export Credit Guarantee Department
Department of Trade and Industry	HM Treasury
HM Customs and Excise	Inland Revenue
Government Actuary's Department	National Investment and Loan Office
Treasury Solicitor's Department	Home Office

Executive Agencies

Central Science Laboratory	Farming and Rural Conservation Agency
The Centre for Environment, Fisheries and Agriculture Science	Pesticides Safety Directorate
Veterinary Laboratories Agency	Veterinary Medicines Directorate
Intervention Board	Maritime and Coastguard Agency
Meat Hygiene Service	Government Car and Dispatch Agency
COI Communications	Royal Parks Agency
Army Base Repair Organisation	British Forces Post Office Agency
Central Data Management Authority	Defence Analytical Services Agency
Defence Aviation Repair Agency	Defence Bills Agency
Defence Clothing and Textiles Agency	Defence Estates Agency
Defence Export Services Organisation	Defence Evaluation and Research Agency
Defence Logistics Organisation	Defence Procurement Agency
Defence Scientific and Technical Laboratory	Defence Scientific Advisory Council
Directorate of Safety, Environment and Fire Policy	Disposal Services Agency
Duke of York's Royal Military School	UK Hydrographic Office
International Visits Control Office	The Met Office
Ministry of Defence Police	Royal College of Defence Studies
Strategic and Combat Studies Institute	War Pensions Agency
Warship Support Agency	Driving Standards Agency
Driver and Vehicle Licensing Agency	Fire Service College
Highways Agency	Planning Inspectorate
Queen Elizabeth II Conference Centre	Rent Service
Vehicle Certification Agency	Vehicle Inspectorate
Forest Research	Employment Service
British Association for Central and Eastern Europe	British Council
Great Britain China Centre	Westminster Foundation for Democracy
Medical Devices Agency	Medicines Control Agency
NHS Estates	NHS Pensions Agency
NHS Purchasing and Supply Agency	Criminal Records Bureau
Forensic Science Service	Prison Service Agency
Passport Agency	The Court Service
Public Guardianship Office	Public Record Office

HM Land Registry
 Central Rail Users Consultative Committee
 Agency for Working Age People
 Child Support Agency
 Appeals Service
 Insolvency Service
 Radiocommunications Agency
 British Trade International Gateway
 Tailored Interactive Guidance on Employment Rights
 British Shipbuilders
 UK Atomic Energy Agency
 Royal Mint
 National Statistics

Northern Ireland Court Service
 Regional Rail Users Consultative Committee
 Pensions Service
 War Pensions Agency
 Companies House
 Patent Office
 Small Business Service
 Consumer Gateway
 Biotechnology and Biological Services Research Council
 Council for Science and Technology
 Valuation Office
 Debt Management Office
 National Savings

Other key central government organisations, nationalised industries, public corporations and regional development agencies

Covent Garden Market Authority
 British Broadcasting Corporation
 Independent Television Commission
 Bank of England
 British Railways Board
 British Nuclear Fuel
 Regional Development Agency - East Midland
 Regional Development Agency - One North East
 Regional Development Agency - South West
 Regional Development Agency - Yorkshire Forward
 Regional Development - South West of England
 Government Information and Communication Unit
 HM Stationery Office
 Civil Service Gateway
 Food Standards Agency
 Low Pay Commission
 MI6 The Secret Intelligence Service

British Waterways
 Radio Authority
 British Waterways
 Civil Aviation Authority
 British Coal Corporation
 Post Office - Consignia
 Regional Development Agency - East of England
 Regional Development Agency - North West
 Regional Development Agency - Advantage West Midlands
 Regional Development Agency - South East
 Greater London Authority (GLA)
 Office of the E-Envoy
 Centre for Management and Policy Studies
 Office of Government Commerce
 Forestry Commission
 MI5 The Security Service

Executive Bodies (NDPB)

Agricultural Wages Board for England and Wales
 Apple and Pear Research Council
 Countryside Agency
 Environment Agency
 Home Grown Cereals Authority
 Horticultural Research International
 Meat and Livestock Commission
 National Forest Company
 Regional Flood Defence Committees
 Sea Fish Industry Authority
 Wine Standards Board of the Vintners Company
 British Library
 British Museum
 Churches Conservation Trust
 Council for Museums, Libraries and Archives
 English Heritage
 Football Licensing Authority
 Horniman Museum and Gardens
 Historical Palaces Agency

