

UK online

Annual Report

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Summary

UK online - success for all in the knowledge economy

Information and communication technologies are transforming economies and societies around the world. The UK has the capability to be a global leader in this new knowledge economy, bringing wealth and new opportunity for all of us.

That is why the Government, industry, the voluntary sector, trades unions and consumer groups have come together to deliver UK online: a major initiative to ensure that everyone in the UK who wants it will have access to the Internet, and to make the UK one of the world's leading knowledge economies.

This - the first in a series of annual UK online reports - sets out our plans for making it happen. Both by acting now, and by laying out a detailed strategy for the future.

UK online: acting now...

Every day, more and more people and businesses around the country are getting online. The Government is investing £3.8 billion to help, of which £2 billion is new money following the Government's spending review in July 2000. New services will be added later, but the initial core UK online services are:

- **UK online centres** - 600 of these will be set up by March 2001, based wherever best suits the needs of local people. They will provide people with access to new technologies, and help to develop the skills to use them. By the end of 2002, all 4,300 of the UK's public libraries will be online, funded through the National Lottery New Opportunities Fund. Call Learndirect helpline on 0800 100 900.



- **UK online for business** helping people succeed in online business by offering expert, impartial, jargon-free help and support, available face to face, online and by telephone. Call the UK online for business info line on 0845 715 2000.



“If you talk to UK online for business you’ll be able to look at all the implications of starting a website and therefore get it right when you do it. Since we launched our site, sales are up 20% and still rising.” Drew Patterson, Marketing Director of Skin Culture Ltd.

- **UK online government services.** Already you can access many government services online. Later this year, the UK online citizen portal will offer a single online point of entry to government information and services, 24 hours a day, seven days a week. New services will be added to the UK online citizen portal as the Government works towards meeting its commitment of delivering all of its services electronically by 2005.



.... and planning for the future

In September 1999 the Prime Minister published a strategy for e-commerce success in the UK: ‘e-commerce@its.best.uk’. Government, industry and consumer groups have worked hard over the last year to implement the 60 commitments in that report,¹ and the benefits are being seen in tangible results such as the new services described above. But to succeed, the UK must continually refresh its strategy in the light of change. The UK online annual report therefore:

- benchmarks the UK’s performance against other major countries (see box 1);
- sets out an updated strategy for success, with 25 commitments (see box 2) aimed at achieving the UK online strategic goals illustrated below.

Many of the actions set out in this report relate to matters for which the devolved administrations in Scotland, Wales and Northern Ireland are responsible for setting targets and developing and implementing initiatives. Further details of how these are being tackled by the devolved administrations are included in rest of this report.



The full detail of the UK online strategy is available at www.e-envoy.gov.uk/report. We will publish monthly reports on progress in implementing the strategy at the same address.

- Fourfold increase in online spending (to £2 billion).

Box 1: The UK in the online world

In September 1999, *e-commerce@its.best.uk* reported that the UK was the leading e-commerce player among the major European countries, but that we lagged behind the United States, Canada, Australia and Scandinavia on key measures of business and consumer e-commerce use. Since then, the UK has seen strong growth, narrowing the gap with the G7 leaders in most areas - and moving into a leading position on some, but not all, measures of Internet access costs.

Significant developments have been:

- **For Individuals**

- Number of households on the Internet up from 13% to 25% in one year.
- One third of the UK population is now online, more than any other major European country. A 50% increase since September 1999 has brought us closer to the USA, which is still ahead with almost 50% of the population online.

- **For Businesses**

- 90% of UK employees now work in businesses which are connected to the Internet - on a par with the US at 93%.
- 33% work in UK businesses which engage in online financial transactions with customers or suppliers - a higher proportion than the USA, Sweden, Germany, France, Japan or Canada.

- **Spending online**

- Fourfold increase in online spending (to £2 billion).
- UK now largest e-commerce market in Europe.

- **Government online**

- 33% of Government services now available online.

- **Cost of Internet access**

- UK cheapest place in the world for off-peak Internet access.
- UK peak-time rates are now below the OECD average - very intensive Internet users pay less than almost anywhere in the world.

- **IT, electronics and communications (ITEC) sectors**

- 8% of UK GDP, and one third of GDP growth.
- Growing faster than the ITEC sectors in Germany France and Italy, but behind the USA.

For the full benchmarking analysis, see www.e-envoy.gov.uk/report. We will be updating this with the most recent research results on a rolling basis at the e-commerce StatMap at www.e-envoy.gov.uk.

Box 2: The UK online strategy**Modern markets****UK online: the Government's commitments****Detailed actions**

1. Drive forward competition in Internet access markets

Consult on competitiveness of dial-up access to the Internet
 Unbundle local loop
 Consult on competition for leased lines
 Promote rapid uptake of digital interactive TV
 Ensure competitive roll-out of 3G mobile telephones

2. Establish a new framework for regulation of the converging markets of telecommunications and broadcasting

Publish White Paper

3. Identify and remove all remaining regulatory and legal barriers to electronic ways of working in the UK

Remove 70% of identified barriers by end 2001, and 100% by end 2002

4. Take action with international partners to develop an effective, light-touch global framework for e-commerce

Implement the e-Europe action plan
 Promote adoption internationally of: 'country of origin' principle; co-regulatory approach; alternative dispute resolution mechanisms for e-commerce internationally
 Press for transparent and liberal e-commerce framework
 Take international lead in updating tax regime
 Promote information security internationally
 Publish White Paper addressing international digital divide

Confident people**UK online: the Government's commitments****Detailed actions**

5. Implement a package of measures to improve access to the Internet at home, at work and in the community

At home:
 Encourage employers to provide PCs and Internet access for home use
 Encourage low-cost leasing schemes for public sector employees
 Low cost recycled PCs for 100,000 low-income families
 At work:
 Promote benefits to employers of having all employees with Internet access
 Government departments to address benefits of access for all staff
 In the community:
 Establish network of UK online centres
 All public libraries to offer Internet access with trained staff to offer support
 Pilot new initiatives in post offices to help people access and use the Internet
 Pilot access for disadvantaged communities

<p>6. Embed information and communication technology (ICT) skills in the education system and throughout lifelong learning</p>	<p>Education system:</p> <ul style="list-style-type: none"> Improve ICT infrastructure in schools, further and higher education Improve educators' ICT skills Stimulate high-quality online educational content Introduce ICT work placement programme for 16+ students <p>Lifelong learning:</p> <ul style="list-style-type: none"> Invest £84m in 2000-01 through Ufi Offer free ICT 'taster' courses to the unemployed Offer 80% discounts for computer literacy training Offer high-quality lifelong learning content
<p>7. Work with industry to ensure a safe and secure environment for e-commerce and to help people trust the Internet</p>	<p>Protect children:</p> <ul style="list-style-type: none"> Publicise best practice self-protection tips <p>Safeguard online consumers:</p> <ul style="list-style-type: none"> Work with industry to promote the TrustUK hallmark for e-commerce web sites Draw up 'Consumer Trust' standard for use online by government departments <p>Reduce online fraud:</p> <ul style="list-style-type: none"> Encourage credit card industry to establish online address verification system Promote tScheme <p>Combat online criminal activity:</p> <ul style="list-style-type: none"> Create advisory body on implementation of ISP interception arrangements Ensure industry fully consulted on fair contribution to interception costs Establish a National Hi-tech Crime Unit <p>Protect online security:</p> <ul style="list-style-type: none"> Expand DTI's promotion to business of information security best practice (BS 7799) Put information security at the heart of e-government Ensure protection against attacks on critical national information infrastructure
<p>8. Help increase people's motivation to access the Internet by driving up the amount and quality of social content</p>	<ul style="list-style-type: none"> Promote local online content Explore new ways to stimulate development and availability of high-quality online cultural content

Successful businesses

UK online: the Government's commitments	Detailed actions
<p>9. Invest an additional £25m over three years to help small businesses exploit the potential of ICT</p>	<ul style="list-style-type: none"> Boost marketing of UK online for business Additional advisers for UK online for business front-line Web-enabled call centre with 'virtual expert' support system Raise awareness of fiscal incentives for small businesses

10. Support industry in improving competitiveness through e-business technologies and processes	Sponsor and disseminate e-business research and analysis: Publish overview of sectoral impact of e-commerce Facilitate rapid transfer of e-business expertise between businesses and between sectors
Government online	
UK online: the Government's commitments	Detailed actions
11. Get all government services online	Improve the customer front-end Join up the back-office systems Set standards Improve the organisational capacity of government to deliver electronic services Champion private and voluntary sector involvement in the delivery of electronic government services
12. Drive forward towards e-procurement and e-tendering targets	Develop coherence and standardisation in e-procurement Provide advice and guidance on e-procurement systems, tools and techniques Innovative pilot e-procurement projects 50% e-tendering by 2001 100% e-tendering by 2002
13. Implement a cross-government knowledge management system	Develop four applications Develop departmental interactivity Develop change management Embed Knowledge Network in operational practices
14. Drive forward citizen participation in democracy as part of the UK online citizen portal	Liaise with Home Office and others on online voter registration and online postal vote application Participation by devolved administrations and local authorities
15. Drive forward the use of authentication services both for e-government services and within government itself	Work with Trusted Service Providers to ensure interoperability with government Identify suitable security and authentication technologies in the marketplace to support government Electronic Service Delivery targets Exploit and develop government use of Public Key Infrastructure (PKI) Define relationship between government PKI and the tScheme

World class supply	
UK online: the Government's commitments	Detailed actions
16. Implement a strategy to make the UK the number one country for the supply of high-level ITEC skills, taking account of the recommendations of 'Skills for the Information Age'	Invest at least £8m to drive forward the ITEC skills strategy
17. Invest in leading-edge e-science	Ensure businesses maximise benefits from investments in science-based infrastructure
18. Facilitate ITEC knowledge transfer	Incentivise universities to commercialise ITEC research Facilitate links between the ITEC sector, universities and other sectors of the economy Review actions needed to facilitate cluster development in the ITEC sector
19. Implement an action plan for growth for the digital content sector, including through liberalised access to government information	Work with industry to implement the action plan, reviewing progress with the Digital Content Forum Introduce marginal cost pricing for most basic government information, other than Trading Funds Introduction of class licensing by HMSO Public information available in digital form
20. Work with industry to develop a UK strategy for m-commerce	Develop a strategy for secure, innovative introduction of m-commerce Host 3G mobile conference
E-leadership	
UK online: the Government's commitments	Detailed actions
21. Establish new mechanisms to coordinate access and skills initiatives at national, regional and local level	Michael Wills, Parliamentary Under-Secretary of State, DfEE, to take lead in coordinating community-based IT access and skills initiatives at national, regional and local level, working with e-Minister, e-Envoy and DCMS Ministers Government Offices in England and Wales to coordinate implementation of these initiatives at local and regional level, reporting on progress to the Parliamentary Under-Secretary of State every six months
22. Further develop and implement the UK online campaign	Work with private and voluntary sectors, consumer groups and trade unions to develop the national campaign to get the UK online Hold a review of the UK online campaign's impact
Measuring success	
UK online: the Government's commitments	Detailed actions
23. Secure international agreement to a common framework for measuring e-commerce	Complete agreement on a common definition Agree core set of common questions

<p>24. Improve e-commerce measurement in the UK</p>	<p>Further work required in the following areas:</p> <ul style="list-style-type: none">individual usebusiness usegovernment useITEC sectorstelecoms/Internet access costs <p>Work with Information Age Partnership to identify global benchmarks for measuring the UK's success</p>
<p>25. Implement a programme to evaluate the net economic impact of e-commerce</p>	<p>First economic impact study undertaken</p>

Introduction

Electronic commerce and the Internet are transforming economies and societies across the world. The Government is committed to giving every individual, business and community in the UK the opportunity to participate fully in the benefits flowing from these changes - in short, to getting the UK online.

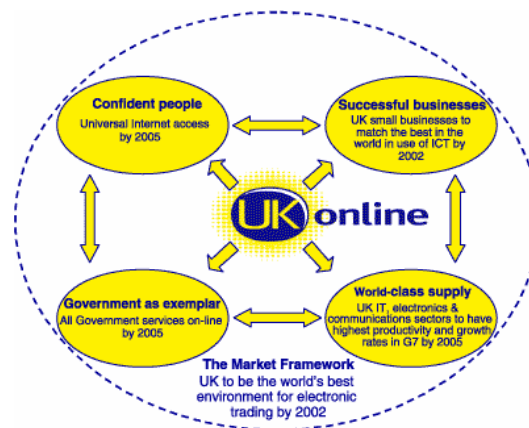
This is the first annual report for UK online. It sets out:

- the UK online goals;
- an analysis of where the UK now stands;
- our agenda for change, highlighting the key actions which government and industry need to take in order to meet our UK online goals; and
- our strategy for measuring UK success.

Overseen by Patricia Hewitt, the e-Minister, and Alex Allan, the e-Envoy, this report has been developed in close conjunction with partners from within government and industry.

UK online goals

Figure 1: UK online strategic goals



As summarised in figure 1, the Government's goals for UK online cover the five areas in which the UK needs to excel if it is to lead in the new knowledge-driven economy:

- **Confident people:** people who have the access they need to information and communication technologies, along with the trust, skills and motivation to use them.
- **Successful businesses:** companies across the economy exploiting information and communication technologies to win business advantage.
- **Government as exemplar:** leading-edge use of new technology in the public sector.
- **World class supply sectors:** IT, electronics and communications supply sectors which are innovative, dynamic and growing.
- **Modern markets:** a market framework which both empowers consumers (individuals, in business and in government) and encourages competition and innovation from the industries which serve them.

The policy background to these goals is set out below.

Policy background to the UK online goals

In 1998, the Pre-Budget Report and the White Paper *Our Competitive Future: Building the Knowledge Driven Economy* set out the Government's strategy for closing the productivity gap between the UK and other leading economies. As a key part of this, the White Paper set

out the aim of achieving leadership for the UK in the global digital economy. It committed the Government to:

- developing the UK as the best environment in the world for electronic trading by 2002; and
- bringing UK small businesses up to the level of the best in the G7 in exploitation of information and communication technologies.

Following publication of the White Paper in December 1998, the Prime Minister asked the Performance and Innovation Unit (PIU) at the Cabinet Office to lead a cross-government project to develop a detailed strategy to achieve that leadership.

The resulting report - *e-commerce@its.best.uk* - was published by the Prime Minister in September 1999. This contained 60 separate recommendations for action, focusing on the measures required to build the market foundation for e-commerce, and to tackle the key barriers to e-commerce uptake - lack of understanding, lack of access and lack of trust. The Prime Minister made it clear that all 60 recommendations had been accepted in full by the Government.

In addition, in March 2000 the Prime Minister committed the Government to:

- getting all government services online by 2005;² and
- ensuring that everyone who wanted it had access to the Internet by 2005.

Table of UK online goals

Section	Goals
Modern markets: getting the market framework right	To develop the UK as the world's best environment for electronic trading by 2002
Confident people	To ensure that everyone in the UK who wants it will have access to the Internet by 2005
Successful businesses	1 million SMEs actually trading online The UK's smaller businesses (under 100 employees) to have reached the level of the international best in use of e-business A higher proportion of business-to-business and business-to-consumer transactions taking place electronically in the UK than in any other G7 country
Getting government online	100% of government services are available online by 2005 90% of low value goods and services (by volume) are purchased electronically by March 2001 100% of procurement by civil central government is tendered electronically by 2002
World class supply	To help the UK-based IT, electronics, communications and content sectors contribute to improving the UK's competitiveness by narrowing the productivity gap with the USA, France, Germany and Japan over the economic cycle
Leadership and coordination	To provide the leadership and coordination in government needed to make the UK a leading Internet-enabled knowledge economy
Measuring success	To ensure that government has the information it needs to develop its policies on making the UK the best place in the world for e-commerce, and to monitor progress towards that objective

Where does the UK stand now?

Summary

In September 1999, *e-commerce@its.best.uk* reported that the UK was the leading e-commerce player among the major European countries, but that we lagged behind the United States, Canada, Australia and Scandinavia on key measures of business and consumer e-commerce use.

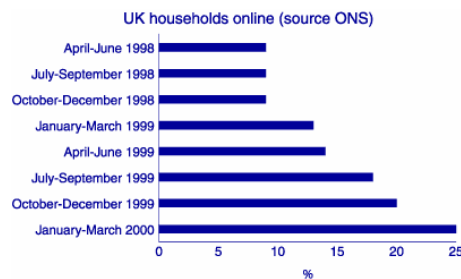
Since then, the UK has seen strong growth, narrowing the gap with the G7 leaders in most areas - and moving into a leading position on some, but not all, measures of Internet access costs. At the same time, other countries are also making rapid progress.

This section of the report analyses progress since last year in:

- the use of e-commerce technologies by:
 - individuals
 - businesses
 - government
- UK e-commerce markets;
- cost of Internet Access; and
- the performance of the UK's IT, electronics and telecommunications supply sector.

Individuals

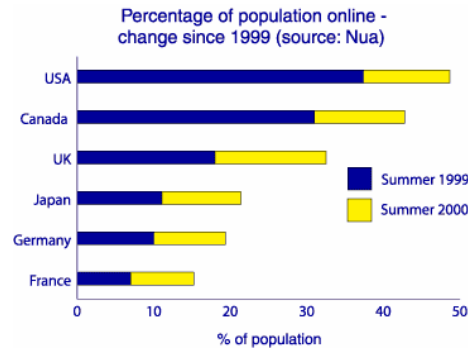
The proportion of UK households connected to the Internet rose from 13% in March 1999 to 25% in March 2000.



The proportion of the UK population using the Internet is even greater - with many individuals having access other than at home, principally at work or at school or college. This takes the estimates of the percentage of the population online to over 30%. Neilson Net Ratings put the proportion at 33% in May 2000.

Against this measure of the proportion of the population online, the UK is third among the G7 nations (figure 2 below). This makes the UK the leading online nation among the major European economies (although the Scandinavian countries have percentages similar to those of Canada and the United States). The graph shows that, although there has been significant growth in the online population in all countries, the UK has maintained its lead over the other major European economies and its online population has grown twice as fast as that of the USA.

Figure 2

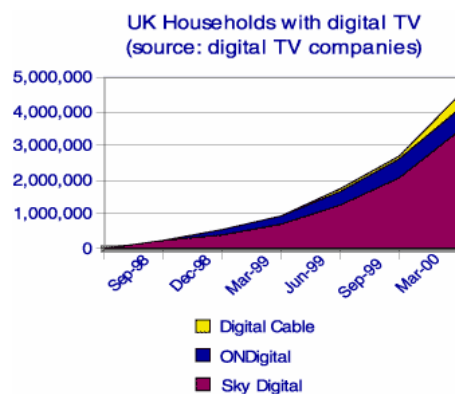


The ONS's figures for household Internet access show a continuing digital divide, between income groups and between different parts of the UK. It is, however, encouraging that there has been strong growth in all sectors in 1999-2000 compared with the figures for 1998-99.

The household figures focus on PC-based access to the Internet. In addition, the UK is leading the way on alternative access routes. Industry and market research data suggests that these will become important channels to the Internet:

- **Mobile phones.** The UK market continues to grow: mobile phone use grew by 78% in the UK between June 1999 and June 2000 - recent figures from the mobile phone operators showed that over half of the UK population now has a mobile phone. The launch of WAP-enabled handsets and services during 2000 has been seen as the first stage in developing mobile access to much of the Internet, in advance of the introduction of third generation services. Further technology enhancements available this year, such as GPRS (General Packet Radio Service) and HSCD (High Speed Circuit Switched Data), will increase the speed of access to the Internet from mobile phones. British companies are leading the way in developing mobile Internet services.
- **Digital television** is seeing rapid growth in the UK, with competing services on three platforms - cable, terrestrial broadcasting and satellite. Digital television is now available in 19% of UK households.

Not all digital services are fully web-enabled yet, but there are plans to achieve this. ONdigital has announced plans to launch a full Internet service through the TV in the autumn. The service, to be called ONnet, will provide an Internet portal, with content zones including news, entertainment and shopping, and will include 'X-links' (direct links from programmes or advertisements to the related website).³



Early figures from *Open...* showed a rapid take-up of e-commerce opportunities by new subscribers.

Internet enabled set-top boxes are also being introduced, to allow Internet access through ordinary television sets. Products have been launched by NTL, Freedomland and Innovations and these products are likely to be widely available in the near future. Bush has also launched an Internet-enabled television set. These developments should enable Internet access with much lower initial costs than the PC route.

