

DIGITAL BRITAIN

Final Report

JUNE 2009



The Digital Britain Final Report is one of the central policy commitments in the Government's Building Britain's Future plan and draft legislative programme.

Building Britain's Future sets out the practical action we will take to build a stronger, fairer and more prosperous country. It focuses the energy and mission of the Government in the year ahead on three clear priorities:

- Cleaning up politics and reforming our democracy;
- Moving from recession to recovery and planning for a strong economy in the future; and
- Reforming Britain's public services.



Department for Culture, Media and Sport
and
Department for Business,
Innovation and Skills

**Digital Britain
Final Report**

Presented to Parliament by
The Secretary of State for Culture, Media and Sport
and the Minister for Communications,
Technology and Broadcasting.

By Command of Her Majesty

June 2009

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The Digital Britain Report is jointly resourced by the Department for Business, Innovation and Skills (BIS) and the Department for Culture, Media and Sport (DCMS) and draws on expertise from across Government, industry and regulators.

The Digital Britain Report benefits from the guidance of a voluntary Steering Board of industry experts. The members of the Steering Board are:

Peter Black – Network technology

Professor Tanya Byron – Online protection

Francesco Caio – Next generation networks

Andrew Chitty – Production/new media

Barry Cox – Digital radio

Matthew d'Ancona – Print media/new media

Robin Foster – Public service content

Andrew Gowers – Creative economy

Ian McCulloch – Media markets

Peter Phillips – Regulatory frameworks

Stephen Temple – Spectrum



Foreword



Britain needs to plan for more than recovery from the global downturn. We face changes that are transforming the world in which our businesses and people operate. The move from analogue to digital technology is one of those revolutionary changes. It will define the competitiveness of our economy and change dramatically the way we lead our lives.

As we made clear in our industrial strategy *Building Britain's Future: New Industry, New Jobs* – we believe Britain needs an active industrial policy if we are to maximise the benefits from the digital revolution. Doing nothing or leaving everything to the market would leave Britain behind. We need a clear and effective approach which is consistent, ensures full access, provides regulatory certainty, smarter public procurement and shows a readiness to intervene where necessary.

The Digital Britain Report does this. It offers a strategic view of the sector, backed by a programme of action:

- to complement and assist the private sector in delivering the effective modern communications infrastructure we need, built on new digital technologies;
- to enable Britain to be a global centre for the creative industries in the digital age, delivering an ever wider range of quality content, including public service content, within a clear and fair legal framework;
- to ensure that people have the capabilities and skills to flourish in the digital economy, and that all can participate in digital society; and
- for government to continue to modernise and improve its service to the taxpayer through digital procurement and the digital delivery of public services.

The proposals in this report will enhance Britain's strengths in a crucial sector and harness new technologies to provide a fairer and more prosperous Britain for all.

We would like to thank all those who have worked so hard to produce this report. We are particularly grateful for the vision and leadership of Stephen Carter, whose experience and knowledge have been invaluable in producing this report.

Rt Hon Lord Mandelson

Rt Hon Ben Bradshaw MP





Introduction



On 26 August 1768, when Captain James Cook set sail for Australia, it took 2 years and 320 days before he returned to describe what he found there.

Yesterday, on 15 June 2009, 20 hours of new content were posted on YouTube every minute, 494 exabytes of information were transferred seamlessly across the globe, over 2.6 billion mobile minutes were exchanged across Europe, and millions of enquiries were made using a Google algorithm.

The Digital World is a reality in all of our lives. In this report we underscore the importance of understanding, appreciating and planning for this reality and we seek to achieve the following:

1. An analysis of the levels of digital participation, skills and access needed for the digital future, with a plan for increasing participation, and more coherent public structures to deal with it.
2. An analysis of our communications infrastructure capabilities, an identification of the gaps and recommendations on how to fill them.
3. A statement of ambition for the future growth of our creative industries, proposals for a legal and regulatory framework for intellectual property in a digital world, proposals on skills and a recognition of the need for investment support and innovation.
4. A restatement of the need for specific market intervention in the UK content market, and what that will demand of the BBC and its role in Digital Britain. What that means for the future of the C4 Corporation. An analysis of the importance of other forms of independent and suitably funded news, and what clarification and changes are needed to the existing framework.
5. An analysis of the skills, research and training markets, and what supply side issues need addressing for a fully functioning digital economy.
6. A framework for digital security and digital safety at international and national levels and recognition that in a world of high speed connectivity we need a digital framework not an analogue one.
7. A review of what all of this means for the Government and how digital governance in the information age demands new structures, new safeguards, and new data management, access and transparency rules.

The level of engagement with this programme has been impressive, both in its scale and quality.



The compilation of this Report also coincided with a severe global downturn in the media and communication industries. Submissions from numerous industry participants and other stakeholders were influenced by a cyclical contraction in advertising spending, newspaper circulation, volatile audience ratings and technology price erosion. That volatility has been compounded by a structural change in communication habits as we all gravitate to new digital devices, multi-media platforms and different forms of content.

Short term economic pressures have exposed areas of policy and regulation that need to be addressed, however, Digital Britain primarily seeks to position the UK as a long-term leader in communications, creating an industrial framework that will fully harness Digital Technology. The UK's digital dividend will transform the way business operates, enhance the delivery of public services, stimulate communications infrastructure ready for next-generation distribution and preserve Britain's status as a global hub for media and entertainment. Most importantly of all this approach seeks to maximise the digital opportunities for all of us, as citizens, where access to 21st Century technologies will be a key competitive advantage for generations to come.

These are therefore exciting prospects for further growth and success.

This is a sector where we have internationally recognised strengths and, if the right decisions are taken now, Britain can continue to be at the forefront of the digital revolution.

In the private sector, whilst we need to invest and build our next generation communications infrastructure, the money and the value in these markets is clearly moving from infrastructure to service and applications development. And whilst we need the wireless and fixed access networks of tomorrow, we must also ensure we have the necessary network security, network resilience, and network disaster recovery programmes.

If, as expected, the volume of digital content will increase 10x to 100x over the next 3 to 5 years then we are on the verge of a "big bang" in the communications industry that will provide the UK with enormous economic and industrial opportunities.

For the public sector, these capabilities and trends are an integral part of the financial solution for the public finances. An ambitious and clear programme of **The Digital Switchover of Public Services**, to primarily electronic and online delivery, will unlock significant cost savings, whilst at the same time serving to increase levels of satisfaction. As a matter of urgency we need to develop a comprehensive model, accounting for the cost of deployment, as well as the revenues and savings that will result from the infrastructure that is being deployed.

This report is the result of the invaluable contributions of a number of people.

I am deeply grateful to The Digital Britain Steering Board, to the many people outside Government who have given their time and their experience, often voluntarily, for the constructive engagement of the industry regulator, Ofcom, and for the welcome and open manner in which countries around the world have shared their expertise and experience.



I would also like to record my particular thanks to Dominic Morris, David Mahoney, Sam Sharps, Nick French, the Policy Teams in both my departments, the expert advisers and my Private Office team, who have helped deliver this project over the last year.

Finally, for the support of officials and ministerial colleagues in DCMS and BIS and most importantly for the political leadership of the Prime Minister, whose recognition of the importance of this sector and the need for a coherent strategy are what has made this work possible.

Lord Carter CBE





Chapter 1

Executive Summary

“Only a Digital Britain can unlock the imagination and creativity that will secure for us and our children the highly skilled jobs of the future. Only a Digital Britain will secure the wonders of an information revolution that could transform every part of our lives. Only a Digital Britain will enable us to demonstrate the vision and dynamism that we have to shape the future.”

Rt Hon. Gordon Brown MP, Prime Minister

AMBITION: TO SECURE THE UK'S POSITION AS ONE OF THE WORLD'S LEADING DIGITAL KNOWLEDGE ECONOMIES

- 1 The communications sector underpins everything we do as an economy and society, to a degree few could have imagined even a quarter of a century ago. Electronic systems and new technology have transformed core elements of UK industry, our media and our public services.
- 2 In the City, digital technologies are vital to the billions of transactions carried out each day by the stock exchange and financial institutions. For the designers, researchers and engineers in our advanced industries, computer generation and simulation and reliable large-scale file transfer are essential tools of the trade as they are now for any knowledge-based company. In the high street, stock ordering, inventory control and the cash tills are all completely dependent on electronic communications.
- 3 As consumers, some 90% of our high street purchases are transacted by plastic which depends on wired and wireless communications to work. That is in addition to the £50bn of consumer purchases and sales through e-commerce that takes place wholly online.
- 4 In transport, the phasing of street traffic lights, the operation of railway signals and points and the wireless systems that allow aircraft to take off and land safely all need communications; as does the national energy grid that heats,



powers and lights our homes and businesses. In the public sector, our universities, schools and libraries increasingly rely on electronic content and the richness of the Internet. Our National Health Service has one of the largest data and communications systems in Europe.

- 5 For individuals a quiet revolution has delivered seamless connectivity almost everywhere. That revolution ranges from personal pocket libraries of music, audiovisual content and increasingly electronic literature on a scale inconceivable ten years ago; inexpensive broadband which allows efficient and family-friendly working patterns in the knowledge sector of the economy – and broadband at increasing speeds – the next generation of which, already available to nearly half Britain’s homes, allows us to send or receive 200 mp3 music files in five minutes, an entire Star Wars DVD in 3 minutes and the total digitised works of Charles Dickens in less than 10 minutes.¹ It has given us access to a wide range of social networks, allowing us to share experiences and swap and create content. The digital revolution has also led to a huge expansion in the creation and availability of professional content. Today, the typical British consumer spends nearly half of their waking hours engaged in one form or another with the products and services of the communications sector.
- 6 The UK is already a digitally enabled and to a significant degree digitally dependent economy and society. The Digital Britain Report aims to be a guide-path for how Britain can sustain its position as a leading digital economy and society.
- 7 A sector that underpins so much of our collective and individual lives is a significant industry in its own right. Its precise scale is evolving continually. The pace of change, the blurring of boundaries between what national statisticians classified as separate activities and the creation of whole new areas of activity make measurement problematic. But on current definitions the Digital Britain sectors account for nearly £1 in every £10 that the whole economy produces each year.
- 8 Digital Britain is a leading exemplar of the new model of Industrial Activism set out in April’s *Building Britain’s Future: New Industry, New Jobs*. It is one of the major growth sectors on which our economy increasingly depends. It is a sector in which we have many relative strengths. Key themes from *Building Britain’s Future* – modern infrastructure, upgraded skills capabilities, converting research and innovation into market-beating products and services, and smarter more joined-up Government – are all themes that feature through **The Digital Britain Report**.
- 9 Industrial Activism is at the centre of The Digital Britain Report. It is about the considered application of Government resources and policy-making across the areas where public policy and the market meet. There are many activities within the sector where public policy and the market do not impinge on one

1 Copycats? Digital Consumers in the Online Age – SABIP



another: the market is working well and without any wider social policy consequences. Although the Digital Britain Report does not address them all, many are, nonetheless, significant creators of added value and consumer satisfaction. The simple position is that these sectors are working well and do not need commentary, intervention or unnecessary interference.

10 We published the Interim Digital Britain Report at the end of January. That set out a view of the sector and an agenda for Industrial Activism in the large number of areas where the markets meet public policy. We identified five objectives:

- i. Modernising and upgrading our wired, wireless and broadcasting infrastructure to sustain Britain's position as a leading digital economy;
- ii. Providing a favourable climate for investment and innovation in digital content, applications and services;
- iii. Securing a range of high quality public service content, particularly in news;
- iv. Developing the nation's digital skills at all levels; and
- v. Securing universal access to broadband, increasing its take-up and using broadband to deliver more public services more effectively and more efficiently.

11 The aim of publishing an Interim Report was to test whether the programme we had outlined was correct and sufficiently comprehensive, and to gauge the level of support for our focus on this sector. The Interim Report drew a substantial and substantive response from a very wide range of stakeholders, from the general public to global corporations. We received more than 250 formal written responses. Those responses have been supplemented by online engagement through the Digital Britain Forum and other social networking/ blog sites, structured engagements in each of the Nations and the Digital Britain Summit at the British Library on 17 April. There have also been in total more than 500 bilateral engagements between stakeholders and Ministers or the core Digital Britain Team.



Digital Britain Unconferences

The Digital Britain Unconferences were a set of UK-wide, volunteer-organised events quickly set up following the Digital Britain Summit on 17 April 2009. Their aim was to produce a representative “people’s response” and gather a set of positive, realistic contributions for the report. In the week after the Summit, and with a nod from the Digital Britain team that they were listening, a website was launched with these simple instructions:

“Anyone can attend or hold an event and associate it with Digital Britain Unconferences, you’ll just need to summarise your discussions and hold it by 13th May 2009! Yes, time is very tight.”

By the 13th May, twelve unconferences had taken place from Glasgow in the North to Truro in the South West. All attendees were encouraged to read the Interim Report and the level of engagement and serious thinking across each event was exemplary. The events included a virtual discussion focusing on rural issues related to Digital Britain and a family unconference held in Tutbury, Derbyshire, as well as large events of more than 50 people in London and Manchester.

Such a speedy reaction was made possible by the free social media tools such as Yahoo Groups, Twitter, Wikis, blogs and instant messaging. Few phone calls were made by the organizers. The process demonstrates what is possible for Digital Britain when these tools are combined with channelling existing loosely connected networks and motivations.

- 12 The responses to the Interim Report provided a wide range of commentary and new ideas. Many argued that there needed to be an even broader focus on the sector than we had applied in the Interim Report. The responses were also clear that we needed to give more explicit recognition of the transformational power of the Internet and the impact of its cheap scalability and interactive nature on how, as a society and economy, we think and organise ourselves.
- 13 There was widespread agreement with our analysis of the importance of Digital Britain for the wider economy and society and support for industrial activism in this key sector. But there were also warnings that an excessive focus on the sector could chill operational negotiations and decisions while the participants in the market wait to see whether and how new Government proposals might affect their position. Recognition of that concern has informed the timetable we have adopted in moving from Interim to Final Report: long enough to have a strategic overview of the sector but swift enough that any chilling effect on market activity is minimised.
- 14 Developments around the globe over recent months show that the focus on the digital communications sector is by no means confined to Britain. The Internet is a global phenomenon. As the Internet expands and touches more



people, many from emerging markets, challenges are emerging in governance, jurisdiction and security. Our challenge is to enable the management of this transition in a way that sustains the Internet founders' ambitions of freedom, entrepreneurialism and innovation.

- 15 The global scale of the digital communications sector is aptly illustrated by the ranking of the sector among global brands: six of the top 10 global brands by value this year are in the digital sector, one Chinese, one British and four American. That scale and importance is reflected in the focus that governments are giving to it: Australia is creating an entirely new nation-wide high-speed communications network. Other countries around the Pacific Rim from Japan and Korea to Singapore and New Zealand are all adopting next generation networks. High speed broadband and smart-grid technology formed an important part of the USA administration's recent stimulus programme. Elsewhere in Europe, Germany, Finland and France have all adopted national broadband or wider digital strategies.
- 16 We are at an inflection point in technology, in capability and in demand. Those countries and governments that strategically push forward their digital communications sector will gain substantial and long-lasting competitive advantage. We have sought in The Digital Britain Report to set out a breadth of analysis and proposals for action that will enable the UK to keep pace with and exceed international developments in this sector.
- 17 We have set out above the importance and centrality of digital communications to our economy and our lives. Throughout this Report we provide 'pen portraits' of the way in which different sections of society are affected. But if we are to realise the potential that Digital Britain has to offer, both for economic and social reasons, we need to ensure that all who want to participate in Digital Britain are enabled and have the capabilities to do so.
- 18 We are at a tipping point in relation to the online world. It is moving from conferring advantage on those who are in it to conferring active disadvantage on those who are without, whether in children's homework access to keep up with their peers, to offers and discounts, lower utility bills, access to information and access to public services. Despite that increasing disadvantage there are several obstacles facing those that are off-line: **availability, affordability, capability and relevance**.
- 19 **Affordability** is addressed in part through the roll-out of the Government's £300m Home Access scheme for low income families. In part the market will increasingly address this issue through the wide availability of new lower cost devices, new schemes for recycling PCs to low-income households or new pre-pay mobile broadband.
- 20 **Capability and relevance** are addressed through three routes: firstly, the recommendations of Baroness Morris's independent report on ICT user skills for adults; secondly, the Digital Inclusion Programme: we are pleased to announce the appointment of **Martha Lane Fox** as the new **Champion for Digital**



Inclusion. Thirdly, the Ofcom-led strategic review of media literacy and, to implement that, the emerging Consortium of Stakeholders, both public and private sector, willing to contribute financially and in kind towards greater digital participation. The Digital Britain Report brings these strands together, with additional funding for demand-side measures, in a **National Plan for Digital Participation** which combines an improved offer to increase motivation to get online, with social networking and outreach, and with skills training. The National Plan will be delivered through tailored local and community-based programmes which build on existing networks. These will draw on the lessons learned in the, to date successful, Digital Television Switchover programme.

21 **Availability** of broadband has two components: the right network today and the right network tomorrow. **To ensure all can access and benefit from the network of today, we confirm our intention to deliver the Universal Service Broadband Commitment at 2Mbps by 2012.** This can be delivered through upgrades to the existing copper and wireless networks. **We also propose public support for the network of tomorrow so that consumers in the Final Third who will not be reached by the market can enjoy next generation broadband.** This will be a longer project which involves what amounts to installing a new network.

22 The Universal Service Commitment and the Next Generation Final Third project are separate projects and need to be addressed in turn.

23 **Firstly, the Universal Service Commitment.** More than one in 10 households today cannot enjoy a 2Mbps connection. We will correct this by providing universal service by 2012. As such, the UK's Commitment leads Europe. It has a measure of future-proofing so that, as the market deploys next-generation broadband, we do not immediately face another problem of exclusion. The USC is also a necessary step if we are to move towards digital switchover in the delivery of more and more of our public services.

24 The Universal Service Commitment will be delivered by a mix of technologies: DSL, fibre to the street cabinet, wireless and possibly satellite infill. It will be funded from £200m from direct public funding,² enhanced by five other sources: commercial gain through tender contract and design, contributions in kind from private partners, contributions from other public sector organisations in the nations and regions who benefit from the increased connectivity, the consumer directly for in-home upgrading, and the value of wider coverage obligations on mobile operators arising from the wider mobile spectrum package. The Commitment will be delivered through the Network Design and Procurement Group, with a CEO appointed in the Autumn. We will also discuss with the BBC Trust the structure which gives them appropriate visibility in the delivery process of the use being made of the Digital Switchover Help Scheme underspend, which will be realised in full by 2012.

2 We expect this to be in the order of £200m, based on current estimates of the Digital Switchover Help Scheme underspend



- 25 The UK's overall electronic communications infrastructure – for mobile and fixed broadband and voice, for corporate communications, for digital TV and sound radio – compares favourably with any in the world. But the first strains are beginning to show: under-investment in backhaul networks – the so-called middle mile – in fixed networks is becoming increasingly apparent. In mobile, the very success of broadband will increasingly lead to congestion in the existing spectrum. Other countries are investing heavily in upgrading their networks to take advantage of technology change. Like our energy and transport infrastructures small variations in performance can have major ripple effects and major costs to the wider economy.
- 26 **Secondly, the Next Generation Final Third project.** Next generation broadband networks offer not just conventional high definition video entertainment and games (which because of this country's successful satellite platform are less significant drivers here than in some other markets) but also more revolutionary applications. These will include tele-presence, allowing for much more flexible working patterns, e-healthcare in the home and for small businesses the increasing benefits of access to cloud computing which substantially cuts costs and allows much more rapid product and service innovation. Next-generation broadband will enable innovation and economic benefits we cannot today predict. First generation broadband provided a boost to GDP of some 0.5%-1.0% a year.
- 27 In recent months the UK has seen an energetic, market-led roll-out of next generation fixed broadband. By this Summer speeds of 50Mbps and above will be available to all households covered by the Virgin Media Ltd's national cable network: some 50% of UK homes. Following decisions by the regulator, Ofcom, which have enhanced regulatory certainty, BT Group plc has been encouraged by the first year capital allowances measures in Budget 2009 and the need to respond competitively to accelerate their plans for the mix of fibre to the cabinet and fibre to the home. BT's enhanced network will cover the first 1,000,000 homes in their network. The £100m Yorkshire Digital Region programme approved in Budget 2009 will also provide a useful regional test-bed for next generation digital networks.
- 28 **The Government believes that the case is made for the desirability of such next generation networks being available to the large majority of the UK population.** It is also persuaded that the economics of network deployment, whether fixed or next-generation mobile, mean that true superfast broadband will be concentrated in the first two thirds of the market in the next decade, leaving the 'final third' served only with current generation broadband. This would be undesirable. Equally, any subsidy scheme has to be carefully targeted to avoid distorting competition or subsidising activities which commercial operators would otherwise undertake.



- 29 Unlike all other utilities or, indeed media services, telecommunications prices have fallen significantly in real terms over a period of years. Today the UK retail telecommunications market is among the most competitive in Europe. Consumers enjoy either the lowest or among the lowest prices, depending on their usage patterns of any major European market. The cost-based basket of wholesale prices for today's copper-network has fallen by £8 per line per year in real terms since 2005. Over the same period the retail price for combined voice and broadband has fallen by around £90 per annum in real terms.
- 30 **The Government believes the fairest and most efficient means of ensuring that the overwhelming majority of the country has access to next generation broadband is to share some of that saving and create an independent Next Generation Fund, based on a supplement of 50 pence per month on all fixed copper lines. The Fund will be available on a tender basis to any operator to deliver and will provide a part subsidy for the deployment of next generation broadband to the 'final third' of homes and small businesses, bringing the cost of the initial deployment to the same level that operators face in the commercially economic parts of the market.**
- 31 In our wireless infrastructure, Digital Britain sets out three objectives: firstly, a rapid transition to next generation high-speed mobile broadband; secondly, progress towards universal coverage in 3G and Next Generation Mobile, reliable coverage throughout the rail network and mobile coverage on the London Underground; thirdly, maintaining a highly competitive mobile market.
- 32 Progress towards next generation mobile networks and greater coverage had been stymied by the differing circumstances and incentives of the existing mobile operators. To address these, the Interim Digital Britain Report proposed a Spectrum Modernisation Programme. The Government appointed an Independent Spectrum Broker to facilitate a solution. His independent report was published in May. The Government accepts the essentials of his report, namely:
- timely clearance of the 800MHz spectrum band being released by television's Digital Switchover;
 - its combination with most of the so-called 3G expansion band in a single auction of 10MHz-width blocks of spectrum; and
 - the timely liberalisation of existing 2G mobile spectrum in the hands of the existing operators, coupled with caps on the amounts of spectrum that existing operators can acquire and coverage requirements on the 800MHz licences, since that spectrum is particularly well suited to rural coverage.
- 33 But in certain key areas, notably the size and structures of the cap mechanisms that best promote competition, the Government has come to different conclusions. The Government has also laid out a process of Guiding Technical Arbitration on the 2G liberalisation.



- 34 The aim of these proposals is to ensure that each of the five existing operators and potential new entrants can bid with a realistic opportunity of acquiring sufficient spectrum to build out a next generation mobile network capable of broadband speeds of 50Mbps in the main urban and suburban markets going down to perhaps 4-5Mbps in the more rural areas. At the same time, we aim to ensure that consumers can enjoy broadly the same degree of intense competition in the market in next generation mobile from which they have benefited to date.
- 35 **The Government proposes to make the existing operators' 3G licences indefinite rather than term licences (though AIP will be payable to reflect the economic value of the licence) in order to provide certainty for investment and an incentive towards greater roll-out towards universality.** Before 2012/13 this is likely to provide in-building speeds of perhaps 1Mbps but could be boosted by an external aerial to make a meaningful contribution towards the wider Universal Service Commitment. The Government and Ofcom are open to practical proposals from the operators on network sharing, particularly to achieve near-universality.
- 36 While some details remain to be verified before the Summer, **the Government will make a final decision on whether to direct Ofcom (if so, we intend to consult in September on the form of a Direction to Ofcom, to give the regulator the greatest possible legal certainty to effect these proposals).**
- 37 The centrality of our communications infrastructure to our economy and society has grown since the Communications Act 2003 was drawn up. We have also moved from a relatively stable era of copper networks and early deployment of 3G to an accelerating picture of investment in multiple types of next generation networks. To that end the Government believes that **Ofcom's duties should be modernised** in two ways. Firstly, Ofcom should have an explicit general duty to encourage investment as a means of furthering the interests of consumers, alongside its duty to promote competition where appropriate. We also propose to give Ofcom a duty, which is the communications equivalent of the letter from the Governor of the Bank of England, to alert the Government to any significant deficiencies in the coverage, capability and resilience of the UK's communications infrastructure and to report every two years on the state of that infrastructure.
- 38 One other aspect of our national infrastructure – that of **sound radio** – requires a clear direction from Government. The diverse and flexible nature of the medium places it at the forefront of device and platform convergence. It has many routes to digital, piggy-backing on other platforms – the Internet, mobile phones, digital broadcast television, satellite and cable. But as a medium it is more than just another stream of audio. Its appeal to the listener is that it is portable, intimate, and ambient as a medium. Those aspects cannot easily be delivered unless radio has its own dedicated digital medium – DAB – for which 9 million sets already exist in homes and cars.



- 39 **The Government accepts that analysis and proposes, with the industry, the supply chain and consumers the process of Digital Upgrade so that all our national broadcast radio stations are DAB-only from the end of 2015.** To that end, the Government is looking to the BBC to extend national DAB coverage so that it is at least comparable to FM radio coverage; and to the supply chain to deliver a range of DAB radios at the key sub-£20 price point that makes swap-out economic. **The Government will also work with the automotive industry, and with the Commission and other key member states in Europe (one of whom has already indicated its intention to prohibit analogue-only radios in vehicles from 2013) on the five point plan set out in this Digital Britain Report to enable the majority of the vehicle parc to be converted to digital before 2015 and with low-cost converters for the remainder.**
- 40 The Interim Digital Britain Report set out criteria that should be met to determine the timing of Digital Upgrade. The Government will look to Ofcom to monitor progress towards those criteria on an annual basis but believes that the clarity of a date will itself accelerate progress towards the criteria. The Government will also conduct a full cost benefit analysis of Digital Upgrade in radio including analysis of whether there is a case for assistance to specific groups, as there has been with Digital TV Switchover.
- 41 Digital Upgrade could also lead to the flowering of community-based ultra-local radio services bringing together the smaller of the local commercial stations with the growing community radio sector on FM radio. The Government accepts the case for some liberalisation for the community radio sector. By the time of Digital Upgrade, FM as a nationwide mainstream-quality medium would be coming towards requiring its own analogue rebuild: the infrastructure is 30 years old in places and beginning to degrade. A £200m nationwide rebuild is impractical for a small sector which is anyway migrating to digital. But much smaller care and maintenance capital expenditure could sustain the infrastructure for the community and ultra-local tier of radio for many years to come.
- 42 In our **creative content industries** Britain has for many years punched above its weight globally. One in 10 of the top album sales in the US market are by British artists. One third of television format sales around the world originate with British production companies. The creative heart of many global CGI, advertising, games, publishing, design or other creative knowledge-economy businesses beats in Britain rather than anywhere else. The transition to digital is however overturning old business models much faster than new ones come into their place.
- 43 The increasingly easy and perfect digital replicability of content makes it harder to monetise **creative rights**. The growth of Internet aggregators has been good for advertisers, who find new cheap and direct routes to those they need to reach. It is also good for consumers, providing them with free search, email,



storage, mapping, what's-on information services, access to social networks, to create and enjoy user-generated content and multiple other applications. But what aggregators do not do in any quantity however is fund the creation of long-form professional content. The unintended consequence is that a significant part of the paid-for advertising revenues that used to fund long-form content locally now funds different sorts of services and applications for consumers or are repatriated to the global Internet aggregators in the form of returns to the shareholders behind these transformational business models.

- 44 These changes have good features and inadvertent bad features. But they are facts of the digital age. It is how we deal with them collectively that will determine how well many of our creative industries make the transition to the fully digital world.
- 45 In relation to rights, **the Government believes piracy of intellectual property for profit is theft and will be pursued as such through the criminal law.** The civil infringement of taking someone else's intellectual property or passing it on to others through file-sharing without any compensating payment is, in plain English, wrong. However, the Government also believes, and the evidence suggests, that most people, given a reasonable choice would much prefer not to do wrong or break the law. The objective of the Government's policy is therefore three-fold. Firstly, to provide a framework that encourages the growth of legal markets for downloading that are inexpensive, convenient and easily accessible for consumers.
- 46 Secondly, through encouraging suitable information and education initiatives, to ensure that consumers are fully aware of what is and is not lawful. And thirdly we aim to provide for a graduated response by rights-holders and ISPs so that they can use the civil law to the full to deter the hard core of users who wilfully continue unlawful activity. **The Government intends to provide initially for Ofcom to have a duty to secure a significant reduction in unlawful file sharing by imposing two specific obligations: notification of unlawful activity and, for repeat-infringers, a court-based process of identity release and civil action. The Government is also providing for intermediate technical measures by ISPs, such as bandwidth reduction or protocol blocking, if the two main obligations have been reasonably tried but, against expectations, shown not to have worked within a reasonable but also reasonably brisk period.**
- 47 As part of the Government's desire to encourage inexpensive but legal consumer access to digital content, we will also make some changes to the legislative framework around copyright licensing, to tackle problems such as those surrounding the use of so-called orphan works and thus help digital markets in those works to develop.
- 48 Fundamental changes to existing analogue models of rights, monetisation and personal security capabilities require a total re-thinking of business models. The private sector will be doing its own research. But as set out in *'Building Britain's*



Future' the Technology Strategy Board has a major and growing role in addressing **collaborative and pre-competitive research and innovation** in key sectors of our economy. Digital Britain is one of the core programmes for the Technology Strategy Board which has committed £30m to Digital Britain-related research and a minimum of £10m to specific innovation programmes. They will use the next generation broadband networks as **test-beds** to enable infrastructure providers, content owners and consumers to come together to trial innovative projects on micropayments and other methods of monetisation of digital content, new rights models and new methods of ensuring personal digital security.

49 Creative content is not restricted to the traditional analogue industries of the performing arts, film and broadcasting. Other countries such as Canada extend the model of cultural tax relief beyond the film industry to the interactive and online worlds. CGI, electronic games and simulation also have a significant role in Britain's digital content ecology and in our international competitiveness. Each of these has the same capability as the more traditional sectors, such as film, to engage us and reflect our cultural particularism. They may in future have a cultural relevance to rival that of film. **The Government has therefore committed to work with the industry to collect and review the evidence for a tax relief to promote the sustainable production for online or physical sale of culturally British video games.** This work will balance any potential support with the need for fair competition and ensure value for money for taxpayers.

50 The genesis of the UK's public policy market interventions took place in the mass, analogue world. We need to address the place for intervention and the transition in the type of intervention as we move from the analogue to the fully digital world. We believe this poses four key questions in relation to public intervention: firstly the evolving role of the BBC in this new environment; secondly, the changing role and remit of Channel 4 Corporation as a multi-media public service counterpoint to the BBC; thirdly, whether we are getting the most from or maximising the visibility of our other publicly-funded content brands; and fourthly whether there are any categories of content beyond news, which this Report validates as a special category, which might justify public intervention.

51 The changes to the commercial market make a strong, confident and independent BBC more vital than ever. The market intervention which sustains the BBC is and should remain the most significant intervention for public service content. **The Government supports multi-annual settlements for the BBC to enable it to plan ahead and to act independently of day-to-day political pressures. The BBC's role needs to evolve to being a public service content partner with a wider range of other media organisations and an enabler of Digital Britain.** Its scale and funding means that it has moved successfully into the online, on-demand and search world. But its scale and impact on the market and the ability of others to monetise services in the



digital environment require careful vigilance by the BBC Trust, particularly in relation to proposals for new services, or new devices such as the broadcast-broadband hybrid Project Canvas.