Agricultural Wages Committee
 British Potato Council
 English Nature
 Food from Britain
 Horticultural Development Council
 Joint Nature Conservation Committee
 Milk Development Council
 National Parks Authority
 Royal Botanic Gardens, Kew
 UK Register of Organic Food Standards
 Arts Council of England
 British Tourist Authority
 Broadcasting Standards Commission
 Commission for Architecture and Built Environment
 Crafts Council
 English Tourism Council
 Heritage Lottery Fund
 Imperial War Museum
 Library and Information Commission

London Film Commission	Museum of Science and Industry in Manchester
Museum of London	National Army Museum
National Endowment for Science, Technology and the Arts	Community Fund
National Lottery Commission	National Museums and Galleries on Merseyside
National Portrait Gallery	National Gallery
National Manuscripts Conservation Trust	National Maritime Museum
New Opportunities Fund	Public Lending Right
Royal National Institute for the Blind (RNIB)	Royal Fine Arts Commission
Royal Armouries	Historical Manuscripts Commission
Royal Geographical Society	Sir John Soane's Museum
Sport England	Tate Galleries
UK Sport	UK Sports Council
Victoria and Albert Museum	Fleet Air Arm Museum
Oil and Pipelines Agency	Royal Marines Museum
Royal Naval Museum	Royal Navy Submarine Museum
Advisory Committee on Conscientious Objectors	Animal Welfare Advisory Committee
Armed Forces Pay Review Body	Dartmoor Steering Group
Defence Nuclear Safety Committee	Independent Board of Visitors for Military Corrective Training Centres
National Employers' Liaison Committee	Review Board of Government Contracts
Royal Military College of Science Advisory Council	Audit Commission
Commission for New Towns	English Partnerships
Lighthouse 1: Trinity House	Health & Safety Commission
Health & Safety Executive	Housing Corporation
London Pensions Fund Authority	London Regional Passengers Committee
Lighthouse 2: Northern Lighthouse Board	Standards Board for England
Strategic Rail Authority	Trust Ports Authority
The National Parks Authority	Electoral Commission
British Educational Communications & Technology Agency	Construction Industry Training Board
Engineering Construction Industry Training Board	Equal Opportunities Commission
Learning and Skills Council	Higher Education Funding Council
Investors in People UK	National College for School Leadership
Qualifications and Curriculum Authority	Remploy Ltd
Student Loan Company	Teacher Training Agency
Commission for Health Improvement	Dental Practice Board
The English National Board for Nursing, Midwifery, and Social Work	Public Health Laboratory Service
National Biological Standards Board	Human Fertilisation and Embryology Authority
National Radiological Protection Board	Medical Practices Committee
Dental Vocational Training Authority	Family Health Services Appeal Authority
Health Development Agency	High Security Hospital Authority
Human Genetics Commission	Medical Research Council
Mental Health Act Commission	Microbiological Research Authority
National Blood Authority	National Institute for Clinical Excellence
NHS Information Authority	NHS Litigation Authority
NHS Supplies Authority	NHS Logistics Authority
Prescription Pricing Authority	UK Transplant Support Service Authority
Alcohol Education and Research Council	Charity Commission
Commission for Racial Equality	Community Development Foundation
Criminal Cases Review Commission	Criminal Injuries Compensation Authority
Gaming Board for Great Britain	Horse Race Betting Levy Board
Horse Race Totaliser Board	National Crime Intelligence Service
National Infrastructure Security Co-ordination Centre	Office of Information Commissioner
Office of the Immigration Services Commissioner	Parole Board
Police Complaints Authority	Police Information Technology Organisation
Youth Justice Board	Commonwealth Scholarship Commission in the UK
Crown Agents Holding and Realisation Board	Civil Justice Council
Law Commission	Legal Ombudsman in England and Wales