- **Games consoles.** Sega's Dreamcast was launched late in 1999 and figures for sales to date are not readily available. However, with the launch of PlayStation2 in autumn 2000, followed by Nintendo's Dolphin and, further down the road, Microsoft's X-Box, the number of Internet-enabled consoles in the UK is expected to see rapid growth up to 2003. It remains unclear what use will be made of Internet access through these consoles, but these developments show the scope for growth in alternatives to PC access to the Internet.

ONS surveys since April 2000 have been amended to capture such alternative means of Internet access, and the first results from these surveys should be available by the end of September 2000.

Businesses

In 1998, the UK's small businesses in particular lagged badly behind our major competitors. The Government set the target that the number of UK small businesses connected should grow from 350,000 in 1998 to one and a half million in 2002. DTI's forthcoming annual benchmarking study⁴ of business ICT adoption shows that this target has been exceeded two years early, with 1.7 million SMEs now connected. Overall, 81% of British businesses are now online - on a par with the USA. Progress has been particularly marked amongst our micro-businesses, with the percentage connected rising from 15% to 55%.

The Government also set the target of ensuring that one million SMEs are actually trading online by 2002. A business trades online if it orders online **or** allows its customers to do so, **and** pays online **or** allows its customers to do so. 450,000 SMEs are currently hitting this target. In terms of making or receiving payment online, a third of UK businesses are now doing this - a higher proportion than in the USA, Sweden, Germany, France, Japan or Canada. Looking at how this varies between customer and supplier facing e-commerce, this varies between countries. 13% of businesses in the UK enable their *customers* to make payments online. This places the UK in third position behind Germany and the USA, each on 15%. On the supply side, the UK is well ahead of all other benchmarked countries with 28% of UK businesses making payments online to *suppliers*. Sweden, on 23%, is the closest to the UK on this measure.

Other surveys confirm this upsurge in e-commerce activity over the last year. For example, Ernst and Young's Enterpriser Survey 2000, carried out by MORI, revealed an 80% increase in e-commerce activity. At the beginning of 1999, just under 4 in 10 (38%) of businesses were engaged in e-commerce; ten months later, almost 7 in 10 entrepreneurs (68%) were pursuing e-commerce opportunities.

Government

In July 2000, a Cabinet Office survey showed that 33% of government services were now available online, with current plans projected to get 71% online by 2002. The Government's international benchmarking study showed that e-government in the UK was on a par with or ahead of some of the G7 nations. Whilst targets for services available online were not found to be directly comparable (because of subtle differences in coverage and meaning), the UK was clearly ahead of the field in terms of monitoring progress against targets and having the necessary high-level structures, commitment and motivation to push the e-government agenda forward.

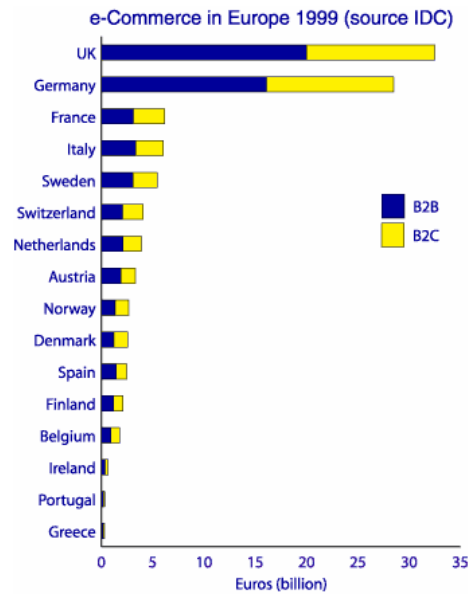
The study found that the UK is putting the building blocks in place. The back-office capability to deliver interactive services may not be as advanced as Australia or the Scandinavian countries, but solid foundations are being established for the future with the Government Secure Intranet and key framework policies that support the e-government strategy. The development of the UK online portal will ensure that this capability is rapidly developed.

Significant progress is being made in the development of e-services and the study found that the UK is on target to meet the 2005 commitment for 100% electronic availability.

UK e-commerce markets

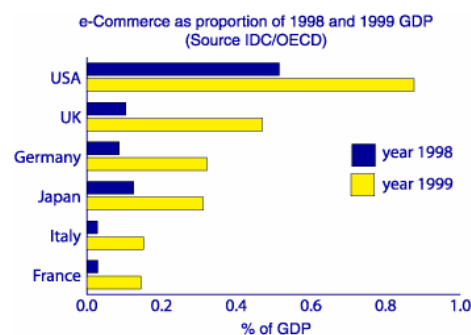
The UK is the largest e-commerce market in Europe, with retail e-commerce estimated at £1.2 billion and business to business e-commerce estimated at £800 million (see figure 3). It should be noted, however, that when the value of business-to-business process e-commerce is added, the German market becomes almost the same size as the UK market.

Figure 3



This is still significantly smaller than the US market (estimated at £81 billion in 1999). However, the UK has been closing the gap relative to the size of the economy, as shown by figure 4 which relates the value of e-commerce to each country's GDP. Relative to the size of each economy, e-commerce spending grew by 350% in the UK last year, compared with 70% in the USA. In all cases, this growth is still against a low base, but e-commerce is predicted to rise to between 4% and 7% of GDP for the countries shown by 2003.

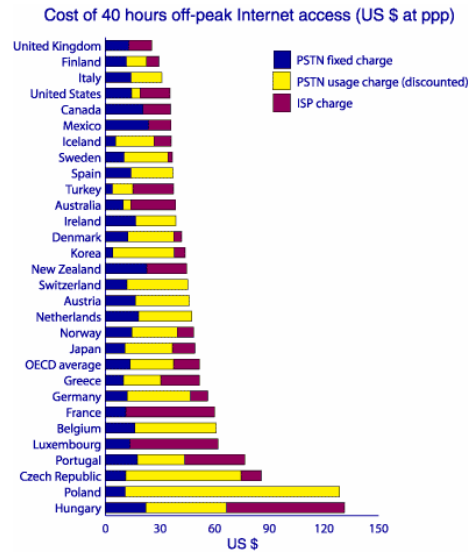
Figure 4



Cost of Internet access

A key concern highlighted in *e-commerce@its.best.uk* was the relatively high cost of Internet access in the UK. Since then, the Government's policy of promoting competition has led to lower prices and greater customer choice. Figures from the OECD in March 2000 showed that the UK was the cheapest place in the world for accessing the Internet at off-peak times (figure 5). Peak rates have fallen by 30-40% since the survey, and are now below OECD averages. Furthermore, OECD figures show that the new unmetered tariffs in the UK make this one of the cheapest markets in the world by some margin for very intensive users of the Internet - whether peak or off-peak (figure 6).

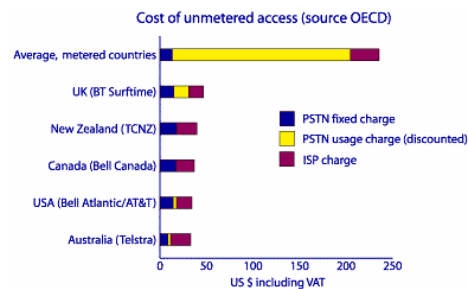
Figure 5



Note: PSTN fixed charges include monthly rental fee and additional monthly charges related to discount plans, if applicable. The basket includes 40 one-hour calls. Off peak is taken at 20h00. In France, Luxembourg and United Kingdom, ISP and PSTN usage charges are bundled and included under the ISP charge.

Source: OECD, <http://www.oecd.org/dsti/sti/it/cm/>

Figure 6



OECD’s comparisons reflect the costs of the main carrier in each country. Even lower prices are available to those who shop around.

The market for dial-up Internet access (currently the dominant mode of accessing the Internet) is the most competitive in the world, with a vibrant Internet Service Provider (ISP) market offering a variety of services and packages to UK consumers and businesses. In large part, this has been driven by the ‘pay-as-you-go’ model popularised by the launch of Freeserve’s subscription-free service towards the end of 1998. Since then, the pay-as-you-go model has been adopted by ISPs around the world.

An important development has been the introduction of unmetered Internet access packages. In June 2000, BT launched its SurfTime unmetered Internet access product, offering unmetered access for a monthly subscription of £5.99 or £19.99, plus the cost of an ISP subscription, for off-peak access or anytime access respectively. A business can now get fully unmetered access to the Internet for around £30 a month by using SurfTime in conjunction with a business ISP. This compares to around £75 for the same ISP’s metered product. Residential consumers can get even cheaper - even zero price - unmetered deals from companies such as Telewest or NTL, though these may require a minimum level of expenditure on other services, and it has not always been possible for companies to meet consumer demand. At the end of May, OFTEL made a Direction on unmetered Internet access (the ‘FRIACO Direction’), requiring BT to offer a wholesale unmetered Internet access product. As a result, competitors wishing to offer unmetered Internet access services to residential and business users can now use alternatives to BT’s own SurfTime product.

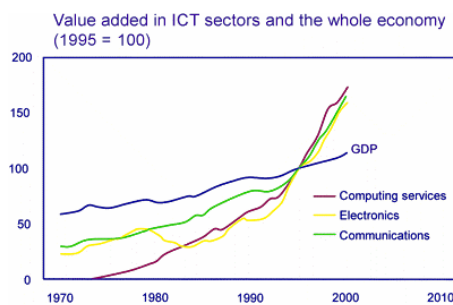
This should make the UK Internet access market increasingly more competitive as compared to other countries.

Although broadband services in the UK are still mostly at a trial stage, a study commissioned by OFTEL, published on 19 April, showed that prices in the UK are similar to those in other major economies. In the UK, the equivalent monthly charge for DSL residential services ranged from £32-£50, compared to £32 to £75 in the USA, £34-£48 in France and £33-£87 in Germany. At the time of the study, broadband services in the UK were still mainly at a trial stage. OFTEL is proposing to continue such benchmarking exercises as the market develops and more commercial, rather than trial, offerings become available in the UK. As set out in the section on Modern markets, the Government is committed to ensuring a competitive market in broadband services.

The performance of the UK’s IT, electronics and telecommunications supply sector

The rapid growth in demand for e-commerce goods and services in the UK is being accompanied by growth in the UK-based industries supplying such goods and services. As shown in figure 7, value added in key ITEC sectors has been growing much faster than overall UK GDP - this growth rate accelerating in the 1990s, to about 10% per annum. Together, these sectors account for nearly 8% of UK GDP,⁵ up from about 4% in 1990, and they account for nearly a third of GDP growth.

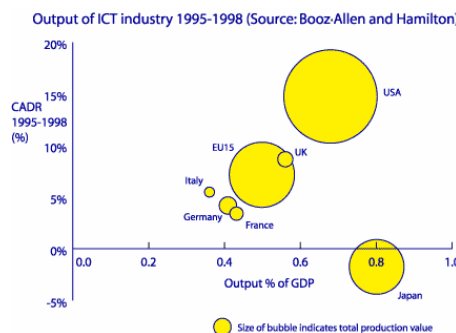
Figure 7



Source: *Success in 2005*, ESRC

This performance puts the UK’s ITEC sectors well ahead of our major European competitors, in terms of both relative importance in the economy and rate of growth (see figure 8). However, the sector still lags behind the USA on both counts.

Figure 8



Agenda for change

This report sets out our agenda for change aimed at achieving:

- Modern markets
- Confident people
- Successful businesses
- Getting government online
- World class supply
- Leadership and coordination

This agenda draws on and updates the strategy set out by the Government in September 1999 in *e-commerce@its.best.uk*. The section on the sign-off of *e-commerce@its.best.uk* reports on progress against each of the 60 commitments in *e-commerce@its.best.uk*, and shows how each of the 36 commitments on which work is ongoing are being addressed in the framework of the new agenda for change.

A summary of the actions is set out in the table in the executive summary.

Related action in devolved administrations is also covered in this report.

Devolved administrations

Many of the actions set out in this report relate to matters for which the devolved administrations are responsible for setting targets and developing and implementing initiatives in Scotland, Wales and Northern Ireland. Examples are e-government (relating to devolved services), promoting e-commerce with SMEs, education and training, social inclusion, electronic procurement and legal barriers to e-commerce (where these relate to devolved matters). Other issues - such as the regulation of telecommunications and e-commerce - are reserved matters and as such are handled on a UK-wide basis. The UK Government, the Scottish Executive, the Welsh Assembly and the Northern Ireland Executive are committed to a coordinated approach to e-commerce, through the Joint Ministerial Committee on the Knowledge Economy.

Wales

Introduction

The overall framework for creating the right climate and conditions in Wales for making progress is the National Assembly for Wales' first strategic plan, *BetterWales.com*; published in May 2000.

At national and local level, Wales is moving forward towards becoming an information society. Wales has participated in the European Commission's Regional Information Society Initiative. This project, coordinated by the Welsh Development Agency (WDA), has initiated a number of large-scale programmes aimed at raising awareness of the benefits of ICT and in addition has developed a consensus-based Strategy and Action Plan for an all-Wales Information Society.

The National Assembly will publish for public consultation in October 2000 an ICT Strategy for Wales, to be followed by an internal e-business strategy.

Examples of progress on the elements of the UK Government's online agenda covered by this report which are presently relevant to Wales are described below

Modern markets

The Wales Information Society (WIS) has in its Strategy and Action plan set out how Welsh business can be transformed by the use of modern information and communications technologies. The Welsh Development Agency (WDA) has been providing independent advice and guidance on ICT and on the opportunities offered by e-commerce to SMEs, which currently constitute a significant proportion of the total number of Welsh companies. *BetterWales.com* sets a target of 50% of Welsh companies using e-commerce by 2003 and the creation by that date of 40,000 net additional jobs, largely by the exploitation of the opportunities offered by ICT.

A range of public and private sector initiatives are being progressed via Business Connect. These include major projects that are being developed by agents of the National Assembly, such as the WDA and the Wales Tourist Board, to help companies make effective use of ICT opportunities, to assist Wales in completing the transition from reliance on heavy industries such as mining and steel making.

Confident people

The Assembly's £18 million Education ICT strategy will provide school and adult learners with access to ICT, actively promoting the National Grid for Learning, Lifelong Learning and social inclusion.

A national framework of Individual Learning Accounts will be available to everyone over 18 to help them plan and pay for their learning. The initial Welsh scheme was introduced in 1999-2000.

The University for Industry will open 50 'cyswllt dysgu learndirect' learning centres in Wales by March 2001.

£13 million from the New Opportunities Fund's Community Access to Lifelong Learning (CALL) will support;

- the development of ICT learning for adults at learning centres;
- the development of Community Grids for Learning, which support the National Grid for Learning and provide community-based websites which are relevant and interesting; and
- through library authorities, the creation of a People's Network of ICT learning centres in public libraries.

Successful business

Operating through a team of ICT Business Advisors, under the aegis of the existing network of IT Support Centres, the WDA's Wales smE-Business programme is helping SMEs throughout Wales to exploit and maximise the benefits of ICT. As a large-scale awareness-raising initiative, this programme aims to reach more than 10,000 businesses, of which - more importantly - some 1,500 are expected to go on to receive in-depth one-to-one support to help them to determine their specific business needs and to identify the most relevant technology/application solutions. The project is forecast to cost £5 million and is being supported by European funding.

After being successfully piloted across the UK during 1999-2000, the Technology Means Business programme was introduced as @TEB in Wales - a scheme to accredit ICT consultants and advisers. UK-wide, the target is to have 1,000 advisers registered or accredited by March 2001.

Know-How Wales - an initiative that provides teams of people dedicated to brokering additional and more effective commercial collaborations between academic institutions and businesses has been introduced. With the joint sponsorship of the WDA and the Higher Education Funding Council for Wales (HEFCW), creating seven Commercial Manager posts to help the host Centres of Expertise to commercialise more of their knowledge and expertise.

A Knowledge Exploitation Fund of £4 million in 2000-01 and £10 million in 2001-02 to accelerate the exploitation of research and development and other knowledge and expertise, and to boost the wealth creating capabilities of further and higher education institutions in Wales has been established.

In 2000-01 £0.82 million has been channelled into the HEFCW Training and Consultancy Services provision, and expanding the scheme into further education.

£0.5 million of HEFCW funds have been earmarked for supporting higher education institutions to participate in the WDA's, Wales Spinout programme, which aims to stimulate the creation, and mentor the subsequent development, of new businesses as 'spinouts' from Welsh higher education institutions.

Assembly funding of the Teaching Company scheme has been increased and the further education equivalent scheme - Colleges and Businesses in Partnership - has been introduced ahead of the rest of the UK.

Getting government online

The National Assembly has, since its inception in May 1999, made extensive use of IT to discharge its daily business. Extensive use is made of the Internet, including the point of first appearance for all Assembly papers and the Record of Proceedings. Public consultation is also carried via the Internet. These Internet services are constantly evolving. The Assembly's IT network now connects more than 3,000 users in over 80 locations across Wales. Currently being upgraded, all users will by the end of 2000 have access to the Assembly Intranet and access to the Internet will be universal. There is wide acceptance across the public service in Wales of the need to extend joint electronic working. The WDA is leading a widely supported project to establish within the next 12 months a broadband, high-speed public service network in Wales.

To encourage efficient electronic working with its partners, the Assembly has installed a videoconferencing network, which connects eight Assembly sites with the Wales Office in London, the 22 Welsh unitary authorities and the headquarters of the Welsh Local Government Association. If required, up to 24 sites in Wales and beyond can be simultaneously connected to the network, which will also carry data. Substantial savings in time and travel and subsistence costs will quickly offset the initial capital cost of a little over £400,000. The NHS in Wales has plans to install a similar network of 50 sites and two telemedicine pilots.

Exploiting the power of ICT to improve business processes and the machinery of government features prominently in *Better Government*, the Assembly's response to the Modernising Government White Paper.

There are numerous examples of innovative practice in local government in Wales. These include the work of Powys County Council in progressively using the Internet and other channels to network all council services and Gwynedd County Council's use of live webcasting of council meetings. There are many others. For more details, visit the SOCITM website.

The NHS in Wales has been at the forefront of exploring the use of telemedicine and has an extensive telecommunications infrastructure in place. High level plans for the development of ICT in the NHS in Wales are set out in the Strategic Plan *Better Information, Better Health*, which can be found on the National Assembly website at Policy & Information/Health/Key Documents.

The LlwybrwPathway Rural Information Society programme is an example of partnership, part funded by the EU, of over 150 organisations, providing a rural area network linking health authorities, schools, businesses, voluntary agencies and government offices across nine counties in rural Wales. It has successfully provided increased opportunities for the public to access the Internet and ICT-based local services via 156 public access points. These include cooperation with the Employment Service to offer the extremely popular and well-used 'Jobs on Line' feature. Two important developments for the Partnership are:

- letting a contract to build a multi-agency backbone network bringing 8mb microwave connections to Ceredigion, Carmarthenshire and Powys along with a 4mb shared Internet feed. Known as MARAN (Multi-Agency Rural Area Network), it is believed to be the largest project of its kind in the UK; and
- launched by the Assembly First Secretary, Rhodri Morgan AM, a project in partnership with the WDA and British Telecom, to bring ADSL to ten towns in rural Wales over the next two years. Providing an always-on connection at 40 times the speed of ordinary modems, the project has secured £3.3 million of private sector investment for the region.

Scotland

Digital Scotland

Digital Scotland is a Scottish Executive initiative which aims to ensure that Scotland obtains and retains maximum economic and social advantage from information and communication technologies. The Digital Scotland Taskforce's report was published for consultation in May. The report made over 60 recommendations which relate to e-business, e-education, e-public services, e-inclusion, telecommunications infrastructure and skills. The Scottish Executive sees these issues as vitally important to Scotland's future and will respond to the taskforce's recommendations shortly.

E-commerce

As recommended in *e-commerce@its.best.uk* the Scottish Executive has been working with the enterprise network to address e-commerce as a priority in its economic development strategies. A first Priority Business Action Plan - *Connecting Scotland, The First Wave* - was published in February 2000 and this was followed by an overall strategy statement which sets out four key areas for action: accelerating business take-up, accelerating supply side development, creating the right environment for e-commerce and developing the right

skills. Scottish Enterprise has now appointed an e-commerce Director reporting to the Chief Executive whose task it will be to draw up an implementation plan and drive progress.

Within the Executive, Henry McLeish, the Minister for Enterprise and Lifelong Learning, has led a taskforce on the knowledge economy which will make recommendations on e-commerce supporting and extending the work of Scottish Enterprise. The recommendations lay particular stress on the telecommunications infrastructure and the specific skills that are vital to the development of the e-economy in Scotland.