- 52 **C4C, much smaller than the BBC and hence more rooted in broadcasting to date, needs a modernised remit which reinforces the moves it has begun to make into multi-media content via 4IP.** C4C could increase its focus on lower unit-cost online means of delivering public purposes, and has a key role in partnering with other cultural institutions (in the same way as it has been a leading partner for the independent sector). The Government has examined in detail three broad structural options for C4C: a strategic joint venture between C4C and BBC Worldwide; a merger between C4 and a private sector partner with majority public ownership; or a stand alone C4, with a new and more online focused remit.
- 53 The Government has concluded that minority privatisation, even on terms that provided additional funding over the short to medium term, could not be assured of delivering the core public policy objectives over the long term. The Government ruled out direct Exchequer funding for C4, given other public spending priorities. A strategic BBC Worldwide/C4 relationship would require further structural separation of BBC Worldwide, on which further work is needed, and would possibly require changing the terms on which C4 acquired content rights (which would have had wider consequences for the UK rights regime and the production sector). However, this work has uncovered the prospect of purely commercial ventures between C4C and BBC Worldwide which are currently still under negotiation.
- 54 In its Statutory Review, Ofcom identified a range of content where there were gaps in market provision and where it believed that plurality of provision, beyond the BBC, ranged from desirable to essential, including material for older children and particularly news in the Nations, regionally and locally. This is central to democracy and the holding to account of public institutions. The Government welcomes the thoroughness of Ofcom's analysis. The BBC's partnerships in kind are welcome. But on their own they may well be insufficient to meet the scale of the challenge facing public service provision, particularly in Nations, regional and local news where rival news agendas and journalistic inquiry are central to pluralism.
- 55 The combination of public policy need and market circumstance means we need to ask if funding is required. The Television Licence Fee is the existing major intervention for content and is the most suitable source for this funding. The Government will therefore consult openly on the option of a Contained Contestable Element of the Television Licence Fee, carrying forward the current ring-fenced element for the Digital Switchover Help Scheme and Marketing (c.3.5% of the Licence Fee) after 2013. This would be independent of the level at which the Licence Fee would be set from 2013. The Government is open to other proposals for funding in the consultation process.



- 56 Any funding needs to be contestable, allocated against clear range, reach and quality criteria by an arm’s-length body. An early priority is for independently-financed news consortia providing an independent stream of multi-media and broadcast news using Channel 3 Licensees’ broadcast regional news slots as one means of distribution. Consortia are likely to be able to produce news more cost-effectively than existing Channel 3 Licensees using assets designed for a different era. The result could be a greater investment in journalism, news-gathering and multi-media distribution and syndication than today, enhancing the quality of news in the Nations, regionally and locally.
- 57 **The Government will discuss with the BBC Trust how the remaining part of the emerging underspend in the Digital Help Scheme, that is not being used to help fund the Broadband Universal Service Commitment, could be used to fund pilots between now and 2012.**
- 58 In respect of the regional and local online and offline press, the Interim Digital Britain Report invited the OFT, in conjunction with Ofcom to review the operation of the newspaper media mergers regime. The OFT’s conclusions, published in parallel with this report, acknowledge the very significant structural and cyclical changes facing local and regional media. The OFT set out a number of clarifications to the operation of the regime which should be helpful to the sector and propose to amend its guidance to ensure a new Local Media Assessment, conducted by Ofcom, takes place in cases relating to local media mergers involving one or more local or regional newspapers which raise *prima facie* competition concerns.
- 59 For the Channel 3 and Channel 5 Licensees the Government believes there is a strong case for progressive liberalisation, so that they can move towards becoming fully commercial networks, serving the interests of their shareholders, whilst continuing to deliver a focused sustainable public service commitment centred on original production and news. However, the Government is not persuaded that, outside any regions covered by pilot news schemes before 2012, there is a sufficient case for removing the Channel 3 Licensees’ obligations to provide regional news. It will review what the position should be from 2013 when the availability and level of sustainable contestable funding is settled. The Government will, however, enable Ofcom to advance by a year the revaluation of the Channel 3 and Channel 5 analogue licences. **Beyond regional news, the Government recognises that Ofcom may need to adjust ITV’s other public service obligations up to and beyond the completion of digital switchover, in line with the diminishing value of the licences. The Government is willing to consider legislative change if adjustments beyond Ofcom’s current powers are considered necessary.**
- 60 In relation to independent production, the Quotas and Terms of Trade Framework are working well. The regime is sufficiently flexible to provide an effective framework for commercial agreements that address innovative business models and new media developments. The BBC’s voluntary New Media



Rights Framework is widely praised and should be adopted more widely by government and other public bodies who commission online content.

- 61 We need to continue to invest in **research and innovation** to enable Digital Britain to keep pace with fast moving technical change and to provide the seed-bed for new companies. The UK has a world-leading research base, funded principally through the Research Councils, which will invest £120m over three years in a co-ordinated Digital Economy Programme.
- 62 The ability of Digital Britain to contribute its full potential to our future economic growth is critically dependent on having enough people with the right **skills** in the right place at the right time to develop and apply the new technologies. We also need more systematically to address Britain's comparative weakness in low and intermediate skills and in the specific Digital Skills for a modern economy. The two sector skills councils, e-skills UK and Skillset, produced an analysis of the gaps in skills provision. They assessed current provision and made a number of detailed recommendations to ensure a healthy pipeline of talent into the professional digital workforce, accelerate the development of the existing workforce and enable companies and individuals to invest in their own skills capability.
- 63 Ensuring the healthy pipeline of talent starts in the education system, from primary school right through to Higher Education. The Department for Children, Schools and Families' Children's Plan aims to make this country the best place in the world for children and young people to grow up. The Digital Britain report highlights many ways in which the digital agenda can help to realise better outcomes for children and young people, including through the Home Access Programme, by ensuring parents have the digital skills and confidence to support their child's safe, effective and balanced use of the Internet, by ensuring good quality, plural and relevant multi platform content for children and young people and by giving our children and young people the skills to make the most of new technology.
- 64 At primary level, the Government endorses the Rose Review of the curriculum which upgrades digital (ICT) competence to a core competence alongside English, mathematics and personal development. We are also piloting a new creative entitlement of five hours a week delivered by professionals in the creative and cultural sector. At secondary level the Government is rolling out a major programme of reforms to the 14-19 curriculum including an emphasis on applying digital knowledge real life contexts. New GCSEs in English, Maths and Information and Communications Technology, incorporating functional skills will come on stream from next year. The new Diplomas for 14-19 year olds in IT and Creative and Media will help swell the numbers of those entering the professional digital workforce with the desired mix of practical and transferable skills, industry knowledge and business awareness.
- 65 In Higher Education we will shortly publish a new HE Framework which will set out how industrial activism and a sectoral focus will be applied in HE, which



will be particularly significant for Digital Britain both as a very significant and growing sector in its own right and as vital underpinning for the wider economy. It will set out how Government will establish clear signals and incentives to universities so that new programmes are established in priority areas and existing programmes re-focused. It will also include the creation of the Skills Funding Agency to ensure that the skills system is prioritising the things that sectors such as digital technology and digital media need.

- 66 One advantage of independently-funded news consortia investing in developing company and individual capabilities is that they will provide regional and local hubs for the development of multi-media skills. More widely the Government has announced a new approach to embedding skills and training in procurement of major IT projects and programmes, with successful contractors required to put in place a formal training plan for the development of the digital project workforce.
- 67 The change from analogue to global digital networks requires us to adapt our policy and legal frameworks for **security and safety**. Most of the risks of the offline world – short of physical harm – are replicated in the online world. What is illegal offline is illegal online. But online if the criminal is digital the protector or enforcer is too often analogue or at least the framework within which they have to operate is. We need to catch up, particularly as we move to a world of ubiquitous broadband.
- 68 The Internet is a truly global network connecting almost two billion users worldwide. It is a participative generative network promoting interactivity, collaboration and conversation. It enables us to transact and share globally, one of its greatest strengths. But because it is not confined to national borders it is not subject to clear national jurisdiction. The Digital Britain Report sets out how the UK Government intends to work to strengthen international collaborative institutions to address that question.
- 69 There remains a significant role at national level for measures to shape a safe online world. At network level there is high-level Cyber Security responding to threats from serious and organised crime and terrorism, often international. The Government has been developing and will shortly publish its Cyber Security Strategy. Our networks must be resilient to attack. Industry agreed voluntary adoption of minimum standards is the first step to prepare the UK for the increased legal requirement on security standards that will flow from the new European framework. The Government will carry out a major exercise later this year to test our national ability to respond to a telecommunications emergency.
- 70 At the individual level consumers must be able to communicate, trade and work online with confidence and assurance that their personal data is secure from misuse or fraud. The market is evolving an increasing range of user-friendly personal security applications and after sales support. But giving basic advice about avoiding known problems online is a cornerstone of any personal security approach. The joint industry-Government Get Safe Online campaign



provides a reliable one-stop shop for information on online security. The Government is committed to working with industry to maximise the effectiveness of the campaign.

- 71 The existing mechanisms for online consumer protection need reform. Agencies overlap and there needs to be greater specialised capability to deal with the different challenges of consumer behaviour in the online world. The Office of Fair Trading has proposed to take a stronger role in online consumer protection. Its five point plan will be addressed in the Government's forthcoming Consumer White Paper, which will set out how UK enforcers and business can work better together, enhance intelligence gathering and tackle online fraud.
- 72 Personal data is the new currency of the digital world. Privacy and security of that data is an increasingly critical issue. The Information Commissioner is developing a new Code of Practice "Personal Information Online" for publication later this year. **The Prime Minister has appointed Sir Tim Berners-Lee to form a panel of experts to deliver better use of public data.** Effective self-regulation is also vital. The Internet Advertising Bureau's good practice principles for providers who collect and use data for behavioural advertising mirror best practice in the USA adapted for the E.U.'s data protection framework.
- 73 In terms of online content safeguards, again effective and adequately resourced self-regulation and clarification systems are important. For electronic games the Government is adopting the Pan European Game Information System for boxed games and believes the system can adapt well to the online world. But additional action beyond self-regulation is needed against criminal material and to secure online child safety. The Internet Watch Foundation and the 'notice and take down' system on Internet sites is widely regarded internationally as a model. But it needs a secure resource base. The Government is challenging the industry to ensure that it has one and will also explore with the IWF and the European Commission the scope for a Pan-European model with commensurate funding.
- 74 Apart from its influence on the overall economic and legislative framework, **Government impacts on the Digital Economy** in four ways: In delivery of public services, as a major purchaser of digital systems, as commissioner and holder of data and content and as a strategic hub for the development of Britain's future digital strength. This Digital Britain Report sets out the next steps in the journey towards truly Digital Government – Government of the web not just on the web.
- 75 The UK is further ahead than many other countries in that journey. But citizens' expectations are rising. The private sector's re-engineering of its business practices for the digital world is accelerating. And the pressures on public expenditure require a step change in the efficiency of the delivery of purchases and ICT procurement.



- 76 Today almost half the UK population use the Internet to access information about Government or local council services, or to complete a Government transaction online. Directgov receives 14m visits each month. Significant savings can be achieved through online delivery – 45% in the case of DVLA Vehicle Excise Disc issue.
- 77 Some public services are already delivered almost exclusively online. The move to universal 2Mbps broadband by 2012 as a baseline service standard should be the trigger for a further programme of **Digital Switchover of Public Services**. By doing so, online will become the primary means of access, though with a safety net for those unable to access the service online. Against clear criteria, each relevant Government department should identify at least two candidate services to form part of the first Digital Switchover of Public Services programme before 2012.
- 78 In **procurement**, significant progress has been made towards a virtual public service service network with the first major Public Sector Network procurement taking place this year. Government cloud computing, the “G-Cloud”, has come an important step closer with the publication of the Government’s CIO Council/Intellect strategy, augmenting the current development of the business case for investment in technical development and physical facilities. These major developments require a single-minded focus to oversee Whitehall-wide standards and systems. This Report recommends that the Government Chief Information Officer should have a ‘double lock’ on approving all significant ICT procurements by Government departments.
- 79 Public Service data and content play an increasingly important role in the digital economy. The Government has embraced the vision of the Power of Information Task Force and, in respect of important data sources for innovation, such as geospatial data, agencies are significantly improving access to data and clearer licensing pathways from innovation to large scale commercial use.
- 80 Government commissioning represents a third of the total investment in professional UK online content. Despite existing guidance many public online commissions still prohibit the re-use of IP. This leads to wasteful warehousing of rights. NESTA will pilot a simplified IP framework for digital media bringing together PACT, the Cabinet Office, Kew Gardens and Arts Council England.
- 81 Finally, implementation of our plans for developing digital infrastructure and participation, including Digital Television Switchover, Digital Radio Upgrade and implementation of universal broadband and the Next Generation Fund, will be carried out through a number of delivery bodies. To achieve maximum efficiency and coherence to all of this activity, **Government and Ofcom, together with other partners, will by the Autumn assess the scope to unify these groupings into a single Digital Delivering Agency with greater capabilities and economies of scale.**



- 82 The Digital Britain agenda encompasses a broad spectrum of policies, some of which are the responsibility of devolved administrations. Not all the initiatives referred to in the report, therefore, are UK-wide. The UK Government hopes to work in partnership with the devolved administrations to deliver a successful digital economy across the UK but recognises that for some policy areas, such as education and some public services, a different approach may be taken in different parts of the UK.
- 83 Detail on the implementation programme for Digital Britain is set out in Chapter 9 of this Report. Broadly, the actions in this report are divided into three categories. Firstly, **Outcomes** where we have reached a final decision, secondly, **Proposals** where we have set out a proposed course of action for further analysis or engagement and thirdly, **Recommendations** where we have set out our views on areas which do not require immediate next steps. Some of the actions in this Report will require legislative measures and a Bill to give effect to these areas will be introduced as soon as Parliamentary time allows.



CASE STUDY

Parents: Simon Blatherwick

The Blatherwick family in south London consider themselves connected. Their two young sons both have MP3 players. They have mastered Wii and grown up with multi-channel digital terrestrial television.

Although the family pays for high-speed Internet access, Simon Blatherwick, the Technical Director of Archaeology at RPS Planning, admits to spending a lot of time swearing about his Internet service provider.

The family use its broadband connection – when it works – for entertainment, shopping, research and school homework. “I don’t go to the High Street anymore to browse around interesting shops, because the most diverse markets and things for sale are now online.”

But Simon remains concerned about the sheer volume of content available online, and how to police it. So the family relies on a software package which includes a security system where both parents are administrators and their children are account users.

The ages of both children are logged into the account details, and the system automatically filters content appropriate to the age-band of their sons. “It’s ultimately policed by Dad pulling out the cable,” says Simon.

Outside, the family relies on mobile phones to keep tabs on each other. “The fact that our older son has a mobile probably encourages us to let him go places that we would be concerned about if we could not get in touch,” according to his Dad. “It allows a freedom in London that probably only comes with a mobile.”



Chapter 2

Being Digital

"The number one benefit of information technology is that it empowers people to do what they want to do. It lets people be creative. It lets people be productive. It lets people learn things they didn't think they could learn before, and so in a sense it is all about potential."

Steve Ballmer, Chief Executive, Microsoft

AMBITION: TO ENSURE THAT EVERYONE CAN SHARE IN THE BENEFITS OF A DIGITAL BRITAIN

Living and working in Digital Britain

1. Building a Digital Knowledge Economy in the 21st Century will be fundamental to the UK's future prosperity. For the country to reap the maximum benefits, we need to put people at the centre of all our digital thinking. The changes we propose in this Report are intended to improve social mobility, promote UK business competitiveness and to improve our everyday lives from our education system to the businesses we run, from careers to how we participate in a modern democratic society.
2. The Government made clear in this year's budget its commitment to a modern knowledge-based economy underpinned by a strong communications infrastructure. It announced that the Government would pursue a Universal Broadband Service, at a speed of 2 Megabits per second, by no later than 2012. Achieving that goal will allow virtually everyone to experience the benefits of broadband, including the increasing delivery of public services online. It made clear that Universal Service will be complemented with further support to improve basic digital skills and promote broadband take-up, ensuring that adoption of broadband continues to grow in line with the expanding opportunities available.



3. Digital technology – and particularly the Internet – is the common backbone for numerous services and devices that most people now take for granted, including MP3 players, web-enabled mobile phones, online gaming, social networking, multi-channel television, digital radio and podcasts. But it is much more than that. Digital technology is no longer simply desirable. It is rapidly becoming an essential facility for citizens and consumers in a modern society.
4. The changes that digital technologies bring require us to develop a **new level of participation** for a competitive digital knowledge economy and a modern democratic and fair 21st Century society. A Digital “Big Bang” will transform how we participate in a modern democracy, how we learn, how businesses operate, how we find jobs and how we do them, how we access our public services and how we develop our creativity, make the most of our free time and network with friends.

Case Studies

Throughout this report, we have included case studies of how Digital Britain benefits different sections across society. They show how:

Young people and families are increasingly viewing digital technologies as the norm, including for music listening, multi-channel television, e-commerce and shopping, research and school work and staying in contact through email and mobile phones.

Education is being transformed in schools and universities through the use of online whiteboards, animation technology in lessons, remote and virtual learning and new IT suites where children are taught to safely navigate the web, store and protect their own content and practise web design.

Health care delivery is changing with the use of digital data to enhance record keeping, access test results, update the latest research, make prescriptions and improve appointment schedules.

Small businesses are using digital technology to revolutionise how they operate through online marketing and sales, improving accounting and internal procedures, online tax returns and record keeping and payments. The Internet enables such small businesses to reach a global audience for their products.

Bigger businesses are transforming their working practices through the use of broadband communications, intranets, webcasts, online advertising and dealer and customer relationships. Digital technology is transforming everything from product design to purchasing portals and customer communications.

Families and older people are using digital technology to communicate through email, engaging with their local communities, communicating with relatives across the globe on webcams and for information and advice, care and support.



5. People will rely on technology tools for most important areas of their life. The advantages of being part of the digital revolution will be vital for work, as well as central to playing a full part in the community and with family and friends. We foresee benefits of Internet use in a number of areas, including:
- 1) **Social Mobility:** through providing additional educational and vocational opportunities.
 - 2) **Financial Savings:** through competitive pricing, lower utility bills, price comparison websites and many other ways.
 - 3) **Educational Attainment:** through online learning, information provision and research and remote and virtual learning.
 - 4) **Improved Salary Prospects:** because already computer skills carry a wage premium.
 - 5) **Democratic Engagement:** through increased opportunities to participate in and discuss the democratic process.
 - 6) **Increased Satisfaction with Public Services:** because online delivery of public services brings greater choice, flexibility and personalisation of service delivery.

Some of the Benefits of Being Online

Health Services – Because Internet based health services can offer greater detail and information about healthy eating, dieting, exercise, diagnosis, treatment and recovery.

Online Shopping – There are significant benefits, both financial and social, that come from being able to shop online, getting the cheapest deal and saving time especially when using price comparison websites. Further important benefits are emerging for people with disabilities or those unable to venture out allowing them greater independence in their daily life.

Online Banking – Including paying bills, allowing quick and easy payment methods, greater control over finances, a wider choice of savings products and access to international markets and share trading.

Job Applications – Using the Internet allows job seekers to search effectively for employment, some of which is advertised only online. Web-based application systems have become much more simple and easy to use.

Self Publishing – New content creation systems have enabled millions of people to distribute their work – the written word, audio, photo sharing and video material – to a global online audience.

Communication – The Internet offers access to a huge range of communication devices to us. These range from the very simple applications such as email in which we can communicate with people anywhere to instant messaging and VOIP which allow us to communicate with people around the world instantly and for free. All these systems have been augmented by social networking sites that allow us to keep in contact with old friends and new.



6. **In the lead up to this Report, the Communications Consumer Panel conducted some research into the importance of the Internet in modern society. It found that:**
- Most people with broadband at home already feel they could not be without it. More than 70% of such people described it as essential or important. People with broadband at home value it more highly than their mobile phone, land line or digital TV.
 - Most people (regardless of whether they have broadband or not) consider it essential for some groups of people to have broadband at home, notably those with school-age children and people who are physically isolated.
 - Most people consider that in the near future it will be essential for everyone to have broadband at home. More than 80% agreed (46% strongly) that it should be possible to have broadband at home, regardless of where people live. Among respondents, 81% agreed (42% strongly) that it is everyone's right to be able to have broadband at home.
 - People who do not have it are expected to be at a significant disadvantage. This is because people expect that more vital services will be delivered solely online in the future, or be provided offline in a way that penalises people who access them in this way, perhaps at a higher cost or lower quality. It is expected that people could lose access to a wide range of services and activities: shopping, banking, school work, public services, and downloading TV content.
7. Today, nearly a fifth of web users use the Internet as their first port of call when investigating a health concern.³ Twenty hours of content is uploaded to YouTube every minute. Already, being a computer user commands a wage premium of between 3 and 10%, when individual, occupation and industry effects are taken into account. The financial savings flowing from an ability to use comparison websites and online-only deals are worth an average of around £23 per month, per individual. Online retail creates opportunities for both sellers and consumers. While consumers benefit from savings online they also spend on average 20% more online than they do offline.⁴
8. And whilst some of the popular activities on the Internet today, such as accessing information, communicating and carrying out transactions can be done on a relatively slow Internet connection, already a considerable proportion of online activity, such as downloading and streaming TV content (e.g. the BBC's iPlayer), require faster broadband connections of at least around 2Mbps. This trend will continue and grow.
9. This technology is particularly critical for certain sections of society. For example, for families with school age children where the Internet is essential for educational purposes, for the unemployed as more job search is conducted

3 Does the Internet improve lives? – FreshMinds/UK online centres, April 2009

4 Economic benefits of digital inclusion – building the evidence, published in April 2008 by UK online centres



online and for the physically and socially isolated, such as the elderly, people with disabilities and those living in rural and remote areas, for whom the Internet can bring huge new opportunities for engagement and participation.

10. Participation in social networking opportunities is redefining how children communicate with each other. Arguably, a more important development is that pupils who use the Internet for educational purposes are more likely to outperform those without web access – by around $\frac{1}{4}$ of a GCSE grade in each subject. This in turn increases the UK's competitiveness by creating a more highly skilled workforce.⁵ In the workplace, 90% of new jobs now require digital skills.⁶

Children and Young People in Digital Britain

As part of the Digital Britain process twelve young people, between the ages of 11 and 16, from the Young NCB (National Children Bureau) and Life Routes projects were invited by the Digital Britain team to participate in the Digital Britain Summit held on 17th April 2009. Their remit was to discuss and give their viewpoint on where they see Digital Britain in 20 years time. We are publishing their Report alongside this document today.

Giving children and young people the skills and tools that they need to participate in Digital Britain is of critical importance from both a social and economic perspective. If we are to truly maximise the potential of these digital economy and the benefits it can bring to all sections of society, we must ensure that children and young people are confident and empowered to access, use and create digital media.

Professor Tanya Byron's Review in relation to Child Safety on the Internet last year addressed the critical need for a sustained information and education strategy targeted at children. The Byron Review highlighted the important role of schools and other services for children and families in equipping children and families with digital skills.

This Report endorses the recommendations made in the Byron Review. The importance of ICT skills will continue to grow and the Government must ensure that all our children and young people are equipped to prosper in Digital Britain.

Current Participation in Digital Britain

11. Today's products and services are making it easier to enjoy the benefits of new technologies and digital services. More than 1 billion applications have been downloaded on the iPhone worldwide. A quarter of us have watched TV on the

5 Economic benefits of digital inclusion – building the evidence, published in April 2008 by UK online centres

6 Delivering Digital Inclusion – An Action Plan for Consultation (2008) <http://www.communities.gov.uk/publications/communities/deliveringdigitalinclusion>



Internet. Almost half of the UK population has used the Internet in the last year to access information about Government or local council services. In UK households, 90% of us have digital television and over a quarter of us have a digital radio. The number of mobile minutes we spend calling has risen by 90% in the last five years.

12. For most people, the technology revolution we have seen in the last 10 years has brought enormous benefits. Yet, today, over 15 million adults in the UK still do not use the Internet. If we are going to maximise the benefits across society, we must also ensure that we address the needs of those 15 million.
13. Those not using the Internet also risk missing out on the full benefits of digitally delivered public services, which can provide greater flexibility and personalisation for the user. We explore the digital delivery of public services in more detail in Chapter 8.
14. It is already increasingly the case that those without access to the Internet suffer economic disadvantage. Their opportunities and livelihoods can be compromised by exclusion from the digital world.
15. More fundamentally, they miss out on areas of learning for themselves and their families and increasingly, they may begin to miss out accessing the full benefits of online public services from health to financial services and employment advice. They miss out on the easy access to relevant information, from the daily updates on weather or transport, to important breaking news at local, regional, national or international levels. Access to news is part of daily life as well as an essential ingredient for democracy.
16. Finally, people miss out on leisure activities and creative development which is increasingly part of the "social glue" for friends, families, communities of interest and society as a whole.
17. The concern of isolation and loneliness, of being the person in a social group who gets left behind, who fails to understand or follow cultural references, are as powerful as motivators for some sectors of society to acquire and improve their digital skills, as the more obvious economic, educational and democratic benefits.

Ofcom Research: Accessing the Internet at Home

Ofcom's recent research project, *Accessing the Internet at Home – A Quantitative and Qualitative Study Among People without the Internet at Home* (by Ipsos Mori) looks at why these people do not have Internet services, and at what price, if any, would they be willing to pay for it and what can be done to encourage take-up.

The key findings were:

- When asked what the main reason for not having the Internet was, self exclusion ('there's no need' or 'I'm not bothered') accounted for 42% of those without Internet access at home.



- Financial/resource exclusion ('can't afford it' or 'no computer') accounted for 30% and the remaining 18% intended to get Internet access at home in the next 6 months. The evidence suggested a strong correlation between experience of the Internet and the intention to get it at home – 72% of this group were Internet users outside the home.⁷
- 42% of people interviewed were willing to pay something for an Internet connection, 13% would get it if they could get free Internet connection and computer but 43% would not get it even if both were free and said that it was irrelevant to their lives.
- Within the 30% of those in the financial/resource exclusion group, two subgroups were identified – 26% were those whose main reason related to costs or equipment and 4% were those who said they did not have the knowledge or skills. 55% of those who cite cost live in social category DE homes.
- Awareness of the Internet was widespread with only 3% of respondents saying they had never heard it. Use outside the home also varied widely: 32% of respondents used the Internet outside of the home; 24% were non-users with indirect access via family or friends carrying out tasks on the Internet on their behalf; and 43% were non-users without access either directly or indirectly.
- Within the self-exclusion group, two subgroups were identified: 37% for whom the Internet was not of interest and 5% who said they did not need it at home because they were happy with the access they had. Respondents who said they were indifferent tended to be older and did not use the Internet.
- The study overall found that a genuine interest in the Internet is a prerequisite to take-up. It's also important to bear in mind that even if a spark of interest is generated, there may be other barriers to take up including skills, resources and affordability.

18. Among non Internet using groups a common response to "digital self-exclusion" is that they say they are living contentedly offline and see no real need or benefit to going online. Despite the advantages of digital participation, as outlined in this document, 43% of those asked in a recent Ofcom study said that even if offered a 'free computer and broadband subscription', they still would not choose to be online.⁸
19. In other cases, however, the problem is involuntary exclusion. People may understand that there are clear benefits to them in terms of employability, access to cheap online shopping, social networking, healthcare and advice, and so on – but lack either the money to buy kit and subscribe to a broadband service, or the skills to engage. In some cases they may have a disability that

7 Internet users defined in this report as those who use the Internet at least once a year and regular users are those who use the Internet at least once a week.

8 Accessing the Internet at home – A quantitative and qualitative study among people without the Internet at home by Ipsos Mori



prevents them from being online. In these cases there is a compelling case to improve the support and availability given to these groups and communities in order to benefit from the digital opportunities.

20. The Government has been alert to the potential dangers for those who are digitally disconnected and to the dangers of the increasing digital divide. To that end it has put in place a series of important initiatives designed to offer practical and easy to reach help for those not online. There has been an unprecedented investment in training and access and encouragement to get people online at local community level. This investment has delivered the People's Network Programme to ensure that Public Libraries and other local community facilities had free opportunities to learn how to enjoy digital technology, as well as initiatives to put ICT equipment and learning at the heart of schools, to the wide range of local government, higher and further education, cultural and leisure centres which all offer access, training, and openings to learn and use digital technology.
21. This Report allows the Government to assess the excellent work already achieved, and to suggest a step change in the ways to help the digitally disconnected, building on the best practice to date, and on the knowledge and understanding we now have about the barriers and the ways to overcome them.
22. It recognises that the market and innovation offer some important breakthroughs, as well as public service and voluntary sector partnerships.
23. The Government wants to take further action in three areas to drive Digital Participation:
 - 1) **Affordability:** both in relation to equipment and ongoing costs;
 - 2) **Capability and Relevance:** ensuring that all citizens have the skills, motivation and confidence they need.
 - 3) **Availability:** by making sure that wide availability of key services, in particular through the Universal Service Commitment for Broadband which we address in Chapter 3.

Affordability

24. UK consumers today enjoy some of the lowest communications bills of any in the European Market. Companies such as BSkyB, Carphone Warehouse, Virgin Media, BT and many others offer a huge range of individual products and bundled packages at very competitive prices. The intensively competitive nature of the UK Communications Market means that UK consumers will continue to be well served in terms of the prices they pay for communications products.
25. Real monthly household spend in communications services fell for the third year in 2008 and prices have fallen by almost 5% since 2004. It is possible today to buy a new laptop computer on the high street for around £250. In the early days of the digital television switchover programme, a set-top box cost up to £300 whereas today it can now be bought from around £25.



26. However, for some the question of affordability is still critical. Whilst there are significant disadvantages faced by households who do not have Internet access in their own homes, the Government and public sector partners have equipped many community centres with computers and offer safe ways for citizens to learn to use and enjoy the Internet and develop their ICT and creative skills.
27. The Government started to tackle this issue through the Home Access Programme, which addresses the needs of those children in state maintained education without online access at home. On 2 February 2009 the Government began a pilot across Oldham and Suffolk local authorities targeting families with children who can't afford home access that benefits both children and their families in getting online.
28. The pilot for the Home Access Programme has been a success in terms of generating and satisfying demand and is well ahead of target. In March, the Minister agreed that funding for the pilot should not be capped at 7,500 grants but should be extended until all the eligible pool has been served. The extension of the grants shows the great demand there is for access in the home. Any families who are eligible and who have not applied under the pilot scheme will be able to apply under the national rollout from December.

UK Online Centres

UK online centres run a network of around 6,000 centres across England, providing people with help and support to access and use computers and the Internet. They were set up in 2000 with funding from the Department for Education and Skills and there are now UK online centres in 82% of areas of high deprivation. Through UK online centres, people can work through the 'myguide' resource, a free open use tool, funded by the DCSF as a cross-sector resource and developed by the central UK online centres team, which can also be used independently or with support from family and friends. It helps the user plot their own journey through email, web searches, and short courses in anything from using a keyboard and mouse to online safety, shopping, banking and more. People can also become involved in other classes offered by the centres, which are sometimes run in outreach venues to engage those who would not necessarily walk through their doors. UK online centres also run the annual Get Online Day – to help raise awareness about the benefits of technology, and to encourage people to visit their nearest centre.

Of the two million annual users of UK online centres, three-quarters are counted as being socially excluded, and around half have no formal qualifications when they start using a centre. UK online centres often awaken users' appetite for learning, and 64% of visitors progress to take up information, advice and guidance, further education or employment. More than 90% of visitors also access online Government services in a UK online centre.



29. In addition, there are a number of other initiatives already in place in the UK which aim to provide affordable technology such as personal computers for digitally excluded citizens. But demand currently far outstrips the supply of suitable equipment. At the same time many organisations and individuals are disposing of large quantities of older but fully-functional personal computers which often end up in landfill sites, simply because they are unsure of how to recycle these PCs or are worried that unless they destroy the hard drive of the computer that sensitive data may remain and could be accessed by a future user of the PC.
30. Many of these personal computers could be put to secondary use. They could provide affordable access for excluded citizens and have a positive impact on the environment. That requires clearer ways for individuals and companies to understand how to dispose of their old PCs through accredited programmes that ensure correct data cleansing and licensing of the computers. In turn, these schemes must be linked into programmes to provide computers to digitally excluded citizens. More needs to be done to support these initiatives.

Microsoft: Affordable Computers in Milton Keynes

Milton Keynes has more than 10,000 disadvantaged citizens within its population of approximately 250,000 people. Milton Keynes Council wanted to provide these citizens with the opportunity to acquire affordable access to technology and help them develop computer skills whilst enhancing their employment prospects and to take advantage of the economic benefits of being online, including engaging electronically with the Council.

The Council worked with Microsoft to develop the Microsoft Digital Skills for Citizens Programme which enables them to refurbish old council computers, install the latest software, online services and training materials and then loan these computers out to disadvantaged citizens for just £1.50 per week. The scheme has been a great success with more than 1,000 PCs already on loan and now has a waiting list of citizens who would like to join the scheme, limited only by the number of computers available from the council. The scheme recently won a European e-Inclusion Award and constantly receives positive feedback from users.

“It has enabled me to go to college, email friends and make new friends. It is helping me with my education.” Citizen of Milton Keynes.

<http://www.connectmk.com>

31. Finally, the exponential growth in mobile broadband services in the UK in the last 12-18 months has led to the possibility of Internet connection over relatively inexpensive devices such as pre-pay mobile. The Government’s commitment to the earliest release of radio spectrum to support next generation wireless technology will further build the capability of this option for many people. We address this in the next chapter.



32. We invite the newly appointed Champion for Digital Inclusion and Expert Task Force (see below) to evaluate the work already underway, and if necessary, assess priorities for future work by industry, the public sector and other stakeholders.