HM Magistrates Court Service Inspectorate	Council on Tribunals
Legal Services Commission	Public Trust Office
Office of Judge Advocates General	The Official Solicitor's Office
Judicial Studies Board	Equality Commission of Northern Ireland
Juvenile Justice Board	Northern Ireland Human Rights Commission
Police Authority for Northern Ireland	Police Ombudsman
Probation Board for Northern Ireland	Occupational Pensions Regulatory Authority
Pensions Compensation Board	General Social Care Council
Independent Tribunal Service	Independent Review Service for Social Fund
Industrial Injuries Advisory Board	Office of Pensions Ombudsman
Social Security Advisory Committee	Millennium Commission
Advisory, Conciliation and Arbitration Service	Biotechnology and Biological Research Council
British Antarctic Survey	British Hallmarking Council
British National Space Centre	Coal Authority
Competition Commission	Council for the Central Laboratory of the Research Councils
Design Council	Economic and Social Research Council
Engineering and Physical Sciences Research Council	Export Control Office
Invest UK	Medical Research Council
National Consumer Council	National Physical Laboratory
National Research Development Corporation	National Environment Research Council
National Weights and Measures Laboratory	Particle Physics and Astronomy Research Council
Postal Services Commission	Post Office Users National Council
Simpler Trade Procedures Board	UK Atomic Energy Authority
Welsh Consumer Council	Policyholders Protection Board
Financial Services Authority	Office of Gas and Electricity Markets
Office of Fair Trading	Office of Telecommunications
Office of the National Lottery	Office of the Rail Regulator
Office of Water Services	Office for Standards in Education
Government Purchasing Agency	Communications Electronic Security Group
GCHQ	Security Service
Liverpool Housing Action Trust	Castle Vale Housing Action Trust
Stonebridge Housing Action Trust	Tower Hamlets Housing Action Trust
Waltham Forest Housing Action Trust	Northumberland National Park Authority
Lake District National Park Authority	Yorkshire Dales National Park Authority
North York Moors National Park Authority	Peak District National Parks Authority
Snowdonia National Park Authority	Broads Authority
Brecon Beacons National Park Authority	Pembrokeshire Coast National Park Authority
Dartmoor National Park Authority	Exmoor National Park Authority
New Forest Committee	Lake District National Park Authority
Exmoor National Park Authority	North Hull Housing Action Trust
Royal Air Force Museum (Hendon)	Royal Air Force Museum (Cosford)

Glossary

Back office system (or back end): Computer infrastructure within an organisation, which supports core business process applications but has no external interface with customers (unlike a Web site or portal).

Branding: The development of a strong commercial identity, which conveys a strongly positive image of a product or service to customers.

Broadband: A transmission medium that can carry signals from multiple independent network carriers on a single cable, by establishing different bandwidth channels. Broadband technology is used to transmit data, voice, and video over long distances and, because many different frequencies operate concurrently, more information can be transmitted more quickly than conventional telephone lines (in the same way that more traffic can flow on a motorway than a single lane road).

Brochureware: Hypertext versions of previously published information, often quite literally HTML or PDF versions of agency brochures.

Channel rivalry: A situation where an organisation provides a new means or channel of communication eroding the cost effectiveness of an existing channel.

Click-throughs: A visitor 'clicks-through' a Web site when she opens a Web link or banner advertisement there transferring her to another site.

Content-providers: People or sections within an organisation who contribute materials (in the form of HTML pages, forms, documents, graphics files or PDF files) to the organisation's Web site or Intranet, controlled by a central unit.

Digital certificate: An electronic device which is issued by a third party to attest to the authenticity of the issuer of a document. The combination of encryption techniques and the use of an independent third party prevents fraudulent documents from being accepted as genuine and facilitates secure transactions between, for example, a government agency and citizens using its services or a bank and its customers.

Directory service: A guide showing how to contact individuals or sections within an organisation via e-mail or the Web.

Disintermediation effect: The elimination of intermediary organisations in transactions between two or more stakeholders through the introduction of more direct forms of communication, such as the Internet.

Drivers: Changes in tastes, trends, economic variables and single or repeated events which all act as stimuli inducing a system or organisation to develop in a particular direction.

E-commerce: Selling products or services to customers using the Internet as the main means for communication and accomplishing transactions.

E-mail: A service that enables people to exchange documents or messages in electronic form. E-mail systems now mainly operate via the Internet.

Electronic Data Interchange (EDI): The transfer of structured data, by agreed message standards from computer to computer by electronic means.