Helping individuals to get online

The Scottish Executive is committed to major improvements in the ICT infrastructure in schools. Over £80 million has been made available to Scottish local authorities to develop the National Grid for Learning in schools. By 2002 it is expected that the pupil:modern computer ratio in primary schools will be 7.5:1 and in secondary schools 5:1. Internet access is already available in 49% of primary schools and 97% of secondary schools, compared to 22% and 73% in 1998, and all schools will be connected by 2002.

The Scottish Executive is looking at how to provide broadband links to all Scottish schools, so that pupils and teachers everywhere in the country will be able to benefit from equal access to e-mail, videoconferencing, high-quality educational materials, and other resources and services.

Nearly 4,800 (10%) of Scottish teachers have already been helped to buy their own computers with a £200 refund from the Scottish Executive. This scheme will play an important part in helping teachers to become confident in the use of ICT.

Training in the classroom use of ICT is available to Scottish teachers and school librarians through the programme operated by the New Opportunities Fund.

The Scottish 5-14 National Guidelines have been reviewed to make sure that ICT is firmly embedded across the curriculum, and revised guidelines are to be issued shortly. This will support the Scottish Executive's target to make sure that all school leavers understand IT.

Any definition of basic skills needs to embrace the capacity to take advantage of the new technologies, and this issue is being addressed in the 'Literacy 2000' project in Scotland.

It is essential too that all students graduating from colleges and university, whatever the nature or level of their qualifications, are familiar with ICTI and one of the key conclusions of the cross-cutting review of the knowledge economy is that ICT should be pervasive throughout the FR and HE sectors, affecting courses and curriculum universally; and with universal access by students.

The cross-cutting review of the knowledge economy has also recommended that the skills requirement of the ICT industries based in Scotland require to be addressed; and that Scottish universities play a major role in the development of the e-sciences.

Within Further Education £29m has been committed for the period 1999-2002 to build the Further Education element of the National Grid for Learning. Key strategic objectives of this ICT strategy are improvements in infrastructure and staff development and a significant proportion of this funding will be directed towards these elements.

The role of learndirect Scotland in providing readily accessible online access to information and guidance will be fundamental to the Lifelong Learning agenda. It will brand a network of learning centres across Scotland, provide a learning support environment for online learners and commission ICT learning materials where there are gaps in provision.

Under the Individual Learning Accounts initiative, implemented across Scotland in September 2000, grants and discounts on a wide range of learning will include 80% discounts on the costs of basic courses in computers.

Meeting the commitment to universal Internet access by 2005 will require special efforts to ensure that ICT is available, affordable and attractive to low-income households and other excluded groups. Scottish Ministers are working in partnership with the private, public and voluntary sectors to roll out ICT learning centres in areas of disadvantage; encourage the development of content that communities will find useful; and to showcase some of the

digital inclusion initiatives that have been taken in Social Inclusion Partnerships. A regional network of community ICT champions will help coordinate this work.

Getting government online

On 31 March, the First Minister and the Prime Minister made parallel announcements that 100% of public services would be available on-line by 2005. The Scottish Executive supports the objectives of the UK 'e-government strategy' and is developing its own separate but complementary framework to achieve these aims in relation to devolved services which it will publish for consultation shortly.

The Modernising Government Fund will provide some £25 million over the next two years to innovate public sector projects which are aimed at improving the quality, effectiveness and efficiency of public services in Scotland often through the application of ICT. Projects bidding for funding have been shortlisted and are currently being developed in more detail. Final funding decisions will be made in the autumn.

To take forward electronic procurement, the Executive has established a Procurement Supervisory Board chaired by John F McClelland, Senior Vice President of 3Com. The board oversees procurement strategy across the Scottish Executive, advising on priorities and opportunities for improvement in the light of Ministers' wider objectives on efficiency, modernisation and competitiveness in the public sector in Scotland. It will also ensure the Executive meets the challenges of new markets, techniques and technology. The Executive is now taking preparatory steps for the implementation of e-procurement.

Removing legal barriers

Now that the Electronic Communications Act has received Royal Assent, allowing electronic signatures to be admissible in evidence and sweeping away obstacles in existing law which insist on the use of paper, the Scottish Executive will identify high priority issues to be the subject of orders under Section 8 of the Act. The orders on high priorities will be made by the Scottish Ministers in the Scottish Parliament by end-2001. Others will follow in due course.

Northern Ireland

Power was devolved to the Northern Ireland Assembly and its Executive Committee on 2 December 1999. This required major organisational change including an increase in the number of Departments from 6 to 11 and the transfer of some executive functions between Departments. Ministers and officials have been working to deliver an appropriate Programme for Government which will focus on the priority local issues.

As an interim step the Executive Committee published an Agenda for Government which identified five clear aims covering the economy, health and education, environment, tackling disadvantage and social exclusion and modern and accessible public services. Projects addressing these priority areas will be supported by a modernising fund of £27.6m.

A new corporate strategic framework for e-government is being developed to apply across the public services in Northern Ireland.

E-commerce

Following a review of economic development strategy in Northern Ireland, the Information Age Initiative (IAI) was established in September 1999. This advisory group, comprising industry, academic and Government representatives, was tasked with preparing a strategic framework and comprehensive action plan aimed at ensuring that Northern Ireland takes maximum advantage of the opportunities offered by information and communication technologies (ICTs).

The vision of the Information Age Initiative is to see 'a highly attractive, successful, dynamic and supportive knowledge-based economy in Northern Ireland'.

The IAI recognised that realising this vision would require creative promotion and positioning of the messages to the business community. This resulted in the creation of the

'Leapfrog' brand which symbolises the stepped change or 'leap' which Northern Ireland must make.

In April 2000 the IAI's Strategic Framework and Action Plan 'Leapfrog to the Information Age' (www.leapfrog.gov.uk) was launched by the Secretary of State for Northern Ireland and Professor Fabian Monds, Chairman of the Information Age Initiative. The Action Plan had three key aims:

- to encourage all Northern Ireland businesses to adopt and use ICTs throughout their organisations;
- to develop the ICT sector to provide growth opportunities in the digital communications, electronics, multimedia and software sectors; and
- the enhancement of an environment supporting the knowledge economy.

The Strategic Framework is based on a model produced by the IAI for the adoption of ICTs throughout organisations - **The Connectivity Chain**; along with a **Three Channel Growth** model for the development of the ICT Sector.

Organisations are expected to progress along the Connectivity Chain, through the stages of **awareness, access, presence, trading** and ultimately becoming full **e-businesses**.

Marketing efforts by the IAI have successfully achieved a significant level of awareness right across Northern Ireland and private sector marketing campaigns are now taking the lead.

The Plan also contains a range of 25 innovative and creative Actions to support the three key priorities. These include:

- **Joined Up Private Sector**

The contribution of the private sector has been significant and the Information Age Initiative is keen to facilitate a 'meeting of minds' of key private sector organisations which have a direct relation with the entire customer base of Northern Ireland to explore opportunities for working together and providing synergy to their respective e-activity.

- **E-Commerce Training**

In January 2000 the Northern Ireland Training and Employment Agency ran the 'Training for Buttons' introductory workshops with the primary objectives of providing enough information for participants to enable them to make a well informed decision on whether or not e-commerce is appropriate for them and provide advice on how to develop an e-commerce strategy for their respective organisations. A total of over 2,000 places were booked and feedback from the workshops has been very positive. A series of modular follow-up training courses is currently being developed to support companies along the Connectivity Chain.

- **ICT Showcase**

The Information Age Initiative is keen that the very best in the Northern Ireland ICT sector is showcased with the aims of developing and growing the sector. Plans are underway for developing a fully interactive and multimedia web-enabled database for promoting the sector and employment opportunities available.

The Information Age Initiative also made a call for organisations in Northern Ireland to submit project proposals for funding under the EU Peace and Reconciliation Programme which would help local industries achieve a stepped increase in ICT use, and facilitate the overall development of the ICT sector in Northern Ireland. These are currently being evaluated.

Confident people

Classroom 2000 is a major project which aims to put computers in every classroom in schools in Northern Ireland. Every pupil will have an e-mail address and the technology will be used to deliver the appropriate parts of the curriculum. In so doing it will increase the IT literacy of both pupils and teachers. This project is being procured as a public/private partnership and is currently at the final stages of negotiation.

A budget of £9m has been received from the New Opportunities Fund's Community Access to Lifelong Learning (CALL) to support:

- the development of ICT learning centres for adults;
- the development of appropriate community-based web sites which support the National Grid for Learning; and
- the creation of a network of online centres in public libraries.

The Electronic Libraries for Northern Ireland project has been established to procure for Northern Ireland robust systems that will support and enable the delivery of electronic information services to the Northern Ireland Community. The Project is currently in negotiations with the private sector to implement such systems. This will establish libraries as public information access points and connect all the public libraries in Northern Ireland to the National Grid for Learning providing an extensive network of ICT Learning Centres as an integral part of the UK Peoples Network. Of the £9m available to Northern Ireland from the New Opportunities Fund for the Community Access to Lifelong Learning programme (CALL), £4.5m has been set aside to assist NI Libraries.

The Employment Service of the Department of Higher and Further Education, Training and Employment is planning to publish employers' job vacancies on the Internet, and (on a pilot basis) through a small number of Self-service Touchscreen Kiosks. Through partnership with the Social Security Agency, the project will also make a range of benefit information available electronically. It is hoped that this web site will be available from October 2000.

A particular project in the Department of Agriculture and Rural Development will be addressing the needs of farmers to benefit from the use of ICTs. The project will enhance the access of farmers to ICT and the provision electronically of high quality business support information to help them manage their businesses.

Getting government online

An inter-departmental e-government Project Board is managing the issues relating to the delivery of electronic public services. The Board has responsibility for publishing appropriate policies, standards and guidelines. A number of major projects are under way including the implementation of an integrated Public Service Network. With a focus on citizen centric services a number of communities of interest have been established to consider how best to collaborate, cooperate and communicate across existing organisational boundaries to help improve the quality and responsiveness of existing services; examples include drivers and vehicles; social welfare and housing; and land and property.

It has been agreed that Northern Ireland should develop its own public service portal to parallel the UK online initiative. Work is in hand to develop local versions of the life episodes.

Modern markets: getting the market framework right

Summary

Goal

To develop the UK as the world's best environment for electronic trading by 2002

The Government will now:

- 1** drive forward competition in Internet access markets;
- 2** establish a new framework for regulation of the converging markets of telecommunications and broadcasting;
- 3** identify and remove all remaining regulatory and legal barriers to electronic ways of working in the UK; and
- 4** take action with international partners to develop an effective, light-touch global framework for e-commerce.

The global electronic marketplace is growing at an explosive rate. It will continue to do so with or without government intervention. But the actions of governments and regulators around the world can affect both the speed and the scope of these changes. The UK Government is therefore working with international partners to build a global framework for e-commerce which removes barriers to market growth and facilitates e-commerce transactions. The Government is also striving to implement the necessary changes within the UK as speedily as possible - in order to achieve our goal of developing the UK as the world's best environment for electronic trading by 2002.

The starting point for success in e-commerce, like other aspects of economic activity, is a fiscal and regulatory environment which guarantees macro-economic stability and which encourages and rewards innovation and risk-taking in business. The Government's strategy for developing such an environment has been set out in the Pre-Budget Report and the Chancellor's 2000 Budget Statement. The Government has taken steps to ensure that the importance of creating this environment is reflected, for example in the IR35 proposals and the application of National Insurance to share options (see box).

Listening to industry - IR35 and share options

Two issues in particular have raised concern in the IT and e-commerce sectors over the last year: that Inland Revenue's proposals on IR35, and National Insurance Contributions (NICs) on share options.

IR35 is not aimed at IT workers specifically. It will ensure that workers, who use service companies but actually do the job of an employee for a client, will pay a fair amount of tax and NICs. Through online consultation over the e-Envoy website we have helped ensure effective two-way communication between the Inland Revenue and potentially affected contractors. The legislation is designed to allow clients and contractors to continue to use limited companies as intermediaries in their contracts, if they wish, ensuring that the flexibility provided by this method of working can continue. But all workers in the IT industry, and elsewhere, will be taxed on a fair basis. As with all legislation, the Government will monitor the effects of the IR35 changes to ensure that they achieve their objectives and do not have unexpected harmful effects on genuine business activities. This will include investigating any effect on the labour market in industries where the use of service companies is common.

The rules for charging National Insurance on share options were changed from April 1999 so that NICs are now payable on the gain made on the option when it is exercised. This is the same tax basis as applies in the USA and many EU countries.

Many e-commerce and high-tech companies offer their employees substantial share options as part of their remuneration package. While employers can plan for NICs on regular pay, it is much less easy for them to plan for NICs on share options, particularly where the share price is volatile. Employers have expressed concern that their exposure to unpredictable NICs liability in these circumstances could put at risk their investment strategies, damage their future growth by deterring investors and even make them insolvent.

After an intensive consultation with industry, the Government has responded to these concerns by introducing legislation that will eliminate the unpredictability of the NICs charge. The employer and employee will be able to come to a voluntary agreement under which the employee could agree to fund all or part of the employer's NICs. Alternatively, the employer and employee will be able to make a joint election under which the liability for all or part of the employer's NICs is transferred to the employee. If they do this, NICs paid by the employees will qualify for tax relief against the taxable gain on the share option, which brings the total effective tax rate for employees to about 47%, which is close to that in California or New York. Announcing these changes, the Financial Secretary has said that he wishes to continue the dialogue about how to make Britain the best competitive environment for e-commerce.

1 Drive forward competition in Internet access markets

As set out in the section Where does the UK stand now, competition has already significantly reduced the cost of dial-up Internet access in the UK. On a number of key measures of access cost we are now among the lowest in the world. Lists of current offers can be found, for example, at the following sites: www.ispreview.co.uk or www.net4nowt.com.

We will continue to benchmark the costs of Internet access in the UK against its major competitors, and will build on the progress made so far by driving forward competition and encouraging industry rollout in:

- dial-up access; and
- high-speed access over:
 - broadband fixed telecommunications networks
 - broadband digital interactive television
 - third generation mobile telephones
 - broadband fixed wireless

Dial-up access

We will build on existing success by reviewing the competitiveness of the Internet dial-up market by:

- publishing an OFTEL consultation document by December 2000.

High-speed Internet access

The Government is also determined to ensure a competitive market in fast access, including broadband services. Broadband is the term used to describe higher speed access (typically faster than 500kbit/s) to the Internet using a variety of technologies. This will enable advanced services which, depending on the connection speed, will range from enhanced web browsing and communication through to true broadband services such as the ability to watch and interact with video over the Internet. Some types of broadband access link can be used by businesses to connect their internal networks to the Internet, allowing multiple users to share the same connection. Broadband access is usually provided as a permanent 'always-on' connection, allowing companies more flexibility in how they interact with the Internet without having to repeatedly dial in to their service provider. We are putting in place a competitive framework for broadband, both over telecommunications networks and other competing infrastructures.

Fixed telecommunications networks

DSL (Digital Subscriber Line) is a technology that allows copper telephone lines to be upgraded to support broadband data speeds.

OFTEL will:

- drive forward 'unbundling' BT's local loop which will increase competition in high-speed access by allowing other operators to use their own technology to offer competing DSL products. The UK was among the first to grasp the policy initiative to unbundle the local loop in order to widen competition in supply of high-speed data services. By the end of 2000 the UK will have fully mandated local loop unbundling and unbundled products will be available, fully in line with the European Commission's proposed Regulation on local loop unbundling;
- monitor BT's compliance with its legal obligations under its licence and the Competition Act and ensure that BT does not unduly discriminate between its own retail arm and its competitors in offering its wholesale ADSL products. BT has rolled out its own ADSL service technology allowing high-speed broadband services on copper wires to 35% of the country covering 7 million homes and 1 million businesses, in competition with cable modem services offered by the cable TV companies; and
- publish conclusions on a recent consultation document on the state of competition in the retail market for leased lines (which many businesses use for high-speed Internet access) with proposals for targeted regulation aimed at stimulating competition.

Third generation mobile telephones

Mobile telecommunications companies are also providing Internet access, for example through wireless application protocol (WAP). The next generation of mobile telephones (so-called 3G services) will significantly extend this, offering high-resolution video and multimedia services on the move. The world's first auction of spectrum for third generation services was held in the UK and came to a close in April, with five licences awarded. This will further add to competition. Of the five successful bidders, four (BT Cellnet, Orange, One2One and Vodafone Airtouch) were incumbent operators and one (Hutchison 3G) was a new entrant. £22.47 billion was raised - which signifies the tremendous potential the operators see for m-commerce in the UK. The Government will work with industry and consumers to ensure that competition delivers the benefits of m-commerce to the UK.

Broadband fixed wireless

Broadband fixed wireless access (BFWA) allows users to take advantage of cheap, fast Internet and multimedia access by radio links rather than down a telephone line or cable television network. The UK is in the forefront of making spectrum available for radio fixed access providing competition in the final connection to premises. The bandwidth available to operators is relatively limited at present. However the Government intends to hold a further auction of airwaves in September making spectrum available at 28GHz for the provision of BFWA services. BFWA at 28GHz will, in some instances, provide an alternative to other higher bandwidth technologies such as ADSL and cable modems.

At higher frequencies in the region of 40GHz, more bandwidth can be found opening up the exciting prospect of much faster data transfer and a far wider range of innovative services to customers including high-speed Internet access, video telephony and conferencing, video-on-demand, broadcasting, home shopping and banking, games, tele-education and tele-medicine, home working, business data transfer, electronic commerce and electronic government. Proposals for awarding licenses for the provision of broadband fixed wireless access at 40GHz will be announced later this year.

Digital interactive television

As set out in Where does the UK stand now, digital television is seeing substantial growth in the UK, with competing services on three platforms: cable, terrestrial broadcasting and satellite. Digital television presents an opportunity to bring the knowledge economy into every home with more television programmes, interactive and personalised services and Internet access available to the consumer via the familiar TV set. Once the conditions which the Government has set for switching over completely from analogue to digital terrestrial television have been met, there will also be significant opportunities to boost growth and jobs by redeploying the analogue TV spectrum. The Government will continue to work closely with industry to help encourage the rapid take-up of digital TV and to ensure that the conditions for switchover are met as speedily as possible.

In particular, we will work with industry to:

- develop robust international standards to provide an effective base for the new services, accessible across different platforms;
- increase the coverage of terrestrial digital services to make them available to more and more people; and
- increase public awareness and understanding of the benefits of digital TV.

2 Establish a new framework for regulation of the converging markets of telecommunications and broadcasting

The convergence of telecommunications and broadcasting technologies is creating new challenges to the effectiveness of regulation in these sectors. Both the European Commission and the UK Government have been reviewing current regulatory systems to ensure they remain effective. As a result, the European Commission on 12 July proposed a new set of legal measures designed to replace existing EU electronic communications law. These measures streamline and adapt existing rules in the light of technological developments and the growth of competition in the electronic communications sector. The Government welcomes this approach. But the Commission's proposals will require further refinement, for example, to provide greater flexibility for national regulators to take proper account of conditions in individual national markets. The Government is working hard to ensure that the Directives finally adopted provide the right overarching framework for the UK's dynamic electronic communications markets.

Within the UK, Chris Smith and Stephen Byers are working jointly to ensure that the UK's market framework and system of regulation also adapts effectively to convergence to promote the benefits of the knowledge economy and help make the UK the best place to do business electronically. To this end they will be publishing a White Paper later this year as a first step to new legislation to replace the current Broadcasting and Telecommunications

Acts - see the Communications Reform White Paper website. The guiding objectives for the White Paper are:

- the creation of the most dynamic market possible for communications services, especially in the light of the growth of the e-economy;
- ensuring universal access to diverse services of the highest quality; and
- guarding consumer interests - protection, choice and value for money.

3 Identify and remove all remaining regulatory and legal barriers to electronic ways of working in the UK

The Electronic Communications Act received Royal Assent on 25 May 2000. The Act provides for electronic signatures to be admissible as evidence in legal proceedings - a move that will be particularly welcome to business. It allows Ministers, by statutory instrument, to modernise the statute book and allow electronic alternatives to paper-based requirements, sweeping away obstacles in existing law which insist on the use of paper. The tax authorities have already used the provision under the 1999 Finance Act (which provides for electronic communication as an alternative to paper communication), to allow tax returns to be submitted online. Furthermore, other regulatory regimes affecting particular industrial sectors may need to be modernised to ensure that they remain relevant to the changes in industry structure and new business opportunities brought about by the Internet.

Following Royal Assent to the Electronic Communications Act, it is now essential that we move quickly to use its order-making power in Section 8 to remove statutory requirements for physical signatures and documents. Ian McCartney has coordinated a comprehensive review across government to identify the first orders under the Act.