CAPABILITY AND RELEVANCE

33. Capability is about ensuring that all citizens have the opportunity to enjoy the direct benefits of digital technology by equipping people with the skills, motivation and confidence to enhance the quality of their lives.
34. The route to engaging people with the new technologies – and empowering them with the skills, knowledge and confidence they need – starts at school. The Government has accepted the findings of Sir Jim Rose’s review of the primary curriculum (April 2009) in which he recommended that ICT join English and Maths as the centre piece of the new primary curriculum. Sir Jim made clear that understanding English, communication and languages underpin success across the curriculum and embrace key skills including viewing, broadcasting, and evaluating. The secondary curriculum also embraces functional skills of English, mathematics and ICT, built comprehensively into the curriculum. The importance of the skills for staying safe, highlighted by Tanya Byron in her review ‘Safer Children in a Digital World’ have also been included in the personal development strand of the curriculum. Engaging parents is another aspect of the modernised curriculum. It is essential to support child safety policies, but also provides an opportunity to engage parents with the online world.
35. As this Report looks at further in Chapter 6, we believe digital life skills are essential for all citizens. Government therefore welcomes the recommendations of the independent review of ICT user skills for adults conducted by Estelle Morris, including the proposals in relation to:
- Working towards a basic digital life skills entitlement for all adults;
 - Clearer progression routes to IT user qualifications;
 - Encouraging more provision of training for IT user qualifications; and
 - Ensuring skills provision underpins the strategy for digital media literacy.
36. In 2008 the Prime Minister appointed the first Minister for Digital Inclusion. His task was to co-ordinate action across Government in delivering the benefits of digital technology to address the needs of those who are not currently benefiting. The issues being tackled include broadband access, focusing particularly on the more disadvantaged groups and communities.
37. A Digital Inclusion Strategy was published in October which set out some of the key priorities to bring these social and economic advantages, including:
- Increasing employability;
 - Building skills and capacities;



- Better public services;
- Empowerment of disadvantaged communities;
- Access to advice and information; and
- Promoting independent living and tackling social isolation.

38. The draft strategy was consulted upon and there was support for the general principle, but also a feeling that the economic case for digital engagement was even stronger than set out. One key proposal that is being taken forward is the appointment of a Champion for Digital Inclusion and Expert Task Force. Their task is:

Citizen and community empowerment: Making everyone vividly aware of the importance of this agenda and its direct relevance to improving the quality of lives and life chances for all citizens.

Effective services: Promoting across all sectors the more efficient and effective use of digital technology to support the design, delivery and personalisation of services appropriate to the needs of the most disadvantaged groups and communities.

Intelligence and Focus: To monitor and evidence the risks and opportunities of emerging digital technology for excluded groups and communities and minimise the environmental impact from these technologies.

39. **We are pleased to announce the appointment of Martha Lane Fox as Champion for Digital Inclusion.** Together with her supporting Task Force, her particular focus is to represent the estimated six million adults who are both socially and digitally excluded.

Users with Disabilities and Digital Britain

Responses to our interim Digital Britain report highlighted the needs of people with disabilities, including people with sight, hearing or dexterity disabilities, learning disabilities and dyslexia, and the potential benefits of new digital technologies to these groups. The key problems identified in the responses were low take-up and lack of accessibility.

Ofcom's annual consumer experience reports found that in 2008 only 42%, 32% and 36% respectively of people with visual, hearing and mobility disabilities had broadband access at home, as opposed to around 60% of the general population.

We recognise the need to take these concerns into account as our action plans are implemented, in particular through the Digital Inclusion Action Plan.



In the proposed new European framework for communications, provisions on access to electronic communications services for Europeans with disabilities have been strengthened to ensure they can benefit from the same usability of services as other citizens, but by different means. For the first time, the EU telecoms rules will include a provision on the availability of terminal equipment offering the requisite services and functions for users with disabilities.

At UK national level there is ongoing work across Government on e-inclusion which supports our work towards the European Union's 'Riga Declaration' (June 2006). In particular there is a priority objective to 'ensure accessibility, affordability and equal participation for disabled users in the digital economy'. For example, the Department for Business, Innovation and Skills will lead a group that draws together Government, industry and third sector to explore and understand issues of e-accessibility and develop and share best practice across all sectors.

Government has also helped develop the use of technology to support those living with disabilities through individual funding commitments and pilot projects. These include the work with 'Significan't' to develop 'sign video'. Significan't is a Government funded deaf and sign language led social enterprise providing 'SignVideo', offering instant and high quality sign language interpreting via the videophone.

We recognise that this key area needs further consultation to agree an Implementation Plan with agreed milestones in the overall implementation of Digital Britain.

40. **We will ask the Consumer Expert Group to report on the specific issues confronting people with disabilities' use of the Internet in Digital Britain as they have already done in relation to digital television.**

A NATIONAL PLAN FOR DIGITAL PARTICIPATION

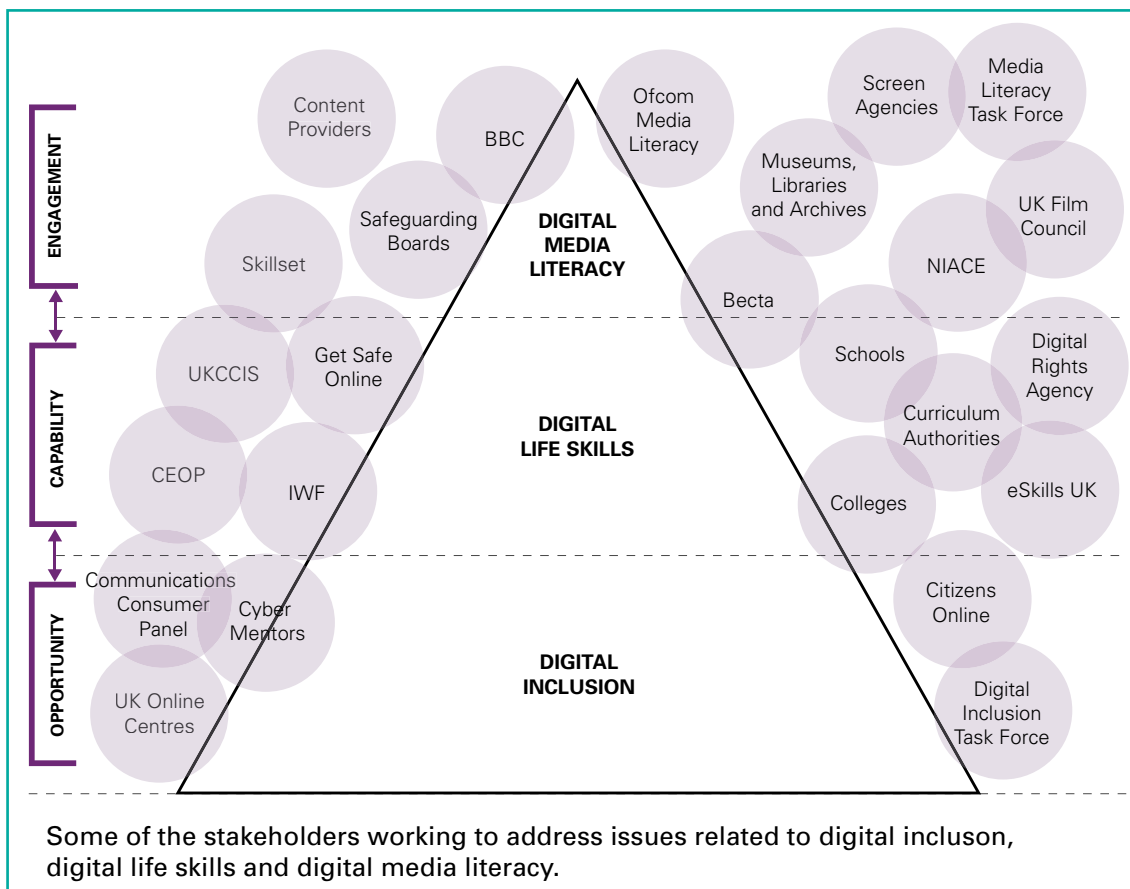
41. Alongside the Digital Inclusion work, many Government departments, organisations and other bodies today are involved in a number of initiatives aimed at promoting media literacy.
42. On 16 April, The Media Literacy Working Group, chaired by Stewart Purvis of Ofcom, published its report in response to Action 22 of our Interim Report. Action 22 asked Ofcom, in the light of significant market changes in the availability of digital technologies and how they are used, to make an assessment of its current media literacy responsibilities and recommend a new definition and ambition for a National Media Literacy Plan.
43. The Media Literacy Working Group brought together all the relevant Government departments and devolved Nations, BBC, industry, education and Third Sector to develop a central focus, a clear agenda and a fresh and radical new approach, driving Digital Participation in the UK. At the heart of the



Group’s recommendations was a fresh new approach to coordinating the number of activities already taking place in this area.

44. It became clear through that process that there were a number of organisations and initiatives aiming to address media literacy. But the approach being adopted was very fragmented, with a large amount of resource being dedicated to this work. They lacked a higher strategic vision or indeed the appropriate aligning of the initiatives to ensure that they were being efficiently delivered and that they were complementing each other. Figure 1 below shows just some of the initiatives currently underway.

Figure 1: The Current Fragmented Approach to Media Literacy



45. Through the process, it also became clear there were numerous working definitions of media literacy but no consistent one. The term “media literacy” was a technocratic and specialist term understood by policy makers but not really part of everyday language.
46. It is important that Government provides clear strategic leadership and vision. To do so, we believe it is now vital to move away from media literacy as a discrete subject and term and to move towards a **National Plan for Digital Participation**.



47. We believe that Digital Participation can be defined as:
“Increasing the reach, breadth and depth of digital technology use across all sections of society, to maximise digital participation and the economic and social benefits it can bring.”

GETTING BRITAIN ONLINE

48. As part of driving Digital Participation we must ensure that the offer presented is as compelling as possible and that people are aware of the benefits provided by being online. It is clear that the current offer is not sufficiently exciting to motivate some people to get online. If we are to encourage wider participation, there must be effective promotion of the services and channels that attract people. That will require provision of appropriate support including outreach, skills training, and demonstration of how people can get the most out of the digital revolution, delivered through tailored, local, community-based programmes building on existing networks.
49. Government can play an important part in creating a compelling online offer through the delivery of public services online. Today, websites such as NHS Choices, DVLA, Directgov and many others are successfully serving the general public online. To maximise the opportunity afforded by broadband ubiquity, Government will need to become genuinely “of the web”, not just “on the web”. We consider this further in Chapter 8.
50. The analogy of digital switchover in television is a useful one. Digital UK has brought together broadcasters, platform operators, retailers, equipment manufacturers, Government departments, infrastructure operators, the third sector and others to create a coherently designed and delivered communications campaign to promote the benefits of digital television and what steps viewers need to take to enjoy those benefits.

Digital UK – Leading the UK’s Television Switchover

Digital UK, the not-for-profit company responsible for leading the UK’s switchover from analogue to digital TV, has been responsible for promoting the benefits of and educating and assisting the public in relation to television switchover across the UK.

The start of the switchover programme has been a success, with successful switchovers already completed in the Copeland area of Cumbria, the Scottish Borders and part of the West Country.



Digital UK has been the critical delivery agency for switchover, undertaking many activities including the following:

- Providing a central focus and coordinating function for the many parties that have an interest in the switchover process;
- Working with commercial and third sector providers to create a compelling offer that has driven take-up levels well in advance of the moment of compulsion;
- Developing a simple and clear communications strategy that consumers can understand around a complex and major technological change; and
- Providing active support to the most vulnerable in the lead up to at the time of switchover, in particular by working with the third sector.

51. It is an ambitious and important goal to create a similarly compelling offer for being online. To be achieved, it will require coordination and a clear and co-ordinated series of messages about the benefits.
52. **We support the Working Group’s proposals for the formation of a Consortium of Stakeholders, led by Ofcom, to drive Digital Participation. Funding will be made available of up to £12m over three years from the Universal Service provision announced in Budget 2009. It will support a new programme managed by members of the Consortium, with a review taking place 12 months after the start of the Programme to audit the effectiveness of this approach.**
53. We support this proposal because it has two powerful but simple ideas. Firstly, achieving a digitally engaged population requires action to motivate those not yet engaged. And secondly, this will best be achieved through a systematic, sustained and co-ordinated approach to increasing Digital Participation.
54. The Government believes that a Programme will need to have three distinct aspects, the first two driven by the Consortium and the third critical leg by Government:
 - 1) **A Communications Campaign:** with a co-ordinated mix of marketing techniques that leverages the assets of the consortium members including their brands, literature, audiovisual materials and advertising inventories.
 - 2) **Targeted Outreach:** to engage those who need more support. This direct outreach work could follow the switchover timetable and harness the interest raised in digital technologies by the digital switchover process.
 - 3) **Digital Switchover of Public Services:** bringing the benefits of online delivery of Government services to users. We consider this further in Chapter 8.



55. We urge the Consortium and Digital UK to work together closely, identifying and leveraging any potential synergies that can be appropriately exploited. These could include the network of volunteers currently helping Digital UK with outreach work for vulnerable and isolated adults not eligible for the Digital Switchover Help Scheme.
56. In addition, we believe the Consortium of Stakeholders should consider how to utilise existing networks of volunteers and resources effectively, including those who support UK Online, Digital Unite, Citizens Online, local authorities and applications such as MyGuide.
57. We believe the Digital Champion and Expert Task Force should liaise closely with the Consortium to develop best practise for the Programme.
58. In addition, we believe that Ofcom and the Consortium should consider how best to continue to work with the devolved Nations on these issues, in particular by capturing the best practice from across the UK and building on it, working with both relevant central Government departments and the devolved institutions who have worked so well with the Consortium so far.

Activity in the Nations

A selection of some of the work currently being done in the nations in media literacy includes:

Wales: 'The Learning Country: Vision in Action' (2008) describes how the Welsh Assembly Government is developing an ICT strategy for schools to harness the potential of ICT in transforming teaching and learning. References to ICT are included in guidance documents to support the 'Framework for Children's Learning for 3-7 year olds in Wales' at primary level and at secondary level, there is a close fit between the learning outcomes within Ofcom's specification of media literacy and the statutory curriculum for schools under English and Welsh orders, the PSE framework and the ICT curriculum.

Scotland: The Scottish Government published a paper on literacy across the curriculum which talks about 'writing using a range of media' and of taking advantage of the opportunities offered by technologies. The LTS provides a range of resources relevant to media literacy promotion in schools.

Northern Ireland: Northern Ireland's Programme for Government sets out strategic priorities for Northern Ireland in 2008-11 in which technology will play a key role in providing a highly skilled and flexible workforce. In 2005, a new A/AS Level in Moving Image Arts was introduced and from September 2009 it will also be taught as a GCSE.



59. **Finally, we will evaluate the work of the Consortium after 12 months using the following metrics:**
- 1) **Reach:** access; number of households online, and numbers using the Internet outside the home;
 - 2) **Breadth of engagement:** modes of usage and consumption (communication, retail, content consumed, public services used);
 - 3) **Depth of engagement:** user contributions, comments, joining networks, user generated content, self publishing, content creation, photos uploaded and shared, etc; and
 - 4) **Social and economic impact:** particularly the impact on economic recovery and benefits for disadvantaged groups and communities.

MEMBERSHIP OF THE CONSORTIUM

60. Following Ofcom’s work, a number of organisations have agreed in principle to join the Consortium. They include the BBC, ITV, Channel 4, BSkyB, Broadband Stakeholders Group, the Mobile Broadband Group, UK online centres, the National Institute of Adult Continuing Education and a number of social and media portals including AOL, Bebo, MySpace Google and Yahoo!. In addition, several museums including Tate and the British Library have also expressed an interest in joining the Consortium.
61. This is an excellent start, but as the work of the Consortium develops, it is likely that the Consortium membership will need to adapt and potentially expand. There are a number of organisations that can help to deliver this vision, including Internet Service Providers, mobile phone companies, online search companies and many others. The Government believes that the BBC and Channel 4, as public service institutions, have a particular important role to play – using their content, services, brands and reach to showcase the benefits of online participation.
62. In particular, the Government welcomes the appointment of the BBC’s Online Access Champion and the increasing role of the BBC in driving Digital Participation. This means more than just creating content to attract those that are already online. It means providing an important function in helping to attract those not online.

The success of public service programming in driving online participation

BBC’s ‘Who Do You Think You Are?’

Following the television series, 10% of viewers also accessed the BBC website bbc.co.uk/familyhistory and 61% of those were new users to family history on the web. There was also an 18% increase in first time visitors to the National Archive website as the BBC was showing the first series.



Channel 4's 'Embarrassing Bodies'

The response to C4's multiplatform initiative 'Embarrassing Bodies' – incorporating TV, web and mobile suggests Channel 4's role can be an effective motivator in increasing the depth of use of online services and educating people about health risks. Over ¼ million online STI Risk Checks have been taken and more than 2.5 million Self-Checks videos have been viewed on the site.

63. **We are inviting the Board of Channel 4 to consider how it can further contribute to driving Digital Participation, including consideration of whether Channel 4 should appoint a Digital Participation Champion from among its Senior Management Team.**
64. The new Consortium of Stakeholders provides an immediate and important vehicle for tackling Digital Participation. It brings together key stakeholders and Government departments to achieve greater coordination and collaboration. Whilst it will be able to bring greater coordination than currently exists, there may be a case for even clearer strategic leadership, coordination and rationalisation of current activity, requiring greater structural reform of Government and stakeholder activity.
65. In the medium term, a new, formal and more structured institution outside of Government is needed to deliver clear benefits above and beyond the Consortium approach. The new institution could replicate the delivery success of Digital UK in television switchover. In that role it would bind the most important stakeholders from across Government, industry and the third sector in a structure with a clearly defined remit, governance and funding arrangements. This is considered further in Chapter 8 as part of the wider consideration of how to deliver Digital Britain.
66. If Government does embrace structural reform of the institutions and processes, it will also need to consider its own interaction on these issues. Today, involvement is currently spread across a number of departments, including BIS, DCMS, DCSF, CLG, and others. There may be scope for developing a more efficient approach to Government activity in this area.
67. This plan to drive Digital Participation in the UK is designed to ensure that everyone can share in the benefits of a Digital Britain. For them to do so, we will need to ensure the UK has a world class infrastructure that makes the services people want universally available. This is considered in the next Chapter.



CASE STUDY

Student: Adam Cunnington, Northampton University

Adam Cunnington, a 21-year-old undergraduate at Northampton, has a drawer full of obsolete technology: CD players, games consoles, mobile handsets and games consoles – all made redundant by the latest digital devices.

The student, studying for a degree in Business & Sport, has consolidated his electronic usage to a laptop and an iPhone. "The laptop gives me everything I need for my coursework, and the iPhone gives me Internet access from anywhere with email, instant messaging, maps, music and Facebook."

As part of the so-called "iPod generation", Adam expects his university to be similarly wired. He has not been disappointed. Every student on his course has access to "Tunis", a secure portal where they can discuss work with tutors, find lecture notes and check sources.

"The idea is to enable students to access all the material they need online," he says. "Not everyone is going to be able to go to lectures."

Adam uses the system to download lecture slides, while using another secure site – Metalib – to find book references, sources, specialist journals and background for assignments.

He cross-checks some of his assignments with friends on Facebook, which has replaced MySpace as the network of choice among his student group. But he also recommends entertainment sites such as Limewire or Bearshare, where Adam admits not all content is paid for.

Given the hours devoted to online coursework and social networking, the undergraduate acknowledges that digital can be a distraction. "I would get a lot more done if Facebook wasn't around, but it helps with just getting information," he adds. "And if mum's taken the SatNav, at least I can use the iPhone to check how to get to the next match."





Chapter 3a

A Competitive Digital Communications Infrastructure

"If Lord Reith was right in his assertion that the broadcasting system should be a mirror of the nation's conscience, then surely our ambition should be for a broadband system that is the engine of the nation's mind."

Lord Carter CBE

AMBITION: TO STRENGTHEN AND MODERNISE THE COUNTRY'S COMMUNICATIONS INFRASTRUCTURE, EQUIPPING THE UK TO COMPETE AND LEAD IN THE GLOBAL DIGITAL ECONOMY.

1. The UK's communications infrastructure is a vital enabler for the country's society, economy, safety, security and well being. If we were to lose the use of a functioning communications infrastructure for any period of time, it is difficult to imagine many aspects of day-to-day life carrying on as usual. A sudden removal of communications would not only bring business and commerce to a halt, but also our traffic, public services, finance, energy supply and much of our personal interaction. Many of us spend more than half our day using one form or another of digital media, and this is only made possible by the infrastructure we take for granted.
2. For a quarter of a century the UK has applied a blend of Government intervention, independent regulation and competitive market forces, leading to the development of modern digital networks for TV, sound radio, the Internet and mobile phones/mobile data. Policies of the last 25 years have injected competition to the market and extracted value from the infrastructure. We have over this period seen significant investments in successive generations of mobile networks and the cable network. But in other infrastructures, and in particular the copper fixed telecoms network, the competitive market has delivered significant upgrades in performance, but not the massive investment required to redevelop the fundamentals of network infrastructure. In the case of broadband, realising the full value of the copper network cost tens of



millions of pounds of investment; replacing it with a fibre network will take billions. Investment of this order poses a new set of strategic challenges.

3. The lesson of the past is that regardless of policy success, we cannot afford to be complacent about the pace of technological change. Alone amongst all of the UK's key national infrastructures, our communications infrastructure finds itself in continuing and rapid technology evolution, in which the new generation already looks unambitious by the time is fully rolled out. The Integrated Services Digital Network (ISDN) promised the ultimate international goal in 1984 of two telephone lines and a 16 Kbps data link to every home. The Total Access Communications (TACS) mobile networks licensed in 1984 was viewed as the foundation of modern mobile communications, while the Videotex Services heralded as the last word in browsing for information. Not only were none of them the last word, they were not even the last generation of "modern" networks but the generation before. All have been overtaken.
4. For governments, the pursuit of the new generation requires prompt action and support for renewal. This is particularly important during periods of economic difficulty. A recent report by the Information, Technology and Innovation Foundation⁹ points to the multiplier effect of investment in digital infrastructure on jobs, productivity, competitiveness and quality of life – in addition to the immediate impact on jobs of investment through engineering and construction. ITIF suggest that a nominal £15bn investment in ICT infrastructure would generate 700,000 jobs, of which 360,000 would be in small businesses. (Public investment would of course carry a cost for the economy, and other estimates put the jobs created somewhat lower).
5. Like our energy and transport infrastructures, small variations in the performance of our communications can have major ripple effects, and major economic costs. Like energy and transport, the demands upon the infrastructure are constantly growing and the challenge of coping with these demands will move from complex to critical if we fail to take the necessary action.
6. There is though a very positive story to be told about the benefits of new networks. Next generation mobile networks offer very high bandwidth broadband with seamless connectivity. Next generation fixed fibre and cable networks offer not just conventional high-definition video entertainment and games, but potentially more revolutionary benefits for our economy and society – telepresence, e-healthcare in the home and, for small and medium sized businesses, access to cloud computing (which substantially cuts hardware and application costs and allows much more rapid product and service innovation). And next generation broadcast will move us into a new era of interactivity and high definition services.
7. If we are to be a global leader in the development of digitally based applications, content and services we need leading edge networks over which to develop and

9 The UK's Digital Road to Recovery, Jonathan Liebenau, Robert Atkinson, Patrik Karrberg, Daniel Castro and Stephen Ezell, April 2009



distribute them. The pattern over the past 25 years has been the arrival of more advanced fixed and mobile networks at roughly 8-10 years intervals and it should come as no surprise that the next cycle is coming up fast. Now is “just in time” for the UK to be investing in the next generation of fixed and mobile networks. To deliver them will need a 21st Century blend of competitive market forces, independent regulation and forensic Government intervention.

8. This chapter sets out some of the current and future challenges for the different elements of the country’s infrastructure, our view of market developments, challenges and changes for regulation, and, where appropriate, the Government’s role in securing our ambition of world-leading networks. By necessity it is only a partial view of the different networks in the UK – a fuller account could run to several hundred pages.

FIXED TELECOMMUNICATIONS NETWORKS (BUSINESS AND CONSUMER)

9. The fixed telecommunications network can be thought of in three distinct parts. At its apex sit the international links that connect the UK to the rest of the world. A massive up-grading of these connections with high capacity fibre optic cables took place over the period 1997-2000. In fact a substantial over-capacity was installed that has allowed the traffic on the Internet to explode without a bottleneck occurring. The competitive market is able to handle this international demand for the foreseeable future. That it can do so on the back of business investment undertaken a decade ago is a tribute to market deployment and must never be taken for granted either by users or the public authorities.
10. The next tier of our fixed telecommunications network is the trunk links between cities and towns down to the local BT telephone exchange (or cable head end in the case of Virgin Media). Over the same 1997-2000 period the links between all the main UK cities enjoyed a massive surge of investment in competitive optical fibre networks. But when the dotcom and telecommunications bubbles burst, this optical fibre investment understandably came to an abrupt halt, but at a point short of optically connecting the market towns in the shires and the smaller towns across the UK. This has left a legacy of a bottleneck between the local telephone exchange and the nearest connection to the optical fibre backbone networks for most UK towns. This link is sometimes referred to as ‘backhaul’ or “the middle-mile”. The lack of low cost capacity over the middle mile is often a major factor in congestion customers experience on the broadband Internet in busy periods.
11. The third tier is the local telephone network that links individual homes and businesses. In 1989 the UK was unique in the whole of Europe in having a policy to encourage competitive local telephone networks. The vehicle for this was broadband cable TV networks. This resulted in a huge investment surge that also came to an end around 2000 – with around half the population having a choice of telephone network provider between BT and Virgin Media.



12. The areas of the country that are covered by the Virgin Media network already have local optical fibre rings that run through Virgin's street cabinets serving typically 500-1000 homes. Broadband coaxial cables then connect to individual homes. Coaxial cable can support 4 Gbps bandwidth on a shared basis. Virgin Media will this year extend its 50Mbps offering to all those homes able to access a cable service. Over the same areas BT has its network of copper wires but these run all the way from the local telephone exchange to homes, and the length of the copper wires limit bandwidth. BT's planned investment in 'fibre to the cabinet' will shorten these copper wire runs to allow much higher bandwidth.
13. The other half of the country is served nearly exclusively by BT's copper network as the only fixed network. Following Ofcom's Strategic Review of Telecoms in 2004/05, the 'natural monopoly' elements of BT's assets were placed into a separate business unit, Openreach. In addition Ofcom took action to make sure BT's competitors could offer retail broadband services over BT's copper wires (so-called local loop unbundling). This opportunity was seized by providers such as Carphone Warehouse and Sky who at their own risk have deployed exchange-based infrastructure investments.
14. As a result the country enjoys the benefits of a competitive first generation broadband market to drive up choice and service levels and drive down prices. However, as we look to move to the next generation of services, with higher data rates, increased symmetry and resilience and lower latency, the business case for investment is very different to the current generation – we are now talking about essentially replacing, rather than enhancing, the infrastructure. While the competitive threat of cable means that the case for upgrading the copper network to fibre is more easily made, the business case for investment in the other half of the country is challenging. In particular, the costs of deploying fibre rise steeply in the more rural areas – the final third.

BUSINESS COMMUNICATIONS SERVICES

15. While the bulk of attention and public policy analysis (including in this report) is focused on domestic and small business consumers, the communications market for our medium to larger businesses is a quite distinct market. It is also an extremely important one. The availability of high-specification, resilient, bespoke communications services and managed private networks at competitive prices represent an important factor in the country's productivity as a knowledge economy and its attractiveness to inward investment. Global companies which rely on their communications services round the clock in turn rely on a vibrant market in business communications. Since these will be growing sectors in the global economy over the coming years, this makes it ever more vital to the UK's competitiveness that we dedicate attention and resource to ensuring that market stays competitive.
16. The distinct nature of the market is in part dictated by the nature of the end customer, who tends to be well informed and used to a bespoke service for



which they are able to negotiate down prices. Business telecoms is a diverse field, but typically providers supply a suite of mobile and fixed products, including high bandwidth point to point connections, Internet protocol virtual private networks, voice and data services management solutions.

17. While BT plc, through its Global Services division, is still the biggest network provider, alternate providers, with their own substantial infrastructure, have offered competitive services. The number of scale competitors in the UK has been reduced through consolidation in recent years. But the nature of the competition to BT has been enhanced. In particular, Cable & Wireless has in recent years successfully pursued a strategy of focusing on IP services for major corporates, while Colt is active in major cities around Europe. Contracts with Mobile operators, particularly with the advent of mobile broadband and high-speed file-sharing, are also an increasingly critical part of any knowledge-economy business's competitive edge in Digital Britain.
18. Importantly, like the domestic market, BT's major competitors often still depend on regulated access to wholesale BT products. Following the Strategic Review, Ofcom has reported a gradual shift from end-to-end wholesale products to access-only products which allow competitors to aggregate backhaul and thereby operate more efficiently at scale.
19. Much focus, whether of democratically-elected politicians or statutorily-appointed regulators accountable to Parliament, understandably rests on high-profile retail communications competition and the wholesale inputs to that competition. But the Government also recognizes the importance of the business communications market. It supports the measures that Ofcom has taken to improve the competitiveness of this market to date. It is as vital that we have a highly competitive business market as it is in the more publicly visible retail market. Additionally, there is a question as to whether the distinct needs of SMEs are fully being catered for by the market as currently composed. These are not challenges we can afford to be obscured by the focus on consumer markets.

CONCLUSIONS

20. The UK can overall reasonably claim to have a satisfactory broadband infrastructure and market structure. It has been quite a journey. When the Internet started it was largely running on telephone modems delivering data at 14.4 Kbps. The bandwidth went up in jumps until, at 56/64 Kbps, the telephone modem had to give way to the broadband Internet (DSL over copper wires or Cable Modems over broadband cable networks). This allowed bandwidth to leap to an average of 512 Kbps by 2005 and have risen steadily to an average of 3.3Mbps today. It has taken us 20 years to get to this average bandwidth. However, challenges remain. There are three major issues for today: reliability of the middle mile, access to services, and universal availability.
21. First, the capacity of the network is strained by users' demands upon it, particularly "the middle mile" issue, which will become pressing as video rich



applications such as the i-Player become commonplace. Without action being taken it is possible that entire metro areas could suffer data 'brown outs'. Inevitably, this will feed through to user experience – and will have an economic cost. This is though primarily a challenge for network operators to boost capacity through investment and appropriate management of traffic flows rather than Government intervention.

22. Secondly, it is important to ensure that the focus on connectivity does not detract from the need to foster the services consumers value. Liberalisation of telecoms has seen service development become decoupled from network development, which allows for more dynamism and innovation. The fulcrum of this process is the world wide web, where millions of sites are available to every single user regardless of who provides the connection. It is important that we do not lose this dynamism as networks are built out, even as new business models are developed.
23. A vibrant digital economy requires that independent value-added services can be delivered across digital platforms. Where this applies to voice services (such as directory enquiries) this might require Ofcom to mandate wholesale connection rates for operators with significant market power, including where the provider is shifting from one technology to another. It might also require a more active regulatory approach to ensure that services such as directory enquiries are kept relevant to consumers' expectations, and we support moves in Europe to ensure that requirements can be put on a wider range of operators to provide directory information to DQ service providers.
24. Thirdly, there are various degrees of current generation broadband under-service. DSL 'not-spots' (no DSL service available at all) arise for homes connected to a small number of largely rural exchanges. As headline bandwidths on offer to consumers have increased, a further subset of homes, this time right across the country, have been left unable to access anything above a very basic service because of line length or other technical issues.
25. Research by the Communications Consumer Panel shows that broadband is at a tipping point. For many people it has become a round-the-clock reality – those who work in a highly connected environment all day often come home to a connected home. For those households who have it, broadband has become an essential utility as important as electricity, gas or voice telephony.
26. But for some of the country, without connectivity at work or at home either, broadband has moved from the point where it might confer an advantage (with accessible mobile broadband playing a role in connecting those who might not have fixed connections). Instead, we are moving into a world where not having broadband access creates social and economic disadvantage – whether it is for children keeping up with homework with their school peers, job opportunities increasingly advertised online-only, cheap goods and services online and access to information.



27. The Commission for Rural Communities has conducted research into the benefits of broadband to rural communities, and the dangers of exclusion, to be detailed in a forthcoming report. They suggest that Internet use for bandwidth continues to increase in rural areas at a faster rate than in urban areas, and that a host of other issues, most notably rural economic development, are bound up in broadband availability.
28. Access to broadband is also a necessary pre-condition for the development and delivery of an increasing range of public services online. Rising demand for public services and constraints on taxpayer finances make it imperative that we drive efficiencies in public service delivery. This is set out more fully in Chapter 8.
29. Taking these factors into account, in the Interim Report we committed for the first time to bringing broadband to within reach of all parts of the country, and stated we would consider minimum levels of service up to 2Mbps downstream.
30. Some responses to the Interim Digital Britain Report argued that the focus should not be on current generation broadband for everyone, but more rapid progress to next generation broadband for most. These are two quite distinct national undertakings. Universal availability of today's network essentially requires incremental upgrades of existing infrastructure and the costs are therefore limited to the hundreds of millions of pounds. Delivering tomorrow's network essentially involves installing a new network or networks, and the costs are in the billions.
31. The Government believe that both objectives are valid: the network of today available to everyone, and the network of tomorrow reaching a large proportion of the population. **We will therefore take action on two fronts. First, we will ensure delivery of the Universal Service Commitment at 2Mbps, and second we will take action separately to address the issue of next generation broadband availability.**

The Universal Service Commitment (USC)

WHAT DOES THE USC LOOK LIKE?