Electronic Document and Records Management (EDRM): A system adopted by organisations for storing all their information and documents in a secure electronic form, using a developed electronic indexing and filing system which is easily searchable. EDRM does away with paper filing registries and facilitates the widest access to documents, files and information across an organisation.

Electronic forms: Forms available on a Web site or Intranet, which a user can complete on the screen and then either print off and post back, or submit on-line.

Electronic payments: Transfers of money made electronically from an organisation's bank account directly to an individual user's bank account.

Electronic transactions: In ordinary language, dealings between people and organisations (such as finding out a piece of information, filling out a form, or making a payment) that take place using the Internet and the Web. Within British government circles alone, 'electronic' transactions are still often more broadly defined to include in addition to Web dealings, systematic dealings by citizens with Web-enabled call centres, electronic data interchange, electronic payments, use of electronic 'kiosks' and a number of other means of contact.

Encryption: A mechanism for coding or 'scrambling' electronic documents or messages, to enable them to travel between networks securely without risk of them being read by third parties.

External Web site: A collection of Web pages stored on a single server and published on the Internet by a single organisation or individual. The pages can be accessed by outside users without any special authorisation.

Extranet: A system for regular communication between an organisation and its main suppliers or implementation partners. Typically extranets are closed private computer networks that function at least partially over the public connections of the Internet, using encryption to ensure privacy. They are designed to give authorised outsiders access to an organisation's Intranet from outside its network by direct telephone dial-up from a PC or by coming in from the Web through a firewall.

Front office system (or front-end): Computer infrastructure in an organisation designed specifically as an interface for communicating with external customers, such as Web sites or portals.

Government Secure Intranet (GSI): A secure intranet linking together UK government departments and other public agencies, which also provides controlled access to the Internet, inaugurated in February 1998. GSI offers inter-agency e-mail without need for encryption for material up to and including 'Restricted' status, e-mail to the Internet, browser facilities, file transfer and directory services.

Hit: A single request from a PC with a browser to an organisation's Web server for an element of a Web page. Because one page may contain several or many elements (such as text, frames, and graphics files), the relevant server will often register multiple hits in response to single click or page request. Recording the number of hits has historically been a common way of measuring traffic on Web sites, but it is not now a very useful measure. Hit numbers often increase just because page designs involve more discrete elements.

Home page: The first page of an organisation's Web site which users see, and the central page for directing people to different parts of the site.

HTML: HyperText Markup Language, the main language used to create Web documents.

Information and communication technologies (ICT): The application of computer science to ways of organising and storing information and facilitating its transfer amongst users.

Interaction: A two-way exchange of information or transaction.

Interactivity: The extent to which someone can provide information to an organisation's Web site, as well as receiving information from it.

Internet service provider (ISP): A company which provides connections to the Internet and other related services to customers, either for a regular fee or as a free service financed by advertising or a small additional phone cost.

Internet: A worldwide collection of computer networks sharing common standards and protocols of communication, in particular a common addressing scheme. The World Wide Web is now the main Internet application, but there are other facilities on it too, such as file transfer facilities and user groups not operating via the Web.

Intranets: A network linking computers within a given organisation, which is closed to outsiders. Its structure and user interface are based on those of the Internet.

Knowledge-management: Techniques for maximising the ability of people within an organisation to find the critical information they need for intelligent decision-making in the most speedy, reliable and cost-effective ways. In the current period most knowledge-management focuses on providing improved ICTs and better training for staff.

Legacy systems: Existing mainframes and networks, and the software based on them, which were developed within an organisation before the use of Web-based technologies became widespread.

Link: A graphic or piece of text on a Web page which refers to another Web page on another Web site. When the link is 'clicked', that page will be retrieved and displayed.

'Look and feel': The general appearance of an organisation's Web site or intranet. A standard 'look and feel' helps users to be aware of which site they are in and gives them assurance that its features will work in a standardised way.

Metadata: Secondary data attached (or 'tagged') to electronic documents stored by an organisation, denoting specific information about the document such as its author, subject, contents, and date. By tagging electronic documents in this way, information is made more easily searchable according to specific categories.

Page requests: A page request (or 'page impression') occurs when a user's browser shows her a complete page from a Web site. Page requests provide a better measure of site traffic than recording hits.