- 70% of those orders announced to Parliament by Ian McCartney on 24 May 2000 [link to Hansard page] will be made by the end of 2001, at the latest, including the following to remove the legal impediments to:
 - a company's use of electronic communication and storage, including communication between a company and its shareholders;
 - certain electronic conveyancing transactions, including electronic signatures on contracts and electronic deeds;
 - electronic authentication of public records for court proceedings.
- By the end of 2002 all the other orders announced by Ian McCartney will have been completed.
- The Cabinet Office will continue to coordinate the use of this order-making power and ensure progress in its use by departments for the electronic delivery of services and the removal of statutory barriers to e-commerce.

4 Take action with international partners to develop an effective, light-touch global framework for e-commerce

The UK cannot go it alone. We need to work internationally both to gain agreement on the legal framework for e-commerce and to expand markets across the globe.

The Government will:

- work with the European Commission and other Member States to implement the e-Europe Action Plan; and
- work with EU and other international partners to drive these principles forward in the wider international arena.

e-Europe

The European Council held in Lisbon on 23-24 March set the ambitious objective for Europe to become the most competitive and dynamic economy in the world. It recognised the urgent need for Europe to exploit quickly the opportunities of the new economy and in

particular the Internet. The UK then worked intensively with the Commission and Member States to develop the detailed action plan for creating 'e-Europe' which was subsequently endorsed at the June European Council at Feira.

The e-Europe Action Plan

The European Council endorsed the comprehensive e-Europe 2002 Action Plan in June. Some 60 actions - mostly geared to targets for their achievement by the end of 2002 - are clustered around three main objectives:

- A cheaper, faster, secure Internet
 - Cheaper and faster Internet access
 - Faster Internet for researchers and students
 - Secure networks and smart cards
- Investing in people and skills
 - European youth into the digital age
 - Working in the knowledge-based economy
 - Participation for all in the knowledge-based economy
- Stimulate the use of the Internet
 - Accelerating e-commerce
 - Government online: electronic access to public services
 - Health online
 - European digital content for global networks
 - Intelligent transport systems

The Action Plan will contribute significantly to managing the economic and social changes that we will need to make Europe the most dynamic knowledge-based economy in the world. It gives a coherent strategic direction and a strong message to prioritise our work and monitor progress. Priorities are cheaper Internet access, accelerating e-commerce and bolstering ICT skills - other actions flow from these three vital drivers of e-commerce. If we get them right early, we will create the wealth and confidence to deliver the other means of achieving a wired society - e.g. access to public services and a low cost/high-speed network infrastructure.

The Government will now work with the European Commission and other Member States to implement the e-Europe 2002 Action Plan. In particular, our priorities are those aspects of the Action Plan dealing with completion of the legal and co-regulatory framework for e-commerce, increased competition in communications markets, and promotion of skills and education. A progress report will be tabled at the Nice European Council in December, and a first assessment against benchmarks will take place at the Stockholm European Council in March 2001.

International action

In addition, working with partners in the wider international community, we will:

- **promote the ‘country of origin’ principle.** A major step forward in the creation of a single electronic marketplace in Europe was the fast-track adoption this year of the E-Commerce Directive, which removes barriers to cross-border e-commerce. The Directive is based on the ‘country of origin’ principle under which e-commerce services are subject to the legal requirements of the Member State in which the service provider is established. This means that in general the free movement of e-commerce services cannot be restricted by another Member State where the services are provided, so that service providers normally need to comply only with the laws of their country of origin. This Directive was adopted in June 2000 and must be implemented by all Member States by January 2002. The Government will continue to promote this approach outside the European Union, in collaboration with EU partners and other key international trading partners;
- **promote internationally the UK’s co-regulatory approach to the Internet.** *e-commerce@its.best.uk* recommended a ‘co-regulatory’ approach to securing public policy objectives on the Internet - where Government defines the objectives to be met but asks industry and the voluntary sector to develop and implement the appropriate solutions. The advantages of this approach, in terms of speed, practicality and flexibility, are being demonstrated by the success of UK initiatives such as TrustUK and t-Scheme. Both of these have been developed with the support of UK industry. The European Commission is now following the UK lead by establishing a ‘stakeholders’ group to develop a European framework for online codes of conduct;
- **encourage the development of Alternative Dispute Resolution (ADR) for e-commerce.** ADR is particularly valuable for the resolution of cross-border disputes where it can be extremely difficult for consumers to obtain appropriate redress. The UK warmly supported the launch of the EEJ-Net earlier this year and aims to be one of the first Member States to establish its ‘clearing house’. This will link consumers involved in cross-border disputes to other Member States’ ADR bodies;
- **continue to press for a transparent and liberal e-commerce framework in multilateral forums,** such as the World Trade Organization, World Intellectual Property Organization and OECD - for example, we played a major part in developing the OECD Guidelines for Consumer Protection in E-Commerce;
- **play a leading role in international efforts to update the tax regime** so it is relevant to a world of electronic as well as physical markets. The UK chairs the OECD’s Committee on Fiscal Affairs and some of its subsidiary working and advisory groups on e-commerce and taxation;
- **work with our international partners,** through G8, OECD and the European Union, **to promote information security** best practice which will support confidence in online trading and mutually compatible regimes on authentication; and
- **work with international partners to address the international digital divide.** The Government will publish by the end of 2000 a Development White Paper, which will specifically address the issue of information and communication as one of the key factors in globalisation. The White Paper will outline what role the UK can play, both directly and indirectly, to promote widespread access to information and communication in developing countries. In addition to ICT’s increasing role in the UK’s mainstream development programmes and a number of major ICT for Development initiatives, for example the Prime Minister’s Imfundo Project, which is investigating how new technologies can be used to improve education and teacher training in the developing world, we will continue to work closely with our international partners to maximise the impact of the international communities’ activities in this area (i.e. working with the new G8 digital opportunity taskforce; the World Bank’s infoDev programme; the Global Knowledge Partnership; etc.).

Confident people

Summary

Goals

To ensure that everyone in the UK who wants it will have access to the Internet by 2005

The Government will now:

5 implement a package of measures to improve access to the Internet at home, at work and in the community;

6 embed information and communication technology skills in the education system and throughout lifelong learning;

7 work with industry to ensure a safe and secure environment for e-commerce and to help people trust the Internet; and

8 help increase people's motivation to access the Internet by driving up the amount and quality of social content.

In March 2000, the Prime Minister committed the Government to ensuring that everyone in the UK who wants it will have access to the Internet by 2005. When setting this target, he made it clear that universal access meant not only easy access to the technology in or near the home, but also a significant level of usage.

This report sets out the Government's strategy for meeting this universal access target by implementing measures to ensure that:

- everyone who wants it has easy, affordable access to the Internet; and
- this access is accompanied by significant levels of use, by addressing the key barriers⁶ of:
 - skills
 - motivation
 - trust

5 Implement a package of measures to improve access to the Internet at home, at work and in the community

Market mechanisms are the single most effective driver of Internet uptake and use. The Modern markets section highlights the effectiveness of the Government's policy of encouraging a highly competitive telecommunications marketplace in the UK. Off-peak Internet access costs in the UK are now the cheapest in the world. The Government is also helping to open up alternative routes of access, such as digital TV and mobile telecommunications.

However, the market is unlikely to deliver universal access unaided. Industry experts forecast that 'natural' market growth would take the number of Internet users to around 60-70% of the population by 2003. The evidence of a continuing digital divide suggests that Government needs to play an active role in promoting affordable access.

We are therefore acting to promote Internet access:

- at home
- at work
- in the community

Promoting Internet access from home

The Government will:

- **encourage employers to provide PCs and Internet access to employees for use at home.** In the 1999 Budget, the Chancellor introduced tax breaks for employees provided with home PCs by their employers. Small employers will be particularly encouraged to invest following the introduction in this year's Budget of 100% capital allowances for their spending on IT equipment. The Government will promote the benefits of such an approach to employers, as part of UK online for business;
- **encourage government departments to look closely at the cost/benefits of low cost PC leasing schemes for public sector employees;** and
- **provide low cost recycled computers for 100,000 low income families.**

Encouraging Internet access at work

Many businesses still see personal use of the Internet at work by employees as a perk to be carefully controlled. Yet many of the businesses which have been most successful in the new knowledge-based economy see full Internet access for all staff as essential. The Government will:

- **promote the benefits to employers of providing all employees with Internet access at work,** as part of UK online for business; and
- **encourage government departments to address the benefits of full Internet access for staff in the public sector,** as part of their departmental e-business strategies.

Providing a national network of community-based Internet access centres

The Government will:

- **establish a network of UK online centres,** with 600 being open by March 2001.⁷ UK online centres will provide community-based access to the Internet, along with ICT skills training - particularly for those who do not feel comfortable in traditional learning environments;
- **ensure that, by 2002, all public libraries offer Internet access and supporting trained staff,** as part of the UK online drive;
- **invest £35 million to pilot new initiatives for post offices to help people access and use the Internet (Internet Learning Access Points),** and to act as government one-stop shops (Government General Practitioners); and
- **pilot the costs and benefits of giving full broadband access to all households and public institutions in selected disadvantaged communities,** to use as a high-profile demonstrator of e-government, e-commerce and e-community services and applications.

6 Embed information and communication technology skills in the education system and throughout lifelong learning

Access alone is not enough to help people use the Internet. Some people lack the skills they need for access, and some lack the confidence to learn, particularly the elderly and the disadvantaged. Some people fear embarrassment in learning environments as a result of previous abortive attempts at acquiring ICT skills.

To ensure that people have skills to benefit from new technologies, the Government is taking steps to ensure that ICT skills training is embedded in:

- the education system
- lifelong learning

Raising ICT skills in schools, further and higher education...

Significant progress has already been made in integrating new technologies in the education system. In 1999, 62% of primary schools were online compared with 17% in 1998, and

93% of secondary schools are now online. ICT training has been made available to all teachers, and we are revising the National Curriculum to place a sharper emphasis on ICT.

Priorities will include:

- £700 million to improve the ICT infrastructure in schools, further and higher education;
- £230 million to improve ICT skill levels among educators;
- the establishment of City Learning Centres (Excellence in Cities programme, £100m for 1999-2002 CMF) in major city schools to meet the needs of pupils and adults in the community for connections, infrastructure, content and training (32 City Learning Centres in EiC target areas from September 2000 and a further 50 from September 2001). Core client group will be pupils and teachers, but will also provide opportunities for the wider community to promote lifelong learning, including the network of UK online centres for adults;
- increasing staying on rates, reducing truancy figures and improving employment prospects
- stimulating high-quality online educational content;
- working with the Digital Content Forum to introduce short-term ICT work placement programmes for 16+ students, in parallel with work experience programmes.

One key outcome from this investment will be that, by 2004, 75% of 14 year olds should have achieved a high standard of basic IT skills,⁸ increasing to 85% by 2007.

...and in lifelong learning

The Government will:

- **invest £84 million in the development of the University for Industry (Ufi) in 2000-01.** By 2003, Ufi aims to have 2.5 million people and businesses using its learndirect services in England, Wales and Northern Ireland. **learndirect** is also available on the web at www.learndirect.co.uk. By 2003 it aims to stimulate demand for up to 1 million courses. In July 2000, **learndirect** already offered 270 course titles, 235 online;
- **offer free ICT ‘taster’ courses to unemployed people** through the UK online employability training programme. There are 50,000 available places. Seven thousand people have already started and 3,000 are about to start. The courses are available at nearly 700 sites in England, offering a wide range of venues, attendance arrangements and learning styles - all intended to attract and retain the reluctant learner;
- **from September 2000, offer 80% discounts for computer literacy training** for those with Individual Learning Accounts; and
- **Offer high-quality lifelong learning content** funded by the New Opportunities Fund and delivered through UK online public libraries.

7 Work with industry to ensure a safe and secure environment for e-commerce and to help people trust the Internet

A significant factor holding back people’s use of the Internet is a lack of trust. The Government is working with industry to put in place practical solutions to the problems - both real and perceived - which cause this lack of trust, in particular in the areas of:

- protecting children from unsuitable content on the Internet;
- safeguarding the interests of online consumers;
- reducing the scope for online fraud;
- combating the use of the Internet for criminal activity; and
- protecting the security of online information assets.

Protecting children from unsuitable content on the Internet

The Internet Watch Foundation (IWF) was relaunched in January 2000 with a widened remit covering racist material as well as its core remit of child pornography. Based on a partnership between government, the Internet Service Providers (ISPs), the law enforcement authorities and child protection charities, the IWF plays a vital role in combating criminal material on the Net and working internationally to develop rating and filtering systems empowering people to control their own and their children's experience of the Internet, and has become an international model of best practice. IWF has been instrumental in getting over 25,000 potentially illegal items (of which the vast majority has been child pornography) removed from their servers by the UK Internet Service Providers industry.

The DfEE has also been active in this area. Its updated 'Superhighway Safety' pack will be available from September 2000 as part of an initiative to help parents support their children's education through the use of ICT.

To build on and publicise this work, the Government will agree, with all core stakeholder groups and in particular the children's charities, a simple set of best practice web self-protection tips for parents and children. These will be made available on the new UK online citizen portal, along with more detailed advice at c And work with the IWF and other partners to publicise these tips widely.

Safeguarding the interests of online consumers

TrustUK is a joint non-profit making venture between the Alliance for Electronic Business and the Consumers' Association, endorsed by UK Government. It seeks to foster consumer trust and confidence in Internet trading through the approval of online codes of practice. TrustUK was highlighted as the most comprehensive of all codes examined in the Canadian public interest advocacy centre's comparative analysis of consumer e-commerce codes and standards. Launched to consumers in July, three codes have been approved under this scheme including The Consumers' Association's Which? Web Trader, ABTA and the DMA.

The Government will:

- help publicise the work of Trust UK by providing 'safe shopping' advice on the UK online citizen portal;
- develop, in consultation with Trust UK, a 'consumer trust standard' for use by government departments providing online transactions;
- monitor advances in online payment systems to ensure that they facilitate universal access to e-commerce and promote developments which increase consumer and business confidence.

Reducing the scope for online fraud

Fear of fraud - and in particular fraudulent use of credit cards - is a key barrier to e-commerce. We will address this by:

- encouraging the credit card industry to establish an address verification system applicable for online and other remote credit card transactions by the end of 2000;
- continuing to work with the Alliance for Electronic Business to create **t-Scheme**, a self-regulatory system of approved 'trust service providers' (organisations offering services which allow messages to be electronically signed, ensure they cannot be changed in transit and make sure they remain confidential)⁹. Widespread use of authentication and confidentiality services from such providers should help increase trust in electronic transactions.

Combating the use of the Internet for criminal activity

We have also been working to make the UK not only the best place in the world for e-commerce, but also the safest. The Regulation of Investigatory Powers Act, which received Royal Assent on 28 July, has far-reaching implications for the safer use of the Internet. The Act provides for the legal interception of communications including the Internet and a legal

framework for disclosure of lawfully acquired information in an intelligible form, where necessary by disclosure of a password or decryption key.

Industry has expressed concerns about both the cost of implementing the interception regime and about the effect on lawful businesses of the power to demand decryption keys: concern that the eventual impact of the Act might be to reduce international business confidence in the UK as a place to do electronic commerce. We have worked with the Home Office to ensure those concerns are acted on. Amendments introduced during the passage of the Act have addressed many industry concerns, and we are confident that the current proposals strike the right balance between promoting e-commerce and the need to ensure that the law enforcement agencies have the ability to investigate criminals and terrorists using new communications technologies. Industry representatives have said that the drafting of the Act now broadly satisfies their concerns.

We will ensure that implementation of the Act is taken forward in close collaboration with industry by:

- establishing quickly the statutory Technical Advisory Board, comprising a balanced membership of business and government interests, to advise the Home Secretary on the implementation of new interception arrangements;
- ensuring that the industry is fully consulted on what constitutes a ‘fair’ contribution to the costs of interception; and
- continuing to work in cooperation with industry and law enforcement agencies to identify and address the threats posed to society by criminal use of new technology. The law enforcement agencies have prepared a National Hi-Tech Crime Strategy to support the detection and investigation of online and other hi-tech crime and to equip and train police to detect and investigate such crimes. A National Hi-Tech Crime Unit will begin work by April 2001 as an integral part of this strategy. It will investigate serious hi-tech crimes with a national impact, provide the UK’s 24-hour response to transnational crimes and provide support to local policing of hi-tech crime.

Protecting the security of online information assets

Protection of information assets is a vital element of e-commerce. We are raising awareness of the need for appropriate levels of security by giving attention to the specific issues raised by trading online and promoting accepted best practice in dealing with these threats. We will:

- devote more resources for DTI to promote information security best practice to UK business. That promotional effort will address the management challenge of information security - focusing on the use of BS 7799 - and in particular the problems associated with trading on line;
- lead by example by putting information security at the heart of our e-government strategy - progressively applying BS 7799 to the management of government information assets;
- ensure sound mechanisms are in place to protect the critical national infrastructure. We set up the National Infrastructure Security Coordination Centre (NISCC) in late 1999 to coordinate and develop work to protect the critical national infrastructure in the public and the private sector against electronic attack. NISCC is raising awareness of information security across those organisations responsible for the critical national infrastructure.

8 Help increase people’s motivation to access the Internet by driving up the amount and quality of social content

About half of the ‘unconnected’ respondents to a recent DfEE survey said that the Internet was not relevant to their lives - although a significant number of the elderly, including those on benefit, are increasingly interested in ICT. A recent study¹⁰ found that IT-related learning is the learning activity most commonly undertaken by older people. 50% of the first 1,000 starters of UK online training were 50 or older, and more than half were receiving benefits other than Jobseekers allowance. The PAT 15 report also cited the lack of perceived

relevance of commercial online content as a major stumbling block to the success of community ICT learning centres. Commercial operators focus on the potentially most profitable segments of the market, so the market often does not provide the sort of content and applications needed to encourage widespread use, particularly among the socially disadvantaged. PAT 15 found that 'social content', in particular content rooted in the local area - e.g. history projects, local events, council services, etc. - was often successful in attracting people to use the Internet. International experience confirms this.¹¹

The Government will therefore:

- emphasise the importance of strong plans for developing local content when assessing the bids from local partnerships bidding to run UK online centres; and
- consider how it might best work with the cultural sector and creative industries to explore new ways to stimulate the development and availability of high quality cultural content for a range of audiences.

Successful businesses

Summary

Goals

By 2002:

- 1 million SMEs actually trading online.
- The UK's smaller businesses (under 100 employees) to have reached the level of the international best in use of e-business.
- A higher proportion of business-to-business and business-to-consumer transactions taking place electronically in the UK than in any other G7 country.

The Government will now:

9 invest an additional £25 million over three years to help small businesses exploit the potential of information and communication technologies; and

10 Support industry in improving competitiveness through e-business technologies and processes.

As seen in the benchmarking section of this report, use of ICT by UK businesses has grown strongly over the last year, with 4 in 5 businesses now online. However, DTI research suggests that many businesses, small and large, find it difficult to formulate the appropriate strategic response to the e-commerce challenge, or to know the best way of implementing a strategy given the pace of technological development. The Government's strategy is focused on providing:

- to small businesses, the proactive advice and support they need; and
- to larger firms in the corporate sector, an environment which encourages rapid dissemination of e-commerce knowledge and best practice.

9 Invest an additional £25 million over three years to help small businesses exploit the potential of information and communication technologies

The Government is already helping SMEs rise to the e-business challenge through the expert, impartial, jargon-free advice available through DTI's Information Society Initiative (ISI), a programme aimed at fostering awareness of ICT best practice in small businesses, addressing skills and training needs and addressing barriers to the take up of new e-business practices and technologies. The national network of 100 ISI support centres was completed in December 1999. Although successful, the ISI has relatively low awareness in the SME community. However, through the national e-commerce awards, it aims to raise the profile of e-commerce amongst SMEs.

This year's national e-commerce award was presented to DGC Distribution, a Durham-based company, for its achievement in e-commerce.

DGC Distribution, an importer and distributor of musical instruments and accessories, has been trading for 18 years with a current team of six employees, and was rewarded for its successful online website. The site, www.guvnor.com, allows trade customers to search the product database and place orders. Customers include music shops in the UK, Ireland, continental Europe and the USA.

The company adopted e-commerce to avoid increases in staff and overhead costs, but found a significant increase in sales with this year's figures running 30% ahead of last year.

Due to this success DGC is now working on plans to develop its website into a central databank for the whole of the music retailing industry. The company has already commissioned Online Marketing to assemble an industry-wide product database, which will meet the unique needs of the company, the customers and the industry.