32. During the recent European Framework negotiations the UK has worked to secure amendments to the Universal Service Directive that permit national authorities to designate functional Internet access at bandwidths deemed appropriate to the market. When finalised, this will remove the previous constraint on Universal Service Obligations as being confined to narrowband connections and will provide a legislative underpinning for a redefinition of what we see in this country to be an appropriate minimum universal service.
33. Our analysis indicates that under existing conditions, and taking into account expected network developments, 11% of all lines are currently unable to deliver a 2Mbps service. Self-help consumer solutions, such as the iplate, will, we believe, reduce this number to around 7%. To address these remaining homes will require a mix of professionally assisted consumer home solutions, professional home engineered solutions, fixed network engineered solutions,



and wireless network engineered solutions (including satellite). The final mix of these solutions will be determined by the procurement process.

34. The gaps in current supply are widely dispersed across the UK, not only in rural areas, but significantly our analysis has revealed a lot of clustering, which should provide scope for efficient solutions to be applied. In many such cases a fibre to the street cabinet solution may well be the most economical. It will also benefit all others connected to those street cabinets whose connections today are over 2Mbps; they too will leapfrog to a next generation service up to 40Mbps. In these circumstances we estimate that **up to 1.5 million households, many of whom currently have little or no broadband availability, might be able to access next-generation super-fast broadband as a result of delivery of the Universal Service Commitment.**
35. The homes which will benefit from the USC are dispersed throughout the country, and are as prevalent in urban locations as they are in the countryside. The following map indicates the level of unavailability by area in Great Britain.

UK Broadband Availability

Our analysis of broadband availability is as follows:

We estimate that today c.89% of homes can readily get a 2Mbps (or higher) broadband service from cable, ADSL or wireless means. This means that c.11%, or about 2.75m, homes cannot readily get a 2Mbps (or higher) broadband service today.

We believe the main reasons that prevent these 2.75m homes from getting a 2Mbps broadband service are:

- Problematic home wiring (c.1.9m homes);
- Random network effects (c.300k homes); and
- Telephone line too long (c.550k homes).

Having considered what the potential solutions might be, our initial conclusions are as follows:

- Home wiring problems resolved by market/self help (c.800k homes);
- Home wiring problems resolved under USC (c.1.1m homes);
- Random network effects resolved by special investigation (c.100k homes);
- Long telephone line resolved by FTTC upgrade (c.420k homes); and
- Residual random network effects and long lines resolved by wireless/satellite (c.330k homes).

The above figures are based on 100% take-up and can thus be scaled down according to any take-up assumption.

The following two maps indicate where the bad lines are most prevalent.



Figure 2: Percentage of bad lines due to length in Great Britain

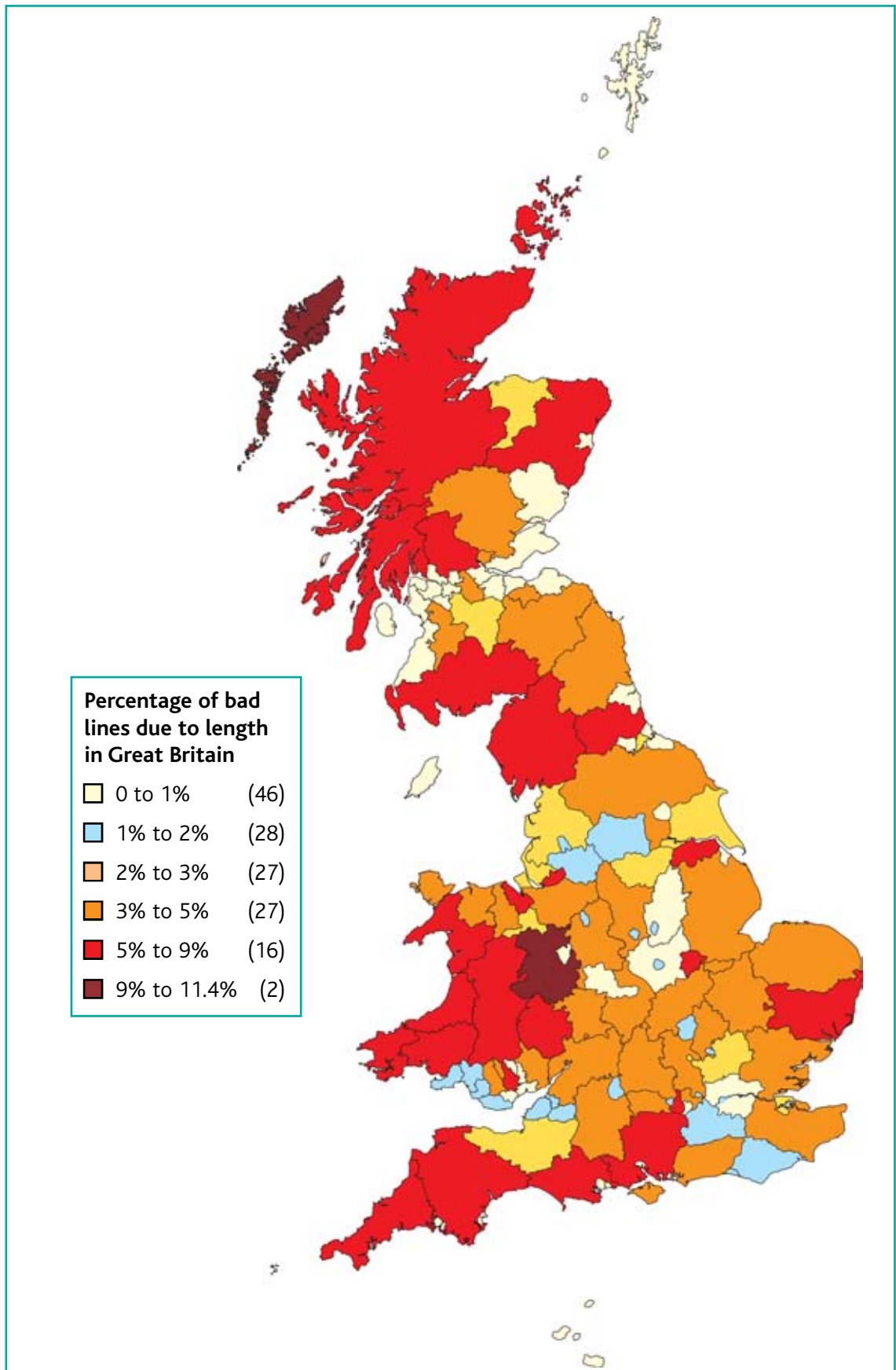
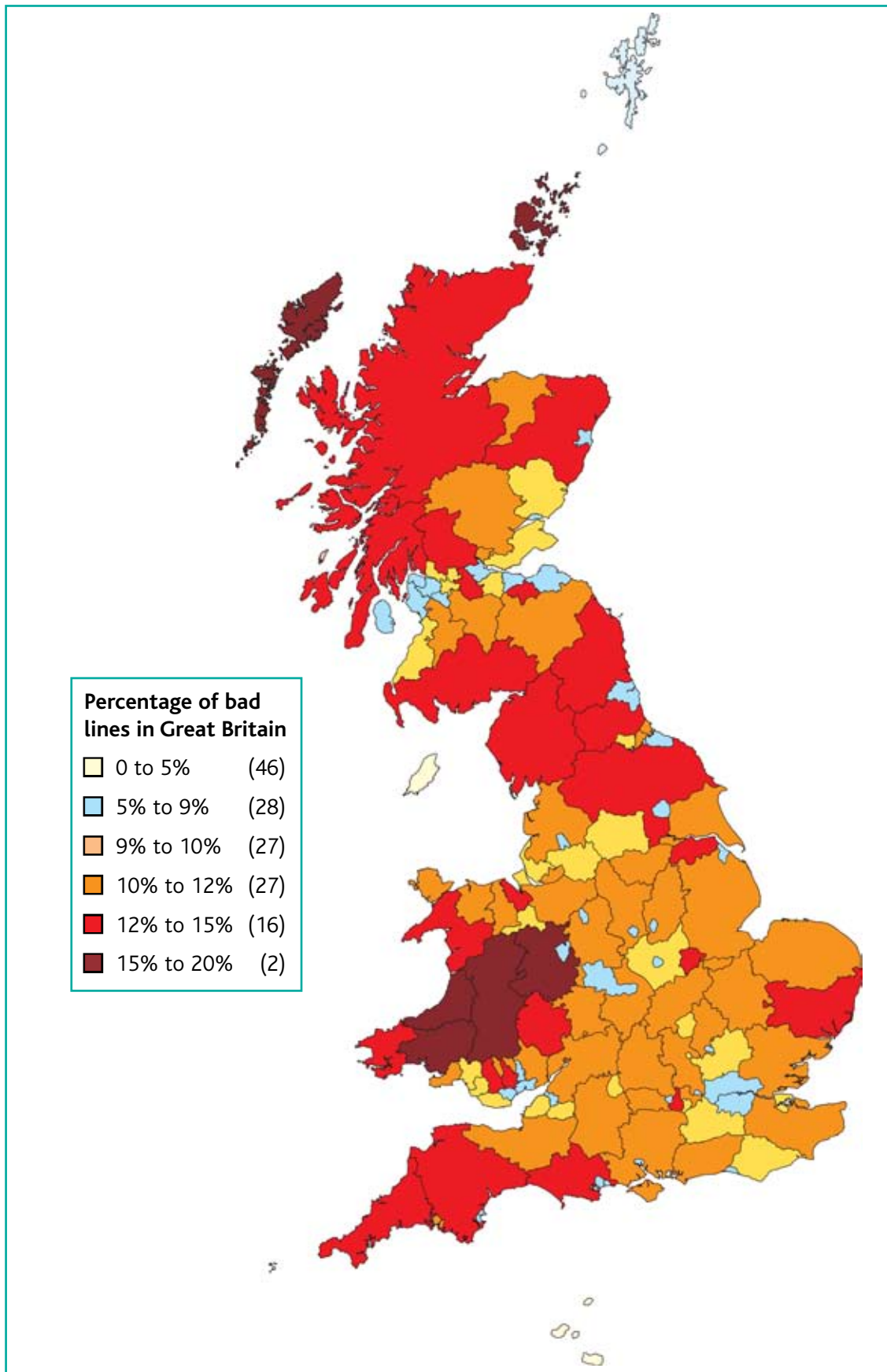


Figure 3: Percentage of bad lines in Great Britain



THE FUNDING AND CONTRIBUTION STRUCTURE

36. In Budget 2009 the Chancellor of the Exchequer announced that
- “... the Government will pursue Universal Service in broadband, at a speed of 2 Megabits per second, by no later than 2012. This target will allow virtually everyone to experience the benefits of broadband, including the increasing delivery of public services online...The Government will consult with the BBC Trust on how the emerging underspend from the Digital Switchover Help Scheme can be drawn on to fund Universal Service and take-up. If necessary, the cost would also be met through additional funding mechanisms, as set out in the Digital Britain Interim Report”.
37. Discussions are underway with the BBC Trust and the BBC Executive about the practicalities and detailed timing of the release of the Digital Switchover Help Scheme underspend in ways that will ensure that Digital Switchover Help Scheme Ltd, which administers the help scheme, is adequately resourced to meet calls on the scheme in the later stages of digital switchover. In addition there will be a contribution from the BIS-Administered Strategic Investment Fund, announced in Budget 2009. The contribution from the Help Scheme underspend is time limited in that it will only be available until the end of the Switchover programme in 2012.

Contributions to the Universal Broadband commitment

- 1) Digital Switchover Help Scheme underspend.
- 2) Strategic Investment Fund contribution. } £200m total*
- 3) Competitive commercial pricing through tender contract and design.
- 4) Contribution in kind from private partners, e.g. extended investment plans to leverage other sources of funding.
- 5) Contribution from other public sector organisations in the Nations and Regions, including Strategic Health Authorities, Primary Care Trusts, Higher Education and Tertiary Education Institutes, e.g. investment in new applications, aggregation of bandwidth requirements.
- 6) Universal coverage of mobile broadband (this is covered in more detail below).

*based on current estimates of Digital Switchover Help Scheme underspend

DELIVERY PROCESS AND NEXT STEPS

38. Our priorities in determining the approach to delivery will be:
- 1) **Coverage** – 2Mbps to virtually every household in the UK (in addition, mobile will have a role to play in providing broadband coverage at different speeds, as set out later in this chapter).



- 2) **Provision** – Those currently unable to receive a service will be given priority.
 - 3) **Technology** – We should remain technology-neutral and look for the most cost effective means of delivering availability, while maximising wider network benefits (such as using next generation-compatible solutions where possible).
 - 4) **Competition** – Service competition should, as far as possible, be available across the country.
39. In designing the scheme to deliver universal broadband we will build on the lessons of the existing successful schemes in Scotland and Northern Ireland, where the devolved administrations have let contracts to fill in not spots.
40. **In order to ensure fast delivery, we will look to establish a delivery body – the Network Design and Procurement Group – at arm’s length from central Government.** The Network Design and Procurement Group will be responsible for structuring and running the procurement process, overseeing delivery, ensuring active stakeholder engagement, and accountability for the value for money use of the direct public contribution to the Universal Service Commitment.
41. As a first step we will by the end of October 2009 seek to recruit a CEO of that body with network, procurement, delivery and management skills. Detailed design of the procurement process will be left to the Network Design Procurement Group, but will need both to reflect regional and national differences in the existing market provision and seek benefits of scale and promote innovative market led solutions aimed toward delivering next generation broadband solutions wherever possible. To do this it will be necessary for the body to employ a range of strategic, business and technical competence, which will be supported by an advisory group containing representatives from the relevant, private, public and technical bodies. We will also discuss with the BBC Trust the structure which gives them appropriate visibility in the delivery process of the use being made of the Digital Switchover Help Scheme underspend. The BBC may well also have expertise which can be drawn upon in the delivery of the USC.

Next Generation Broadband

42. Universal availability of today’s network is a necessary, but not sufficient step in delivering the sort of digital infrastructure we want for the UK. We also need to see tomorrow’s network available widely across the country in the coming years.



43. Like the UK, Governments around the world are grappling with what should be the right strategy for developing the next generation of broadband for all their citizens and businesses. Many countries view Next Generation Access Networks as important to international competitiveness. There are genuine negative consequences for a country still connected to the Internet at 14.4 Kbps today. In twenty years' time, countries still connected to the Internet at 3.3Mbps (or the 256 Kbps that characterises the up-link speeds for many consumers today) will similarly be left behind.
44. The new applications, services and businesses that such networks make possible will be likely to develop fastest in those countries earliest to adopt fibre. While we cannot predict with accuracy the full effects of a new network, we can note the productivity gains from first generation broadband.¹⁰ It is not fanciful to imagine further gains from next generation broadband.
45. Within the past twelve months, the arguments for next generation development have been bolstered by the worsening economic situation, given broadband projects' potential role in creating a short term stimulus as well as strategic infrastructure. However, there are constraining factors on the desirability of widescale intervention to deliver next generation broadband. Governments need to be careful not to chill or displace private investment.
46. **Taking these factors into account, we have examined the likelihood of market-led investment throughout the country in this critical national infrastructure. We welcome the substantial investment already taking place, and are confident that the UK's competitive markets will provide the stimulus for further investment without any Government intervention, providing competitive coverage of superfast, next generation broadband for between half and two-thirds of the population.**
47. **Other developed economies are recognising the importance of investment in next generation broadband and, as we set out below, are pursuing different strategies to achieve this. In the UK we will achieve wide-scale next generation coverage first through market-led investment and, to a smaller degree, through targeted intervention.**

10 Lehr et al found that over the period 1998-2002, employment in communities with broadband grew 1 percentage point more than those without; a study for the European Commission estimates that broadband contributed an average of some 0.71% to EU GDP in 2006.



Major international broadband developments since the interim Digital Britain Report

Finland

In December 2008 the Finnish Government published a commitment that by 2010 a universal service of 1Mbps would be available to all Finnish residents. This commitment was technology neutral, and allowed for the delivery of the service through either fixed or wireless connection. The Finnish Parliament, has amended the Communications Market Act to put this universal service commitment on a legislative basis.

Through this commitment, and legislation, the Finnish government has committed to:

- The public telecommunications network being upgraded to allow a sufficient number of connections to information society services;
- A reasonable price for broadband services being ensured; and
- The State contribution to funding necessary for the measures being made available.

Recognising that the 2010 target of 1Mbps is only a stepping stone, the Finnish Government has a second target that by 31 December 2015 a network offering 100Mbps connection should be available throughout the country and that at least 99% of all households and businesses should have access to the network. This commitment is technology neutral, but commits the Government to ensuring that no one is more than 2km from the high speed network. What is currently unclear is how the last 2km will be provided as current proposals state that the subscriber is responsible for the connection to the cabinet.

UK

The market has responded over the last year. Twelve months ago, Virgin Media were still in trial developments, BT had not even started their first trials. Today Virgin Media is able to offer 50Mbps bandwidth to 7 million homes and aim to complete roll-out to their current network footprint of 11 million homes by mid-Summer this year. They are now trialling a 200Mbps product. All Virgin Media customers are now being offered a 10Mbps DOCSIS connection with optional upgrades which consumers are adopting to 20Mbps or 50Mbps.

BT announced that it would advance its £1.5bn investment programme beyond the trials at Ebbsfleet, Muswell Hill and South Glamorgan to the first 500,000 homes covering a combination of metropolitan and rural areas. Responding to competition and since the uplift to Capital Allowances in Budget 2009 BT have announced deployment to an additional 500,000 homes, with the location of the next tranche of 1,000,000 homes expected to be announced this Autumn, to be enabled by Summer 2010.



Germany

In early 2009 the German Government outlined a broadband strategy with a basic service of 1Mbps to be rolled out by end 2010. By 2014, it aims to deliver a 50Mbps service to 75% of households, with public sector involvement where the market will not deliver (180m Euro has already been identified). The German Government has linked spectrum liberalisation at 900MHz to achieving wider coverage, and identified mediation between competing suppliers as crucial to lowering the costs of NGA deployment.

USA

As part of its economic stimulus (the American Recovery and Reinvestment Act), the US Government has allocated US\$7.2bn (£4.8bn) for broadband projects most of which will be distributed via grants, loans and loan guarantees. Of this, US\$4.7bn (£3.1bn) has been allocated to the National Telecoms and Information Administration (NTIA) to establish a Broadband Technology Opportunities Program (BTOP) with the aim of accelerating broadband development in un-served and under-served areas, creating jobs and providing public benefits.

Up to US\$350m (£234m) has been specifically earmarked for developing and maintaining state-wide broadband inventory maps, while US\$250m (£167m) has also been earmarked for programs that encourage sustainable adoption of broadband services. The Department of Agriculture's Rural Utilities Service (RUS) meanwhile will receive US\$2.5bn (£1.7bn) for its distance learning, telemedicine and rural broadband programme.

Australia

Following a request for proposals, the Australian Government took the decision to abandon its plans for a National Broadband Network using FTTC, based on a A\$4.7bn (£2.3bn) government subsidy. Given the economic downturn, doubts were held about whether those who had bid would be able to provide the levels of investment they initially indicated, and ultimately the Government's advisory board recommended that none of the proposals reflected value for money for the Australian taxpayer.

In its place, on 07 April the Government announced a A\$43bn (£21bn) FTTH project, to provide FTTH to 90% of Australian homes. The final 10% of homes, in rural areas, will be served by wireless technology delivering up to 12Mbps. This is an average of A\$5,500 (£2,700) per home passed.

The Government intends for this to be a joint venture with industry, but will retain majority ownership of the investment vehicle (allowing industry a maximum 49% share). The project will take 8 years to complete. Deployment will begin in Tasmania, which could be as early as July 2009.

Alongside this project, the Government is reviewing the legislative and regulatory framework for the telecoms sector in Australia.



New Zealand

On 31 March, the Government issued a draft proposal titled the New Zealand Government’s Broadband Investment Initiative (see <http://www.med.govt.nz/upload/63958/Final-broadband-initiative-consultation-document.pdf>). The Government requested comments and the consultation closed at the end of April.

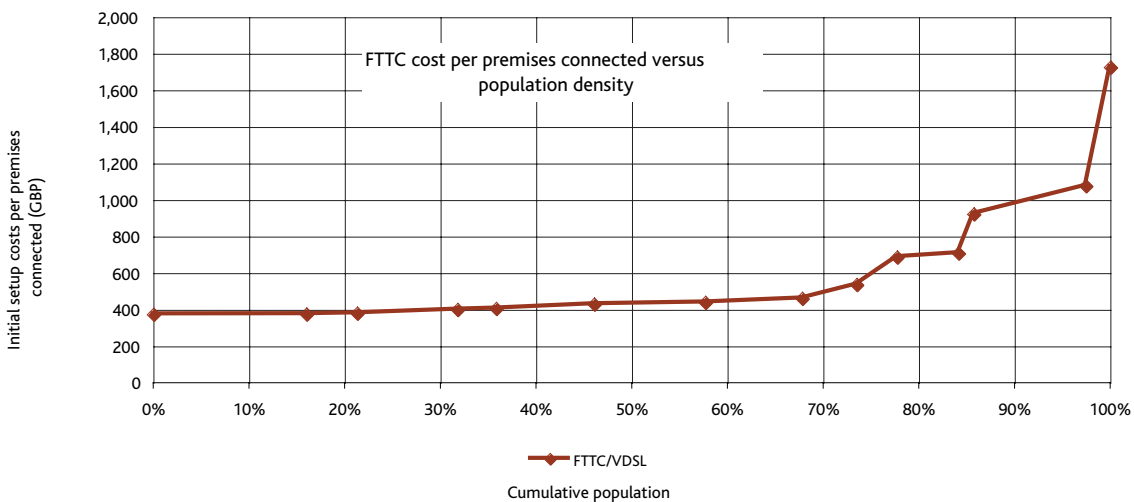
The Government is seeking to accelerate the deployment of FTTH to 75% of the population, and will provide investment of NZ\$1.5bn (£0.6bn), alongside industry investment. This equates to a government investment of NZ\$1300 (£500) per home passed.

It is anticipated that the first investment decisions will be taken in early 2010. New Zealand has already developed a broadband mapping service (see <http://www.broadbandmap.govt.nz/map/>), open to the public.

PREVENTING A FUTURE FIBRE DIVIDE

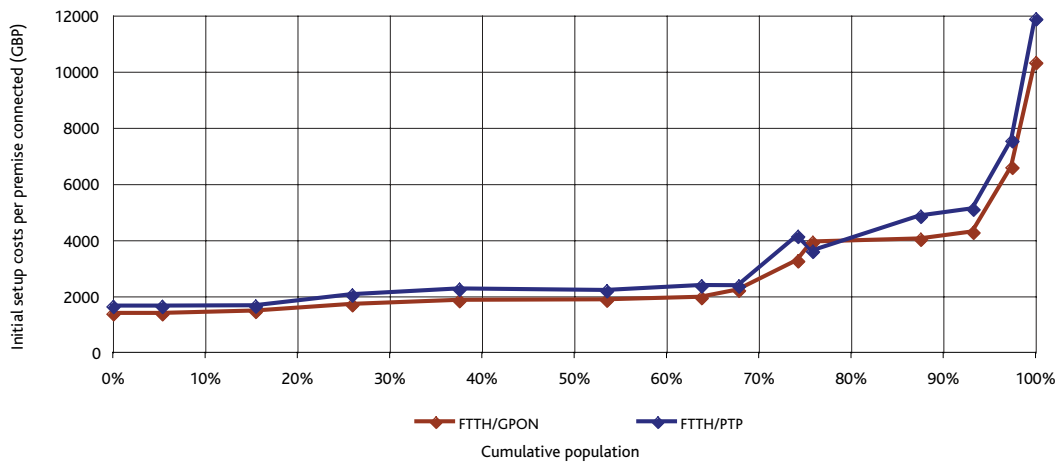
- 48. Our expectation is that competitive, market-led investment in fibre will deliver next generation services to a significant proportion of the country. The following two graphs demonstrate the step changes in incremental rollout costs once fibre or new cable infrastructure deployment reaches 60-70% population coverage. They show the deployment costs of fibre-to-the-cabinet (FTTC) and fibre-to-the-home (FTTH).

Figure 4



Source: Broadband Stakeholder Group

Figure 5



49. We welcome the significant investment by Virgin Media and BT plc's competitive response via its commitment to developing next generation broadband services. We can be confident, over time, of BT's investment leading to coverage matching the cable footprint and possibly extending to a certain proportion of the population beyond this. But we cannot ignore the emerging industry consensus that, despite this welcome investment and competition, the economics of next generation broadband deployment mean that there will remain up to a third of the country – both homes and small-to-medium-sized businesses – not served in the way that the rest of the country is by the fixed telecoms market.
50. At the same time, mobile will play an important role in developing alternative means of connectivity across much of the country. Next Generation Mobile services will offer substantially higher speeds and data rate capabilities than 3G. This will mark an acceleration in the trend of mobile networks being used more for data than voice traffic. As we outline below, Long Term Evolution (LTE) technology is capable of delivering a range of speeds up to 50Mbps in a competitive, multi-operator market. We will take the necessary steps to ensure spectrum is available for use and the market remains competitive. But here too, the costs of deployment rise in the final third of the country, meaning the investment required to install the density of base stations needed to support very high bandwidths becomes uneconomic. While we believe, therefore, that the market will deliver new higher mobile data rates to the final third of the country, this may not be at genuinely 'next generation' bandwidths.
51. In summary, given the expected rates of return it seems unlikely, particularly in a period when capital markets are severely constrained, that private investment or publicly available financing will provide the investment necessary to roll out NGA such that coverage can reach ADSL or mobile coverage levels.
52. **The increasingly widespread conclusion from industry and economic analysis is that there is no obvious means whereby the market, unaided,**



will serve the final third of the population. We therefore propose a Final Third Project to deliver at least 90% coverage of Next Generation broadband for homes and businesses by 2017 (and, it is hoped, accelerate the expansion of the boundary of market provision from 50% to the two-thirds coverage level).

53. The Final Third Project would need to focus resources on geographic areas where the market would not otherwise invest and to subsidise only that activity which contributes to next generation broadband deployment. For this reason we do not believe tax incentives for investment would be the best means of delivery. A form of targeted subsidy is likely to be more effective and deliver better value for money.

THE NEXT GENERATION FUND

54. In order to generate the substantial funds needed to support such an undertaking, the Government intends to propose a small general supplement on all fixed copper lines (that is, residential copper lines, the equivalent business analogue and ISDN2 lines and cable telephony lines) from 2010 for a Next Generation Fund. Such a model would be the communications sector equivalent of the Renewables Obligation, which is paid for through household and business energy bills to deliver an objective which the market otherwise would not. It would apply to fixed line rather than mobile because mobile operators already contribute with licence coverage requirements for mobile telephony and broadband.
55. Such a supplement needs to be set against the historic fall in telecoms prices. Unlike all other utilities or, indeed media services, telecommunications prices have fallen significantly and steadily in real terms over many years. Today the UK retail telecommunications market is among the most competitive in Europe. Consumers enjoy either the lowest or among the lowest prices, depending on their usage patterns of any major European market. Indeed, many consumers pay no separate charge for broadband – it being included as a free element within a bundle of voice, line rental and pay television.
56. At wholesale level, the UK currently has the second cheapest prices in Europe for broadband only DSL, the third cheapest for voice and broadband DSL, and the fourth cheapest for voice line rental. ADSL prices for a 10MBps service can be as low as £5.99. The cost-based basket of wholesale prices for today's copper-network has fallen by £8 per line per year in real terms since 2005. Over the same period the retail price for combined voice and broadband has fallen by around £90 per annum in real terms.
57. Against that background, the Government believes that it is right to share a small part of that saving, and that a Next Generation Fund supplement of 50p per month on fixed lines represents a fair and sensible national investment to ensure that the overwhelming majority of the country can get access to next



generation broadband. Low income households – those on social telephony schemes – would be exempted.

58. Over time there has been modest fixed line to mobile-only substitution. Even so, a supplement of 50p per month can be expected to raise £150m-£175m a year for the Fund. This amount might be sufficient to make investment in connecting most of the Final Third by 2017 as commercially viable as connecting the first two thirds of the population.
59. **We envisage that the Next Generation Fund supplement would be collected by all fixed line operators, including cable. It would not be consolidated for accounting or tax purposes by those operators.** The amounts collected by the operators would be passed to Ofcom (in the way that spectrum AIP payments and commercial broadcasters' Additional Payments for their licences are collected) and placed in the Consolidated Fund.
60. **The Government envisages that the Network Design and Procurement Group responsible for delivering the Universal Service project would then hold tenders to which all operators (including cable) proposing to install a next generation service would be eligible, on a reverse auction basis to provide next generation broadband to the Final Third.**
61. **A key part of the programme will be to ensure a coherent framework for network designs, operating systems, common processes and regulatory requirements so the next generation access networks across the country work as effectively as possible for all parties. In particular, the networks need to offer all end users an optimum level of service quality and choice.**
62. **The Government will consult on the detailed design and implementation of such a measure in the normal way.**

OFCOM'S FOCUS AND PRIORITIES

63. Budget 2009 stated that 'in advance of the Digital Britain final report, the Government will review the powers and duties of Ofcom to ensure that it can strike the right balance between delivering competition and encouraging investment in the communications infrastructure'.
64. Since then the Government has reviewed this question and consulted Ofcom. Given the importance of communications infrastructure – television, radio, cable, mobile, fixed telecoms and others – we believe it is appropriate to reconsider Ofcom's duties in order to make it clear that part of their role is advise Government on the nation's infrastructure.
65. A competitive market for communications ensures that companies are able to compete fairly, and allows businesses and consumers to benefit from a broad range of service provision. Effective operation of competitive markets also has a role to play in driving economic growth, with lower costs helping to increase demand.



66. The Government has concluded that there is a case for broadening Ofcom’s primary statutory duties. For Britain to become a leading Information Society economy, and for our international competitiveness, we will need leading edge infrastructure. That will require a climate and a set of governmental and regulatory frameworks that are conducive to investment, while retaining a competitive market for consumers and business users. Ofcom needs to place the desirability of having a strong infrastructure, in the round, at the centre of its vision and strategy alongside its other core duties.
67. **The Government proposes to amend the Communications Act 2003 to make the promotion of investment in communications infrastructure one of Ofcom’s principal duties alongside the promotion of competition, to meet its overarching duties of securing the interests of citizens and consumers in the provision of communications services.**

OTHER MEANS OF SUPPORTING NEXT GENERATION BROADBAND DEPLOYMENT

68. There are a number of other means of aiding the rollout of next generation broadband, any or all of which could be carried out in addition to the measures outlined above. Following the Caio Review, we are already taking forward a number of policies.
- 1) Caio recommended that Government should look to produce guidelines for homebuilders to ensure they embed next generation broadband in their plans. The British Standards Institution (BSI) will be facilitating this process.
 - 2) Caio recommended relaxation of regulations on the installation of overhead lines to lower deployment costs. The Government wants to give communities the choice. We will therefore be consulting on the impact of any amendment to the Code by Summer 2009 and will seek to establish the level of demand for overhead deployment from communications providers.
 - 3) Caio highlighted the issue of non-domestic rates, where some concern remains over uncertain liabilities, or alleged discrimination. We have continued to address the uncertainty. The VOA has published guidance to help remove uncertainty about rates liabilities and will be working with consultants to provide greater clarity and modelling of liabilities.
69. Two other means of supporting rollout are support for localised projects and development of markets in access to existing infrastructure.

Support for localised projects

70. In the 2009 Budget, the Government supported capital investment in access, backhaul and core networks through a doubling of capital allowances. The Government also approved Yorkshire Digital Region, a £100m project which will both stimulate economic activity in South Yorkshire and provide a test-bed/ demonstrator of the potential for innovation and productivity improvement



from a cluster of super-fast broadband development. In Manchester, a tender has been issued to deliver a fibre-to-the-premises network to 500 businesses and 1000 homes in the Oxford Road area.