PDF: A format of document that allows a file to be downloaded from the Web, using Adobe's popular Acrobat viewer, which can also be downloaded free.

Peer-to-peer technologies (P2P): Technologies that allow computers to communicate directly with each other in a 'virtual network' rather than having to go through central servers as in conventional networks.

Portal: Any well-used gateway to the Internet, especially those sites designed to serve as a 'front door' and thus the first page that users see when accessing the Web. Portals typically provide large catalogues of other sites, powerful search engines for locating information, and e-mail facilities or other attractive Web services.

Private Finance Initiative: A specific form of procurement agreement by contract between public sector organisations and private firms usually covering design, build and provision/maintenance of specified infrastructure or services over a long period of time (usually between 8-20 years). By borrowing capital from private lenders, firms take on the financial risk of a project during the design, build, and roll-out stage (for example, a new computer system, hospital, or prison), and subsequently lease out services to the public sector in return for contractually specified unit charge payments over the life of the contract.

Public Service Agreements (PSAs): Set out department's objectives for public services with measurable targets for their delivery.

Service Delivery Agreements (SDAs): Set out how each department will meet its PSA targets and the changes needed to deliver the targets.

Search engine: A database of Web page extracts that can be queried to find references to a person, subject or topic across the World Wide Web as a whole. Many Web sites and intranets provide similar but smaller search facilities for finding material on their site alone.

Server: A computer or network of computers that makes services available on a network (for example, access to a Web site).

Smart card: Transactional electronic card technology capable of storing and updating authentication or account information about the user.

SME: Small and medium sized companies, those with a taxable turnover of less than £600,000 per annum.

Take-up: The extent to which electronic government services are available on line *and* are currently used by citizens or customers.

Third generation mobile phones (3G): Mobile telephones giving users access to the Internet through convergence of voice and data communication.

Transactions: A transaction with an agency is an interaction with it. This interaction could be the receipt or dissemination of information, the completion or submission of a form, the sending of a payment, the inspection of an account, or more complicated sets of dealings.

URL: Universal Resource Locator. A unique identifier of a page which is the standard address of files on the Web (for example: <http://www.ukonline.gov.uk>). The components of an URL are: protocol // domain:port / path / filename.

User session: A single visit by a user to a particular Web site, which may be a repeat visit or a first-time visit. This measure provides the most useful and reliable way of gauging the volume of traffic to a site.

VAT: Value Added Tax - a tax levied on the difference between the cost of materials and the selling price of a commodity or service.

Version control problem: A mismatch which occurs when more than one version of a document is in circulation simultaneously.

Visit: Any occasion when a person clicks on to a given Web site or intranet. 'Unique visits' refer to distinct persons coming to the site: here first-time users are recorded while repeat users (those returning to the site for a second or subsequent time) are not.

The Web: the World Wide Web, see below.

Web-enabling: The adaptation of existing ICTs so that at some stage Web-based technologies are employed - for example, creating a channel of communication with users or accessing information held on legacy systems using a browser.

Web page: A single document on the Word Wide Web.

Web site: A collection of Web pages located on a common server and published on the Internet by a single organisation or individual. The pages can be accessed by outside users without any special authorisation.

World Wide Web: The complete ensemble of graphics and text documents published on Web sites and inter-connected via the Internet through clickable 'hypertext' links.

XML: A schema which defines the data and data format that can appear in a web-based form.

Zero-touch process: An administrative operation capable of being performed without a human operator's involvement, by means of automatic systems and checks.

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List of Web sites

(All Web site addresses formally start with http:// but virtually all modern browsers or search engines will find the addresses below without this complication)