Following the Cross-cutting Review on the Knowledge Economy, the Government will now significantly expand this support by investing an additional £25 million in this and the next two years to:

- boost marketing of the service, which will be rebranded as UK online for business;
- ramp up the front-line capacity of the UK online for business;
- create a web-enabled call centre advice service, supported by a 'virtual expert system'; and
- raise awareness of the range of fiscal incentives which the Government has launched to encourage small business engagement in e-commerce.

Fiscal incentives for e-commerce

100% first year capital allowances for investment in information and communications technology (ICT): small businesses will be able to write off immediately against their taxable profits the whole cost of their investment in ICT made between 1 April 2000 and 31 March 2003.

The most tax-advantaged all-employee share ownership plan the UK has seen.

A new Enterprise Management Incentives scheme to help small companies recruit and retain key personnel through highly favourable share options packages.

A package of major tax cuts to the capital gains tax taper rules for business assets to boost productivity and increase the provision of risk capital.

Discounts for electronic filing of tax returns in 2000-01, worth up to a total of £150 for small businesses.

R&D tax credit for SMEs: introduced in April this year to encourage investment in R&D by increasing the 100% tax relief on current R&D spending by SMEs to 150%.

Corporate venturing scheme: designed to promote mutually beneficial technology-driven investment which aids innovation and product commercialisation by providing tax relief on companies' investments in small higher-risk trading companies.

Finally, the Government has been working in collaboration with industry to improve the quality of advice on e-business which SMEs get from the full range of business advisers they interact with - not just in ISI centres, but in banks, accountancy firms, IT vendors and so on. In March 2000, Patricia Hewitt announced the national launch of Technology Means Business. Established by the Institute of Management and sponsored by the DTI Information Society Initiative, Microsoft, Compaq, Intel and BT, Technology Means Business is currently creating a national network of accredited advisers who can offer UK small and medium sized enterprises integrated business and ICT advice. By June 2000

Technology Means Business had accredited 60 advisers with over 420 working towards their accreditation. The aim is to have 3,000 advisers actively engaged in the programme by the end of 2002. For further information see www.technologymeansbusiness.org.uk.

10 Support industry in improving competitiveness through e-business technologies and processes

The DTI's International Benchmarking Study 2000 identified the main issues about business understanding and plans:

- Of the businesses not yet using e-commerce, 75% intend to use it in the future, and 31% intend to buy and sell online within six months of the survey.
- In relation to both existing e-commerce use and future plans, micro and small businesses in the UK rank second only to their counterparts in Sweden, and are ahead of Germany, the USA and Canada.
- The main driver behind e-commerce adoption in the UK appears to be the desire to enhance business competitiveness. Forty-four percent of businesses in the UK regard e-commerce as being very important for their current competitiveness, comparable with businesses in Germany, Sweden and Canada. Looking to the future, 73% of UK businesses see e-commerce as being very important to their competitive position in three years' time, a greater percentage than any other benchmarked country.

While the Government's proactive support focuses on SMEs, we recognise that many large businesses also need to respond to the e-business challenge. We have therefore been working with key business representative organisations, such as the CBI and Institute of Directors, to help large businesses consider the appropriate strategic response to e-business by:

- sponsoring and disseminating e-business analysis and research; and
- working with industry on activities designed to improve competitiveness through e-business.

Sponsoring and disseminating e-business analysis and research

The challenge facing most industries today is how to gather the relevant information they need to take informed decisions about future strategies to retain a competitive edge. The DTI's Foresight programme¹² has been fulfilling this role to a certain extent since 1993. A key part of this programme is now focused on e-commerce. The *Clicks and Mortar* report identifies potential opportunities offered by e-commerce to retailers of all sizes and in all sectors. *Smoke on the Water, a Fire in the Sky*, published by the e-Commerce Task Force, tries to envisage how best the UK should ready itself for the coming world of e-commerce. Both reports, although different in style, are designed to involve all stakeholders in e-commerce and stimulate the debate on the important issues raised.

We are also implementing the recommendation in *e-commerce@its.best.uk* that the Government carry out sector-by-sector analyses of the business impact of e-commerce. Furthermore, regulatory regimes affecting particular sectors may need to be modernised to ensure that they remain relevant to the changes in industry structure and new business opportunities brought about by the Internet. Government departments with sectoral responsibilities have been identifying, in conjunction with the industry, the opportunities, threats and barriers to the development of e-commerce in those sectors. Around 25 different sectors are being studied this year and a further 45 sectors are expected to be researched over the next two years. Some common lessons are beginning to emerge and the Office of the e-Envoy will, by the end of 2000, draw together the results of the first wave of studies, and publish an overview of the sectoral impact of e-commerce in the UK.

Full list of studies carried out in 2000:

Department	Sector	Title
Department of Trade and Industry (DTI)	Steel	Study of e-Business in the UK Steel Sector
DTI	Aerospace	A Study of the Impact of e-Business on the UK Aerospace Sector
DTI	Motor Vehicle Retailing	DTI Study on the Impact of e-Commerce on Automotive Distribution and Retailing
DTI	Downstream Gas	Sectoral e-Commerce Impact Study Downstream Gas
DTI	Telecom Services	Applications of e-Commerce in the Telecommunications Industry
DTI	Electronics Manufacturing	e-Commerce Sectoral Impact Assessment for the Electronics Design and Manufacturing Industries
DTI	Upstream Oil and Gas	TBC
DTI	Biotechnology	TBC
DTI	Chemicals	TBC
DTI	Metal Forming and Finishing	TBC
Department for Culture Media and Sport (DCMS)	Music	Consumers Call the Tune
DCMS/QUEST	Culture, Media and Sport	Creating e-Value: DCMS Sponsored Bodies and the Internet
Lord Chancellor's Department (LCD)	Legal Services	e-Commerce and the Legal Sector - Review of Regulation and State of Preparedness
Ministry of Agriculture Fisheries and Food (MAFF)	Farming	MAFF's Role in e-Business
MAFF	Fishing	Sectoral e-Commerce Impact Assessment
Department of the Environment, Transport and the Regions (DETR)	Construction	E-BUSINESS IN CONSTRUCTION Current Status, Opportunities and the Role of the Government
DETR	Road Haulage	TBC
Department for Education and Employment (DfEE)	Education	A Study of the Impact of e-Commerce on the Education Sector
DfEE	Employment	A Study of the Impact of e-Commerce on the Employment Sector
Home Office (HO)	Gambling	Report of the Gambling Review Body
Her Majesty's Treasury (HMT)	Financial Services	A Study of the Impact of e-Commerce on the Financial Services Sector

DTI e-commerce sector impact assessments¹³

The open and borderless nature of the Internet opens up new opportunities and imperatives for business and government to assess the performance and implications of Internet-based business-to-business e-commerce. However, most firms in the UK are only beginning to climb the e-commerce learning curve in an Internet environment. But this also applies to other parts of the world. Currently, most e-commerce takes place on conventional EDI systems using dedicated telecommunications links.

Businesses do recognise the extent of the potential opportunities available, particularly in:

- customer relations management;
- marketing and sales;
- efficiency gains and cost reductions;
- supply chain restructuring;
- developing ‘smarter’ companies; and
- new business development.

Importantly, though, it was generally clear that the characteristics of different sectors influenced the generation and exploitation potential of different kinds of opportunities.

In most sectors, ‘tactical’ drivers towards e-commerce (such as cost reduction) outweigh ‘strategic’ drivers (such as supply chain restructuring), but there were indications that the source of motivation was moving upwards in the management structure.

In general, the significant barriers to e-commerce were identified as inertia and/or uncertainty about the scale, scope and pace of e-commerce adoption in specific markets. Technical problems appear not to be major inhibitors on the whole.

The impacts of e-commerce were diverse and differed across sectors. They included:

- changing nature of intermediaries (particularly in telecommunications and gas distribution) - leading to pressure on existing intermediaries to justify their value added or become ‘smarter’;
- management coordination at a sector level - some sectors noted indications of increased collaborative activity;
- new market entrants - e-commerce was facilitating the proliferation of new entrants, each approaching the market in different ways and deploying its own standards; and
- human resources - there had been immediate impacts on how human resources are deployed - in particular, sales activities are being re-focused to put greater stress on the management of customer relations.

Work with industry on activities designed to improve competitiveness through e-business

DTI is already working closely with industry to improve their use of ICTs. For example, in June, Patricia Hewitt announced a £12 million hi-tech ‘ICT carrier programme’ to support the engineering industry, with industry providing half of this sum. The programme will encourage industry to:

- develop innovative engineering products and processes and make better use of ICT;
- speed up the uptake of new technologies by supporting and developing collaboration between companies, sector organisations and others; and
- improve awareness and understanding of the opportunities such technologies offer to improve competitiveness in the engineering sector.

Getting government online

Summary

Goals

To ensure that:

- 100% of government services are available online by 2005;
- 90% of low value goods and services (by volume) are purchased electronically by March 2001; and
- 100% of procurement by civil central government is tendered electronically by 2002.

The Government will now:

- 11** get all government services online;
- 12** drive forward action towards e-procurement and e-tendering targets;
- 13** implement a cross-government knowledge management system;
- 14** drive forward citizen participation in democracy as part of the UK online citizen portal; and
- 15** drive forward the use of authentication services both for e-government services and within government itself.

11 Get all government services online

People want government to provide services which are accessible, convenient and secure. They should not have to understand the internal structures of government to find the information or service they need. The electronic delivery of government services gives us the opportunity not just to introduce new routes for people and businesses to deal with government, but also to transform the underlying services, to make them responsive to the needs of users, not of producers. The e-government strategy is to make those changes happen, by helping departments and agencies, central and local government to cooperate to deliver services in ways which make sense to the consumer, and by forming partnerships with innovators in the private sector who can help us find new ways of meeting changing patterns of demand.

In March 2000 the Prime Minister announced that the target for 100% of government services to be online would be brought forward from 2008 to 2005. At the same time, the method for measuring progress was aligned with public service agreements (PSAs) and service delivery agreements (SDAs). In April 2000, the Government published *E-government - a strategic framework for public services in the information age*, setting out our vision for achieving this target in a way which transforms the delivery of public services, putting the user of those services first.

This section of the report sets out:

- progress to date in getting government online; and
- significant elements of the PIU study on electronic service delivery for government, which is being published in parallel with this report.

Progress to date

Thirty three per cent of government services are now available on line. And departments predict that by 2002, 70% of services will be available. But there remains much more to do. Although the range of online services currently offered by government is large, the complexity and added value of these services has remained generally at a low level. However, this year, we have been introducing:

- NHS Direct, which will cover the whole of England by the end of October. This is an innovative scheme to provide interactive healthcare information and services through call centres. This has now been extended to include a web-based information service. Future developments in the NHS include:
 - patient access to electronic personal records by 2004
 - electronic prescribing of medicines by 2004
 - all local health services to have telemedicine facilities by 2005, allowing patients to get advice electronically from NHS staff;
- the Inland Revenue's online service for self-assessment taxpayers. The registration facility came into operation in April and over 83,000 individuals have already registered to use the service which was launched on 3 July and has now received over 13,000 self-assessment tax returns; and
- The DSS's online application service for a retirement pension forecast. A retirement pension forecast tells you in today's money values:
 - The amount of state pension you have earned already
 - The amount of state pension you can expect at state pension age based on what you have earned already and what you might earn before you retire.

Next steps

In parallel with this report, the Government is publishing a detailed report by the Performance and Innovation Unit, which builds on the progress we have made so far on electronic service delivery and identifies the organisational and cultural changes that will be needed within government in order to transform the way government interacts with citizens and businesses. All the report's recommendations [insert link] have been endorsed by the Government. Some of the key recommendations from that report that are relevant to this area are included in this section under the five following headings:

- improving the customer front-end;
- joining up the back-office systems;
- setting standards;
- improving the organisational capacity of government to deliver electronic services; and
- championing of private and voluntary sector involvement in the delivery of electronic government services.

Improving the customer front-end

As an essential part of our commitment to the introduction of better online Government services, in autumn 2000 we are developing the UK online citizen portal which is due to be launched later this year. This will be a one-stop shop for government's online information and services, organised around 'life episodes', where users will be able to access in one place all the information they need about a particular experience - such as having a baby.

The UK online portal will continue to be developed over the coming year by:

- adding further life episodes every three months;
- integrating online transactions as they are developed across government; and
- ensuring that all government services are accessible through the portal.

Joining up the back-office systems

A 'Government Gateway' is also in the early stages of development to provide a security and authentication layer and to join up existing IT systems in departments to a single point of access. The Gateway will make it much easier and more efficient for citizens and businesses to use online public services and will provide universal security and authentication standards for online government transactions.

The first transactional services will be enabled through the Gateway by March 2001.

Examples of planned services include:

- self assessment tax;
- first UK online portal life event transactions;
- online VAT returns; and
- MAFF CAP scheme forms.

The existing Government Secure Intranet (GSI) will be used to provide the connectivity between departments and the Gateway. However, to ensure that the GSI is truly effective it will have to be extended to more departments, agencies and to local authorities.

Setting standards

We have developed a set of framework policies and implementation guidance to support departments in the development of their e-business activities and to ensure consistency in the Government's approach, covering issues such as website design, authentication and security. In addition, we have developed standards to ensure that departmental IT systems are interoperable and have worked in partnership with representatives of government and industry to develop the e-Government Interoperability Framework (e-GIF), which sets out the Government's technical policies and standards for achieving interoperability and information systems coherence across the public sector.

The Office of the e-Envoy will continue to develop technical standards and will:

- revise existing guidance and publish guidance in new areas; and
- develop data schema initiatives to support data compatibility across government.

Improving the organisational capacity of government to deliver electronic services

New investment mechanisms are needed at the centre to support a coordinated drive for e-government, based around the needs of service users. In conjunction with the launch of this report, the Prime Minister announced the creation of a 'virtual budget' to take forward the e-government strategy, worth £1 billion over three years. This is in addition to the significant investment going into IT infrastructure across government.

These changes need to take place in the following three areas:

- strengthening the strategic role of the centre;
- ensuring the development of departmental skills and buy-in; and
- developing mechanisms for encouraging entrepreneurship within departments and agencies.

Strategic role of the centre

It is important to ensure that Government moves forward in a coordinated and effective way. This means giving the Office of the e-Envoy a greater strategic role by:

- releasing funds to departments and agencies only on condition that departments have drawn up detailed e-business strategies, and the e-Envoy has confirmed to the Chief Secretary that these are aligned with the Government's overall strategic vision;
- ensuring that all departments produce e-business strategies by October 2000; and
- ensuring that the overall government strategy is reviewed by the e-Envoy by December 2000.

Departmental skills and buy-in

To be effective, the e-government programme must ensure that departments and agencies have the skills needed to carry it out, and also that there is buy-in throughout the entire organisation. To do this we will:

- ensure that the information skills required at all levels of government to implement the e-government strategy are kept under close review.

From Autumn 2000 onwards, the six-monthly electronic service delivery implementation reports will contain more information about take-up and the measures departments are taking to increase it.

The implementation of e-government requires the government to address the way it handles projects. In May 2000, we published a report, *Successful IT: Modernising Government in Action*, which set out measures to improve project delivery and provided 30 recommendations which aim to ensure that all government IT projects are as good as the best.

In addition, the Government will:

- hold meetings of the Cabinet on e-government every six months.

Encouraging entrepreneurship

We also need to ensure that entrepreneurial e-business ideas from junior officials within departments are given space to flourish outside the normal departmental planning mechanisms and to consider mechanisms to allow this to happen. To encourage this to happen we will now:

- establish an e-government incubator within the Office of the e-Envoy by March 2001 to identify and support innovative electronic service delivery projects outside traditional government structures;
- establish ‘demonstrator’ product managers responsible for delivering content to key customer segments by December 2000; and
- establish an e-business unit within each major service delivery organisation by March 2001.

Championing private and voluntary sector involvement in the delivery of electronic government services

Government is making significant progress in the development and marketing of its services. However, it is undoubtedly true that the private sector has the edge in what is essentially a market driven activity. Through its wide-ranging ‘user friendly’ contacts with the public and business, the voluntary sector is also well placed to participate in and support government electronic service delivery.

We therefore need to facilitate a mixed economy of private and voluntary sector solutions alongside, or in place of, government initiatives. Examples of this approach are already starting to appear. The challenge facing government is to develop new ways of working in partnership with the private and voluntary sectors without either stifling competition or compromising probity.

Business use of government information

www.upmystreet.com takes government data including from the Land Registry, Home Office and DfEE and repackages to present an approximate profile of where you live.

www.streetmap.co.uk takes Ordnance Survey and postcode data to provide you with a map centred on the place you are seeking.

www.healthcentre.org.uk takes government health information websites and NHS Direct and packages it with other information such as websites for support groups (e.g. diabetes) or drugs help and advice from the Health Development Agency and the Department of Health.

www.mychildatschool.com is to be launched in September. However, demonstrations are available now which illustrate an interactive service based on DfEE and other data with perspectives designed for a parent, pupil or teacher.

www.clearlybusiness.com among much general advice on marketing and business planning provides information from several government websites including health and safety, Companies House, Patent Office, employment legislation, disability and data protection and a variety of forms you might need to use.

www.ihavemoved.com is in negotiation with government to extend their change of address service to include government departments as well as utilities and other organisations.

We will therefore:

- champion the development of interaction and transaction markets;
- ensure that all proposals for developing new online services consider the scope for private and voluntary sector involvement.; and
- consider the benefits of switching ESD to alternative service providers where progress is slow.

Following the Government's acceptance of the recommendation of the Committee on Standards in Public Life (the Neill Committee) on sponsorship, we will publish guidelines to ensure that income generation and sponsorship do not impinge on probity and appropriateness. In future, departments will be required to include information in their annual reports on the value and benefits derived from sponsorship and advertising.

12 Drive forward action towards e-procurement and e-tendering targets

Experience in the private sector has emphasised the advantages of business-to-business (B2B) e-commerce. Savings of 60% have been demonstrated for low value procurement of goods and services. On 1 April 2000 the new Office of Government Commerce (OGC) was launched. The OGC is leading the drive towards full electronic trading between government and its suppliers. In support of this, the 'Modernising Government' target, "90% of low value goods and services (by volume) to be purchased electronically", has been widely adopted by departments and OGC will shortly publish an assessment tool which will help departments measure their performance against this target.

The e-procurement indicators in the *e-commerce@its.best.uk* report have generated much e-procurement activity, and have led departments to define more clearly their e-procurement strategies. They have also encouraged the formation of cross-departmental user groups - where small working parties lead on particular issues.

The box illustrates current government electronic procurement initiatives.

While it is expected that huge process cost savings will be generated from e-procurement's introduction, the real benefits will be derived from the leverage benefits, supply management, price accuracy and standard specifications which result from a close analysis of procurement. Full achievement of savings will only occur with full systems integration.

The OGC has initiated a review of current e-procurement systems in government. During the coming year the following actions will be taken:

- development of a strategy to ensure coherence and standardisation of e-procurement across government (by end 2001);
- provision of advice and guidance on development of e-procurement systems tools and techniques (ongoing); and
- sponsorship and support for pilot projects to explore innovative e-procurement solutions (pilot projects identified by end 2000, and started by 2001).

Electronic tendering also offers significant efficiency savings. The Government has announced the following new targets for the introduction of e-tendering in central civil government:

- 50% by December 2001;
- 100% by December 2002.

In support of this, the OGC is leading the development of an e-tendering system, which will start with a number of departments piloting the successful system to ensure success in its widespread adoption. Pilots will start in the autumn, with assessment and possible roll-out in April 2001. OGC is also piloting a Government Supplier Information Database (G-SID), which records basic supplier information on a website and is free to suppliers. G-SID is currently undergoing a small-scale pilot, with larger pilots planned for the autumn. Full-scale roll-out could be as early as January 2001.