71. As we set out in the Interim Report, independent localised networks can, so long as they are constructed in an inter-operable fashion to allow services at scale across the country, play an important part in the development of our next generation broadband networks. We welcome the plans to provide greater cohesion to independent networks across the country.
72. **Localised and community network developments have a role to play in developing next generation broadband, and where we can we should look to support their capacity, scale and expertise. Work on standardisation and inter-operability between local networks has already commenced. The Government will provide further support through a £150,000 grant to support the Independent Networks Co-operative Association (INCA).**

Development of wholesale markets in access to infrastructure

73. In order to lower costs of deployment or market entry, network operators could utilise different forms of existing infrastructure.
74. *Firstly*, there is at present no wholesale offering over Virgin Media's network, a fact which BT and others have claimed is a factor limiting service innovation.
75. *Secondly*, in addition to the existing network access offered by BT, operators have shown some limited interest in using BT's ducts to deploy fibre. Ofcom have conducted a duct access study which showed a mixed picture¹¹, suggesting duct access might play little immediate role in delivering next generation broadband.
76. *Thirdly*, other utility infrastructure might be used to lower rollout costs. The use of sewers for fibre deployment in Bournemouth and elsewhere has been well documented, although as yet this does not seem to have translated into commercial services.
77. *Fourthly*, it has been proposed several times, including by the Caio review, that next generation rollout would be helped by sharing of street-works to limit costs. We have investigated the potential for further sharing, and while the opportunities for massive cost reduction are limited by mismatches between the scope and timing of different utilities' plans, there is certainly scope for better working between utilities, including developing the existing industry body so that it is capable of facilitating joint working nationally and the more ambitious use of existing procedure.

11 Results of a small sample (817 chambers, 18206 duct ends and 76 street cabinets – 0.02% of Openreach's chambers) indicated that there is some spare, usable duct space, with more space available in the metro node to the exchange, than in the Exchange to street cabinet. 51% of duct ends had 42% of unoccupied space. Unoccupied space does not necessarily mean that the duct can be used – the duct could have collapsed somewhere along the section, or Openreach are keeping spare capacity in reserve (esp in the metro node) for future expansion. There may also be additional engineering rules that prevent the space being used (i.e. to limit disruption with other cables in the duct).



78. **Although the effects might immediately be marginal, there is still value in maximising the possibilities for alternative means of deployment of fibre. We therefore propose action in four areas:**
- 1) **The Government believes that, as demand for next generation services develop, commercially-based wholesale access to the cable network could benefit both the market and the consumer. At this embryonic stage of the market's development, regulatory action would be premature and market-led approaches to access are preferable. The Government will continue to monitor closely developments in this area.**
 - 2) **We are asking community broadband groups to provide evidence of where access to existing primary infrastructure or shared 'digs' could accelerate their deployment.**
 - 3) **We will investigate as part of the scheme design for the Next Generation Fund means of maximising the future potential commercial access to primary infrastructure.**
 - 4) **We will continue to work with utilities and public authorities to facilitate better use of existing mechanisms. By 2012 our goal is that information on all street works planned for 1-2 years ahead is made available to all those likely to work in the highway. We would like to move to a system in which all utilities offer to share works with other interested parties, with the option of enforcing a 'must offer' system if necessary.**
79. While commercial confidentiality might preclude a publicly available 'national map' there might be value in a comprehensive inventory of the UK's Ducts, Poles, Lit Fibre, Unlit Fibre, Used and Unused Wavelengths to establish the complete picture of what infrastructure is out there, what is actually being used, what is likely to be used and therefore what could be used for a future UK NGN rollout. The inventory could also include Utility installed Duct and Fibre. We return to this issue at the end of the chapter.

Mobile Networks

80. Since 1984 the UK's mobile radio networks have gone through three revolutions. The first revolution lifted mobile radio from a minor added value service (starved of investment) to a major two player competitive industry in its own right. The second revolution (GSM) was in fact three simultaneous revolutions in one that saw the digitalisation of mobile radio, the transformation from a professional electronics market to a mass consumer market and the ability for consumers to be connected to a compatible mobile network in over 160 countries.
81. GSM brought with it the expansion of competition from 2 to 4 mobile network operators. This additional competition (Orange and T-Mobile) was made



- possible by the Government releasing new spectrum at 1800 MHz with compensations for the 1800 only operators (as there was insufficient room to accommodate them in the 900 MHz spectrum used by Vodafone and O2). The first generation (analogue) mobile networks were phased out and closed down.
82. The third revolution (3G) anticipated the rise in demand of multi-media services over mobile networks. GSM operates in only narrow 2x200 kHz wide radio channels whereas 3G uses 2x5MHz wide radio channels and improves the efficiency with which this spectrum was used. The Government led the way in making new spectrum available for 3G services at 2.1 GHz, encouraged the adoption of internationally harmonised technology and made it possible, through the introduction of a new entrant licence for a new operator (H3G) to add competitive energy in rolling out the new networks.
 83. Initially it took an enormous effort by the industry to get the 3G technology to deliver its multimedia promise but this was eventually accomplished with the arrival of the High Speed Data Packet Access (HSDPA) technology up-grade that is now used by all 5 UK mobile network operators to over 80% of the population with speeds up to 7.2Mbps.
 84. The five UK mobile operators (and a larger number of mobile virtual network operators) have competed vigorously to provide consumers and businesses, with excellent mobile services expressed in quality, price and customer support. But the last few years have posed significant challenges. Mobile radio has been a business based on premium payments for the convenience of voice and text on the move but much of that premium has now been regulated down through tighter controls imposed over mobile termination rates and international roaming charges; and on top of this also competed away at retail level by the operators themselves.
 85. The mobile network operators have been looking to the expansion of data services to compensate for the falling profits from voice and text messaging. The most significant of these data services is mobile broadband Internet access. This has created a pressing need to expand the capacity of mobile networks and the point is rapidly arriving where a combination of new technology running on new radio spectrum and operating in even wider radio channels (up to 2x20 MHz wide) will be needed.
 86. Coverage is another concern. The heart of the mobile radio promise is "mobility" across the entire country (and internationally). The period over which the GSM operators enjoyed high margins fuelled a surge of investment in GSM coverage well over the obligations imposed by the Government. Today there is near universal coverage of GSM and this has been important for regional development, of great value to those who live and work in semi-rural areas and almost everyone else who makes the occasional visits there.
 87. But the extensive coverage we now take for granted with GSM has not yet happened with 3G networks. Roughly 20% of the population do not have a choice of 3G network operator and the 90% who can access a 3G service have



limited in-building coverage. Around 10% of the population have no 3G service. The characteristics of 2.1 GHz radio spectrum allocated to 3G services has not helped as it has much shorter transmission ranges than lower frequency spectrum, say 900 MHz. Also the tighter margins of the mobile operators are forcing them to make tough choices between investing in more capacity in urban areas or extending 3G coverage to more rural areas.

88. For these reasons, if we eventually move to a phasing out of GSM networks in favour of the next generation, we might face the end of universal mobile coverage in the UK. There are strong public policy arguments for wishing to preserve very extensive coverage.

Actions to maximise the potential of mobile and wireless

89. Already the limitations of the 3G technology are becoming clear. The 3G HSDPA upgrade provides a huge boost in bandwidth but it does not do this uniformly across the service area. Typically 10% of users (close to a base station) can achieve 75% of the peak data speeds (or better) but 50% of users (on the outer rim of radio cells) can only achieve 25% of the peak data speed (or less). This is a fundamental limit set by the nature of 3G technology and the availability of 5 MHz wide radio channels. The next revolution will be a technology that is able to achieve greater resilience at the edge of radio cells and work in much wider radio channels. The most likely such technology for national networks across Europe will be the Long Term Evolution (LTE) technology. It can deliver a headline speed of 50 Mb/s in a 2x10 MHz wide channel. Other technologies may emerge over dense urban areas, such as WiMAX, to serve particular customer segments.
90. There are benefits for the UK in being on the leading edge of the transition to mobile Next Generation Network technology:
- Consumers and businesses alike will prize the flexibility of “mobility” for much higher speed broadband Internet connections – as they have already demonstrated for other mobile services;
 - Mobile radio provides productivity gains to industry and commerce. Coupling together the power of the broadband Internet to the flexibility of very high speed mobile data links will be a significant tool for even greater efficiency gains in the economy;
 - The next generation of mobile phones are developing PC functionality. The mobile industry has shown extraordinary capacity to take complex technology and make it simple, reliable and very low cost. (It is one of the reasons why, in developing countries, mobile phones are prevalent and PC’s are not). Given time, low cost broadband mobile phones connected to the mobile broadband network have the best long term potential to ensure complete inclusion of all in the UK to the broadband Internet;



- The increasing move towards open standards and open platforms, such as Android and Symbian, not only will deliver operating benefits, but offers a real opportunity to content and application developers in the UK to become world leaders in this rapidly growing market; and
 - Inward investors are attracted to leading edge markets.
91. There is a role for Government intervention in releasing new radio spectrum for a rapid roll out of mobile “Long Term Evolution (LTE)” networks (requiring early release of the 800 MHz auction), ensuring the balance of radio spectrum holdings optimises network competition and extracting the best infrastructure deal for the country in terms of universal coverage.
 92. To enable that transition to high speed services, a key role of Government and the regulator is to ensure the availability of sufficient quantity at the right time of the right sort of wireless spectrum and to consider whether the imposition of standards is justified.
 93. There has been a trend for both governments and regulators to be “technology neutral” in respect of national infrastructures provided by the private sector. Technology neutrality does not mean the same as *laissez-faire*. The mobile sector has consistently benefited from quiet forms of industrial activism. In the case of first generation mobile radio networks, the mobile phones of UK consumers and business users stopped working beyond Dover. The freedom UK citizens enjoy where they can get off a plane in any one of 150 countries and their mobile phone automatically works came with internationally standardised GSM 2nd generation technology. EU governments gently nudged the EU market to a common 3rd generation technology by requiring companies to commit themselves to the technology they would use prior to the entry to the 3rd generation auctions. This tilted the balance of risks towards a standardised 3G technology and avoided the need to mandate it through regulation.
 94. The work done in the Digital Britain project shows an encouraging consensus amongst the incumbent mobile radio operators for the mobile broadband networks to be based upon either 3G technology or LTE. This does not preclude a new entrant using other technologies, such as WiMAX but in the highly competitive UK mobile radio market makes it is unlikely that such a new entrant would have the market power to de-stabilise the vital standardisation that underpins national and international mobile roaming for UK users. It therefore looks unnecessary to mandate the technology to be used for mobile Next Generation Networks.

THE NEW CHALLENGES FOR THE UK MOBILE RADIO SECTOR

95. The Digital Britain Interim Report identified a complex set of new challenges now facing the Government, Ofcom and the mobile industry itself and proposed a Wireless Radio Spectrum Modernisation Programme. Five elements were identified including: establishing whether there could be a voluntary spectrum trading solution between the existing mobile network operators to



allow the seamless liberalisation of use of the existing 2G GSM; making more spectrum available through the release of the 2.6 GHz spectrum and the Digital Dividend 800MHz spectrum; greater investment certainty; allowing more network sharing and seeking a significant contribution to the proposed broadband universal service commitment.

96. On 13th February 2009 Ofcom published for consultation its proposals for an imposed solution to the specific issue of the 2G spectrum, which was to provide for the compulsory release of 2x 5MHz of spectrum shared between the two operators holding 2G spectrum in the 900MHz band. Subject to the outcome of the Digital Britain consultation that remains the reserve solution. Ofcom's proposals and process have been opposed by different operators on different grounds. As a consequence, the Government appointed an Independent Spectrum Broker to facilitate discussions on the possibilities for a voluntary or alternative solution to the 2G spectrum, and beyond, as an alternative to this reserve solution.
97. The report of the Independent Spectrum Broker was published on 13th May 2009. He concluded that developments affecting the mobile sector required a new approach to the issues being addressed and that there was a need for a comprehensive approach to resolving the future of mobile spectrum. At stake is the transition to Next Generation Mobile networks capable of delivering headline data rates of up to 100 Mbps (a data speed more associated with next generation fixed access).
98. What has crystallised out of his further work is that the Government and Ofcom are now faced with three important public policy priorities for the UK mobile radio market:
 - a. **Infrastructure:** expediting the transition to Next Generation Mobile;
 - b. **Competition:** sustaining competition in the UK market, leading to lower prices, choice and innovative services; and
 - c. **Universality:** increasing the availability of mobile broadband in general and enabling it to play an important role in achieving near-universal broadband.

These priorities are inter-linked but distinct. The central issue to resolve is their relative priority in the best long term interest of Digital Britain.

THE INDEPENDENT SPECTRUM BROKER'S REPORT AND THE GOVERNMENT'S RESPONSE

99. The interim report identified a roadblock in the release of spectrum that was hindering progress towards a broadband mobile future.
100. This roadblock has its roots in the allocation of GSM spectrum. Initial spectrum allocation of 900 MHz took place in the 1980s in a time when spectrum was administratively allocated and the available spectrum was split between the two operators at the time, Vodafone and O2 (Cellnet). The allocation of



1800MHz spectrum, was also administratively allocated among four players, T-Mobile (One-2-One) and Orange having entered the UK market.

101. The allocation was asymmetrical, with T-Mobile and Orange receiving more 1800MHz spectrum than Vodafone and O2. Although 1800 spectrum is not as attractive as 900 spectrum¹² particularly for voice traffic, lower AIP and higher mobile termination rates applied to T-Mobile and Orange have provided some compensation for the higher costs associated with poorer propagation properties of the 1800 spectrum. In 1998 the UK moved to allocation of spectrum through auction, it was on that basis that spectrum at 2.1GHz (3G) was allocated. The development of greater network sharing, coupled with a significant investment programme, has enabled some of the operators in the 1800MHz band to achieve national voice coverage that is now broadly on a par with 900 spectrum operators, and in mobile broadband with greater capacity.
102. This imbalance in spectrum holdings and the differing views on the need to rebalance the holdings of 900MHz spectrum, along with disagreements on the cost and time required to achieving any refarming, have been central to the delays. In response the Government announced its Wireless Radio Spectrum Modernisation Programme to address this issue, among others. To assist in this process, the Government appointed the Independent Spectrum Broker.
103. In undertaking this role, the Independent Spectrum Broker (ISB) has come to a clear view that significant progress can only be achieved if a comprehensive solution is applied. He believes that:
 - There is real advantage to be gained for the UK in moving quickly to next generation mobile services;
 - The benefits of access to mobility at higher speeds, delivering new content and services will fall to consumers and business;
 - A solution will deliver increased mobile broadband in general and make a contribution to near universal broadband (see USC section, p.51); and
 - A solution can be found if the industry, regulator and Government assess the strategic objectives and focus on delivering these, rather than becoming mired in operational issues.
104. The ISB's report also explores the role of proportionate and limited safeguards to ensure that the move to next generation broadband maintains the competitive intensity in the UK market that consumers benefit from. The Government warmly welcomes the Independent Spectrum Broker's Report and endorses most of the Report's conclusions. **We will move to implement the ISB proposals in line with our response as set out below. In the event that the Government decides to direct Ofcom, the direction will be subject to consultation as required by statute.**

12 900MHz spectrum offers greater coverage and penetration than spectrum at higher frequencies, so the costs of rolling out a network are lower.



Background

105. In deciding its response, the Government recognises that the alignment of the auction release of the 800MHz spectrum with the paired spectrum at 2.6GHz, along with the liberalisation of use of the 2G spectrum at 900MHz and 1800MHz, offers a unique opportunity for the prospect of competitive and early deployment of next generation mobile. Spectrum below 1GHz is ideal for widespread coverage for the new technology; spectrum between 1.8 and 2.6GHz is good for provision of high speed capacity in urban areas where usage will be most dense. Through a more comprehensive approach there is in principle sufficient spectrum for all of the existing operators, or indeed a new entrant, to acquire (or re-use) spectrum that can provide nation-wide next generation broadband networks from 2012. The UK has a vigorous mobile industry that already has in place a dense network of base stations. The UK is therefore once again positioned to be on the leading edge of a new mobile revolution.
106. The Independent Spectrum Broker's report identifies a set of proposals that he believes will best deliver against the policy objectives (summarised in the box below along with the Government response). Having had further discussions with the regulator and industry, the Government will expedite work to resolve the key questions through the Technical Arbitration Process (see below) that will support a final decision. However it is of the view that a solution based on the ISB proposals can be achieved and therefore is minded to implement the following integrated package:
- The immediate release of the WiMAX-suitable 2.6GHz unpaired TDD spectrum for auction;
 - The alignment of the 2.6GHz paired FDD spectrum and the 800MHz auctions (the 'Big Auction') at the earliest practicable date – the Government understands this to be mid 2010;
 - An overall spectrum cap of 2x65MHz of sub-3GHz spectrum for any operator participating in the 'Big Auction', for a specified period including TDD holdings. Any operator acquiring spectrum in excess of this cap must relinquish other spectrum in 2x5MHz blocks to remain within the cap. This cap to include existing TDD holdings;
 - An exchange of 900MHz spectrum by current holders for any acquisition of spectrum in the 800MHz auction, at a ratio to be determined;
 - A specified time period for the relinquishment of 900MHz or other spectrum released as a result of this exchange;
 - Taking steps to minimise any competitive distortion which emerges as a result of any time difference between the possibility to liberalise existing 2G spectrum holdings and the availability of the 800MHz spectrum;
 - Making indefinite the 3G Licence term in return for proper AIP from the end of that term and additional coverage obligations; and



- The alignment of AIP for liberalised 2G licences reflecting the full economic value of this spectrum.
107. At the centre of these proposals is a question on the rate of exchange of spectrum at 900MHz if the users of 900MHz (Vodafone and O2) decide to bid for spectrum at 800MHz. This issue is at the heart of the Technical Arbitration Process and to make the outcome acceptable to all parties (including new bidders for spectrum) a variety of approaches will need to be considered.
108. In considering its response, the Government has been mindful of the policy objectives that it set out in the interim Digital Britain report. In summary these are:
- Successful deployment of next generation mobile networks;
 - Maintenance of the competitive intensity in the UK market;
 - Maximising coverage of next generation networks; and
 - Liberalising use of current spectrum for 3G or next generation purposes.
- The Government's rationale for its response to each of the ISB's proposals is detailed below.

Independent Spectrum Broker's Recommendations and Government Response

1 Liberalising the 2G spectrum in the hands of the existing users to ensure that spectrum bands do not become fragmented and that decisions on which technologies to deploy are not rushed; but revising administrative incentive pricing¹³ (AIP) to reflect the full economic value of this spectrum.

Government response: The Government agrees that over fragmentation of sub 1GHZ spectrum is to be avoided and that liberalisation of the 900 spectrum in the hands of existing users is consistent with this approach. Ofcom has stated that it intends to revise AIP rates as soon as practicable after liberalisation to reflect the net economic benefits of liberalised 900.

2 Re-aligning the upcoming mobile suitable spectrum auctions to provide operators greater certainty in building spectrum portfolios necessary to provide NGM services, through:

- *a separate auction of the TDD 2.6GHz spectrum suitable for WiMAX services before the end of 2009; and*
- *co-ordinating the upcoming FDD suitable auctions at 2.6GHz and 800MHz to allow existing and new operators to build spectrum holdings in an integrated, strategic fashion.*

13 This is the charge applied to spectrum users who have not obtained spectrum at an auction, in order to incentivise efficient usage of spectrum



Government response: The Government agrees a more coordinated approach to the auctioning of these key blocks of spectrum is desirable to encourage the deployment of new services at the earliest opportunity and to provide the opportunity for existing operators or new entrants to acquire the right balance of spectrum holdings to achieve this. The Government also wishes to see early use of spectrum wherever possible, and on that basis would support the early auction by Ofcom of the TDD portion of the 2.6GHz spectrum

3 Extending mobile broadband coverage, and eventually achieving near-universal coverage of mobile broadband, by:

- *delivering near-universal access to NGM services by imposing regional coverage and access obligations on all three 2 x 10MHz blocks of the 800MHz. Each block would carry a basic national coverage obligation at a specified speed (say 2 Mbps) to be achieved by a specific date. Furthermore, each of the licences would carry greater coverage obligations, of perhaps 99% population coverage – as well as access obligations – at a specified speed in a specific geographic area of the UK to achieve near-universal coverage of NGM.*

In the short-term operators extending 3G coverage in return for making the 3G licence term indefinite and allowing greater infrastructure sharing in rural areas.

Government response: The variants set out in the ISB report and the issue of alignment of the spectrum auctions raise important policy issues. The ISB sets out his arguments to support his preference for option ii), i.e. three licences of 2x10MHz each. Having given due consideration to the options and the arguments for and against, the Government is of the view that option ii) would more likely deliver its policy goals. Clearly there are attractions in option iii), providing a 2x20MHz channel that would deliver a network capable of offering the highest speeds, but the lessening of competitive intensity that would result, even allowing for any access and coverage conditions that might be imposed, has led to a preference for option ii).

The Government believes that coverage and access requirements are important. It will more fully assess the costs and benefits of different levels of coverage requirement in parallel with the technical arbitration work.

4 Encouraging balanced spectrum holdings and a competitive environment between operators by applying 'event-specific' spectrum caps to the combined 2.6GHz and 800MHz auction:

- *by setting a temporary cap on overall mobile suitable FDD spectrum holdings per operator at 2 x 60MHz;*
- *by setting an additional temporary restriction on the current holders of sub-1GHz spectrum, so to obtain access to 800MHz spectrum they must give up an equivalent quantity of 900MHz spectrum.*

These restrictions should expire perhaps one year after the date of the combined auction.



Government Response: The Government believes that an overall spectrum cap is necessary, but considers that the cap should include holdings of TDD spectrum as well as FDD spectrum. Therefore, the Government proposes a revised overall spectrum cap of 2x65MHz of FDD equivalent spectrum sub-3GHz, where each holding of 1MHz of TDD spectrum shall count as 2x0.5MHz of FDD spectrum towards the overall cap.¹⁴ This offers the right balance between giving companies the opportunity to acquire spectrum across different bands, without allowing any company, or companies, to acquire holdings that might constrain competition in the market overall. As proposed by the ISB, the cap should remain in place for a period of 1 year from the date of the combined auction of 800MHz and FDD suitable 2.6GHz.

Given the Government seeks a rebalancing of spectrum holdings, and that the propagation qualities of sub 1GHz spectrum allows more economic roll out of services, especially to rural areas, it accepts the rationale for putting in place a cap on this spectrum so as to allow additional operators to acquire spectrum.

The ISB proposes that holders of 900 spectrum, who wish to bid for 800 spectrum will be required to relinquish an amount of 900 spectrum. The ISB proposed that an equivalent amount be given up, in other words a one-for-one ratio, but acknowledged that there might be alternative approaches.

It has become clear during further discussions that there are widely differing views on what the appropriate ratio should be. These differing views reflect the disagreement about how costly refarming of 900 spectrum will be and how long it might take. This issue, and how the Government intends to deal with it, is discussed in more detail below.

The Government is of the view that there are potential benefits in a one-for-one swap. However it acknowledges that other ratios are conceivable, for example a three-for-four swap. The former would more easily allow any successful acquirer to cost effectively extend a network at speeds consistent with achieving a step up in current performance. This option also has the benefit of simplicity and offers the greater opportunity to rebalance spectrum holdings. The latter option might be more applicable if refarming 900 spectrum is so challenging to the current holders that competition with an operator deploying next generation mobile in acquired 800 spectrum is made more difficult. It is to inform the final choice of this ratio that the Government is seeking guiding technical arbitration on the refarming of 900 spectrum before taking a final view on the ratio. The technical arbitration process will also look at other ways of addressing these issues, for example how additional spectrum trades might impact on the appropriate ratio or the timing/duration of the refarming process.

14 As TDD holdings are unpaired spectrum, a 1MHz block of TDD is half the amount of spectrum as a 2 x 1MHz block of FDD (which has 1MHz for uplink and 1MHz for downlink). Therefore TDD spectrum would count as half the amount of equivalent FDD spectrum under this cap. For example, an operator possessing 2 x 40MHz of FDD and 5MHz of TDD would be judged to have 2 x 42.5MHz of spectrum for the purposes of the cap.



5 Action to increase the certainty to operators of the availability of sub-1GHz spectrum, including:

- Government supporting Ofcom in taking all practical measures to expedite the clearance of 800MHz; the extra costs incurred in accelerating the clearance of channels 61 and 62 of television usage and channel 69 of PMSE usage would also serve to increase the value of the spectrum at auction;
- achieving consensus on both the earliest date at which 800MHz will become available for NGM usage and the earliest date at which Vodafone and O2 will be able to deploy reformed 900MHz; and adapting my proposals as appropriate; and
- if 900MHz spectrum is easily reformed this might create a significant first mover advantage for the 900MHz operators. In this case some form of remedying measure might be necessary.

If 900MHz is comparatively difficult to reform this might increase the necessity for the 900MHz operators to be able to gain easier access to 800MHz than I have proposed with the sub-1GHz cap.

Government response: The Government is committed to the timely release of 800 spectrum and will work with Ofcom to understand and meet the technical challenges. It has already endorsed Ofcom's proposal setting out its plans to clear channels 61, 62 and 69. The Government will facilitate this re-planning and will meet the costs incurred by broadcasters and PMSE users as a result of these changes.

WIRELESS SPECTRUM MODERNISATION PROGRAMME: NEXT STEPS

109. In addition to the position set out above, there are a number of points that require further and more detailed consideration. *Inter alia*, these include:
- 1) Detailed AIP payment structure on liberalisation of the 2G spectrum;
 - 2) Ensuring potential new entrants are appropriately incentivised to bid for spectrum;
 - 3) Timing between any 800 MHz acquisition and 900MHz release;
 - 4) Timing between 2G liberalisation and next generation spectrum access/ deployment capability;
 - 5) How long spectrum caps will be in place;
 - 6) The extent and the detail on delivering universal service obligations for new licences; and
 - 7) The role of 1800Mhz or other blocks of spectrum in addressing any impact on competition.



110. There is a need to address the central issue identified above around 900 MHz spectrum that has been the subject of considerable debate and diverging opinions. Essentially this relates to the ratio at which 900MHz spectrum is exchanged for 800MHz spectrum and this in turn relates to the timing and cost of 900MHz refarming – changing the use that this spectrum is being used for from GSM to UMTS technologies – and the availability of 800MHz.
111. This has been the subject of considerable debate with a range of differing opinions held by the regulator and the operators, some of whom have experience of refarming in other markets. By September, the Government will have an independently produced guiding technical arbitration on this issue (and the other issues of important detail mentioned above), paid for by an industry fund. This fund will be contributed by the MNOs and any other party that considers its commercial interests may be affected by the proposals. Subject to the findings, of the technical arbitration, the Government will move to implement the ISB proposals in line with its response.

MOBILE'S CONTRIBUTION TO THE UNIVERSAL SERVICE COMMITMENT

112. Universal broadband service delivery will be achieved through a mix of fixed and mobile, with mobile ideally placed to make a contribution to the universal service commitment.
113. It is clear though that in the near term mobile services may not be able to deliver a 2Mbps service and it may well be that 1 to 1.5Mbps is a more likely deliverable up to 2012. However for those households in not spots or not a lot spots, this would represent a welcome upgrade.
114. We should not lose sight of the success that 3G has been in recent years and the part it continues to play in delivering broadband services. Availability of HSPA services in the UK has reached 87%, ahead of many other leading nations including France, Germany, Japan and the US. The number of 3G users has risen to 12m in 2007 from virtually zero in 2002, and 17% of mobile users are now on 3G. Growth continues to be strong with dongle sales, a USB modem that plugs into a PC or laptop, continuing unabated. Over a million have been sold in the past year. New and innovative services are coming on stream, the provision of access to Skype is one recent development.
115. While acknowledging this progress, the Government:
- 1) Wants a universal coverage for mobile broadband that matches that of current GSM coverage (99%);
 - 2) Recognises that network sharing, reciprocal access, interconnection regimes are increasingly a means of assisting in achieving that coverage level;
 - 3) Will, as part of its integrated package, convert existing 3G licences from time limited to indefinite to give MNOs certainty in being able to plan to achieve these coverage requirements; and



- 4) Will look at AIP levels that take into account the contribution being made by the operators to universal service.
116. Looking ahead to next generation services, coverage levels should match that of GSM and 3G. Next generation mobile broadband will be an important component of a Digital Britain, and this is a further reason to support option ii) above, with the coverage and access obligations it would impose through each spectrum licence. On access, the Government anticipates that there would be reciprocal access arrangements between operators. This might include network sharing in the final section of the network.

Broadband Universal Service Commitment – Relationship with Mobile

Following extensive work by the mobile radio companies in cooperation with Ofcom five facts have emerged:

- 1 Where BT's DSL cannot deliver 2Mbps to a location, mobile networks may be able to serve this location in time (whether this applies in all cases cannot easily be quantified at this stage);
- 2 Between now and 2012 the number of such locations is likely to increase as the mobile operators continue to roll out 3G coverage;
- 3 Whilst the Government objective of 2Mbps is a stretch for the 3G technology the near universal roll out of some 3G networks will guarantee 1-1.5Mbps availability across a range of current broadband "not-spots";
- 4 Broadband mobile networks could deliver considerably higher data rates in the future (beyond 2012) if they were able to operate in much wider radio channels – with 2x20 MHz wide radio channels at least quadrupling the mobile radio cell edge data rate – but this improvement requires mobile Next Generation Network technology; and
- 5 The mobile networks (3G and Next Generation Networks) could significantly extend their reach, at lower cost, if they used radio spectrum located below 1 GHz.

This last point indicates how precious spectrum below 1 GHz is in being able to provide broadband coverage at much lower cost to the last 10% of the UK population. But this last 10% of the population is well dispersed and it is not a viable market on its own.

OTHER WIRELESS INFRASTRUCTURE

117. In this respect, a number of companies have argued that the so-called wireless white spaces (interleaved spectrum) provide an opportunity for exciting new wireless services such as enhanced wi-fi in the UK. These have potential in rural areas to deliver broadband connectivity.
118. The USA has in principle sanctioned use of white spaces – although in practice no-one has been given the green light for services in that spectrum yet.



Ofcom's Digital Dividend Review statement in 2007 said that use would be allowed in interleaved spectrum if they did not cause interference to licensed products.

119. Ofcom has just concluded a consultation on how this might work operationally, based on licence-exemption for devices meeting certain criteria. They would either need to be cognitive/spectrum sensing devices, devices working off geo-location databases or beacon driven.
120. There is broad agreement that the opportunities offered by cognitive devices should be further explored, although there are concerns about the scope for interference to licensed users operating in and around the interleaved spectrum and ongoing questions about technical constraints. Whilst recognising those concerns, the Government also believes that there are significant opportunities for innovative services to be delivered, that would further the achievement of Digital Britain.
121. **The Government will therefore encourage Ofcom to carry out the necessary technical work and testing to establish the parameters for use and will support Ofcom to achieve the international harmonisation that is required.**
122. Satellite data and broadcast services are also important parts of the nation's communications infrastructure. Market data on use of satellite services is not widely collected at national level in the UK, but the imminent Space Innovation and Growth Team will take steps to address this. Satellite communications services take several forms, including:
 - Private business networks (VSAT) to a dish about 1m diameter;
 - Direct to home broadband Internet to a dish less than 1m diameter;
 - Direct to home broadcast of TV to a dish less than 1m diameter (*UK Freesat, German TV, French TV, Aljazeera, etc. etc. and Sky*);
 - Content distribution to UK TV networks (*Freeview, cable and IPTV*);
 - International trunk telephony and sub-sea cable back-up;
 - Direct to handset global positioning services (*SatNav*), or Traditional global mobile communications (*Maritime, Aeronautical, Military*);
 - Global mobile voice communications direct to handsets (*news reporting, emergency services*);
 - Personal global mobile broadband services direct to laptops;
 - Satellite imagery and environmental monitoring (*Google Earth, Weather forecasting, land management*);
 - Satnav, which has swiftly become a pervasive and popular technology in this country; and
 - Various military uses.



123. A communications satellite usually employs carefully designed bespoke antennas to direct the signals to (or from) the specific coverage area which may be as small as a country such as the UK or one third of the Earth's surface. European transponder demand is dominated by pay-TV with more countries introducing platforms and existing platforms contemplating new services based on digital PVRs and HDTV. Other services, especially private business networks, are often supported by broadcast satellites. Arqiva leases satellite capacity to distribute the digital TV and radio signals to its terrestrial transmitter stations.

TRANSPORT COMMUNICATIONS

124. In seeking ubiquitous mobile coverage, there is a need to address notable gaps in coverage, such as the transport networks. Measures announced last year by the European Commission has paved the way for mobile services to be accessible on pan-European flights, but there has been a failure to provide reliable and consistent broadband mobile coverage over the length of UK main railway lines and there is a near total mobile coverage blackout over the Central London section of the London Underground, including even large stations. Although rail travellers can currently enjoy wireless connectivity, service across the network as a whole is variable in performance and availability.
125. Some progress is being made in expanding the commercial provision of higher band width services across the rail network, but these services may not be uniformly available. **The Government is therefore considering how best it might support the availability of these services in a cost-effective manner – one option is to make the provision of high speed broadband services part of the rail franchise requirements for train operators or to integrate the requirement to provide mobile broadband services into the next Network Rail control period funding.** Further discussions will also be held with Network Rail to ease access to Network Rail land for commercially based services.
126. **On the underground, the London Olympics in 2012, which will be the most digital Olympics in history, seems a particularly good reason for the Mobile Network Operators to work with the Mayor of London to provide and fund solutions to take the initiative to improve the broadband mobile access for mobile customers travelling by Tube – including the huge influx of international visitors to the London Olympics. If regulatory or other similar constraints turn out to be a barrier the Government is willing to address these.**



Telecommunications and Climate Change

Telecommunications is a green technology. It displaces the need to travel for face-to-face meetings. Mobile radio is now indispensable for efficient fleet management. A significant development in this area was the Government's announcement in October 2008 of its intention to mandate a roll-out of smart meters to all households, with an indicative timetable for completion of end 2020. Smart meters will help consumers to change their energy habits – enabling them to monitor and reduce their energy consumption – and will provide a stepping stone to the smart grids of the future.