Audit Commission	www.audit-commission.gov.uk
Australian Government Portal	www.gov.au
Australian Commonwealth Government Portal	www.fed.gov.au
British Chambers of Commerce	www.britishchambers.org.uk
Cabinet Office	www.cabinet-office.gov.uk
Direct Access Government for Business	www.dag-business.gov.uk
Government Gateway	www.gateway.gov.uk
Government Information and Communication Service	www.gics.gov.uk
Government Security and Interoperability Site	www.govtalk.gov.uk
HM Customs and Excise	www.customs.gov.uk or www.hmce.gov.uk
Improvement and Development Agency	www.idea.gov.uk/menu/index.html
Information Commissioner	www.dataprotection.gov.uk
Information Service Providers Association	www.ispa.org.uk
Inland Revenue	www.inlandrevenue.gov.uk
Invest to Save Budget site	www.isb.gov.uk
Local Government Association	www.lga.gov.uk
Local Government DTLR	www.local-regions.dtlr.gov.uk
Local Government Pathfinders	www.lgolpathfinder.gov.uk
National Audit Office	www.nao.gov.uk
Number 10 Downing Street site	www.number-10.gov.uk
Office of National Statistics	www.ons.gov.uk
Office of the E-Envoy	www.e-envoy.gov.uk
Oftel	www.oftel.gov.uk
Promoting Electronic Government site	www.peg.org.uk
Public Accounts Committee	www.parliament.uk/commons/selcom/pachome.htm
Society for Information Technology Management	www.socitm.gov.uk
UK Online for Business	www.ukonlineforbusiness.gov.uk
UK Online government portal	www.ukonline.gov.uk
UK Parliament Site	www.parliament.uk
Up My Street Local Information site	www.upmystreet.com
US Federal Government Portal	www.firstgov.gov

Reports

Reports by the Comptroller and Auditor General, Session 2001-2002

The Comptroller and Auditor General has to date, in Session 2001-2002, presented to the House of Commons the following reports under Section 9 of the National Audit Act, 1983:

Agriculture

Agricultural fraud: The case of Joseph BowdenHC 615

Better Public Services

Better Public Services through e-GovernmentHC 704-I
Case Studies in Support to

Better Public Services through e-governmentHC 704-II

Academic Article in support of

Better Public Services through e-governmentHC 704-III

Government on the Web IIHC 764

Culture, Media and Sport

Winding-up The New Millennium ExperienceHC 749
Company Limited

Defence

Non-competitive procurement in theHC 290
Ministry of Defence

Major Projects Report 2001HC 330

Ministry of Defence: The Joint ServicesHC 537

Command and Staff College

Ministry of Defence: Combat IdentificationHC 661

Implementation of Integrated Project TeamsHC 671

Education

Widening participation in higher educationHC 485
in England

Improving student achievement inHC 486
English higher education

Employment

The New Deal for Young PeopleHC 639

Environment

Policy Development: Improving Air QualityHC 232

The operation and wind up of theHC 640
Teesside Development Corporation

Construction of Portcullis House, the newHC 750
Parliamentary building

General Topics

Modern Policy-Making: Ensuring PoliciesHC 289
Deliver Value for Money

Joining Up to Improve Public ServicesHC 383

Financial Auditing and ReportingHC 335-XIX
2000-2001 General Report of the
Comptroller and Auditor General

HM Customs and Excise

Losses to the Revenue from FraudsHC 178
on Alcohol Duty

The Misuse and Smuggling of Hydrocarbon OilsHC 614

Inland Revenue

Income Tax Self AssessmentHC 56

NIRS 2: Contract extensionHC 355

e-RevenueHC 492

Law, Order and Central

Giving confidently: The role of theHC 234
Charity Commission in regulating charities

Reducing Prisoner ReoffendingHC 548

Collection of fines and other financial penalties
in the criminal justice systemHC 672

National Health Service

Inpatient and Outpatient waiting in the NHSHC 221

Inappropriate adjustments to NHS waiting listsHC 452

NHSDirect in EnglandHC 505

The Management of Surplus PropertyHC 687
by Trusts in the NHS in England

Overseas affairs

Performance Management - Helping to ReduceHC 739
World Poverty

Privatisation/ Asset Sales/ Commercialisation

The Auction of Radio Spectrum for theHC 233
Third Generation of Mobile Telephones

Delivering the Commercialisation ofHC 580
Public Sector Science

Public Private Partnerships (PPP)

Innovation in PFI Financing:HC 328
The Treasury Building Project

Managing the Relationship to Secure aHC 375
Successful Partnership in PFI Projects

AirwaveHC 730

Redevelopment of MOD main buildingHC 748

Regulation

Better Regulation: Making Good Use ofHC 329
Regulatory Impact Assessments

Opening the Post: Postcomm and postal servicesHC 521
- the risks and opportunities

Pipes and WiresHC 723

Transport

Royal travel by air and railHC 25

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