Government electronic procurement initiatives

- MOD Defence Electronic Commerce Service (DECS) consisting initially of an electronic messaging systems capability and online hosting of product catalogues. Contract placed with service provider, with the initial service being progressively introduced over the remainder of this year.
- Northern Ireland Government Purchasing Agency (GPA). Northern Ireland operates a fully Electronic Requisitioning and Ordering System (EROS), with full GPC integration - including reconciliation. The system provides a service to the Benefits Agency and all government departments in Northern Ireland, and its delivery is proven across the UK.
- Foreign & Commonwealth Office (FCO) Services are purchasing an end-to-end e-procurement solution to be rolled out to all worldwide posts. The system will incorporate catalogues and third party catalogues and will include a 'track and trace' facility. It will be implemented by end March 2001.
- The Buying Agency (TBA) has a pilot online facility covering all the 500,000 products and services in its direct call-off contracts. This allows any of the TBA's public sector customers to use call-off contracts in an electronic environment.
- The NHS Purchasing and Supply Agency's e-commerce trading system - SupplyStream - allows paperless requisitioning and purchasing, integrated to finance systems. An electronic warehousing system is already in place. Electronic tendering is currently being tested and the electronic catalogue continues to be refined and is available on the web, as well as in CD-ROM format.
- DSS, in conjunction with the Employment Service, estimate that they have saved £18 million since April 1998 through e-procurement.
- The Environment Agency (EA) has signed up as an early adopter to an electronic trading portal. The portal is a utilities focused joint venture, which has a significant synergy with the utilities sector. The pilot involving EA will be in operation by autumn 2000.
- In MAFF an electronic procurement initiative is under way that will allow paperless requisitioning and purchasing, fully integrated with the financial management system. The initiative will incorporate electronic supplier catalogues maintained internally as well as access over the Internet to the electronic catalogues of contracted suppliers. The roll-out of this initiative is planned to meet the Prime Ministerial target of March 2001 for 90% of low value transactions online.
- Government IT Catalogue GCAT: a comprehensive catalogue of IT goods and associated services providing online browsing, ordering and payment facilities and supporting use of the government procurement card.
- Government Telecommunications Contracts (GTC): a widely based framework of telematics contracts. Progressive roll-out of electronic browsing and ordering is planned for this year.
- Some other departments and agencies, such as DVLA, are using supplier catalogues to place orders, payment being made using the government procurement card

13 Implement a cross-government knowledge management system

Across government, Ministerial and press offices are called upon, on a daily basis, to provide information about government policy - to MPs, the media, businesses and the public. The type of information required includes details of statements and speeches made about policy, and facts and figures both supporting and questioning policy decisions. It is important that government manages its assets properly in this area. To this end the Knowledge Network (KN) project has been initiated, and is described in the box. A priority this year must be to ensure that this project is fully implemented.

The timetable and milestones for the KN project are summarised below.

- By 23 October 2000 - the following applications will be made available to participating departments over the GSI:
 - research online: briefing on facts and figures
 - local and regional statistical information
 - KN online helpdesk
 - Parliamentary Clerks' network
- By May 2001 - departmental interactivity will be developed, to include the following:
 - identification of 'early adopter' departments
 - installation of systems in departments with common standards for metadata and classification of material
 - initiation of demonstrator projects including 'community of interest' and 'knowledge pool'
- By January 2002 - the change management consequences of the KN project will have been assimilated through the following actions:
 - best practice seminars, studies and ideas exchange
 - introduction of recognition and reward schemes
 - identification of weak areas with support provided
 - new methods of communications and training
- By July 2002 - embedding the KN in departmental working practice including:
 - spreading from departments to agencies, NDPBs and external stakeholders
 - development of specific 'communities of interest'
 - development of new ways of exploiting the KN infrastructure

The Knowledge Network Project

The Knowledge Network project will provide fast, modern flows of knowledge, facts and figures with the following characteristics:

- available both within individual government departments and between them;
- available at pan-government level - for example between Number 10, the Cabinet Office and departments;
- available to officials and Ministers remotely, 24 hours a day;
- providing regionalised, local facts and figures; and
- available to the public via the Internet.

There are currently five pilot projects in the Knowledge Network process, involving ten departments:

- *Content management analysis* - participants: Number 10 Research and Information Office, Department of Health.
- *Regionalised facts and figures* - participants: Number 10 Research and Information Office, Department of the Environment, Transport and the Regions, HM Treasury, Home Office, Office for National Statistics, COI Regions, Government Office for the Regions.
- *PMQs Online* - participants: Prime Minister's Office Parliamentary section, Department of Trade and Industry.
- *Correspondence business process* - participants: Number 10 Direct Communications Section, Department of Health, Department of Trade and Industry.
- *The Information Age Ministers' Knowledge Network* - participants: Office of the e-Envoy; the offices of the Information Age Ministers.

14 Drive forward citizen participation in democracy as part of the UK online citizen portal

The objective of this work is to bring government and citizens closer together, through facilitating a dialogue between:

- citizen and government;
- citizen and elected representatives; and ultimately
- citizen and citizen.

Government has taken the first steps towards introducing information age technology to assist in the democratic process. A trial electronic voting system was used on 4 May at Salford and Bury. Electronic petitions are accepted by the Scottish Parliament. Gwynedd County Council broadcasts council meetings in English and Welsh over the Internet. The Number 10 website has a 'Your Say' section with a Policy Forum, a consultations register and way to accept electronic petitions.

This work is being taken forward as one of the elements of the UK online citizen portal. It is intended to create a one-stop shop for information about government, government consultations, access to elected representatives and election information. The service currently being developed (for launch in autumn 2000) consists of four strands:

Citizen to government

- consultation: giving citizens the ability to give their views to Government, and providing easier access to public consultation documents; and
- CitizenSpace discussion forums, moderated by the Hansard Society, allowing citizens to exchange views with ministers and with each other.

Citizen to elected representative

- elections: enabling citizens to find information about elections and how to vote; and

- know-how: giving citizens the ability to contact government departments, MPs, MEPs and local councils and guidance on which would be the most appropriate choice.

Targets

The UK online team will build on the strands outlined above by exploring:

- with the Home Office and other interested bodies, issues surrounding authentication and legislation, and the feasibility of using the portal for:
- online voter registration
- online postal vote application
- participation in the programme by the devolved administrations and legislatures, and representatives of local government.

15 Drive forward the use of authentication services both for e-government services and within government itself

e-commerce@its.best.uk advocated the development of authentication services for the promotion of trust in e-commerce. Progress towards higher level services for government electronic service delivery will crucially depend on the development of appropriate electronic authentication and security processes for use by businesses and citizens. To ensure that this can take place the Government will need to:

- work with a range of trusted service providers, to ensure interoperability with government processes; and
- identify where the marketplace is adopting suitable technologies for secure transactions and access, and ensure that the Government makes full use of these to meet electronic service delivery targets.

e-commerce@its.best.uk also recommended the use of a PKI for government purposes. CITU in conjunction with CESG has now set up the central infrastructure of a PKI, including a Root Certificate Authority. Procurement guidance for departments has also been developed under CESG's PKI standards initiative ('Cloud Cover'). A number of departments are now actively planning their own PKIs to interface with the central infrastructure.

In the coming year, the Root Certificate Authority will be supplemented by an online GSI Certificate Authority, to be operated and maintained by a commercial service provider. Assistance will be provided to departments in developing departmental PKIs which meet local business requirements. CITU and CESG will also work closely with industry to assist in resolving industry-wide PKI interoperability problems, and will define more clearly the relationship between government PKI and commercial authentication services provided within the t-Scheme.

Action for the current year:

- exploit and further develop PKI within government, in accordance with departmental business needs; and
- define the relationship between government's own PKI and authentication services provided under t-Scheme.

World class supply

Summary

Goal

To help the UK-based IT, electronics, communications and content sectors contribute to improving the UK's competitiveness by narrowing the productivity gap with the USA, France, Germany and Japan over the economic cycle.

The Government will now:

16 implement a strategy to make the UK the number one country for the supply of high-level ITEC skills, taking account of the recommendations of *Skills for the Information Age*;

17 invest in leading edge e-science;

18 facilitate ITEC knowledge transfer;

19 implement an action plan for growth for the digital content sector, including through liberalised access to government information; and

20 work with industry to develop a UK strategy for m-commerce.

The UK's ITEC sectors (i.e. the IT, electronics, communications and content sectors) are a significant driver for the UK economy. They are both significant in their own right (8% of GDP and 30% of GDP growth), and as a key enabler of growth and productivity across all other sectors of the economy.

Technological change means that these sectors face a vital window of opportunity to take a global lead. In the first phase of the digital revolution - which has been driven by the PC, connected over fixed telecoms networks - US companies have dominated, with companies such as IBM and Dell building the PCs, Microsoft, Oracle and Sun providing the software, and Cisco providing the Internet technology.

But we are now entering a second phase, in which a huge range of intelligent devices can communicate with each other, with connectivity becoming permanent, ubiquitous and mobile. Europe as a whole, and the UK within it in particular, has an opportunity to lead in this second phase. Digital television (DTV), third generation (3G) mobile telephony, semiconductor design, embedded intelligence, opto-electronics - these are all leading-edge technologies where UK and European companies are global leaders. (See box for a case study of the UK semi-conductor design sector.) And in the case of DTV and 3G mobiles, the UK is putting in place the market framework conditions to create a mass market for these services well ahead of our competitors: we are already the only country in the world to have DTV available to consumers over three competing platforms, and earlier this year we held the world's first auction of spectrum for 3G mobile services.

A world class player in semiconductor design

The UK has:

- the largest semiconductor design industry in Europe, with well over half (57%) of the market in integrated circuit applications design. Of the 140 design houses in Europe, 60 are based in the UK. (Ref Future Horizons, Dataquest), including Europe's largest independent design house industry - worth \$85 million;
- Europe's second, and the world's fifth largest electronics industry. It employs some 400,000 people in manufacturing plus 130,000 in software and services sectors. The world's leading information companies have chosen the UK as their European operations hub and many inward investors manufacture complete products or components here. This continuous investment has ensured that the UK is a world leader in many key areas such as chip design and manufacture, opto-electronics and digital broadcasting technology;
- a strong academic infrastructure. Eighty-five British universities offer training in applications design alone - leading to undergraduate, postgraduate and vocational qualifications. At least 50% of these universities have research teams of their own. The universities address the important System on Chip technology with the Alba centre in Livingston, Scotland, being the world's leader in this area. In 1999, some 25,000 home students were admitted onto electronics-related degree courses;
- close government/industry partnership. For example, DTI supports the National Microelectronics Institute (NMI), a partnership with the major UK-based semiconductor manufacturers. The NMI aims to promote the growth of the UK microelectronics industry and supply chain, in particular through stimulating world class best practice in the manufacture and design of semiconductors, a key technology for the Information Society. During the year NMI produced a health and safety passport for suppliers to the semiconductor manufacturing industry. This provides core training material and reduces the need for suppliers to be accredited for separate customers.

The UK's ITEC sectors therefore have a real opportunity to leverage early domestic demand in Europe to become the global leaders in the next wave of the digital revolution. But there are a number of challenges to overcome if the UK is fully to exploit this window of opportunity. ITEC productivity lags some way behind the USA. The R&D intensity of UK ITEC companies is below the G7 average. The Government is determined to make the UK the best place for world class electronics companies to invest, particularly in leading-edge products. There is already a shift in production activity away from low added value production towards more leading-edge products, e.g. away from analogue TVs and VCRs and towards digital products. Through a series of studies into the faster-moving sub-sectors, government will continue to monitor these developments and to take the necessary steps to maintain a globally competitive electronics industry.

Current weaknesses are set out in more detail below, along with the actions we are taking to address them. The development and implementation of this agenda will be done in close collaboration with the Information Age Partnership, which has established a Task Group aimed at building an internationally competitive supply base, leveraging the UK's technological strengths (including 3G mobile).

16 Implement a strategy to make the UK the number one country for the supply of high-level ITEC skills, taking account of the recommendations of *Skills for the Information Age*

About 1 million people are employed in skilled ITEC occupations - not just in the ITEC sectors themselves, but across the economy. And demand for such skilled professionals is growing rapidly, in the UK (see box) and globally. In the UK, the Institute of Employment Research has forecast that the IT services industry alone will need to recruit over 540,000 people between 1998 and 2009.

In March 2000, at a seminar held at Downing Street, the Government discussed with major employers in the IT sector how disadvantaged unemployed people might be trained for, and placed successfully into, the increasing number of vacancies in the sector, with the help of intermediary organisations and the New Deal Innovation Fund. Work is now ongoing to set this project in place.

The Government has been working closely with the ITEC sector to address these skills requirements. In November 1999, an industry working group, supported by DTI and DfEE and chaired by Alan Stevens of EDS, published *Skills for the Information Age*, an investigation into the skill needs of jobs in ITEC.

Early progress has been made in implementing the ITEC skills strategy:

- A new strategic group of ITEC National Training Organisations (NTOs) has been convened under the chairmanship of the e-Envoy to oversee the implementation of the skills strategy. The group includes EMTA for engineering manufacture, e-Skills NTO for IT jobs, NTO tele.com for the communications sector, Skillset covering broadcast and new media sectors and Publishing NTO for electronic publishing interests.
- We have put in place highly favourable work permit arrangements for employers wishing to tap into the global pool of ITEC skills. Employers wishing to recruit a non-EEA national into a designated ITEC shortage occupation can now benefit from fast track application procedures, with no quota restrictions as in countries such as the USA and Germany. We are also making it easier for employers to recruit overseas students into ITEC jobs straight from UK universities.
- The Chancellor announced an overall increase of £1 billion for science, along with an uprating in PhD stipends for science and engineering postgraduate students. Both of these measures will help increase the flow of postgraduates in disciplines needed by the ITEC sector.

The Government will now **invest at least £8 million over the next three years to drive forward the ITEC skills strategy**, in particular through:

- a major new business-led campaign to improve the image of careers in IT, particularly targeting children and women;
- a new programme of work placement opportunities for electronics undergraduates;
- coordinated action to develop and maintain an interest in electronics amongst school children to encourage more young people to follow electronics-related careers;
- preparation of better ITEC labour market information through DfEE's skills sector dialogues; and
- rationalising the number of IT awards around a coherent set of IT qualifications which have value and standing in the eyes of business - the current provision of around 800 IT awards has left many learners and businesses confused about the purpose and value of many qualifications. By the end of 2001, the Qualifications and Curriculum Authority will have reviewed the currently unregulated IT qualifications and reduced them by 90% to give a coherent framework of accredited qualifications.

The programme to improve the supply of specialist ITEC skills will benefit from the Government's drive to embed information and communication technology skills in the education system and throughout lifelong learning (see commitment 6).

17 Invest in leading-edge e-science

The Government is investing an additional £1 billion in science, in partnership with the Wellcome Trust. This will include substantial investments in leading-edge e-science - information technology, networks and databases required to handle the exponentially increasing data from large-scale experiments such as the Large Hadron Collider and Genome. We will work with business and the science base to ensure businesses maximise the benefits from investments in these new electronic methods of supporting science, for example, by entering the world-wide markets for the provision of e-science systems and services.

18 Facilitate ITEC knowledge transfer

Effective knowledge transfer - between universities and the ITEC sector, and companies and between sectors - is vital if the UK is to lead in development and exploitation of the next wave of digital technologies.

The speed of market and technological developments in this area makes knowledge transfer particularly challenging - especially for SMEs. Many of them do little more than seek to implement existing ICT best practice in their business. There is insufficient focus on developing the services and applications which will commercialise the next wave of digital technologies. For example, the infrastructure for broadband mobile e-commerce will be built by around 2002. Yet DTI research shows industry has only started to begin developing the rich set of content and applications which will be needed to make mobile multimedia viable, because of a lack of information outside the ICT sector on how the technology will work, and on issues such as emerging standards.¹⁴

To help address this, the Government will:

- **incentivise universities to commercialise ITEC research**, by providing a strong supportive framework for universities and business to work together to drive innovation. Various measures to stimulate knowledge transfer from universities were set out in the recent white paper *Excellence and Opportunity: a science and innovation policy for the 21st century*. These included a £140 million Higher Education Innovation Fund to create better links between universities and business and industry, and a further round of the University Challenge Competition to provide seedcorn funding for commercialisation of research;
- **facilitate links between the ITEC sector, universities and other sectors of the economy**, by:
 - investing over £24 million in new LINK programmes to promote industry/university collaboration on next wave technologies, optical systems, information storage and display and electronics manufacturing. This work should lay the foundations of the future Internet (or Grid) on which companies will depend for future electronic business;
 - helping UK businesses to secure over £75 million per year funding from European programmes for the development of the information society, bringing suppliers and users of information and communications technologies in all business sectors together with academic research institutes. Work ranges from the more applied areas such as transport and healthcare through to the development of new technologies that may only reach the marketplace ten or more years in the future. DTI provides a comprehensive guidance and advice service largely through an interactive website (www.ukishelp.co.uk) and a helpline (0870 606 1515) as well as through conferences, seminars and publications;
- **review with the Information Age Partnership any actions needed to facilitate cluster development in the ITEC sector**. Business innovation and growth is often strongest when competing, collaborating and interdependent companies and institutions cluster together, creating a critical mass for skills, knowledge transfer and investment. A Cabinet Committee chaired by the Chancellor of the Exchequer is overseeing the development of national policies to encourage the growth of clusters. In the ITEC area, the Government has worked with the Information Age Partnership (IAP) to map ITEC clusters, with a view to identifying policy actions to facilitate their growth. We will now work with the IAP to identify any sector-specific requirements for action.

19 Implement an action plan for growth for the digital content sector, including through liberalised access to government information

The Government launched an *Action Plan for growth for the digital content sector* in February 2000. During 1999 three industry taskforces looked at what government, industry and industry associations might do to promote growth in the sector. Their findings, endorsed by Ministers, included: the creation of a central brokerage to facilitate

collaboration between universities and companies; proposals on company financing, skills and exports; a new industry body, the Digital Content Forum, for trade associations and other representative bodies involved in digital content; and a new industry web portal. The Digital Content Forum was launched in March. It is now up and running and has set up Industry Action Groups, for example, on exports, skills, e-commerce and new business models.

The Government will now work with industry to implement the action plan, carrying out with the Digital Content Forum a full review of progress made in early 2001.

In addition, the Government will stimulate the growth of the digital content sector by liberalising access to its largest primary information resource: government data. As part of the Cross-cutting Review on the Knowledge Economy, the Government consulted the content sector on how the UK could best secure economic benefit from the information assets held in government. As a result, we will now introduce a radically simplified system of pricing and licensing for government information, with:

- a policy of marginal cost pricing for all basic government information, except in the case of Trading Funds which will be managed to improve their pricing and dissemination policies;
- introduction by HMSO of a class licence providing a click-use-pay environment for the re-use of much of government information; and
- a presumption in favour of public information being made available in digital format and a prohibition on exclusive arrangements between departments and agencies and the private sector for the digitisation of public sector information where this unreasonably restricts access and/or commercial re-use of the material.

Full details of our plans to liberalise re-use of government information by the content sector are expected in autumn 2000.

20 Work with industry to develop a UK strategy for m-commerce

The successful auction of five third generation mobile licences earlier this year put the UK at the head of the field in providing new multimedia services on the move. Building on the momentum created by the auction, the Government is working with industry to create a highly supportive environment for mobile e-commerce.

The Government:

- will work with industry, in particular through the Information Age Partnership, to develop further an m-commerce strategy which supports secure, innovative mobile developments;
- is actively working to develop standards for third generation networks and the security and digital signature capabilities required for mobile transactions; and
- will host on 11 September 2000 another third generation mobile conference, following on its successful conference last year, which will help to make SMEs aware of the new opportunities arising from the convergence of mobile telecommunications and the IT industries.

Leadership and coordination

Summary

Goal

To provide the leadership and coordination in government needed to make the UK a leading Internet-enabled knowledge economy.

The Government will now:

21 establish new mechanisms to coordinate access and skills initiatives at national, regional, and local level; and

22 further develop and implement the UK online campaign.

e-commerce@its.best.uk stressed the wide range of government actions and initiatives which had an impact on the development of the Information Age in the UK, and argued that much stronger leadership and coordination was needed. To address this, the Government has:

- appointed Patricia Hewitt as the Government's e-Minister, and Alex Allan as the e-Envoy, to lead work on the Information Age agenda across Government;
- established a new network of Information Age Ministers from key departments - the first web-enabled Ministerial committee, supported by a new network of e-commerce coordinators within government departments
- set up a transparent system of accountability, with monthly progress reports by the e-Minister and e-Envoy to the Prime Minister, published at www.e-envoy.gov.uk; and
- implemented the recommendation in *e-commerce@its.best.uk* that an overarching strategy, informed by customer research, should be drawn up to communicate the Information Age activity of all government departments in a coherent and coordinated manner. This has resulted in the development of an overarching brand - 'UK online' - which will become the focus of our work in delivering electronic services to citizens and businesses, and working with partners to build ICT access and skills in the UK.