Telecommunications networks also consume energy. A typical UK mobile radio operator's network consumes over 400 GW-h per years and produces 200,000 tons of carbon emission per year (Source O2 2005). On the other hand when this energy consumption is spread across the number of UK mobile users it has been estimated that the annual CO2 footprint of the average mobile subscriber is around 25kg – which is comparable to driving an average car on the motorway for one hour (Source: Ericsson).

The Government is committed to a low carbon economy, with a legally binding target to reduce carbon emissions.

For the mobile radio industry the most direct contribution the Government can make is to be more supportive of infrastructure sharing where traffic levels are light (as set out in the Interim Report) and ensure that next Generation Mobile Networks provide universal coverage so as to provide conditions for earlier generation mobile networks to be phased out much more quickly.

Now is the time to send out a strong signal to innovative UK companies that there will be sizeable market opportunities for innovations and products that save energy in telecommunications networks. For example a small innovative UK company in Nottingham called 4energy is trialling an alternative to conventional air conditioning for keeping telecommunications equipment rooms from over heating in the Summer. A number of UK Universities are collaborating with mobile radio operators and leading manufacturers in a research programme called "Green Radio" run by the UK Mobile Virtual Centre of Excellence – with the objective of securing 100 fold reduction in energy requirements for delivering high speed data services.

We support these moves to develop energy-efficient equipment, and encourage industry and consumers to seek ways to reduce the environmental impact of digital technology.

Where public funds are used to procure equipment under this project, the Government will take proper account of sustainability and energy efficiency criteria, whilst minimising whole life costs.



Broadcasting Networks

Television

127. The UK is well served by its TV broadcasting networks with universal coverage of digital satellite broadcasting, digital terrestrial TV driving out towards universal coverage and cable TV covering 50% of the population. These three networks offer both a competitive choice but also their own unique attributes and particularly taking into account the services that have been lined up behind each means of delivery.
128. Digital satellite broadcasting provides the most comprehensive geographic coverage. In addition to alternative providers of free-to-view satellite services, there is a strong pay-TV platform offering by BSkyB Ltd which has driven innovation in storage, navigation and high-definition, and in bundling its 'home-hub' consumer proposition combining video with broadband and voice telephony. Cable similarly offers a bundle of services including pay TV but also offers on-demand services to the TV set. Both provide a huge choice of TV channels. Free-to-air digital terrestrial broadcasting offers access at a low set up cost to a number of channels with a wide range of reception equipment available now, and, we expect, leading-edge high-definition capability from early 2010.
129. There are no current major infrastructure issues for cable or satellite TV distribution and other less strategic issues remain with the capabilities of the private sector to resolve. Terrestrial TV distribution on the other hand still provides a huge challenge (and opportunity) for Government, Ofcom and the industry to accomplish the Digital TV switchover.
130. Between 2008 and 2012, analogue channels broadcast from more than a thousand transmitter sites are being switched off, region by region, and replaced with digital TV services. The programme is off to a good start, and on track for successful delivery.
131. High definition transmissions offer much clearer TV pictures on very large home TV screens. These services have already started on UK satellite and cable TV networks. From the end of 2009 onwards, digital terrestrial TV networks will include the potential for High Definition transmissions without the need for allocating extra spectrum as a result of Ofcom's innovative work to introduce HD onto the terrestrial network within existing capacity.
132. Another missing infrastructure link for digital terrestrial TV is a return path for interactive services – a capability already provided on satellite, DSL and cable networks.
133. In the interim report we said that equipment with a return path should become an option in the Help Scheme and that we would consider at what point and at what cost the standard offer provided by the Digital Television Switchover Help



Scheme could have a return path capability. Since then Industry has agreed an open standard for a return path on the terrestrial platform – the MHEG interaction channel – and equipment should be available by early 2010. The BBC’s proposal for Canvas is also intended to bring on-demand viewing to television sets.

134. The Help Scheme already issues an open invitation for the supply in each region of services from alternative providers (those not selected for the standard offer). To date every region has had at least one alternative provider offering equipment including a return path – we expect this to continue and we will encourage additional providers to offer to supply such equipment through the Help Scheme.
135. The standard offer must be able to deliver access to free-to-view digital television services in the most cost effective way and comply with all the core receiver requirements designed to ensure usability of help scheme equipment. To date there is not equipment available on the general market that makes it simple for everyone eligible for assistance under the Help Scheme to access the basic TV services, and also provides an easy way of accessing video on demand. We believe it is still premature therefore to set a date for changing the core receiver requirements for the Help Scheme. But we will keep this under review, particularly in light of the development of the Canvas proposal. Once the return path technology is successfully deployed on the terrestrial platform as well as the satellite platform, it will be possible to take a more detailed view of the costs and implications for the objectives of the Help Scheme.

Digital Switchover so far

Digital TV switchover is the process of converting the UK’s terrestrial television system to digital. Between 2008 and 2012, analogue channels broadcast from more than a thousand transmitter sites are being switched off, region by region, and replaced with digital TV services.

Switchover was successfully completed in the Copeland area of Cumbria, including the town of Whitehaven, in late 2007. In November 2008 the Scottish Borders, served by the Selkirk transmitter group, became the next area to switch. In both cases switchover was trouble-free for the vast majority.

Following a comprehensive communications campaign in the preceding year there was near-universal awareness of what was happening, and what you needed to do. Two weeks after switchover every home surveyed had converted their main set to digital, and 87% had converted every TV in their home. The local response was positive, with residents describing being ‘well prepared’ for the digital switchover, which they felt has been widely and successfully communicated and publicised’ (Source: Other Lines of Enquiry). Almost 90% said they had received sufficient information and advice.



Some digital terrestrial TV viewers did struggle with re-tuning, and 2% of households required help. Awareness of the need to re-tune, and understanding of how to do it will no doubt continue to be a feature of the whole switchover programme, and the life of the DTT platform beyond.

Following the Stockland Hill switchover, 1.5% of UK homes had completed the switch to digital (in Copeland, Scottish Borders and in April 2009 at the Beacon Hill transmitter group in West Country). A further 4.6 million will switch by the end of 2009, including more than 3 million homes in Granada, taking the total to 18%. The path to a fully digital terrestrial TV system in 2012 will see a very significant increase in the frequency and scale of switchovers, with some risks along the way, such as the impact poor weather could have on the transmitter engineering programme. Nevertheless, the programme is off to a good start, and on track for successful delivery.

Digital UK is the independent, not-for-profit organisation to lead the implementation of the switchover. The company was founded in April 2005 and is jointly owned by the UK's public service broadcasters (BBC, ITV, Channel 4, Five, S4C and Teletext) and commercial multiplex operators SDN and Arqiva. Digital UK co-ordinates the technical process, including the engineering plan to convert each TV transmitter in the UK to digital, and aims to make the public's experience of switchover as simple as possible by providing clear, impartial advice on what people need to do to prepare for the move to digital TV. It also works with industry, including electrical manufacturers and retailers, and the digital TV platforms, and engages with the housing sector where communal systems may need to be upgraded. The Digital Switchover Help Scheme has been set up by the BBC through an agreement with the Government to offer eligible people help to make the switch on one of their TV sets, and works closely with Digital UK. People are eligible if they are aged 75 years or more, or have lived in a care home for six months or more, or if they are registered blind or partially sighted. Also eligible are people who get (or could get) attendance or constant attendance allowance, mobility supplement, or disability living allowance. Most people will contribute £40 to the cost of the scheme. For those eligible people who are receiving income support, the Help Scheme is provided free.

The switchover programme will proceed as follows

Border	2007-08
Granada	2009
West Country	2009
Wales	2009-10
Channel Islands	2010
West, STV North	2010
STV (Central Scotland)	2010-11
Central, Anglia, Yorkshire	2011
London, Meridian, Tyne Tees & Ulster	2012



RADIO

136. Sound radio remains an essential component of public mass entertainment and information. It has found its natural space for consumers alongside TV services and particularly during times when a picture is a positive distraction (and even more for the visually impaired). The most widely diffused and used networks uses analogue FM technology in the 88-108 MHz frequency spectrum – providing both BBC and Commercial national and local radio services.
137. The move to digital radio began in earnest in 1998 when the Radio Authority licensed the first DAB Multiplex. DAB sets have sold well and receiver prices have recently hit the key price points that make them an attractive consumer purchase. However, in the subsequent decade radio has developed distribution models across a number of digital media (satellite, DTT, IP) but has not developed its own dedicated digital platform to a robust national standard.
138. In part this is because of the difficulty in deriving sufficient new revenue from the DAB platform: the relatively low DAB audiences have made broadcasters cautious in funding the widest possible choice of radio channels over DAB and extending the coverage of DAB networks to match that of FM broadcasts. The financial pressures the commercial sound radio broadcasters now find themselves under is a further complication.
139. This is a barrier to the full development of a dedicated digital platform for radio and a public policy issue for the Government. We address this and the future of radio as a dedicated medium in the next Chapter.

Data centres

140. All of the information on the global Internet, whether for commerce, industry or consumer consumption, has to be stored somewhere in digital form on servers. This is the function of the Data centres. They are a crucial part of the underlying infrastructure and a vital foundation block of much of the digital economy.
141. These data centres can be operated by the owner of the digital content themselves or outsourced to a third party provider. Some of these third party data centres have become major Internet hubs or home to a significant proportion of the UK's most online intensive organisations – both Government and enterprise.
142. London is the largest data centre market in Europe and a location for international businesses looking to expand into Europe.



What is a Data Centre?

Data centres house computer systems, server and network infrastructure and associated storage platforms. Many organisations operate their own data centres in house. However, as the role of computer systems and network services becomes ever more critical to the success and growth of the economy, many organizations are looking to third party providers to support their expanding data centre requirements. Data centre operators can provide highly secure and resilient environments for the outsourcing of all or part of the hosting and management of organizations technical, web and IT infrastructure to ensure these systems remain 'always-on'.

Outsourced data centres come in all shapes and sizes. They range from carrier-owned – such as those operated by BT, to so-called 'carrier-neutral' – such as those operated by UK-based European data centre specialists such as TelecityGroup. Typically, carrier-owned data centres are built to house the servers and networks of the carrier, or network-provider's equipment and those of its customers. Carrier-neutral data centres usually offer access to a much wider range of connectivity providers, all of which have built their networks into the data centre thus creating Internet 'hubs'; physical locations where network operators and ISPs can exchange traffic with each other and with content providers and other organisations whose systems are also hosted in the data centre. These types of data centres differ from the in-house, proprietary data centres in being able to offer much higher levels of connectivity, and are home to a significant proportion of the UK's most online-intensive organisations – both Government and enterprise.

143. The current demand for highly-connected data centres in the UK points to constraints in supply which is of concern as these facilities can take up to two years to build from initial inception. The private sector needs to look beyond the current recession since the up-turn in the economy will not be the only driver of expanding demand – the quantity of information to be stored continues to rise exponentially across the world.
144. Storage technology is almost in a continuous state of revolution and this, together with the state of the telecommunications networks, can impact where it is most economic to store data. The most appropriate Government and Ofcom action is to ensure competitive pressure continues to drive down the price of long distance transmission.

Monitoring the National Communications Infrastructure

145. This report emphasises the increasing importance of communications infrastructure, and the need for Government and regulator to take a broad view of the nation's needs and gaps. Our intended amendment to Ofcom's duties will give it a first order requirement to look at investment in infrastructure.



Building on this, we are asking Ofcom to maintain a close and ongoing assessment of the overall communications infrastructure.

146. **We will ensure the Board of Ofcom has a statutory obligation to write as necessary to the Government alerting Secretaries of State¹⁵ to any matters of high concern regarding developments affecting the communications infrastructure and in any event to write every two years giving an assessment of the UK's communications infrastructure.**
147. Examples of matters which we will require Ofcom to keep under review include:
- 1) Availability/coverage of the major communications platforms, to include fixed telecoms, cable, mobile, broadcasting and other platforms including core, backhaul, spectrum usage and access network capability;
 - 2) An assessment for each of key indicators of reliability, resilience and security – e.g. downtime;
 - 3) Testing of resilience against emergency conditions (NB this report touches on matters of resilience in Chapter 7);
 - 4) Services on offer over each platform, including details of wholesale arrangements and service competition;
 - 5) International competitiveness index of UK network infrastructure; and
 - 6) Evidence of network failure-potential and priorities for strengthening (taking into account the report of the ECRG Chair).

15 In practice this letter will be sent to BIS, but the other interested departments will include DCMS, Home Office, MoD and the Cabinet Office



CASE STUDY

Hays

Hays PLC, a major UK employment services business, is investing £40 million to apply web-enabled technology to services matching employers and job-seekers.

The UK company believes it could transform the search process by creating a sophisticated database and online portal for would-be applicants.

Alistair Cox, Chief Executive, says: "At the moment the whole industry's use of the web is limited to online versions of print job ads. I want to put a much richer array of services on the web."

The investment is expected to deliver a double benefit to the group, increasing efficiency and reducing costs in back-office functions while creating a more effective matching capability for companies and potential recruits, thereby enhancing customers' experience.

Hays expects the system to remove much of the manual processing and data handling from what Mr Cox calls "match-making people for the right roles".

By automating that data collection, he also expects the two thirds of candidates described as "passive" job seekers to self-select their areas of interest, skills and eligibility for different types of employment, giving them access to a rich seam of information to allow them to better plan their careers.

"The £40 million investment will put in place a rich database repository which will be more current, relevant and searchable, enabling our consultants to spend more time on advisory services with their clients and candidates and less on administrative processing. It will also allow us to embrace the constantly evolving use of the web and future-proof our business as new models are invented. I can imagine a world where clients and candidates can use the Hays world for all of their needs around people and roles; a single repository for information, real-time updated data, online hiring requests and applications, straight-through and fully automated administrative processing, instant messaging and feedback", he adds.

Although there has already been significant risk capital invested in online recruitment – particularly in the US – Mr Cox argues that no-one has yet delivered a model to "take the market by storm". He believes that the UK could lead the way, exploiting the already relatively heavy online usage by jobseekers. The technology is also expected to be platform neutral, allowing users to access the company's web services via multiple platforms or devices.

The company fully expects the new system – due for completion next year – to deliver the efficiency implied in its name. It is called "One Touch".



Chapter 3b

Radio: Going Digital

"One must verify or expel his doubts, and convert them into the certainty of Yes or No."
Thomas Carlyle

AMBITION: TO SECURE AND DELIVER A DIGITAL RADIO PLATFORM FOR THE BENEFIT OF BROADCASTERS AND LISTENERS.

THE IMPORTANCE OF RADIO

1. Radio's diverse and flexible nature has placed it at the heart of platform and device convergence. One of the advantages of digital audio content is that it occupies comparatively small amounts of capacity and can easily be delivered through a wide range of digital technologies. Digital radio receivers already comfortably co-exist with Digital TV and on fixed and mobile broadband platforms as a means of accessing digital audio content.
2. But as well as being a flexible medium, radio's appeal to the listener is that it is more than simply a stream of audio: it is an intimate, portable and ambient medium; and it is a very personal medium: the pictures that it forms inside our heads are different for every listener. To remain true to that breadth of appeal to listeners, we argue that radio needs a future on its own, dedicated, digital platform – DAB – alongside the many other digital paths over which it can be carried. That might not be justified if the commercial and economic cost of doing so were huge. But they are not: radio is, in most respects, bar those of the imagination, a small-scale medium. The costs of a dedicated digital platform are comparatively small – the £10s of millions rather than the £billions that television, fixed networks, mobile communications, or broadband require.
3. In economic terms the radio industry is relatively small. The total sector value in the UK is £1.1bn a year. But radio is a disproportionately important part of



the UK's cultural landscape. More than 90% of the population consume in excess of 1 billion listening hours a week. However, radio's special position is by no means assured in the future. Radio is not, and cannot be, immune to change.

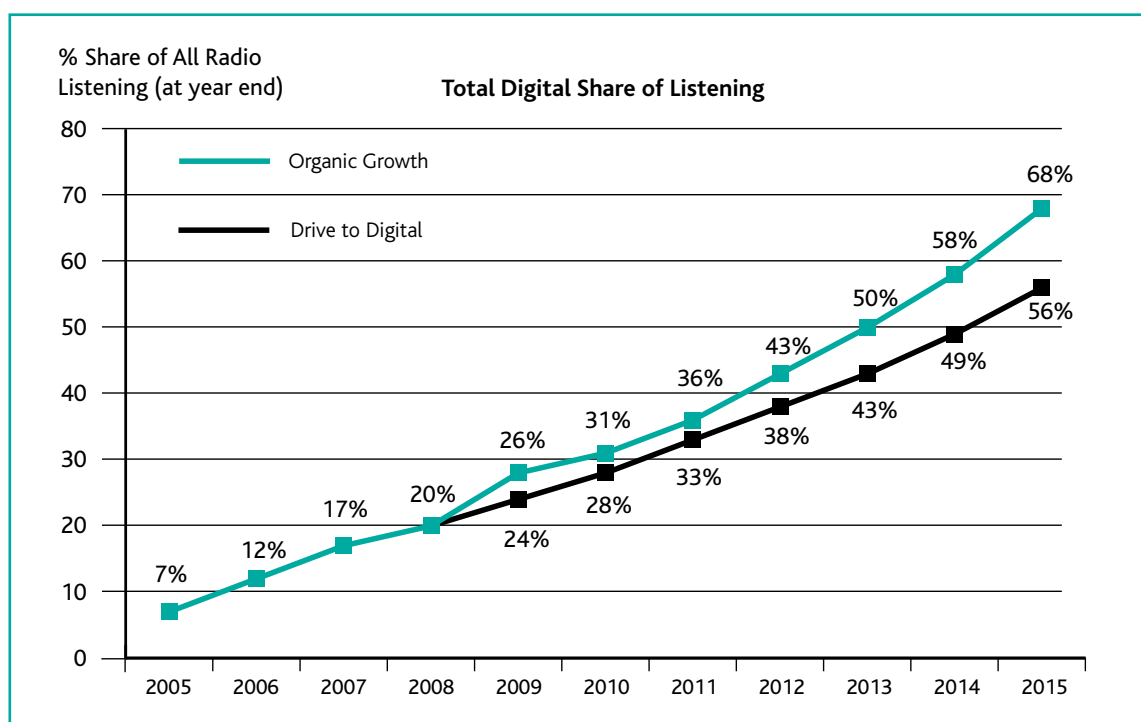
4. Today's radio industry has been shaped more by the scarcity of the analogue spectrum than by market demand. Brands are built as much on the frequencies they occupy as the characteristics of their content, while commercial revenues are primarily limited to local markets, delivered by on-air advertising and sponsorship. The current analogue radio landscape is not a bad one. Far from it, it has built a medium which is highly valued by listeners today. However, if radio is to compete in a Digital Britain then it must have greater flexibility to grow, innovate and engage with its audience, and in this the limits of analogue, as the primary distribution platform for radio, are now all too visible.
5. By comparison, digital offers a number of possibilities for radio to grow. The delivery of new content and functionality, such as scrolling text, one-to-one traffic information and listen again, can connect listeners and radio in new ways, provide gateways to online businesses and open up new revenue streams to the commercial market.
6. A dedicated digital platform for radio will require greater investment, both public and private, in new and existing infrastructures, digital-only content and marketing. But the same is true of analogue. The infrastructures which deliver analogue radio are decaying and considerable investment would be needed – up to £200m of capital expenditure – to maintain a full national FM network over the next 20 years. Nor can the radio industry risk assuming that its current content offering will remain appealing in an increasingly global market, where competition for listeners' time is much greater. Therefore, the question is how the inevitable investment is best used, and it is our belief it must be on building a radio industry fit for a digital world.
7. The biggest barrier to radio's digital future is a lack of clarity and commitment to the DAB platform.
8. Any good business will invest in its future if it understands that future and the potential returns from its investment. Consumers will adopt new technologies when they are affordable and the benefits are clear, while consumer demand will drive innovation and provide economies of scale for manufacturers.
9. We believe that Government has a pivotal role in securing this certainty. In the Interim Report we set out the details of, and our commitment to, securing a digital future for radio. In this chapter we will build on this commitment and set out our vision for the radio industry in a digital world and the mechanisms needed to deliver it. **At the heart of our vision is the delivery of a Digital Radio Upgrade programme by the end of 2015.**



THE DIGITAL RADIO UPGRADE DECISION

10. The Digital Radio Upgrade will be implemented on a single date, which will be announced at least two years in advance. On the determined date all services carried on the national and local DAB multiplexes will cease broadcasting on analogue. At the same time, a new tier of ultra-local radio, consisting of small local commercial stations and community stations, will occupy the vacated FM spectrum. Radio services on MW will either upgrade to DAB or, if they are within the ultra-local tier, to FM. **This will deliver an upgrade from FM to DAB and from MW to FM.**
11. In the Interim Report we set out two migration criteria; these were:
- 1) When 50% of listening is to digital; and
 - 2) When national DAB coverage is comparable to FM coverage, and local DAB reaches 90% of the population and all major roads.
12. Following the Interim Digital Britain Report it has become apparent that, while many welcomed the commitment to a Digital Radio Upgrade policy, a timetable determined solely by these criteria provided little additional market certainty. While we accept this view, we believe that a timetable and criteria can co-exist providing both market clarity and protection to listeners. Therefore, included within the Digital Radio Upgrade timetable is our intention that the criteria should be met by the end of 2013.
13. The following graph shows the projected digital share of listening under two scenarios: organic growth and with a concerted drive to digital.

Figure 6



14. We have asked Ofcom to produce, at least once a year, a report on progress against the criteria; the first of which will be published by the end of 2010. In addition, we will monitor with Ofcom and industry the impact of the proposals set out below and the extent to which they are supporting the Digital Radio Upgrade timetable. The first of these reviews, which will include an assessment of multiplex structural changes and plans to increase coverage, will take place in Spring 2010.
15. The over-arching principles of the Digital Radio Upgrade policy are two-fold. First, to provide greater choice and functionality for listeners. Secondly, those listeners who can currently access radio should continue to do so after the Upgrade. **To ensure future policies take account of the wide range of listener needs we have invited the Consumer Expert Group, which brought together key consumer representatives to inform the Digital TV switchover process, to extend its scope to cover radio. In addition, we will conduct a full Impact Assessment, including a Cost/Benefit Analysis of Digital Radio Upgrade. The results of this Impact Assessment will help determine whether there is a case for a Digital Radio Help Scheme and, if so, what its scope might be.**

A DEDICATED DIGITAL PLATFORM FOR RADIO

16. In response to the Interim Report we received submissions raising questions about the best technology for a dedicated radio platform. Should it be DAB, DAB+, DMB-A or DRM?¹⁶ Some others argued that all digital listening would become online.
17. We recognise that there is some force in these arguments. However, it is our view that these opinions give too much regard to technologies and too little to the real drivers of change, the listener.
18. Digital radio is not now, nor should it be in the future, a single platform medium. The Internet, mobile broadband, in particular, will have a role in radio's future. However, it is our belief that listener behaviour has already provided a compelling argument for a broadcast specific platform for radio, and for DAB, which if actively encouraged now can bring benefits to listeners and broadcasters in the immediate and longer term. We also believe that DAB, as the broadcast specific platform for radio, can co-exist alongside the other means of digital distribution because it offers specific benefits to the listener.

16 *DAB+* is a non-backward compliant variant of DAB which utilises newer compression techniques providing a more spectrum efficient broadcast signal. *Digital Radio Mondiale* or *DRM* was designed to use Long, Medium and Short wave bands to deliver digital radio. It broadcasts via single station transmissions, rather than a multiplex. *DMB(A)* is the audio-only technology evolving from T-DMB which was developed in Korea for the delivery of digital TV services. The WorldDMB Digital Radio Profiles specify a minimum set of requirements to be built in to different class of receivers, ensuring that they operate across Europe. Digital Radio Profile 1 requires a receiver to be able to receive DAB, DAB+ and DMB-A, alongside basic text and visual services.



The benefits of a broadcast specific platform for radio

- Radio is fundamentally a portable medium and a broadcast specific platform is the most appropriate way to deliver mobile digital radio, particularly to cars;
- It is currently the most effective and financially viable way of delivering local radio digitally;
- Receivers are already affordable, portable and easy to use;
- It is free at the point of access for all listeners;
- A defined space for radio, where it can be master of its own destiny and have the freedom to take risks;
- Supports a UK radio broadcasting sector providing content specifically for UK listeners; and
- Increases the opportunities for UK-based independent content providers.

19. To date more than 9 million DAB receivers have been sold in the UK, and sales are continuing to grow year on year. DAB ownership is up 19% year on year, with 32% of adults now claiming to live in a DAB-enabled household. Consumer satisfaction is also high. DAB accounts for 63% of total digital listening, compared to 11% on the Internet and 17% on digital TV.
20. We are clear that at least for the foreseeable future DAB is the right technology for the UK. However, it has always been our intention that the ultra-local services which remain on FM after the Digital Radio Upgrade should only do so temporarily. To ensure, as much as possible, that any additional digital upgrade will have a minimal impact on listeners we will seek to ensure that all digital radio receivers sold in the UK meet at least the WorldDMB profile 1.¹⁷ One way this could be achieved is by clear labelling such as the 'digital tick' used in Digital TV Switchover.

17 The WorldDMB Digital Radio Profiles specify a minimum set of requirements to be built in to different class of receivers, ensuring that they operate across Europe. Digital Radio Profile 1 requires a receiver to be able to receive DAB, DAB+ and DMB-A, alongside basic text and visual services.



The Upgrade Path for DAB

DAB is one of a number of Digital Radio standards, which also includes DAB+, DMB-A and DRM. All of the standards in this family offer similar functionality to each other, such as slide-shows, mobile TV and Electronic Programme Guides (EPGs).

DAB represents the right dedicated digital platform for UK Radio in the lead-up to and beyond Radio Upgrade. DAB has established itself as a trusted and valued technology by UK listeners, and this is reflected in the number of DAB receivers sold. At this time only a small minority of these receivers are capable of receiving other technologies and would be rendered redundant if a change from DAB was made.

However in the future, broadcasters may want to explore the potential to upgrade existing networks to take advantage of more advanced compression technologies, particularly once the overall economics of digital are more robust. We will also need to consider the most appropriate technology for upgrading the ultra local tier of radio to digital. To prepare for any such change or additional upgrade we will work to ensure that digital radio receivers sold in the UK are at least compliant with the WorldDMB receiver profile¹; which includes DAB+ and DMB-A. However, any such change will need to be run alongside DAB for at least the foreseeable future.

THE RIGHT INFRASTRUCTURES

21. Achieving the Digital Radio Upgrade timetable will require building a DAB infrastructure which meets the needs of broadcasters, multiplex operators and listeners. This will require a significant contribution from the commercial operators and the Government welcomes the early commitments that they have given. We recognise too that Government and regulator will need to redraw the regional multiplex licence map. However, getting to the level of necessary coverage will also require a contribution from the BBC, in line with its sixth Charter Public Purpose:

'helping to deliver to the public the benefit of emerging communications technologies and services, and in addition, taking a leading role in the switchover to digital television'.

22. The Government recognises that this may impose an incremental cost, though the BBC, like other operators, is benefiting from lower transmission charges from Arqiva plc following the undertakings given to the Competition Commission on the merger of the managed transmission services; and there will be cost reductions in accelerating the ending of dual analogue and digital transmission costs nationally. Depending on how the above calculations balance out the BBC's contribution may require some residual access to the Digital Switchover Help Scheme under-spend.



23. **At a national level we will look to the BBC to begin an aggressive roll-out of its national multiplex to ensure its national digital radio services achieve coverage comparable to FM by the end of 2014.** Even though the national commercial multiplex already matches coverage of Classic FM we believe indoor reception must improve and where possible overall coverage be extended. **It is our intention that where possible the BBC and national commercial multiplex operator should work together to ensure that any new transmitters benefit both BBC and commercial multiplexes.**
24. Partnerships between the BBC and commercial multiplex operators will be even more important at a local DAB level. Further investment is required if local DAB is ever to compare with existing local FM coverage; this is especially true in parts of Scotland and Wales. However, we believe that this cost is not prohibitive.
25. In areas where the BBC's need to deliver universal access is not matched by the economic realities of the local commercial market, the BBC will need to bear a significant portion of the costs. However, the full cost cannot be left to the BBC alone. The Digital Radio Upgrade programme, alongside the proposals on co-location and licence-renewals, will offer significant cost-savings for commercial broadcasters. Some of these cost-savings must support future transmitter investment by the local multiplex providers. We will work with the commercial radio sector, BBC, transmission providers and Ofcom to agree a plan for the extension and improvement of local DAB coverage, and where the cost would most appropriately fall, in time for the first progress review in Spring 2010.
26. In addition to increasing DAB coverage, we are proposing new measures to address some of the failings in the existing multiplex framework. This includes encouraging, where appropriate, adjoining multiplexes to merge and extending existing multiplexes into currently un-served areas rather than awarding new licences. **These proposals will be supported by new legislation granting Ofcom powers to alter multiplex licences which agree to merge.** These powers will also allow the existing regional multiplexes to consolidate and extend to form a second national multiplex. We urge the regional operators to begin the commercial negotiations and discussions with Ofcom needed to achieve this.
27. Where solutions can be found we are **prepared to extend multiplex operators' licences until 2030.** We will also consider with Ofcom the case for delaying the implementation of AIP on DAB multiplexes until after the Digital Radio Upgrade is completed. In order to ensure any changes complement our timetable these powers will be time limited and we will make our decision on whether to offer such rewards after the Spring 2010 review.



CONTENT AND SERVICES ON THE DEDICATED DIGITAL PLATFORM

28. The main challenge to a successful Digital Radio Upgrade is not converting the avid radio listener, who has in many cases already embraced DAB, but the occasional radio listener. Recent research showed that 52% of listeners had not changed their main household radio to DAB because they were “quite happy with my existing radio.” If listeners are to adopt DAB they must be convinced it offers significant benefits over analogue.
29. DAB should deliver new niche services, such as a dedicated jazz station, and gain better value from existing content, such as live coverage of Premiership football or uninterrupted coverage from music festivals. The radio industry has already begun to agree a pan-industry approach to new digital content and we urge them to implement any changes as soon as possible.
30. However, the average analogue TV home receives four or five TV stations, while an analogue radio household already receives three or four times that number. Therefore, DAB must become more than just a platform for new stations if it is to attract new audiences – it must also offer more services.
31. Functionality and interactivity must become central to the DAB experience. EPGs, slideshows, downloading music, as well as pause and rewinding live radio must be developed and brought to market on a large scale. Broadcasters and manufacturers must seek to develop and implement digitally delivered in-car content, such as traffic and travel information.
32. DAB receivers must also be attractive and affordable. The price of DAB receivers has already fallen considerably and we welcome manufacturers’ commitment for sub-£20 sets in the next two years. We also urge manufacturers to look closely at the market opportunities for DAB to ‘FM re-broadcasters’, a set-top box solution for analogue radio, as a means of allowing existing analogue radios to receive DAB in the future.
33. In addition, we will work closely with manufacturers to examine the environmental impact of the Digital Radio Upgrade. The energy consumption of digital radios is now broadly comparable to that of analogue, and some DAB radios consume less energy than an energy saving light bulb, but cheaper digital equipment has yet to achieve parity. In addition, we must ensure the environmental impact of any significant analogue radio disposal is minimised through a responsible disposal and recycling strategy. Of course current legislation already exists in the shape of the Waste Electrical and Electronic Equipment (WEEE) Regulations to deal with the recycling of Consumer Electronics materials.



Digital radio in vehicles: a five point programme

In-car listening represents a significant portion of total radio listening (around 20%). It is important that listeners have the confidence they will continue to have access to their favourite stations in their cars after the Radio Upgrade. Therefore, we are proposing the following measures to support take-up of digital radio in new and existing vehicles sold in the UK. We will:

1. Work with manufacturers so that vehicles sold with a radio are digitally enabled by the end of 2013;
 2. Support a common logo for digital radios and ensure that non-DAB radios, and their limitations, are clearly labelled;
 3. Encourage the development of portable digital converters, such as the Pure Highway, and the integration of DAB into other vehicle devices such as Sat-Navs;
 4. Promote the introduction of more sophisticated traffic information via DAB and comprehensive marketing by broadcasters; and
 5. Work with our European partners, including the European Commission, to develop a common European approach to digital radio. We have approached the European Commission to encourage them to lead a Community-wide effort. Such an approach, as was adopted in digital television, could provide certainty well in advance for vehicle manufacturers and those providing in-car devices to bring the unit price of conversion down.
34. Earlier this year we established the Digital Radio Delivery Group, which brought together the key radio stakeholders to inform our policy-making. We welcome the radio broadcasters' offer to take forward the work of this group in the coming months. However, as the Digital Radio Upgrade date becomes more apparent we will need to examine what body is best placed to deliver the Digital Radio Upgrade programme.