These mechanisms will continue to oversee the implementation of the revised strategy set out in this report. In addition, the Government will now:

21 Establish new mechanisms to coordinate access and skills initiatives at national, regional, and local level

The new drive on community-based IT access and skills initiatives (see the section on Confident people) requires strengthened coordination mechanisms. While the e-Envoy and e-Minister will continue to be responsible for ensuring that these initiatives are integrated with the other elements of the UK online strategy, there is also a need for detailed coordination at the implementation level. The Prime Minister has therefore asked:

- Michael Wills, Parliamentary Under-Secretary of State, DfEE, to take the lead in coordinating IT access and skills initiatives at national, regional and local level, working closely with the e-Minister, e-Envoy and DCMS Ministers; and
- the Government Offices in England to coordinate implementation of these initiatives at local and regional level, reporting on progress to the Parliamentary Under-Secretary of State every six months.

22 Further develop and implement the UK online campaign

We will:

- work with private and voluntary sectors, consumer groups and trade unions to develop a national campaign to get the UK online, launched by the Prime Minister in conjunction with this report; and
- hold a review of the UK online campaign's impact in 2001.

Measuring success

Summary

Goal

To ensure that government has the information it needs to develop its policies on making the UK the best place in the world for e-commerce, and to monitor progress towards that objective.

The Government will now:

23 pursue international agreement to a common framework for measuring e-commerce;

24 improve e-commerce measurement in the UK; and

25 implement a programme to evaluate the net economic impact of e-commerce.

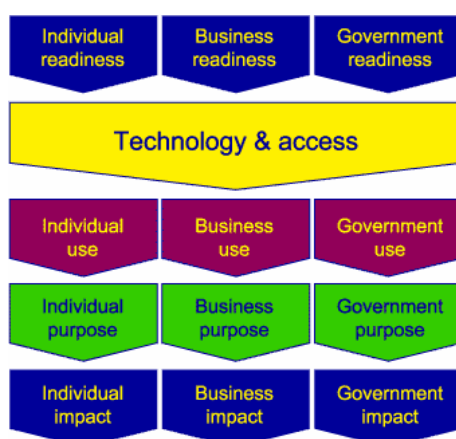
e-commerce@its.best.uk identified the importance of developing measures that would help us analyse progress towards making the UK the best place in the world for e-commerce.

The UK is making good progress in developing robust and reliable official statistics for measuring e-commerce, especially given that little work had been done in other countries which could be drawn on in developing them.

The official statistics will supplement the market research currently available, which can use varying methodologies and definitions. In order to assess the information available, the e-Envoy's office commissioned De Montfort University, working in partnership with Teleconomy and BT, to undertake a study of existing market research on e-commerce in the UK and internationally. The report found variations in the definitions and scope of what was available from market research companies and recommended that the Government should concentrate its efforts on a limited range of e-commerce indicators. This work has been taken forward in parallel with the discussions at the OECD on developing a list of priority measures.

As a result of this work, an eStatMap has been developed at www.e-envoy.gov.uk in order to provide a framework for understanding e-commerce measures and a one-stop shop for up-to-date, good quality e-commerce data.

Figure: eStatMap



This eStatMap was designed to be comparable with the emerging OECD framework of key indicators, though it is more comprehensive. For example, the OECD indicators do not cover cost, or the means by which the Internet is accessed.

23 Pursue international agreement to a common framework for measuring e-commerce

The UK was the only country reviewed in the De Montfort research that had attempted to produce internationally comparative measures for e-commerce. In order to allow for international comparisons, it is important for the UK to co-operate with other countries in developing common measures of e-commerce that can be used in a consistent way across several countries. To achieve this, we will work with partners in the OECD and with European partners on measures for the e-Europe programme. In particular, with the OECD we aim to:

- complete agreement on common definitions; and
- agree a core set of common key indicators and questions.

Common definitions of e-commerce

e-commerce@its.best.uk recognised the importance of securing definitions of e-commerce that could be agreed internationally. Provisional agreement on a definition has now been reached in the OECD's Working Party on Indicators for the Information Society (WPIIS). This consists of a nested group of definitions, which enables distinctions to be drawn between the processes, the communications infrastructure and the actors involved. For clarity, the process characteristics are also included.

OECD draft definitions of e-commerce

	Electronic or Internet	
	Transactions	Business processes
Process	The sale or purchase of goods or services conducted over...	Any business process conducted over...
Communications infrastructure	Computer-mediated networks (electronic)	or Internet Protocol based networks (Internet)
Actors	Whether between businesses, households, individuals, governments and other public or private organisations	That generate value both within a firm or organisation (internally) and among actors involved
Process characteristics	The goods or services are ordered electronically, but the payment and ultimate delivery of the good or service may be conducted on or off line	Some of these processes may result in a monetary exchange and some will not

Given the speed of technological change in this area, it was agreed that modifications and refinements would be needed as an ongoing activity. In particular, further work will be needed on the definitions of the communications infrastructure. The rationale used to distinguish between 'computer-mediated' and 'Internet Protocol based' networks is to characterise both the network (for example, public versus closed group networks) and the communication protocol used (i.e. proprietary or non-proprietary).

The definitions distinguish between 'transactions' and 'business processes'. The importance of this was identified in *e-commerce@its.best.uk*. The narrower definition (transactions) will be more practical for monitoring via regular business surveys. The broader definition (business processes) will be more suitable for the evaluation of impacts and for supporting sectoral impact assessments. The second definition - of business processes - is similar to the wider definition suggested in *e-commerce@its.best.uk*:

“the exchange of information across electronic networks, at any stage in the supply chain, whether within an organisation, between businesses, between businesses and consumers, or between the public and private sectors, whether paid or unpaid.”

However, it is not clear that a consensus exists among member countries for the statistical definition of electronic business as a whole.

The priority for the coming year will be to finalise the narrower, transaction-based, definitions, by February 2001. A provisional set of definitions should be in place by October 2000.

Common key indicators and survey questions

More work will then be needed to develop practical monitoring schemes based on these definitions and particularly to develop detailed measures that are internationally comparable. But it will be possible to begin this work, now that there is a commonly understood framework of definitions, and the OECD has already produced an indicative list of the measures that should be pursued as priorities. OECD's Working Party on Indicators for the Information Society (WPIIS) agreed in April 2000 that they gave the highest priority to surveys of ICT usage in business. A model questionnaire is being developed, which will be considered at the Voorburg Group of statisticians in September 2000.

We aim to agree a set of key indicators by February 2001. The questions to be asked follow immediately in some cases, but in others the indicators could be derived in different ways, depending on the existing statistical infrastructure or the resources available in each country. Establishing a set of key indicators should speed progress towards robust internationally comparable statistics of e-commerce, but there is no obligation on member countries to adopt the recommended approach.

24 Improve e-commerce measurement in the UK

Good progress has been made over the last year in measuring the adoption and growth of e-commerce in the UK, but further work is still needed on developing the statistical base. The initial development of a strategy for the collection of e-commerce statistics has been overseen by an interdepartmental group of statisticians and prospective users within government, chaired by the Department of Trade and Industry, building on developments that were already in hand, particularly for household surveys. The main areas where further work is required are as follows:

- individual use
- business use
- government use
- ITEC sectors
- telecoms/Internet access costs

In addition to this ongoing work, the Government is aware of the need to develop measures in consultation with industry in order to identify appropriate global benchmarks for the UK's success. In particular, the aim of this work would be to identify the attractiveness of the UK as a location for hi-tech investment. This programme of work will be taken forward through the Information Age Partnership.

Individual use

The spread of Internet availability among individuals remains both an indicator and a key driver of the information society. The Prime Minister has underlined the importance of this by setting a new target that everybody should be online by 2005, and should be making substantial use of the Internet.

Tracking progress towards this universal access target will be undertaken primarily by the ONS. This is being done through development of the Family Expenditure Survey (FES), General Household Survey (GHS) and Time Use Survey (TUS). These are surveys commissioned by Socio-Economic Division, ONS and carried out by Social Survey Division of ONS and other suppliers.

In addition, the ONS has been developing a set of questions to gather information on individuals' access to the Internet including questions on the use of different technologies and perceived barriers to using the Internet. The intention is to put these questions on the National Statistics Omnibus survey, which is carried out by ONS, on a quarterly basis.

The **Family Expenditure Survey** (FES) already includes information on whether households have home computers and Internet access. From 1998-99, the data has been included in *Family Spending*, the report on the FES.

Although the FES has previously collected information on purchases made over the Internet, these purchases could not be separately identified. From April 2000, the FES expenditure diary will specifically record whether purchases were made across the Internet and from July 2000 this will include goods and services ordered across the Internet.

Information about large one-off purchases such as holidays, cars and houses is collected within the FES questionnaire. Piloting work has been undertaken on identifying whether these goods are purchased over the Internet and this information has been collected since April 2000.

The **General Household Survey** has collected information on whether households have a home computer since the mid-1980s. From April 2000, the GHS and FES will also collect information on Internet access, whether via home computers, digital TV, games consoles, mobile phones or other developing technologies.

Subject to validation, user consultation and the provision of the necessary resources, it may also be possible to pool GHS and FES samples to provide a more precise harmonised source of information.

The **Time Use Survey**, as well as providing information on household ownership of home computers and access to the Internet, should also provide information for 2000-01 on the time individuals spend using computers.

In July ONS published the first in a series of National Statistics First Releases on Internet access. The July edition included quarterly estimates of households with home Internet access using the FES as the source. The next in the series will be published in late September and as well as updating the FES estimates will include information on individual access from the National Statistics Omnibus.

Measuring the digital divide

At present, the take-up of Internet technologies remains unevenly spread across society. The issues of social exclusion from the benefits of e-commerce were addressed in the PAT 15 report. Among the report's recommendations were several specifically concerned with monitoring of take-up among socially excluded groups. In addition to the work being undertaken by the ONS, the DfEE is establishing an ICT research centre in order to take this work forward. In line with the PAT 15 recommendations, the majority of the information required should be determined and gathered at neighbourhood level by local people against a national framework.

Several leading Internet Service Providers (ISPs) have cooperated with a project to map ISP subscribers, on the basis of their postcodes and how long they have been connected with that company. This has provided valuable information on the growth of the domestic Internet market and how it has become more typical of society at large over the past few years. The results of the first survey were published as part of the PAT 15 report.

Business use

The ONS has been developing a strategy for gathering information about the use made of the Internet for business activity. Investigations have covered:

- a stand-alone survey of the level of business activity conducted using the Internet; this is due to be piloted in autumn 2000;
- use of data from ISPs' discussions with the Internet Service Providers Association (ISPA) are ongoing with the aim of producing data in autumn 2000; and
- changes required to existing inquiries related to e-commerce; questions will be included for the first time in the Annual Business Inquiry (ABI) to be issued in January 2001.

Much of this development has required thorough preliminary work to ensure that surveys minimise the burdens placed on business. To ensure this, the ONS undertook an audit of the existing surveys in relation to e-commerce.

A stand-alone survey

Work is progressing on a regular stand-alone survey of business use of the Internet for conducting transactions. The purpose is to measure the scale of e-commerce in business activity by asking businesses directly about their use of e-commerce. This will involve piloting a questionnaire in October with a view to establishing a business case for a regular survey from April 2001. In considering the size of the survey, the government has been keen to balance the need for robust statistics with minimising the burden on business.

The current source of information for business use of the Internet remains the DTI's International Benchmarking Study. Conducted this year by Romtec, this provides a valuable method of measuring take-up, and also allows for international comparisons to be made on a consistent basis. The ONS business survey will supplement this by providing quantitative values for e-commerce transactions.

Use of data from ISPs

Discussions have been held with the international e-Commerce Research Centre at De Montfort University and with the ISPA about how the Government can make use of information already held by ISPs to measure business use of the Internet. The intention is that by tapping into information that is already available, this can avoid the need for additional data collection. This exercise has the potential to deliver useful data but is still at a relatively early stage.

Changes required to existing inquiries

The Annual Business Inquiry is the largest and most comprehensive inquiry conducted by the Office for National Statistics. The inquiry for reporting year 2000 - to be issued in January 2001 - will contain questions requesting information on those businesses involved in e-commerce. These filter questions will serve two purposes: first, to improve the sampling frame for the stand-alone survey and second to provide a body of data that links Internet access to various other economic variables.

On the international front, OECD's Working Party on Indicators for the Information Society (WPIIS) agreed in April 2000 that they gave the highest priority to surveys of ICT use in business. A model questionnaire is being developed, which will be considered by the Voorburg Group of statisticians in September 2000. It will be necessary to ensure that any questionnaires that ONS issues are in line with international definitions.

Government use

Government has set out its methodology for measuring Electronic Service Delivery until 2005 using a new monitoring process based on monitoring the number of services that are enabled for electronic transactions. It is expected that 71% of services will be enabled by 2002.

On government procurement, the target is still that 90% of low value procurement will be conducted electronically by 2001. The methods for monitoring this have still to be agreed.

It remains important for the Government to benchmark its service delivery against other governments. This has been done for the list of priority services set out in the Modernising Government White Paper. We now need to develop a methodology for benchmarking progress in delivering electronic services across a broader range of services, in both local and central government. In order to monitor the UK's progress in delivering electronic services as compared with other governments, we will repeat and develop the benchmarking exercises in 2001 and 2002 to ensure that all major areas are covered.

ITEC sectors

The measurement of the enablers of e-commerce - the ITEC sectors - will be undertaken through the analysis of data on relevant goods and services. For computer services, this will

be done through the SERVCOM project, which is a two-year project to explore the feasibility of introducing a survey of turnover generated by sale of services. The initial pilot will be targeted at computer services. The SERVCOM inquiry would be analogous to an existing survey in the manufacturing sector called PRODCOM, which collects sales of approximately 5,000 product categories, which would serve as the source for the necessary product details within manufacturing.

The product-based approach replaces the original DTI industry-based proposals for new five-digit codes for e-commerce enabling industries within the UK Standard Industrial Classification. It was felt that they would be both difficult to implement and of limited value in the fast-moving and converging IT services industry.

The OECD's regular *Information Technology Outlook* (the most recent edition published in March 2000) brings together comparative data from member states' statistical offices.

Telecoms/Internet access costs

Comparative figures for the cost of Internet access are increasingly available. OECD publish a twice-yearly comparison of Internet access costs, and OFTEL has commissioned and published a number of surveys covering this area as well as ISDN and ADSL services. This information is valuable for the Government in benchmarking this important driver of Internet penetration, both for households and for businesses. It can also have an important function in encouraging increased competition in the UK telecoms markets, by identifying the best deals.

The number of offerings and the number of companies offering services are likely to grow rapidly over the next few years, with the roll-out of ADSL and competition in the local loop, and it will be important to keep abreast of changes in the marketplace for both residential consumers and for businesses of various sizes. OFTEL is committed to continuing its programme of work to determine how the UK compares with other leading countries and the effect that competition is having on prices and services.

OFTEL will therefore continue its programme of work to benchmark key telecommunications and Internet services internationally.

25 Implement a programme to evaluate the net macro-economic impact of e-commerce

e-commerce@its.best.uk emphasised the importance of assessing the economic impact of e-commerce. The Treasury, Office of the e-Envoy and DTI are working on a joint paper on evaluating the net economic impact of e-commerce. This includes consideration of the main drivers behind the micro-economic and macro-economic effects of e-commerce, a methodological framework for evaluating them and the way in which information will be gathered to support this work. The first government economic impact study will be undertaken in 2002, or 2001 if data becomes available.

Timetable for e-commerce statistics

Date	Action
July 2000	Publication by ONS of the first in a quarterly series of National Statistics First Releases on Internet access. This edition shows 1999-2000 Family Expenditure Survey (FES) data on household access to the Internet
September 2000	Publication by ONS of the second in the National Statistics series on Internet access. This edition includes information on individual access to the Internet
End Nov 2000	Planned publication of full results of DfEE survey on ICT access and usage
December 2000	Third in series of National Statistics First Releases on Internet access
2001	Data from Labour Force Survey and New Earnings Survey coded to SOC 2000
April 2001	Planned launch of new Expenditure and Food Survey (EFS)
Autumn 2001	Data from 2000-01 General Household Survey (GHS) - information on access
Autumn 2001	Data from 2000-01 FES - purchases by households
End of 2001	Data from 2000-01 Time Use Survey (TUS) - usage by individuals
2002	Census data

Partners

The strategy for UK online set out in this report has been developed in collaboration with partners in both industry and government.

Industry

In industry our partners have notably been the Alliance for Electronic Business and the Information Age Partnership.

The Alliance for Electronic Business was launched at the end of May 1998 by five leading business organisations to influence public policy on matters affecting electronic business. The Alliance consists of the following partners:

- Confederation of British Industry;
- Computing Services and Software Association;
- Direct Marketing Association;
- e centre uk; and
- Federation of the Electronics Industry.

In summer 2000 it jointly hosted a consultation exercise and an e-business summit with the e-Minister and the Office of the e-Envoy, which informed the production of this report

The Information Age Partnership (IAP) is a high-level forum bringing together Ministers and the CEOs from over 30 major digital companies in the UK. The IAP aims to define the challenges, provide strategic leadership, and ensure that effective and speedy action is taken with a view to Britain driving future waves of global developments rather than responding to them. The great majority of its recommendations so far have been acted upon by Government. Moving forward, the IAP has identified the following strategic priorities, which will focus its own work and are reflected in the agenda for change set out in this report:

- stimulating awareness and adoption of e-commerce among SMEs;
- building an internationally competitive supply base and leveraging the UK's technological strengths;
- increasing user trust and confidence;
- supporting e-government;
- creating an international e-friendly policy environment;
- m-commerce; and
- specifying and implementing global benchmarks for measuring the UK's success.

Government

Leadership in e-government has been provided by the Information Age Ministerial Network. This group of 18 Ministers from 15 departments and the devolved administrations has the aim of ensuring that the social, economic and e-government strands of the Government's Information Age programme are combined as an integrated strategy. The group is chaired by Patricia Hewitt, the e-Minister and includes Ian McCartney, the e-government Minister. The group has been established as a 'virtual' committee, using a site on the Government Secure Intranet (GSI), which gives them access to committee papers and enables them to discuss matters online both formally and informally.

The work of the Office of the e-Envoy has been carried forward with the assistance in particular of the e-commerce coordinators in 37 departments and agencies. These have acted as a primary point of contact between the Office of the e-Envoy and their department or agency, and have coordinated the monitoring of the fulfilment of the commitments in *e-commerce@its.best.uk*. They have made monthly contributions to the reports given to the

Prime Minister by the e-Minister and the e-Envoy and to the cross-government calendar of Information Age Events.

Information Age Government issues are covered specifically by the Information Age Government Champions (IAGC) Group. The IAGC Group consists of 40 senior officials from government departments and local authorities. The function of the Group is to lead the work within their departments and authorities in support of the development and implementation of the e-government strategy, taking ownership on behalf of Government.

Information Age Government Ministers Network

Patricia Hewitt	e-Minister - Minister of State, DTI (chair)
John Battle	Minister of State, FCO
Charles Clarke	Minister of State, Home Office
Andrew Davies	Business Secretary, National Assembly for Wales
Angela Eagle	Parliamentary Under-Secretary of State, DSS
David Hanson	Parliamentary Secretary, Welsh Office
Denis Haughey	Junior Minister, Northern Ireland Executive
Alan Howarth	Parliamentary Under-Secretary of State, DCMS
Adam Ingram	Minister of State, NIO
David Lock	Parliamentary Secretary, LCD
Ian McCartney	Minister of State, Cabinet Office
Jack McConnell	Minister of Finance, Scottish Parliament
Lewis Moonie	Parliamentary Under-Secretary of State, MoD
Dermot Nesbitt	Junior Minister, Northern Ireland Executive
Joyce Quin	Minister of State, MAFF
Chris Smith	Secretary of State, DCMS
Gisela Stuart	Parliamentary Under-Secretary of State, DoH
Stephen Timms	Financial Secretary to the Treasury
Lord Whitty	Parliamentary Under-Secretary of State, DETR
Michael Wills	Parliamentary Under-Secretary of State, DfEE

e-commerce coordinators

Jon Atkey	HM Land Registry
Philip Barclay	FCO
Nick Batey	Welsh Assembly
Richard Bellingham	Scottish Executive
Bruce Calderwood	DSS
Jen Challinor	DoH
Caroline Charlton	CCTA
John Cliff	Property Advisers to the Civil Estate
Tony Cooper	DETR
Hugh Burns	LCD
Bruno Brunskill	NISCC
Glynis Davies	International Development
Helen Foster	HM Treasury
Michelle Gabbidon (Dr)	Treasury Solicitor
Ben Gales	HM Treasury

Jane Gibbs (Dr)	Office of Government Commerce
Richard Green	Court Service Agency
Ray Hamilton	ECGD
Chris Drew	ONS
Chris Henning	DTI
Steve Hogger	DfEE
Anthony Kelly	HMCE
Harvey Mattinson	CESG
Dave Monnery	HM Treasury
Mark O'Neill	DCMS
David Palmer	Home Office
Chris Penny	MoD
Chris Portman	OFT
Clare Poulter (Dr)	The Buying Agency
David Preston	NHS Executive
David Rabey	MAFF
Rachel Radford	Inland Revenue
Margaret Saner	CMPS
Nigel Shenton	Vehicle Inspectorate
Duncan Shiel	Ordnance Survey
Pauline Sheehy	DfEE
Dave Simpson	OFTTEL
Kevin Treeby	DoH
Carol Tullo	HMSO
Des Vincent	CITU (NI)
Ian Walters	Planning Inspectorate
Mike Warnock	DETINI
Simon Watkin	Home Office
Clare Williamson	DTI

Sign-off of e-commerce@its.best.uk

The table summarises the 60 commitments from the *e-commerce@its.best.uk* report, showing against each whether the action has been completed or is being taken forward through the mechanism of the UK online annual report. Of the 60 commitments, 24 were shown as completed in the report to the Prime Minister at the end of July. It will be noted that follow-up action is being taken on 8 of the 24 completed commitments.

e-commerce@its.best.uk commitments	Action
7.1: OFTEL and OFT should carry out a review to identify any emerging barriers to competition in electronic markets and make recommendations for preventing any such barriers from becoming serious problems	Completed
7.2: DTI should work with industry to map emerging clusters of e-commerce businesses to examine whether their development can be facilitated	Taken forward: Commitment 20
7.3: DTI should facilitate an industry-led mentoring/partnering initiative to help new Internet service and content businesses start up and grow	Taken forward: Commitments 9 and 21
7.4: The independent Banking Review, headed by Don Cruickshank, should consider carefully the problems faced by SMEs in obtaining online credit card processing facilities for e-commerce transactions and should recommend action as appropriate	Completed

e-commerce@its.best.uk commitments	Action
7.5: The Inland Revenue and Customs and Excise should publish a comprehensive Information Paper in the autumn (1999) updating the Government's strategy for the tax treatment of e-commerce	Completed
7.6: The UK should continue to aim for international agreement on the direct tax treatment of payments for electronic goods and services by end 2000	Taken forward: Commitment 4
7.7: The UK should continue to seek international agreement on the application of the 'permanent establishment' principle to websites by March 2000	Taken forward: Commitment 4
7.8: The UK should continue to play a leading role in OECD work to review the application of transfer pricing rules to e-commerce and to develop rules for attributing income to permanent establishments	Taken forward: Commitment 4
7.9: The UK should identify effective mechanisms for VAT collection in respect of consumer purchases of online items from outside the EU	Taken forward: Commitment 4
7.10: The tax authorities need to remain vigilant in ensuring e-commerce does not lead to increased tax evasion and avoidance	Taken forward: Commitment 4
7.11: The UK should work with the EU, the World Customs Organization and other international bodies to improve and streamline procedures for the collection of VAT and customs duties on small consignments of imports	Taken forward: Commitment 4
7.12: The Inland Revenue and Customs and Excise should publish improved guidance for e-businesses, targeted at small and medium sized enterprises, explaining their tax obligations and how the tax system will treat cross-border transactions	Taken forward: Commitment 4
7.13: The UK should continue to play a leading role in the OECD and in other international organisations to achieve an internationally agreed implementation of the framework for the taxation of e-commerce agreed at the 1998 Ottawa Ministerial conference	Taken forward: Commitment 4
7.14: The UK should seek an international examination of the implications of e-commerce betting and gaming for the tax yield from this sector	Taken forward: Commitment 4
7.15: The implications of the convergence of telecommunications, broadcasting and information technologies for regulatory regimes and institutions should continue to be kept under review by DTI and DCMS	Taken forward: Commitment 2
7.16: Regulatory regimes affecting other sectors of the economy need to be reviewed and reformed by the relevant department responsible for each sector to ensure they remain relevant to the changes in industrial and market structure and new business opportunities brought about by e-commerce	Taken forward: Commitment 3
7.17: The UK should promote a coordinated and joined-up approach to e-commerce across Europe and globally	Taken forward: Commitment 4
7.18: The UK should continue to push for e-commerce to be fully integrated within the framework of international trade	Taken forward: Commitment 4
8.1: Mount a concerted PR campaign in partnership with industry, to create an e-commerce 'buzz' in the UK. Commission research to identify the most appropriate branding to support this campaign	Taken forward: Commitment 9 and 24
8.2: Carry out and communicate shared industry/government sector-specific 'e-commerce impact assessments' to highlight the opportunities, threats and barriers in each sector, and in particular the audiovisual content industry (linked to recommendation 7.15 above)	Taken forward: Commitment 10
8.3: Work with key business influencers to increase boardroom recognition of the strategic challenges of e-commerce	Taken forward: Commitment 22
8.4: Develop a multi-channel marketing strategy to influence SMEs/micro businesses	Taken forward: Commitment 22
8.5: The new English RDAs and devolved authorities should address e-commerce as a priority in their economic development strategies, where they have not already done so	Completed
8.6: Set new National Targets on IT literacy	Taken forward: Commitment 6
9.1: Telecommunications operators should be encouraged to offer a wider range of tariff structure options	Taken forward: Commitment 1
9.2: Telecommunications operators should be encouraged to explore new commercial interconnect arrangements with BT, allowing more flexible retail tariffs	Taken forward: Commitment 1

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9.3: OFTEL ensure BT's DSL roll-out plans do not give it unfair competitive advantage	Completed
9.4: E-Minister/DTI ensure that OFTEL has sufficient resources to meet DSL roll-out timetable	Completed
9.5: Better coordination and marketing of access initiatives	Taken forward: Commitment 5
9.6: The monitoring of priority excluded groups	Taken forward: Commitment 5
9.7: The combination of skills training with the provision of access	Taken forward: Commitment 6
10.1: Implement a national, secure Public Key Infrastructure (PKI) for Government purposes	Completed. But also taken forward: Commitment 15
10.2: Ensure that the industry-led TrustUK Hallmark initiative puts in place an Internet disputes arbitration service and a mechanism for policing its standards	Completed. But also taken forward: Commitment 7
10.3: Encourage private providers to launch multi-function smartcard schemes for individuals	Completed. But also taken forward: Commitment 15
10.4: Ensure government departments quickly take advantage of the equivalence between digital and written documents	Completed. But also taken forward: Commitment 3
10.5: Improve technical capability of law enforcement and regulators and establish an Internet Crime Unit	Taken forward: Commitment 7
10.6: Build on recommendations in PIU report <i>Encryption and Law Enforcement</i> on government/industry cooperation	Completed. But also taken forward: Commitment 7
10.7: The Home Office should re-consider the case for using non-jury trials for serious fraud (including e-commerce fraud)	Completed
10.8: The Government to encourage the EU to achieve a co-regulatory approach to e-commerce enforcement and redress	Completed
10.9: Ensure action is taken to give protection of Intellectual Property Rights (IPR) a higher profile in public understanding and that DCMS work with the audiovisual industry to put in place standards and infrastructure to ensure that content is protected in transmission and that adequate remuneration is received for the exploitation of intellectual property	Completed
10.10: Provide 'parents' websites' and encourage software companies to supply free content-filtering software;	Completed. But also taken forward: Commitment 7
11.1: Publication of departmental performance against targets in electronic procurement	Taken forward: Commitment 12
11.2: Campaign to get SMEs more involved in government procurement	Taken forward: Commitment 12
11.3: Internationally benchmarking government e-commerce targets	Completed
11.4: Initiating an 'Internet node' programme, enabling transfer of the human and organisational skills that are needed to take advantage of e-commerce, from private to public sector senior management	Completed
11.5: Using the Invest to Save Budget to build alternative Government electronic delivery mechanisms	Completed. But also taken forward: Commitment 11
11.6: Extending the dialogue with the private sector over use of the evolving Crown copyright management system with a view to widening the adoption of a class licensing system	Completed. But also taken forward: Commitment 19
12.1: Produce an annual 'state of e-commerce' report	Completed
12.2: Develop and pilot changes to the industry classifications used in official UK statistics	Taken forward: Commitment 24
12.3: Develop and pilot changes to existing tools for gathering business statistics	Taken forward: Commitment 24
12.4: Scope the potential for the Internet itself to be used to monitor e-commerce	Taken forward: Commitment 24

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12.5: Commission new e-commerce market research	Taken forward: Commitment 24
12.6: UK to take a lead in international forums to achieve comparable statistics across countries	Taken forward: Commitment 23
12.7: Commission a methodological framework for evaluating the overall net impact of e-commerce by end 1999	Taken forward: Commitment 25
12.8: Commission a formal evaluation of the overall net impacts of e-commerce, starting 2002, and at three-yearly intervals thereafter	Taken forward: Commitment 25
14.1: The Prime Minister should appoint an e-Minister on Information Age issues to provide political coordination of activities on e-commerce and e-government. The e-Minister should work with a network of Ministers, in key departments with lead responsibilities for e-commerce and e-government policy delivery	Completed
14.2: The Government should appoint an 'e-Envoy' with a wider remit than originally proposed, covering both e-commerce and the IT elements of the Modernising Government White Paper. The e-envoy should be a high-level champion for Information Age issues across government, based in the Cabinet Office with a direct line to the Prime Minister	Completed
14.3: As part of the new arrangements to ensure more effective cross-departmental working, an 'Information Age Management Board' should be established, chaired by the e-envoy, bringing together a small core group of departments with major e-commerce and e-government responsibilities	Completed
14.4: Where these do not already exist, officials should be identified in each major department as 'e-commerce coordinators'	Completed
14.5: The e-Minister and e-Envoy should together champion implementation of this report and should maintain a 'living' programme of action in taking forward the overarching strategy	Taken forward: Commitment 21

Glossary of terms and acronyms

ABI	Annual Business Inquiry. EU business survey
ADR	Alternative Dispute Resolution
ADSL	Asymmetric Digital Subscriber Loop. A type of DSL
AEB	Alliance for Electronic Business - an alliance of UK business and industry organisations formed in 1998 to promote UK leadership in e-commerce
AOL	America On Line. ISP
ATM	Automatic Teller Machine. 'Hole in the wall' system for accessing cash
Bandwidth	A measure of the amount of electronic data that can be transmitted, either down a telephone line or through an individual radio channel. The broader the bandwidth, the quicker the information can be transmitted
BBC	British Broadcasting Corporation. UK public service broadcaster
Broadband	A class of transmission system which allows large amounts of data to be transferred at high speed. See bandwidth
BFWA	Broadband Fixed Wireless Access
BT	British Telecommunications plc
CA	Consumers' Association. UK non-governmental organisation
Cable modem	Means of connecting to the Internet using a cable TV network, rather than the conventional telephone line
CCTA	Central Computer and Telecommunications Agency (UK Government agency)
CEO	Chief Executive Officer
CESG	Communications and Electronic Security Group (UK Government body)
CISU	Central Internet Strategy Unit. Proposed unit of UK Government Cabinet Office
CITU	Central IT Unit - part of the Cabinet Office of the UK Government
COI	Central Office of Information (now COI Communications)
CSSA	Computer and Software Services Association
DCMS	Department for Culture, Media and Sport (UK Government department)
DECS	Defence Electronic Commerce Service
DETR	Department of the Environment, Transport and the Regions (UK Government department)
DfEE	Department for Education and Employment (UK Government department)
Digital TV	Television broadcasts using digital technology. Far more efficient use of radio spectrum enables a larger number of channels and supplementary data services to be broadcast
DMA	Direct Marketing Association. UK private sector organisation
DoH	Department of Health (UK Government department)
DSL	Digital Subscriber Loop. A technology that enables higher bandwidth communications to be passed through conventional telephone lines
DTI	Department of Trade and Industry (UK Government Department)
DTV	See Digital TV
DVLA	Driver and Vehicle Licensing Agency (UK Government Agency)
EA	Environment Agency
EC	European Commission
E-cash	Electronic cash. A system that allows cash to be stored on a smartcard
ECU	European Currency Unit
EDI	Electronic Data Interchange. A series of industry standards for the exchange mainly of process information between companies in supply chains
E-mail	Electronic mail - usually sent or received over the Internet

EU	European Union
ESD	Electronic Service Delivery
Extranet	A 'closed' network, accessible only to certain organisations or individuals, that operates using Internet technology
FCO	Foreign and Commonwealth Office (UK Government department)
FES	Family Expenditure Survey
Fixed-link	Telecommunications using a cable, fibre or point-to-point radio link, rather than mobile telephony
FSA	Financial Services Authority (UK Government agency regulating the financial services sector)
G7	The group of seven most highly industrialised nations
GCAT	Government IT Catalogue
GHS	General Household Survey
GICS	Government Information and Communication Services. Unit of UK Government Cabinet Office
GPA	Northern Ireland Government Purchasing Agency
GSI	Government Secure Intranet. Private network connecting UK Government departments and agencies
G-SID	Government Supplier Information Database
GTC	Government Telecommunications Contracts
Hacking	The process of gaining access to private data or systems, without permission from their owner, typically using the Internet
HMC&E	Her Majesty's Customs and Excise (UK Government department)
HMSO	Her Majesty's Stationery Office
HMT	Her Majesty's Treasury (UK Government department)
HO	Home Office (UK Government department)
HSE	Health and Safety Executive (UK Government agency)
IAP	Information Age Partnership: a DTI initiative bringing together the main UK industry players in ICT
ICT	Information and Communications Technology
Inland Revenue	That part of HMT concerned with tax collection
Internet	The Internet is an 'open' network allowing anyone to exchange data - as opposed to a 'closed' system such as an extranet
IPR	Intellectual Property Rights. The right to get a return from the products of one's own ingenuity
ISDN	Integrated Services Digital Network. A digital telephone service operating over the normal fixed-link network, giving higher bandwidth access
ISI	Information Society Initiative (ISI) of the DTI
ISP	Internet Service Provider. A company providing access to the Internet for individual and business users
ISPA	Internet Service Providers Association
ITC	Independent Television Commission (UK Government statutory body)
IWF	Internet Watch Foundation. Non-governmental UK organisation set up to monitor illegal and fraudulent use of the Internet
KN	Knowledge Network
LCD	Lord Chancellor's Department (UK Government legal department)
Local loop	The last part of a fixed-link telecommunications network that connects to a subscriber's home or business
m-commerce	e-commerce over mobile telecommunications networks
MAFF	Ministry of Agriculture, Fisheries and Food (UK Government department)
MoD	Ministry of Defence (UK Government department)
Modem	A device attached to a PC which enables it to communicate using the Internet

	or other data network
MP	Member of (UK) Parliament
NCIS	National Criminal Intelligence Service (UK Government agency)
NDPB	Non-departmental public body
NHS	National Health Service (UK Government agency)
NISSC	National Infrastructure Security Co-ordination Committee
NMI	National Microelectronics Institute
OECD	Organization of Economic Co-operation and Development
OFT	Office of Fair Trading (UK Government agency)
OFTTEL	Office of Telecommunications Regulation (UK Government statutory body)
OGC	Office of Government Commerce (proposed UK Government body)
ONS	Office of National Statistics (part of HMT)
PAT 15	Policy Action Team 15
PC	Personal computer
PIN	Personal identification number
PIU	Performance and Innovation Unit. Unit of UK Government Cabinet Office
PKI	Public Key Infrastructure. A system that allows individuals and businesses to use Public Key Cryptography
PM	Prime Minister. Leader of UK Government
PMQ	Prime Minister's Questions
PR	Public relations
Process e-commerce	Managing flow of information about design, manufacturing, order, quality, etc. within industry supply-chains
PSTN	Public Switched Telecommunications Network
Public Key Cryptography	A system for encrypting material sent over the Internet by generating a 'pair' of solutions (keys): one transmitted publicly, the other kept private
RA	Radiocommunications Agency. UK Government agency responsible, amongst other things, for issuing licences for exploitation of the radio spectrum
RAu	Radio Authority. UK Government statutory body which decides who can broadcast
RDA	Regional Development Agencies in UK
SEU	Social Exclusion Unit. Unit in UK Government Cabinet Office
SFO	Serious Fraud Office (UK Government agency)
SIC	Standard Industrial Classification - for goods and services
SIM	Système Internationale Mobile. Standard for digital mobile communication used in Europe
Smartcards	Plastic cards containing computer chips that can store data for identification or electronic cash purposes
SME	Small and Medium-sized Enterprises
Software	Computer programs
Spam	Unwanted 'junk' e-mail. Can be sent repeatedly, in enormous quantities, at very little cost to the sender and some cost to the receiver
Spectrum licences	Licences given to businesses to exploit internationally agreed areas of the radio-frequency spectrum. In UK licences are issued by the Radiocommunications Agency (RA)
TBA	The Buying Agency
Telcos	Telecommunications companies
Telecommunications	Communication using the telephone infrastructure - either land-line or mobile
Third generation mobile	See UMTS
Transaction	Selling products electronically - either business-to-business or business-to-

e-commerce	consumer
TSP	Trusted Service Provider
TUS	Time Use Survey
UMTS	The Universal Mobile Telecommunication Service is a standard for mobile telecommunications that will offer high bandwidth access from 2002
Unbundling	Ensuring that the last part of a fixed-link telecommunications network that connects to a subscriber's home or business is made available to competing telecommunications companies
URL	Universal Resource Locator. The 'address' of a website (takes the form http://www.[name of organisation or business].[com or co or gov or net].[country uk, au, etc.])
UFI	University for Industry
VAT	Value Added Tax. Tax on items purchased
VCR	Video cassette recorder
Virus (electronic)	Software, usually originating in the Internet, that infiltrates a PC, making something happen that the owner would rather not (e.g. loss of data)
Walled garden	A 'closed' environment on the Internet allowing users access to a range of electronic traders selected by the owner of the walled garden
WAP	Wireless Application Protocol
WDA	Welsh Development Agency
Web	Another name for the Internet
Website	A virtual location on the Internet that has been developed by an individual, business or organisation for the purpose of giving information, advertising or selling its products. Accessed by using a URL
White Paper	Official UK Government document
WTO	World Trade Organization

Notes

- ¹ Twenty four of these have been completed, and the others are being taken forward under the key commitments set out in this report. For details, see sign off of *e-commerce@its.best.uk*.
- ² This accelerated the existing target, set out in the Modernising Government White Paper, of getting all government services online by 2008.
- ³ Source: ONdigital press release, 11 July 2000.
- ⁴ Figures from this study are weighted by employment when given as percentages, and weighted by number of firms when given as absolute figures.
- ⁵ In a strict and narrow sense, using gross value added at basic prices, which is the appropriate concept when comparing an industry's value added with the total for the economy as a whole.
- ⁶ *e-commerce@its.best.uk* identified three key barriers to Internet uptake: access, understanding and trust. It also committed the Government to undertake further research to refine this understanding of barriers. The Government has done this through two major research exercises. A Policy Action Team of experts from the private, public and voluntary sectors (PAT 15) was brought together by the Social Exclusion Unit to analyse the particular constraints on IT use among the socially disadvantaged. And DfEE and Cabinet Office collaborated on a programme of quantitative and qualitative research into people's perceptions of ICTs. The results of these two strands of work very much confirmed the analysis in *e-commerce@its.best.uk*, but highlighted the way that 'understanding' was made up of two distinct components: skills and motivation.
- ⁷ These will build on best practice developed through 19 early pioneer and pathfinder pilot projects already implemented during 2000.
- ⁸ Achieving Level 5 in the Key Stage 3 ICT test.
- ⁹ The Electronic Communications Act gives the Government powers (subject to a five year 'sunset clause') to create a voluntary approvals scheme under statute if an effective self-regulatory mechanism is not developed, but the tScheme prospectus suggests that it will meet our business and law enforcement objectives.
- ¹⁰ IES study: *Learning in later life - motivations and impact*. Published February 2000.
- ¹¹ A recent report by the United States Children's partnership (*On line content for low income and under-served Americans*) found that it was as important to create useful content on the Internet as it was to provide computers and Internet connections. In particular, the study found that these groups were deterred by the content available - for its lack of local information, its requirement for high literacy levels, its scarcity of non-English language material and its lack of cultural diversity.
- ¹² Foresight is the UK Government programme designed to develop visions of the next 15 to 20 years to guide the people who make today's decisions in business, academia and government. For further information see www.foresight.gov.uk.
- ¹³ Note: these findings are drawn from interim reports and should not be taken as definitive.
- ¹⁴ *Telecommunications value added services* (DTI, 1999).