REGULATION

35. Following the publication of the Interim Report we commissioned the former CEO of GMG Radio, John Myers, to conduct a review of the current localness regulations. The report, entitled 'An Independent Review of the Rules Governing Local Content of Commercial Radio' ('Localness Review') was published in April.



Key recommendations in the Localness Review

- A move from input to output regulation for small local commercial radio stations;
- Introduction of a 'Local Impact Test' for local commercial stations with a coverage area of less than 700,000 adults;
- Relax rules concerning the location of a local station, and the number of local hours broadcast, for stations with a coverage area of less than 700,000 adults;
- An increase to the minimum number of local news bulletins broadcast each day by all local radio stations;
- The regulator to allow the merging of two or more co-owned local licences;
- Extension of all local commercial radio licences until 2020 and all multiplex licences until 2030;
- Removal of radio specific and cross-media ownership rules; and
- Change in the current legislation to allow community radio stations to be licensed in areas served by a commercial radio station with coverage of 50,000 adults or less.

36. The Localness Review was clear in its findings that localness will be more, rather than less, important in the future, becoming a station's Unique Selling Point in a much more competitive marketplace. We agree with this view and will continue to ensure that locally made content, relevant to local listeners, is an essential characteristic of UK commercial radio. The challenge for Government and Ofcom is to devise a regulatory regime which secures the provision of local content but that equally reflects the economic realities of local media markets.
37. We agree this regime should include a greater focus on the output, or more precisely the impact of local stations. We recognise there are challenges in devising such a regulatory structure, as it must give clarity both to broadcasters and be enforceable by Ofcom. However, this difficulty should not be allowed to undermine the principle. **We will work with Ofcom to agree a two-year pilot of a new output focused regulatory regime. This will consider the impact stations have on the communities they serve, perhaps by an agreed set of obligations proposed by stations themselves, much in the same way community radio stations do. If successful this new regulatory mechanism could be rolled out more widely.**



38. For those stations not participating in the pilot we are proposing, as recommended in the Localness Review, a reduction in **the number of locally-produced hours in exchange for an enhanced commitment to regular and updated local news**. It will be for Ofcom to determine how such changes should be applied.
39. In addition, we are supporting the recommendation for greater flexibility to co-locate services. While we remain of the view that local radio should be locally-made we accept that a re-definition of what constitutes local can provide economies of scale to broadcasters without significantly affecting the quality of service to audiences. For this reason we have asked Ofcom to consult on a new map of mini-regions which balances the potential economic benefits but also the needs and expectations of listeners. We will make an amendment to the existing legislation to support this change.

A new tier of ultra-local radio

In this chapter we have hinted at our intention to create a new tier of ultra-local radio which will occupy the FM spectrum vacated by the services migrating to DAB. We believe that these stations, rather than becoming the poor relation of digital, will have a key role in radio's continued contribution to the UK's cultural life and local democratic debate.

Local commercial radio and community radio, in particular, have consistently proved the value of radio generated by and for local communities. It is these characteristics which will differentiate this new tier of ultra-local radio from the much larger services on DAB. This is not to say that we intend to blur the lines between commercial and community stations – they both have separate roles and functions – but rather that both will have a common focus, to enriching and informing the communities they serve.

We will work with Ofcom and the radio industry in the period leading-up to the Digital Radio Upgrade to agree a clear vision for this new tier of radio; a vision which will have at its core the needs and expectation of local communities.

40. While we are working towards a new tier of ultra-local radio we believe the rules which keep the commercial and community radio distinct from each other remain generally appropriate. However, if the community radio sector is to grow and prepare itself for a more fundamental role in the future radio landscape it must also be given the certainty to invest in its future.



41. **Alongside this report we have published a short consultation seeking views on proposals for a new licence renewal regime for community radio. In addition, we are proposing the removal of the 50% funding limit from any one source and the restriction preventing a station being licensed in an area overlapping with a small commercial service. We are also extending our commitment to promoting best practice within the community sector and encouraging self-sustainability by allocating a small portion of the Community Radio Fund to support the work of the industry body, the Community Media Association.**
42. To further support the Digital Radio Upgrade timetable and to refocus the regulatory regime for a digital, rather than analogue, world we are proposing changes to the existing licensing process.
43. A successful and co-ordinated implementation of the Digital Radio Upgrade will require a common-end date for all licences, particularly if the FM spectrum is to be re-planned to accommodate the current MW services. For this reason **we will introduce new legislation which will insert a two-year termination clause into all new licences. This will be triggered by the Government when the exact timetable for Digital Radio Upgrade can be better determined.**
44. We also recognise that the investment needed to achieve the Digital Radio Upgrade timetable will on the whole be made by the existing radio companies. We are also aware that our timetable will mean that many new licences will run only for three or four years. For these reasons **we propose to grant Ofcom new powers to extend the licence period of all national and local licences, broadcasting on DAB, for up to a further seven years. However, we will keep this decision under review and if by the end of 2013 it is clear the Digital Upgrade timetable will not be achieved we will use the powers, set out above, to terminate licences and the existing licensing regimes will apply.**
45. Lastly and in line with the recommendations in the Localness Review, we are proposing some additional flexibility to allow analogue stations to merge to form new DAB stations. We envisage this will happen in two ways. First, two or more small stations merge to form a single larger service, which could then be carried on DAB. Alternatively, this flexibility will allow two or more regional stations, as defined by Ofcom, to align services to form a single UK or nation's service. To support this we will **amend the rules under which Ofcom grant analogue licence renewals to ensure that regional stations which do become national DAB stations do not lose their current or future renewal.**



CONCLUSIONS

46. It is because we recognise that importance of radio to listeners that we believe the challenges of building a UK radio sector fit for a Digital Britain must be overcome. We believe the proposals set out above will have a significant impact on setting and achieving radio's future, particularly leading up to the Digital Radio Upgrade. However, whilst we can provide clarity of direction it must be for the broadcasters, manufacturers and transmission providers to deliver digital radio as a compelling proposition for listeners.



CASE STUDY

GP: Dr Louise Irvine

Dr Louise Irvine, a veteran inner-London family doctor, began using digital technology in the early 1990s. The surgery where she is now partner was one of the country's first adopters of EMIS, a software system developed by GPs to store and record patient details electronically.

"It has evolved over the years, and we are now using it in every consultation to code problems, store test results, search patient records and deploy a 'call and recall' systems to proactively care for our population," she says. "There are no more written records."

The electronic database is now also used for all immunisations, and prescriptions as well as referral letters, X-rays, blood tests and scan results.

Given the socially mixed nature of her practice area, Dr Irvine says that many patients do not use or have access to new media. Many remain suspicious of it. So initiatives to modernise the referral system do not always work, particularly among older people and those with English as a second language.

Hence, Dr Irvine often encounters patient resistance to the electronic "choose and book" system for healthcare, in which doctors can access a database of hospitals with the shortest waiting lists and then offer patients a choice. "The patients invariably ask me to choose and don't even want to consider different options."

So general practice, at least in parts of inner London, is relying on a technology hybrid. Surgeries are using digital data to enhance record keeping, access test results, update the latest research, make prescriptions and improve appointment schedules. But when it comes to seeking advice, Dr Irvine says patients still value and prefer the personal touch.





Chapter 4

Creative Industries in the Digital World

"This is what real revolutions are like. The old stuff gets broken faster than the new stuff is put in place. The importance of any given experiment isn't apparent at the moment it appears: big changes stall, small changes spread. Even the revolutionaries can't predict what will happen."

Clay Shirky, Blog Posting April 2009

AMBITION: TO MAKE THE UK ONE OF THE WORLD'S MAIN CREATIVE CAPITALS

Towards a new framework for content

1. In addition to being a financial services capital of the world, we should aim to be a global centre for the creative industries. In addition to comprehensive participation and comprehensive infrastructure as described in the preceding Chapters, we also need a digital framework for the creative industries and a commitment to the creative industries grounded in the belief that they can be scaled and industrialised in the same way as other successful high-technology, knowledge industries such as bio-sciences have been.
2. The creative industries in Britain start with many of the same advantages that have helped drive our other successful knowledge sectors:
 - **Convenience:** The UK's geographical location makes it accessible from East and West, while Greenwich Mean Time gives us a working day overlapping with major economies on both sides of the world.
 - **Legality:** A strong rule of law is vital for industries that depend on respect for intellectual property.
 - **Accessibility:** The English language is ever more so the international language of both commerce and entertainment.



- **Financials:** A UK base provides businesses with access to capital markets and with experience in funding IP-based businesses.
 - **Human Capital:** Companies in the UK can call on a skilled workforce rooted in an education system that encourages the questioning, original thought vital for creative businesses.
 - **Infrastructure:** Businesses have access to competitive markets providing high spec, resilient, competitively priced bespoke fixed and mobile communications services.
3. The creative industries are a significant source of employment and national wealth creation, as well as almost uniquely delivering cultural and social benefits. They contribute 6.4% of GVA and have grown by an average of 4% over the past decade compared to 3% for the economy as a whole.
 4. The 2008 Report 'Creative Britain: New Talents for a New Economy' was the fourth major policy document on this important economic area, building on the 1999 and 2001 Creative Economy Mapping documents and the 2001 Green paper, Culture and Creativity: the next 10 years. All these signalled the intention of the Government to join up the worlds of education, cultural and creative subsidies, training and trading support to encourage the creative industries to thrive. This work to incorporate the creative industries into mainstream economic thinking has been studied and copied worldwide, and the Budget signalled a new phase of Industrial Activism joining up the work of BIS, DCMS, DWP and DCSF.
 5. A driving consequence of the changes in our communications infrastructure capability, mass participation in Digital Britain, widespread adoption and use of new digital devices and services described in the previous chapters will be a flowering of distribution, production and creation of all sorts of content. This will revolutionise what is bought, searched for, seen, listened to, shared and enjoyed.
 6. This will represent a significant change to the old analogue models of distribution, of monetisation and of participation. Media today is participative, interactive, equal and many-to-many. Where traditionally innovation and creativity was largely the domain of specialist teams in large organisations, today there is a creative revolution which is rooted in the opportunities afforded by connectivity. There is a significant opportunity to take the success of our creative industries into this interactive and participative world.



C&binet and international solutions

C&binet (Creativity and Business International Network) stems from a Creative Britain commitment to initiate the launch of a World Creative Business Conference. C&binet was formally launched in October 2008. The first main C&binet forum will take place on 26-28th October at the Grove in Hertfordshire. It will host up to 400 delegates, mostly chief executives and other senior figures from across the Creative Industries and those industries that support them. This year's conference, entitled "Nurturing Creative Content in the Digital Age", will focus on issues such as paying for creative content online, attracting finance for content creation and international co-operation. The event will be action-focused with outcomes identified for each session that will have benefits beyond the conference. The conference will be streamed fully on the C&binet website (www.cabinetforum.org) and interaction with the event will be encouraged.

We are also aiming for C&binet to play a part in beginning the dialogue on international solutions to some of the barriers facing content generation, particularly illegal peer-to-peer file-sharing. These issues are not just problems for one economy but for all economies that produce creative content, so solutions should be found and agreed that can be implemented across the world.

7. The ambition of Digital Britain is that this country remains a source of innovation in content and applications disproportionate to the relative global size of its overall economy and that the UK market, rights and regulatory frameworks maintain Britain's place as one of the most attractive destinations for mobile investment in content, applications and services.
8. We have a mixed economy of content creation, often taking the best from the worlds of subsidy and commerce. In Chapter 6 we trace the path to develop talent, from school and higher education to lifelong learning for those who become consumers to specialist training and support for those who produce the content upon which the creative economy relies. The Digital World will continue to rely upon the development of these same core creative skills, and many of the basic building blocks in which people develop and enjoy creative content live – our museums, libraries, arts centres, theatres and music venues – look set to thrive in the Digital Age.
9. We have had a series of public policy interventions designed for the linear analogue world. Many of these will need to be radically re-cast for the digital environment, an environment in which the economics of content production and distribution are profoundly different. Limitless perfect digital copies and intense new competition for advertising has challenged old business models. At the same time the social networks and content-rich portals that dominate the Internet today are still, in many instances, groping towards means to monetise creative content, to turn a strong user base into hard currency.



10. These changes are leading to a fundamental change in our corporate media ecology. As Charles Leadbeater put it in an article following our Interim Report:

“Twenty years ago the industries that provided most of our information and entertainment, resembled a few very large boulders strewn over a largely empty beach.

These boulders were the big media companies that came into being because media had high fixed costs – print plants for newspapers and studios for television. They were closely regulated and resources, like broadcast spectrum, were scarce. All that created high barriers to entry. These boulders made their money mainly from advertising and by charging consumers for access to their products, which required controlled access and often physical distribution and storage.

Anyone trying to set up a significant new media business could be seen coming from a long way off. Rolling a new boulder onto the beach took lots of people, money and heavy machinery. In the mid-1980s an entrepreneur called Eddie Shah tried to roll a boulder onto the British beach by setting up a national newspaper based in northern England. That provoked a protracted national strike. Rupert Murdoch caused controversy by moving his boulder – production of his News Corporation newspapers – from one part of London to another. That caused another lengthy dispute. Channel 4 caused a stir by becoming a new boulder on the beach, one which eventually spawned several other mini-boulders in the form of independent production companies. The big advertising agencies – WPP and TBWA – are boulders that service other boulders. The ITV companies have all merged to create an even bigger, arguably even more unsuccessful, boulder. Until recently boulders were the only business in town.

Now imagine the scene on this beach in five years time. A few very big boulders will be still showing. But many have been drowned by a rising tide of pebbles. Every minute millions of people come to drop a pebble on the beach: a blog post, a YouTube video, a picture on Flickr, an update on Twitter. A bewildering array of pebbles in different sizes, shapes and colours are being laid down the whole time, in no particular order, as people feel like it.”

The Digital Revolution: the Coming Crisis of the Creative Class by Charles Leadbeater.

11. Against this background, we aim in this Chapter to address four key issues:
- Restating an explicit recognition of the economic importance of our creative industries.
 - Protecting due reward for creativity in the digital world, meeting the interests of creators, aggregators, distributors and consumers.
 - Extending our public policy framework to embrace interactive content.
 - Ensuring that our existing interventions are 'digital ready'.
12. Government and the wider public sector are both major commissioners of digital content and the repository of a wide range of non-personal data which



can form the basis for a wide range of innovative, interactive content services and applications. These aspects are set out in more detail in Chapter 8.

Protecting and Rewarding Creativity

13. Already today around 7.5%¹⁸ of total UK music album purchases are digital and a smaller but rapidly increasing percentage of film and television consumption is streamed online or downloaded. In Digital Britain, with the Universal Service Commitment delivering video quality broadband and most households having much greater bandwidth, streamed, downloaded or searched-for content will become the norm. User-generated and social content will be very significant; but should not be the main or only content.
14. The popularity of *X-Factor* and *Britain's Got Talent* shows the enduring drawing power of content-creating talent that few people possess. The digital world allows more of that talent to find its way to more consumers and admirers than ever before. But it is not wholly democratic: some have the talent to create content; many others do not. As throughout history, there need to be workable mechanisms to ensure that content-creators are rewarded for their talent and endeavour. And the need for investor confidence is key. User generated videos can be hugely popular, but there remains a healthy appetite for big movies costing many millions to produce.
15. The Government's objective is to see the creation of an effective online download and streaming market of scale, providing content that is highly affordable, easily and conveniently accessible to consumers. Commercial entities from Hulu, to Spotify, to Six-To-One, to FremantleMedia, are trying out different business models to provide such content to consumers.
16. This requires a significant reappraisal of traditional positions by most of the operators in the market. The Government has sought to encourage this in a number of ways: through the major review of copyright, currently being undertaken by the Intellectual Property Office, following the Gowers review; through the Memorandum of Understanding between Internet Service Providers and rights-holders, brokered by the Government in 2008; and by recognising the limitations that need to be placed on 'free' publicly-funded content.
17. But at the moment the content industry faces a significant challenge. At its heart the current model is not working. There are many views on why the model has broken, but the undisputed fact is that a significant proportion of consumers are choosing to access digital content unlawfully, principally via unlawful peer-to-peer file sharing. Creative industries have indicated they suffer considerable losses from unlawful peer-to-peer file-sharing. The BPI claim P2P file-sharing costs the UK music industry £180m pa (2008) while IPSOS gives a loss in the UK for TV and films of £152m (2007). Figures are not available for the losses from unlawful file-sharing in other content industries such as

18 Source: Ofcom (2008)



publishing, business software or computer games but we do know that all are suffering significant losses. It is clear that the scale of unlawful activity is a major concern for those contemplating investment in innovative content models that rely upon any form of payment.

18. This is unacceptable. The Government considers online piracy to be a serious offence. Unlawful downloading or uploading, whether via peer-to-peer sites or other means, is effectively a civil form of theft. This is not something that we can condone, or to which we can fail to respond. We are therefore setting out in this report a clear path to addressing this problem which we believe needs to result in a reduction of the order of 70-80% in the incidence of unlawful file-sharing.
19. But this is not just about taking action against consumers. Most consumers, except the minority of the anarchic or those who believe in 'freedom to' without its counterbalancing 'freedom from', who believe in unsupported rights without countervailing duties, would prefer to behave lawfully if they can do so practically and with a sense of equity. A recent study in Scandinavia has shown that the biggest users of unlawful peer-to-peer material are also the biggest paid-for consumers of music. Where there are easy, affordable and lawful routes consumers will take them.
20. Digital Britain therefore proposes an equitable framework to bring content-creators, rights-holders, aggregators, distributors and consumers together to create workable and effective online download markets of scale.
21. Central to this new proposition is a series of commercial agreements and business models that give the consumer or the fan highly affordable and convenient content. That includes persuasion and information for the lawfully-inclined consumer and parent on how to access this content and straightforward advice on dos and don'ts, since very few people carry around a detailed knowledge of the intricacies of copyright law. That should be combined with effective sanction against the small minority who believe that others should pay for their pleasure. In short, convenience, affordability and equity.
22. The Government believes that there is now an alignment of a range of operators in the market in support of these objectives. Much of this requires action from the creative industries themselves – in particular though information and the provision of attractive content packages, and we expect to see those industries take the necessary action. Commercially-led solutions remain by far the preferred approach. The Government will look to Ofcom to work with Government departments and other regulators to produce guidelines on how technical measures could be sensibly incorporated within bilateral commercial agreements in a way which will not conflict with other policies, such as those covering privacy.
23. For its part the Government will legislate to provide an underpinning for these market models and to create an enforcement climate that will focus consumers on legal sources of content rather than unlawful ones.



THE LEGISLATIVE PROPOSALS

24. **The Government is therefore consulting on a proposal to legislate to give Ofcom a duty to take steps aimed at reducing copyright infringement. In order to fulfil that duty Ofcom will require ISPs to accept two specific conditions. These are the obligations set out in the Interim Digital Britain Report, namely to notify account holders when informed in an agreed format that their account appears to have been used to infringe copyright and an obligation to maintain and make available (on the basis of a court order) data to enable the minority of serious repeat infringers to be identified. This will allow targeted court action against those responsible for the most damaging breaches of copyright.**
25. These obligations will need to be underpinned by a detailed code of practice. We hope that an industry body (the 'rights agency' envisaged in the Interim Report or 'rights authority' as some now term it) will come into being to draft these codes for Ofcom to approve and we would encourage all rights holders and ISPs to play a role in this. Clearly, however, there needs to be a backstop power for Ofcom to impose its own code if it is satisfied that the industry cannot produce, and has no immediate prospect of producing, a code itself. It is important that this notification process should start as soon as possible and we would encourage industry to start working on a code as soon as the legislation was introduced, with the aim of having an agreed code in place for Ofcom to approve as soon as the legislation was passed.
26. There is evidence that most people who receive a notification stop unlawful file-sharing. This is backed up by survey results which found significant numbers of people say they would stop or significantly reduce their file-sharing activity upon receipt of a notification. Separately surveys indicate there is real interest in new business models that offer a similar experience and content to file-sharing. The recent "Copycats" report by the independent SABIP body showed there is still real confusion over what is/is not lawful and demonstrates the need for widespread education as part of an overall approach.
27. But there are also those who believe that notification, education and the ultimate sanction of legal action will not be enough to make the impact on unlawful file-sharing that we need to see. The Government believe that the notification process outlined here should have the effect of significantly reducing file sharing; but if it does not go far enough then further action will need to be taken.
28. For that reason **the Government will also provide for backstop powers for Ofcom to place additional conditions on ISPs aimed at reducing or preventing online copyright infringement by the application of various technical measures.** In order to provide greater certainty for the development of commercial agreements, the Government proposes to specify in the legislation what these further measures might be; namely: Blocking (Site, IP, URL), Protocol blocking, Port blocking, Bandwidth capping (capping the speed of a subscriber's Internet connection and/or capping the volume of data traffic



which a subscriber can access); Bandwidth shaping (limiting the speed of a subscriber's access to selected protocols/services and/or capping the volume of data to selected protocols/services); Content identification and filtering– or a combination of these measures.

29. These powers should be used if, and only if, the combination of measures set out above has been fully implemented but has not succeeded in significantly reducing the level of unlawful file-sharing. We will ask Ofcom to establish a baseline level of unlawful file-sharing activity at the point at which a code covering notifications and identification of egregious offenders becomes operational, and to make a further measure of unlawful file-sharing activity after the code has been operational for 6 and 12 months to test the efficacy of the notification procedure by the ISPs and the execution of legal action by the rights holders. Other elements of the package such as education and commercial developments would also need to have taken place.
30. If after 6 months there is evidence that the measures set out above, although being effectively implemented, are not having a significant impact Ofcom should consult ISPs and rights-holders on the detail of the additional measures and their operation and work with the industry on drawing up the code of practice changes that would be needed to support them in practical terms in order to facilitate a quick implementation should the need arise. **If at the end of the 12 month period, provided that the combination of measures set out above have been fully implemented and tested and the other factors such as education and commercial developments have been taken forward, it is clear that there has not been a significant reduction in unlawful file sharing Ofcom should move to use its backstop powers to introduce those additional measures. In order to exercise their reserve powers Ofcom will need to consult, and to make an Order in Parliament.**
31. **We are consulting on the trigger mechanism, which we believe needs to give both rights-holders and ISPs strong incentives to make the notification system work.** The Proportionate Notification Response trigger that we propose, should be focused on measuring the efficacy of the scheme involving a notification procedure, legal action and other measures as set out above in relation to achieving the 70% target for reduction in unlawful sharing. We therefore believe that the trigger should be calculated by (a) taking the number of unique individuals notified and (b) assessing what percentage of those notified have stopped unlawful file sharing, either voluntarily or due to prosecution. If that percentage does not exceed or is not significantly close to 70% the mechanism will be triggered (As an illustration: if the baseline unlawful peer to peer universe identified by Ofcom was 100, and notifications were sent to 50% of that universe with prosecutions against serial repeat offenders, the benchmark would be met if there was a 35% reduction in unlawful file-sharing i.e. 70% of 50%).



Legislation to reduce unlawful peer-to-peer file-sharing

The key elements of what we are proposing to do are:

- Ofcom will be placed under a duty to take steps aimed at reducing online copyright infringement. Specifically they will be required to place obligations on ISPs to require them:
 - to notify alleged infringers of rights (subject to reasonable levels of proof from rights-holders) that their conduct is unlawful; and
 - to collect anonymised information on serious repeat infringers (derived from their notification activities), to be made available to rights-holders together with personal details on receipt of a court order.

Ofcom will also be given the power to specify, by Statutory Instrument, other conditions to be imposed on ISPs aimed at preventing, deterring or reducing online copyright infringement, such as:

- Blocking (Site, IP, URL);
- Protocol blocking;
- Port blocking;
- Bandwidth capping (capping the speed of a subscriber's Internet connection and/or capping the volume of data traffic which a subscriber can access);
- Bandwidth shaping (limiting the speed of a subscriber's access to selected protocols/services and/or capping the volume of data to selected protocols/services); and
- Content identification and filtering.

This power would be triggered if the notification process has not been successful after a year in reducing infringement by 70% of the number of people notified.

Other rights issues

FAIR USE

32. A number of people have raised with us during this process whether the current IP infringement framework reflects the digital environment, and whether provisions for 'fair use' by citizens are reasonable. The Government has considered whether, in the round there should also be a modernisation of 'fair use' rights for consumers to reflect the realities of the digital age. The Government has concluded that the scope for such modernisation is heavily constrained within the EU copyright framework. The Government is however considering the scope to amend the copyright exceptions regime where we believe exemptions exist, in areas such as distance learning and the preservation of archive material and intends to announce a consultation on these later this year. Clearly, on the broader question of modernisation of fair use rights, further work remains to be done.



MODERNISING LICENSING

33. The UK copyright framework is 300 years old this year. But it has not stood still. Copyright has had to evolve continually to meet the technological challenges of photography, the gramophone, film, television, the video recorder, the photocopier and latterly the Internet and the World Wide Web. And copyright needs to evolve further in the digital age.
34. The 2006 Gowers Review of Intellectual Property¹⁹ was a groundbreaking exercise, a fundamental review of how the system was working in the digital age. Gowers's frame of reference took the existing international copyright framework at EU and world level as the backdrop, and concentrated on what could be done within the UK.
35. The Gowers Review concluded that while the system was broadly fit for purpose, there were areas for improvement. Since then the Government has been working on implementing the Gowers recommendations (with more than half now completed). In some areas, the process of converting policy recommendations into legislative and institutional change has taken longer than originally anticipated. The challenge however is to get the changes right.
36. But even since the Gowers Review there have been changes in business models and business practice, for example recent developments in music, such as Last FM and Spotify, which show that where the system is failing to serve the needs of users, innovative business models will develop to fill the gap.
37. It is against this background that the Government launched its Copyright Strategy at the end of December 2008. The Copyright Strategy was launched as a debate on the future direction for copyright, with the aim of sparking an open debate on the future of copyright and to move towards a more strategic vision to guide and inform the development of copyright over the coming decades. With this aim in mind, following the launch of an issues paper, four professional stakeholder events were held in London, and several grassroots workshops were held in four cities across the UK in February and March 2009. The output from this first stage of work has now been published on the Intellectual Property Office (IPO) website. The next stage of the process is to start working up solutions to deliver. We intend to continue to consult widely and work with stakeholders across Government.
38. The Copyright Strategy's focus is long term, and global. The Digital Britain report focuses on what needs to be done in the UK. Much of copyright law is an EU competence and the UK must work within that European framework. Nonetheless, the Digital Britain work and the IPO's copyright strategy work have shown that, in addition to completing the work of Gowers in this area, there are changes that could be made at national level which would aid the process of implementing Digital Britain.

19 http://www.hm-treasury.gov.uk/gowers_review_index.htm



Intellectual Property Office's Copyright Strategy

David Lammy MP launched the copyright strategy work in December 2008 so that the UK could build a long term picture for copyright and ensure the system evolves to reflect the digital age.

The IPO has engaged widely with stakeholders, through the Issues Paper that was published in December 2008 and through a series of independently-facilitated workshops for professional copyright stakeholders and also for the "hard to reach" groups, such as members of the public, and in particular artists and consumers.

Work will continue on the strategy throughout the Summer. What is clear though is that changes are needed. Those changes may not necessarily be legislative changes but both within the UK, across Europe and globally there are key improvements that need to be made. Rights clearance and the visibility of rights is a major issue. We must find better ways of navigating the system. We want creators and creative businesses to be paid but we also want to maximise access works. Too often the existing systems seem to be breaking down. This impacts on businesses, who cannot get access to works. It impacts on consumers and wider society as it reduces the pool of content that they can legitimately draw from. It also impacts creativity as untapped opportunities mean less recognition and less reward.

Rights clearance is not the only issue though. The relationship between creators and creative business needs to be a balanced one – there may be steps we need to take here. Equally the societal importance of public policy exceptions must be recognised by the system.

Over the coming months we will be working with stakeholders and across Government as we develop the strategy, exploring how we can make the system work better for those who interact with it. This work will be concluded later in 2009.

ORPHAN WORKS

39. Orphan works are works that remain in copyright where, even after a diligent search, the owner cannot be identified or found. Anyone who uses orphan works on a commercial scale currently risks not only civil but also criminal liability.
40. It is frequently assumed that orphan works consist of largely forgotten books in the stacks of public libraries and second-hand bookshops. The British Library for example estimates that some 40% of their archive count as orphan works. This represents an enormous cultural heritage to which the public cannot get access. Mass digitisation projects, which could put forgotten works back digitally onto the cultural map, are thwarted because of the orphan works problem.



41. But orphan works are not limited to ancient books. The BBC estimates that around 1 million hours of programmes sits in its archives, where the complexity associated with identifying, checking and clearing rights will require imaginative new solutions in order to be addressed. Photographers are concerned that photographs posted on websites frequently lack identifying metadata, and hence the evidence of ownership is lost. Orphan works are being created in growing numbers. Not only are creators losing a source of income, but important cultural assets remain under lock and key because of the legal difficulties associated with using these works.
42. The digital age has ushered in new marketing opportunities for creators and rights holders, and with that the possibility to carve out ever more sophisticated rights and sub-rights over creative works. So rights have grown in both diversity and volume. If the copyright system is not to inhibit the move towards a fully Digital Britain, it is right that the framework should keep pace in order to reflect these developments.
43. Following work done by the European Commission (The EU's High Level Expert Group on Digital Libraries), much work has been done on proposals for "voluntary" schemes, based on the grant by collecting societies of licences for commercial and non-commercial use. Voluntary in this context means operating within the current legislative structure and without specific Government endorsement or approval. But the operators of schemes cannot avoid criminal liability, and the Government cannot absolve them from such liability, without change in UK legislation. **In order to pave the way for a more effective framework to deal with orphan works, the Government proposes to introduce legislation to enable commercial schemes for dealing with orphan works to be set up on a regulated basis.**
44. **As such a scheme would enable the operators of orphan works schemes to grant rights without the consent of the rights holder, appropriate safeguards will need to be put in place. The form of the new legislative provisions will be outlined fully as work progresses on how such schemes might be administered. However, the expectation is that anybody wishing to use orphan works will be expected to secure an appropriate permission from the Government first, and permission will only be granted where the proposed operator can satisfy the Government that the business methods and procedures involved satisfy key minimum requirements, including making appropriate searches for the true owners and making provision for the reimbursement of rights holders who are subsequently found and claim for the use of their work.**
45. This work will also explore the extent to which powers to grant rights over certain works could be exercised by collecting societies or equivalent bodies through an extended collective licensing arrangement as operates in the Nordic countries. This would permit collecting societies or equivalent bodies, subject to appropriate safeguards, to assume a mandate to collect fees on behalf of rights holders who have not specifically signed up to that society.



46. These provisions, which have operated in Nordic countries for many years, would help streamline the problem of rights clearance. If a rights holder wishes to opt out of an extended collective licensing system, then they will have that option – thus maintaining control over their exclusive right. It will extend the ability of consumers to enjoy cultural works and it will collect royalties for the benefit of creators. That is good for creators and simpler for consumers and businesses.
47. The Government intends that any new powers for collecting societies should be balanced with appropriate responsibilities. This will require institution of the necessary provisions to ensure that the balance between consumer and rights holder interests are maintained. These provisions should include adherence to agreed Codes of Practice, including greater transparency and improved complaints handling procedures to give aggrieved users, whether members of the societies, consumers or businesses more effective redress short of having to go to the Copyright Tribunal.

MATCHED PENALTIES FOR ONLINE AND PHYSICAL COPYRIGHT INFRINGEMENT

48. The Interim Digital Britain Report clearly identified the need for an enforcement framework which is the product of the digital age; it needs to recognise the rapid growth in digital accessibility and outlets and the parallel growth in online IP crime. At the same time, the current criminal legislation presents an anomaly in failing to recognise the growth in online Intellectual Property (IP) offences.
49. Recommendation 36 of the Gowers Review called for the matching of penalties for both online and physical copyright infringement by amending section 107 of the Copyright, Designs and Patents Act 1988 (CDPA), backed up by custodial sentences.
50. In line with an agreement between Ministers in both DIUS and MoJ and a commitment in Creative Britain (2008), the Intellectual Property Office in August 2008 launched a consultation document: "Taking forward the Gowers Review of Intellectual Property: Penalties for Copyright Infringement". The consultation invited responses based on three main options to introducing exceptional summary maxima (above £5,000) in the Magistrates Courts for IP offences.
51. The consultation ended on the 31 October 2008. Many responses endorsed the option to introduce exceptional statutory maxima of £50,000 for all IP offences and as a result of this support it is intended that this option will be adopted. The need for securing implementation on matched penalties has also been emphasized during a recent Lords debate on digital piracy.
52. **The Government therefore intends to address this issue in line with the other legislative changes detailed in this report.**



A ROLE FOR RIGHTS-BASED FUNDING MECHANISMS?

53. The Interim Digital Britain Report noted the impact of the changing economics of the digital market on the funding of content. Ofcom estimates that total spending on UK originated content was £314m lower in 2008 than in 2004. The Government invited views on possible alternative funding mechanisms for content in the digital age. Three credible possible approaches have been put forward by industry:
- Retransmission: removal of section 73 of the Copyright, Designs and Patents Act (CDPA);
 - Reuse: charge consumers for the right to copy using recording equipment; and
 - Micropayments: pay-per-view charges for on demand audio-visual content, which we cover later in this Chapter.

RETRANSMISSION (SECTION 73)

54. Section 73 exempts cable broadcasters from paying a copyright fee for the retransmission of certain wireless broadcasts within a limited geographical area, provided that they are:
- Received wirelessly and immediately retransmitted by cable; and
 - Retransmitted in the area for reception of the original broadcast.
55. It was created to encourage infrastructure firms to lay cable networks and to allow diffusion services to operate, ensuring access to Public Service channels for as much of the population as possible, with households in remote areas not obliged to pay more than those in urban areas.
56. Section 73 provides that neither the copyright in the wireless broadcast nor any underlying copyright is breached for the retransmission of specified wireless broadcasts by cable operators.
57. Section 73 only relates to cable operators, and does not provide any retransmission exemption for satellite or other platform operators. BSkyB, for example, has a commercial agreement with the wireless channels listed under section 73 to retransmit their live broadcasts over its satellite platform.
58. Some industry participants believe that Section 73 should be removed with a 'must offer' provision enacted to ensure continued provision of public service content over cable networks. The 'must offer' would enable broadcasters to agree terms with cable operators through a commercial negotiation, within reasonable bounds, and generate incremental revenue that could be reinvested into content creation. Oliver & Ohlbaum estimate that the UK could generate c.£83m pa by 2012 and c.£90m pa by 2015 through retransmission fees.



59. Satellite operators provide a useful case study as there is no Section 73 provision. A fee is paid to the broadcaster for retransmission of copyright material, and in return the broadcaster must pay a carriage fee to the satellite operator. This is arranged through a commercial negotiation between the operator and broadcaster. It is understood that the current arrangements for BSkyB in the UK transfers no value between the operator and broadcaster, either because the retransmission fee equals the carriage fee, or because the fees have been negotiated to zero. It is likely that a similar situation may result for UK cable operators, generating no additional revenues for the UK television industry.
60. Section 73 only applies to cable operators, so its removal offers limited potential for incremental revenues given that there is currently only one national cable operator in the UK (i.e. Virgin Media). There are further challenges relating to the BBC's ability to accept commercial funding and advertiser-funded broadcasters charging to broadcast their adverts on a subsequent platform.
61. The Government therefore remains unconvinced that the removal of section 73 will generate the necessary future revenues to fund content creation in the UK, without unacceptably adverse consequences.

REUSE – THE RIGHT TO RECORD

62. Recording equipment (e.g. PVRs, DVD Recorders) enables consumers to record copyright material that can be viewed at the leisure of the consumer over an indefinite period of time. The market for recording equipment is growing, and forecasts suggest that consumers are increasingly turning to time-shifted and non-linear viewing.
63. Industry participants argue that consumers should pay for a 'right to copy', reimbursing the copyright holder for the privilege of (a) retaining a recording of the material, and (b) being able to watch the material outside of the linear broadcast window.
64. The UK music industry already has a well established licensing regime for audio copyright material, and it is argued that this should be replicated for visual content.
65. A system of reuse charges already exists in Europe, generating €568m in 2004 across the 22 EU states that employ it. Most of this income is recycled back to the copyright holder, with a proportion retained for national cultural initiatives. Oliver & Ohlbaum estimate that a similar system in the UK could generate c.£176m pa by 2012, and c.£206m pa by 2015 in reuse charges.
66. In the UK, however, broadcasters already benefit from substantial public intervention of a kind not available in a range of other EU States e.g. the TV Licence fee, direct Government grants and regulatory assets (e.g. spectrum allocation, EPG position). While the Government recognises that a reuse system has the potential to generate significant incremental revenues for UK content,



it is not persuaded that in the current economic climate it would be right to add to the retail cost of recording devices. **Government will keep this issue under review and will invite Ofcom to assess the cost/benefit and framework required for the introduction of 're-use' fees for private copying and format shifting.**

Interactive content: converting creativity into value

INNOVATION IN CONTENT CREATION AND MONETISATION

67. The yield on high-priced inventory based on geographic or demographic monopoly access is being rapidly diminished by structural as well as cyclical changes. The ability to create new monetisation models is critical. It is also necessary to find new payment methods suitable to an era of multiple small on-demand purchases rather than single, larger purchases of the physical version of the audio-visual product.
68. Content providers are experimenting with a wide range of business models, from embedded and behavioural/targeted advertising, pay-per-use (though there are few successful examples of models that do not include an element of platform aggregation, such as Apple iTunes or the iPhone App Store) others are experimenting with "freemium" models, whereby content is initially offered for free and supplemented with a tiered pricing structure for premium use. This allows the content provider to take the best of both worlds by attracting mass audiences at one end, while at the other end retaining dedicated users who would be willing to pay for additional features.

New Business Models

Spotify

Spotify is an innovative digital music service that provides free and legal access to a vast library of albums and artists from across the world, while allowing music to be shared with friends via email or instant messenger.

The service is primarily funded through advertising embedded into the music stream, but also offers a premium paid-for 'day pass' and monthly subscription. By April 2009 Spotify had reached 1 million UK users.



Habbo (Sulake)

Habbo is one of the world's leading virtual worlds for teenagers. It allows users to create their own activities, interiors and games by collecting and trading virtual items, such as furniture, which provide 'status' to users.

Entry to Habbo World is free and users purchase virtual items using real money through a number of different payment methods, including Premium SMS, credit cards and single or multi-purpose prepaid cards. Premium SMS has proved the most popular due to the age group of users, but Sulake are now looking to move towards a differentiated micropayment service.

The site is further supported by advertising, including sponsored events and branded virtual items, providing an innovative and effective way for advertisers to engage with teenagers.

Habbo boasts 132 million registered users worldwide, of which 16 million are based in the UK, and this has helped to drive revenue growth of over 20% per annum since 2005.

Guardian Open Platform

Open Platform is a suite of services that allow partners to build new and innovative content and applications that piggy-back on core content and data from the Guardian's archive. Launched in March 2009, the platform had granted over 300 API licences within 6 weeks with 45 sites and services now live in the public domain. The service will remain in beta while the infrastructure costs and revenue models are finalised.

The service is offered for free, allowing developers to trial small-scale applications and experiment with no charge or commitment. The Guardian envisages that usage will remain free for most users, as they will likely extend the Guardian's reach into markets where its content is not currently available or in demand.

For users who drive substantial amounts of traffic, or who can demonstrate the creation of new revenues as a result of using Guardian content and data, it is envisaged that a shared advertising model will be deployed. As the Guardian has the scale to supplement small publishers, and already has the advertising platform, a shared revenue stream should benefit the user more than their own ad network, while providing revenue to Guardian New Media to offset the infrastructure costs.

Finally, for conventional publishers who wish to use Guardian content to supplement their existing products, the current models of paid syndication will remain.



The British Library

Containing 750,000 million pages, the British Library's newspaper collection is held in hard copy and/or microform for preservation purposes. To provide greater access to and preservation of this precious part of our collective history the British Library aims to undertake mass scale digitisation. For example, in one partnership with the Joint Information Systems Committee (JISC) and a commercial partner, over two million out of copyright newspaper pages have been digitised and made fully searchable online. Content is drawn from some 49 19th century titles. Available via the 19th century newspaper service <http://newspapers.bl.uk/blcs/>

The service is available free of charge to Higher Education and Further Education institutions. There is also a separate paid for service for individuals, and a commercial, subscription-based service for non-UK markets. The service is available free of charge in the Reading Rooms at the British Library's own sites. This mix of 'free and fee' access models allows both the Library to receive royalties which can be ploughed back into Library activities, including future digitisation. This service has already transformed online access to newspapers, and the chosen hybrid business model demonstrates the benefits of a public/private partnership for large-scale digitisation.

69. The Government is today publishing a research report which it commissioned from Analysys Mason to help inform what, if any, industrial activism by Government would be appropriate in the nascent interactive media sector.
70. Given the rapid growth of the market, its fluidity (to the point where very few operators, have clear monetisation strategies), the central thrust of the research is that the emphasis should be on giving businesses the necessary freedom to innovate and continue exploring new opportunities.

Analysys Mason

Analysys Mason was commissioned by DCMS to assess the drivers of and barriers to creative ambition in Digital Media in the UK. Through an extensive programme of interviews with industry players and stakeholders, Analysys Mason articulated the following findings:

1. Despite a cyclical downturn observable at the moment, innovation funding does not appear to be a structural issue, besides areas of public-service provision already identified by Ofcom in the recent PSB review. This assumes that the current level of funding already provided through the PSBs, public sector procurement and the finance community is sustained.



2. While current revenues available online are limited, market players are continuing to pursue new monetisation options, and some interviewees believe there exist significant opportunities in this respect.
3. There is potential for changes in the rights regime to enhance the exploitation of traditional content in the online world.
4. The development of common standards for delivery of online content has the potential to deliver significant benefits to content producers.
5. Given its scale in the online market, public sector investment in online content (including multimedia and interactive websites) may provide a significant stimulus to the market.
6. The Government can act to lower regulatory barriers to a more dynamic online content sector, but intervention must be considered carefully to limit market distortions.

Most respondents expressed strong views that the Government should not impose additional regulatory burden unless absolutely necessary, and should not in any case substitute itself to the market and try and "pick winners".

The market for New Media in the UK is still in its infancy. As such, it is difficult to ensure that issues identified are truly non-transitory market failures. As the market matures, however, Government should remain vigilant to ensure the best possible outcome for the sector and the economy as a whole.

The Government does have a role to play, however, in ensuring that dialogue between different players in the value chain is well-informed and constructive, and that the environment in which UK companies evolve is as favourable to innovation as possible, particularly where such innovation can generate international revenues for UK firms.

71. The Analysys Mason Report did not see the case for the sort of large scale intervention that a small number of other governments have embarked on. It has, however, identified a limited number of issues where focused and targeted steps by Government could help this nascent market to develop further. This includes targeted support for innovation.

DIGITAL TEST BEDS TO TRIAL NEW PRODUCTS AND BUSINESS MODELS

72. Across the UK individual and corporate innovators are undertaking research, trials and market experiments with their own money to establish what might work in the new digital age. All business models will, for obvious reasons, be based around where an individual or firm can gain advantage. But that leaves a wide range of cross-sectoral issues that require cooperation or where no one party has an interest in driving to a solution. In these circumstances Government may have a role in bringing the parties together in a 'safe harbour'



for pre-competitive innovation or in addressing wider social barriers to take-up that would otherwise act to frustrate the market.

73. **These models are the Digital Test Beds for Digital Britain.**
74. The research by Analysys Mason has highlighted the difficulties in trialling new business models involving the use of IP: *“Rights holders find it hard to understand what business models will enable them to protect and monetise their rights online, and they are concerned that making rights available for use in unproven models may lead to piracy and generally a loss in the value of their rights.”*
75. NESTA, has already undertaken some useful work on in this area, and together with a cross-sector range of partners, will launch later this year through its Connect Programme a new £1.5m trial of innovative digital projects which have participation and user-centred business models at their heart. A major research and networking effort will ensure that the lessons from experimentation are disseminated widely across the UK.

NESTA’s Connect Programme

NESTA’s Connect Programme is leading a new experimental initiative to test the potential of collaborative and user-centred business models made possible by digital technology. The Programme will be open to partners from all sectors and will manage a portfolio of experimental activities such as:

1. Rapid prototyping for social change: Social Innovation Camp is a process which creates prototypes of socially-oriented web services over the course of a dynamic weekend. The Programme will partner with Social Innovation Camp to develop a new longer-term process which takes high-potential ideas to investment-readiness.
2. Digital innovation in finance: This initiative will identify and support new opportunities for how digital tools can radically change the nature of financial services, as UK-based businesses such as Zopa are beginning to demonstrate.
3. Showcasing and thought-leadership: the Programme will showcase and celebrate the best ideas and projects based on collaboration and participation. This will be supported by practically-oriented research that addresses how our most pressing social and commercial challenges can be tackled using participatory and grassroots approaches.

Source: NESTA

76. As recommended by NESTA in their submission to Digital Britain, a number of Next Generation Digital Test Beds will be established across the UK providing a forum to develop and trial end-to-end online propositions, to understand how users respond to these new or alternative offerings, and to



- investigate the working relationships that will be most successful, profitable and robust in the future.
77. These would comprise trial zones providing low cost, low risk opportunities for industry to experiment with new ideas in real world environments, and collect data to probe the performance of these ideas. On an individual basis, participating companies would be able to trial and optimise their own products and business models pre-launch or while under development. Collectively, the Test Beds would bring together participating companies from across the value chain (including network owners, operators and content providers) to learn from each other, share experiences and collaborate on cross-industry initiatives. The Test Beds will involve thousands of real Internet users, forming a balanced and representative population encompassing personal and business environments.
 78. **The Technology Strategy Board will lead and co-ordinate the necessary investment for Next Generation Digital Test Beds and has allocated an initial budget of up to £10m for this purpose.**
 79. Four initial areas have been identified, where industry partners are willing to take the action forward. All are in the cross-cutting and pre-competitive stage of innovation. They are:
 - New monetisation methods for online content, such as on demand video and music, through micropayments as discussed below, embedded or personalised advertising or other means.
 - Alternative business models to encourage the sharing and exploitation of intellectual property to reduce incentives for piracy and other illegal use by maximising the opportunities to monetise these popular methods of acquiring content.
 - New models of identity management, security and privacy and new ways to design security and resilience into systems from the start, to help reinforce consumer confidence and trust in their privacy and security and hence their readiness to engage willingly with the new business models, applications and services.
 - Context and content-aware network operation where knowledge of the nature and ownership of data traffic enables its intelligent management, to improve quality of services and to enable monetisation, protection and security models as above.
 80. These Test Beds will not necessarily be restricted to wireline Internet access, but may extend to include service delivery through televisions and set-top boxes, mobile devices and phones, and could also be used to trial automated systems such as smart meters and buildings monitoring.
 81. The Test Beds will operate at multiple sites across the UK with different characteristics, reflecting the real-world situation. They will include fibre-connected home users, as well as wireless, satellite and ADSL-connected groups.



This will allow behaviour over different access networks to be compared side by side. To represent the future mix of access types, the Test Beds will particularly need participation of people within the current next generation broadband areas set up by regional agencies and by commercial infrastructure owners. In addition, the trial scope will take into account participating users' mobile access to services and content.

82. The Test Beds will record consumer, network and revenue stream data from controlled experiments, such as introducing new services, changing network operating characteristics, or altering the way providers are rewarded for their services. Many thousands of users will be needed to form a representative population. Analysis of this data will provide direct feedback to the participating businesses on the relative success of different approaches; by subsequently disseminating this understanding across the industry, other players in the UK marketplace will be guided in their own development efforts.
83. Industrial partners will be recruited for the construction and operation of the networks. The Digital Communications Knowledge Transfer Network (KTN) and ICT KTN will assist the Technology Strategy Board in assembling the necessary consortia, including infrastructure owners and operators and service platform providers, and the Creative Industries KTN will have an important role in engaging content creators and owners. Initial indications are that there is considerable enthusiasm from business to participate.
84. Among the first such partnerships could be the project to explore how micropayment mechanisms could evolve for video on demand content. The success of Virgin Media's on demand service demonstrates that there is a clear and substantial market for VOD delivered to the television. Virgin's television subscribers account for approximately a quarter of monthly views on the BBC's iPlayer, with 52% of Virgin households using the service. Channel 4's experience has shown that consumers regard catch-up and on demand viewing via the television as significantly more appealing than via the PC, with 4oD TV achieving 5 million monthly viewers compared to the 2 million of 4oD Catch-Up.
85. Catch-up services have traditionally been positioned as 'add-ons' to linear television, provided free to the viewer and only available after the primary broadcast. Yet as the service evolves, offering improved convenience, quality, a wider library of content and the potential for interactivity, on demand viewing may be elevated to a superior service from which broadcasters could earn a return.
86. However, the experience of Channel 4's video on demand service, 4oD has shown it is difficult to establish a pay-per-view model for on demand content. When it was launched in 2006, 4oD charged consumers 99p per show to view or rent. Combined with a time-consuming billing process, the service achieved less than 1000 views per day.
87. FremantleMedia proposed in their submission to Digital Britain a micropayments system for on demand viewing whereby viewers are charged as



low as 5-10p per programme. This equates to the equivalent revenue generated per viewer hour from advertising on the primary channel, and sets a price level capable of competing with free. Indicative research conducted by FremantleMedia on consumers' willingness to pay suggests a high level of acceptance of a pay-per-view model, particularly in the range of 20p and below.

88. Setting prices at such a low level poses challenges for the billing mechanism. It is also unlikely that for such small sums of money, consumers would willingly establish billing relationships with multiple suppliers. The challenge would be to establish a single billing agency, capable of providing an open and transparent service to all rights holders that is independent of industry participants and that would develop low-cost billing relationships with UK consumers for on demand content. The agency would be designed to support a wide range of pricing strategies controlled by the rights holder, and offer the simplest possible user experience through 'single-click' payment.
89. The Technology Strategy Board will work with industry partners to assess the feasibility of such a system.

EXTENDING EXISTING INTERVENTIONS TO INTERACTIVE CONTENT

90. In Animation, Computer Generated Imaging (CGI), electronic games and other interactive digital media applications, the UK has over the last 15 plus years more than punched its weight in global markets, whether in terms of awards and recognition or its creative excellence and in jobs and wealth from its business innovation. Businesses that employed two or three people at the beginning of the last decade are now multi-million businesses employing hundreds of very high-skilled digital creatives. They combine skills and disciplines in a way that few have before: the CGI for the anti-hero in the most recent *Batman* film came out of London and from designers who combine the talents and skills of artist, mathematician and computer programmer. Hollywood may still lead the world in movies, but much of the 'soft infrastructure' comes out of British creative digital talent.
91. The challenges and opportunities for this important sector of creative Digital Britain are well exemplified by the changing fortunes of the UK electronic games industry. The global games market is rapidly expanding, with a compound annual growth rate of 10.3% and projected worldwide sales of \$68.4bn by 2012.²⁰ The UK video games industry is currently highly placed in the global games marketplace:
 - UK is the world's third largest games producer by revenue behind only the US and Japan;²¹
 - In 2008 UK-developed games software generated more than £2bn in global sales;²²

20 PWC: Global Entertainment and Media Outlook 2008-2012

21 Games Investor Consulting

22 Games Investor Consulting



- The turnover of the UK games market (games consoles, software and accessories) is on an upward trend, increasing significantly from £2.18bn in 2006, then £3.356bn in 2007 to £4.034bn in 2008;²³
- There are currently 10,000 games developers, predominantly graduates, working in the UK and according to industry figures they each generated £124,000 in global sales in 2007 (compared to £49,000 for each worker in the UK film industry);²⁴
- The UK games development sector has a worldwide reputation for creative and highly skilled workers, producing global successes with the production of original content such as Grand Theft Auto, Tomb Raider, Lemmings, Lego Star Wars and LittleBigPlanet.

92. This position of strength is being challenged in three key ways.
93. Firstly, while the UK offers many benefits to investors, it is competing for investment against lower-cost countries. Some established UK companies have located investment overseas, in countries such as South Korea and China, to exploit these lower costs. Some locations, including provinces in Canada, also offer sector-specific support for video games developers.
94. UK games development is predicted to drop gradually down the world rankings. In 2009, on our current trajectory, the UK is expected to fall to 5th behind Canada and, for the first time, South Korea. China will climb fast up the global rankings to appear in 6th place in 2009 and 4th by 2010.²⁵ While our major competitors' territories will grow, analysts claim the 8% growth rate in the UK's development employment since 2006 will not be maintained.
95. Secondly, there is a shortage of skills. Instability and lack of adequate skills provision threatens to undermine the growth of the UK games industry, damaging the UK's position in this growing sector. UK studios are expressing concerns about the loss of experienced staff, targeted to move to companies in the US and Canada. Companies are also actively avoiding recruiting from many of the UK's Higher Education games courses, most of which they regard as inadequate, preferring maths and science graduates, exacerbating the shortage.
96. Thirdly, there are few indigenous UK IP owners. Although the UK games development community is recognized for its ability to create original IP, most independent studios do not have access to adequate support in order to maintain ownership of this content, and have to relinquish often 100% of the IP rights to (mainly) non-UK publishers, in return for initial investment.
97. These risks are offset to an extent by new business models and opportunities emerging for developers.
98. It's no longer just about high-end, boxed games. New routes to market are offered on the back of the growth of online delivery – such as PC and console

23 ChartTrack/ELSPA

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- down-loadables – as well as new platforms like the iPhone. There have been over a billion content downloads on the iPhone since launch and games are the most popular category. In the top 100 iPhone applications, 60% are games.
99. We need to ensure that UK-based games businesses are well placed to develop for the new markets and delivery channels and able to effectively monetise these opportunities.
 100. **Digital Britain recommends three actions to address the challenges identified above to this important interactive digital sector.**
 101. In film a system of cultural tax credits has long helped to sustain a wide range of films that speak to a British narrative, rather than the cultural perspectives of Hollywood or multinational collaborations. Other countries such as Canada, for similar reasons, extend the model of cultural tax relief beyond the film industry to the interactive and online worlds. CGI, electronic games and simulation also have a significant role in Britain's digital content ecology and in our international competitiveness. Each of these has the same capability as the more traditional sectors, such as film, to engage us and reflect our cultural particularism. They may in future have a cultural relevance to rival that of film. **The Government has therefore committed to work with the industry to collect and review the evidence for a tax relief to promote the sustainable production for online or physical sale of culturally British video games.** This work will balance any potential support with the need for fair competition and ensure value for money for taxpayers.
 102. Our objectives are to:
 - Support the creation and retention of new IP and technology in the UK and the emergence and growth of new companies;
 - Maintain a critical mass of UK creative and technical expertise to facilitate the production of culturally British video games;
 - Encourage the production of culturally significant video games that may otherwise not be made in the UK.
 103. The Government has committed to work with the industry to collect and review the evidence balancing any potential support with the need for fair competition and ensuring value for money for taxpayers.
 104. **Secondly, in relation to skills, the measures set out in Chapter 6 on skills for Digital Britain are clear recognition by the Government of the importance of this issue. The forthcoming Higher Education Framework and its shift in incentives from purely demand-led emphasis in courses towards meeting recognised skill gaps; developing and promoting Graduate and post-Graduate courses that combine 'hard' excellence in Science, Technology and Mathematical skills with the 'softer' excellence in business and creative skills mark a sea change in the Government's approach to the Skills for Digital Britain.**



105. **Thirdly, and linked to this, we will examine the options arising from a feasibility study into a new Usability Centre for Video Games.**
106. The feasibility study, commissioned by the North West Regional Development Agency together with industry partners, conducted preliminary research into the industry appetite for a video games centre of excellence in the UK. The Report proposes a model of support which combines usability testing, applied research, internship training and public interface components in a single facility to be based in the MediaCity complex in Salford. Locating the Centre within MediaCity would exploit the benefits of co-location with the BBC, particularly in relation to their Children's and Sports Department, Interactive Education and Literacy Department and key parts of the Corporation's R&D operations, all of which will be based there. The Centre would be a national resource with companies from any part of the UK able to use the available facilities.
107. The primary aim of such a Centre is to address issues around skills development offering graduates the work related training necessary to enable them to secure their first job in the industry and helping to bridge the current gap. The opportunities offered would build on existing training and skills work such as that established by the University of Abertay, Dundee, who have demonstrated how to successfully equip graduates for work in the industry.
108. We will work with industry and expedite the collection of further evidence in order to ensure the scope of the proposal meets the industries' needs. We will also consider whether or not there is a case for providing funding from the Strategic Industry Fund following the development of a business plan.

Virtual worlds

Virtual worlds are online simulated persistent environments where users are able to interact with each other in real time using 2-D or 3-D graphical representations of themselves (ie avatars). There are many types of virtual worlds already – for entertainment, for social interaction, for work collaboration, for education.

The potential reach and scale of virtual worlds is exciting. For example, Habbo, the virtual world for 8-14 year olds has had 130 million registered users and receives 2.7 billion visits per month from young people across Europe, Asia and the Americas.

Virtual worlds may offer business benefits and opportunities in relation to enhanced interaction with customers, efficiencies, environmental gains, international collaboration and knowledge transfer.



In public policy terms virtual worlds offer interesting scope – for example for citizen engagement and for education – but also significant challenges given that they operate across national boundaries.

Both those that develop virtual worlds and those that use them may have to deal with legal uncertainties when local laws and customs – for example on commerce, taxation, data privacy, child protection – vary. Governments need to ensure that any regulatory responses are appropriate for these emerging technologies that are by their very nature trans-boundary. Governments also need to ensure that these virtual worlds do not become a low-risk haven for crimes such as money-laundering.

The UK has taken a leading role in initiating international discussion on the public policy implications of virtual worlds, for example with a highly successful workshop for OECD member countries – on Innovation and Governance in Virtual Worlds – staged jointly with the OECD’s Committee for Information, Computer and Communications Policy in March 2009. As a result the OECD member countries have now proposed that OECD should commence a major study on virtual worlds. BIS has been asked to draft the Terms of Reference for this work and present these at the OECD Working Party on the Information Economy meeting in June.

DIGITAL BRITAIN: FILM, CINEMA AND LITERATURE

109. The public policy objectives in film remain the same in the digital world as in the analogue: widening the audience for cultural film and enhancing the sustainability of culturally-specific British films. But the emergence of digital technology in recent years has provided a vital opportunity to create a dramatic change in the cinematic experience, through greater access to an even wider range of films and other cultural experiences such as opera and music concerts. Crucially, it allows the deployment of new and developing technologies such as the re-emergence of 3D film.
110. Uniquely amongst audiovisual media, film has a dedicated social and communal space in which to be exhibited – the cinema. It has occupied a vital part of the cultural lives of the people of this country for over a century, and in recent years cinema attendance has been growing steadily, along with the range of films that people have been watching.
111. However, the technology used in the cinema has hardly changed in the last hundred years. The majority of cinema screens still operate 35mm celluloid film projection equipment, which is only designed to show one particular format and must be physically transported to and from locations as needed. This restricts access to content and so limits the democracy of distribution; only those producing 35mm output can screen their content via the cinema.



112. The cost to cinema chains – large and small – and independent exhibitors of this “digital switchover” have for a long time been prohibitive. Whilst exploitation of the digital model would and does offer significant savings, such as the cost per copy of a film, each digital projector can cost up to £80,000.
113. Schemes have been developed to promote the take up of the technology. The UK Film Council’s £12m Digital Screen Network equipped around 240 screens (approximately 8% of all screens) in over 210 cinemas with state of the art digital projection equipment. The larger cinema chains are already beginning to implement their own digital conversions, and so the UK’s position at the forefront of European digital cinema looks set to continue.
114. We also note the importance of the BFI National Archive in ensuring the richness of the film and television collections in the UK. Following the last Comprehensive Spending Review, £25 million was awarded in support of a Strategy for UK Screen Heritage, to realise the huge potential of both the BFI’s own and the numerous other regional collections. The BFI have now established a programme office to deliver that strategy to ensure that the public are able to access, learn about and enjoy their rich screen heritage wherever they live and wherever the material are held. The Government is greatly encouraged by the progress of this venture.

LITERATURE

115. PLR is a small public body that oversees the Public Lending Right which makes compensatory payments to EU authors (including writers, translators, editors and illustrators) for the free loan of their books through UK public libraries. It’s a popular scheme and an interesting relationship between public and private sectors, linking public libraries and rights holders.
116. The key issue is the scope of their primary legislation (1979), which talks only of “books” and excludes by omission other formats of publication such as audio books and e-books, which are becoming increasingly relevant to public libraries. The Government have received formal proposals from the APPG on Writers to make such changes to the PLR Act. The Government is sympathetic to these representations and will consider an early legislative opportunity to make this modest but useful intervention ‘digital-ready’.
117. Much as the digitisation of the music and audio-visual industries led to radical change in those industries, so the introduction of e-books as a mass-market consumer offer is likely to have a significant impact on the publishing industry. Such devices are beginning to be available in the UK and e-books are available to download to other handheld devices such as the iPhone and the Nintendo DS. Following the lead of sites such as Amazon, Borders, the bookseller, has recently launched a new section of their website making over 45,000 e-books available in the UK.



118. The arrival of e-books provides further choice for consumers. Over time, the technology will of course develop and more and more services, such as newspaper downloading to e-readers, will become the norm. It is important that industry sensibly manages that development, learning from the many experiences of other industries, in particular the question of open versus proprietary standards, the effective use of Digital Rights Management technologies for industry and consumer and the appropriate pricing of digital products to reflect consumer expectations.
119. The example of e-books highlights one aspect of a much broader issue: that of inter-operability. In networks and in devices, consumers will increasingly come to demand seamlessness, in which the content they seek is available and consumable over whatever platform and device they wish to use. This is the promise of convergence. While many business models have been built on exclusive access to services and content, a gradual breaking down of technical standards barriers through inter-operability will ensure that short term customer gain does not freeze out the long term development of a converged market.



CASE STUDY

Retirees: Lee Masefield

Richard and Lee Masefield, retired farm-owners in Sussex, both have mobile phones. But they are rarely switched on. Most of the time, the handsets are kept in the car for emergencies.

"I hate to see people on phones all the time, especially texting. It stops people actually talking to each other," says Lee, who moved to the UK more than 40 years ago after growing up on a farm in Australia.

While mobile phone use is frowned upon in their farmhouse, the grandparents – whose three children have all left home – have begun using the Internet and emails to keep track of their family. Lee also admits to the "occasional bits of online shopping, but we're not madly keen on it".

She also does not like personal music players or video games, describing them as a waste of time. "People should just get out and play sport."

When they do use the Internet, it's mainly to check the weather or to research a book Richard is writing. Yet digital technology has not been ignored altogether. Lee says the retired couple have signed up to Skype, the Internet telephony service.



Chapter 5

Public Service Content in Digital Britain

"Let us be the generation that reshapes our economy to compete in the digital age."
President Barack Obama

AMBITION: TO ENSURE THE PROVISION OF ENGAGING PUBLIC SERVICE CONTENT OF QUALITY AND RANGE, FROM MULTIPLE PROVIDERS ON MULTIPLE PLATFORMS, TO A WORLD-CLASS STANDARD

A renewed commitment to public service content provision in the digital world

1. The changes described in the preceding chapters have a significant bearing on the public service content that, as a society, we both want and can get.
2. Public service content in Digital Britain now comes from a much wider range of sources than in the analogue age. Public cultural institutions like Tate, the Royal Opera House, the RSC, the Film Council and many other museums, libraries, archives and galleries around the country now reach a wider public online. Online and on-air, the subscription-funded market provides a wide range of public service content from history and science and arts to material for younger children and national and international news.
3. Inevitably much debate about public service content focuses on broadcasting because we are still in an age where mass transmission and mass reach predominates and the genesis of the market interventions was from that mass, analogue world. As in other parts of this Report, we need to work through the implications of the transition from analogue to digital in the context of public service content.
4. It is not yet clear at what point technology and users will cross over from an environment where content is consumed passively through the linear schedule



to one where content is consumed actively through search and on-demand. Measures set out in this Report will accelerate the not-distant point when that occurs. For thousands of website designers and creators and independent producers this offers great opportunity. For traditional mass broadcasting it offers challenges. The BBC, with its secure and significant funding stream has spread into this online, on-demand and search-based world. Channel 4, smaller and more commercially focused has been rooted more firmly in broadcast, but has recently made some moves into the new world via its materials for schools and 4IP.

5. We believe this backdrop poses five key questions in relation to public intervention:
 - firstly the evolving role of the BBC in this new environment;
 - secondly, the changing role and remit of the Channel 4 Corporation as a multi-media public service counterpoint to the BBC;
 - thirdly, whether we are getting the most from or maximising the visibility to our other publicly-funded content brands;
 - fourthly whether there are any categories of content beyond plurality of news, which this Report validates as a special category, which might justify public intervention; and
 - fifthly, the scale and pace at which the Channel 3 and Channel 5 broadcast licensees move from public service to wholly commercial operations.
6. The market in Digital Britain is much more efficient. But that means it is also much more precise about what consumers are willing to pay for – implicitly or explicitly – than in the days of analogue. The surplus generated by premium advertising was sufficient to allow the implicit subsidy of public or social goods. In a sharply focused digital market this is proving unsustainable or at least can no longer be monetised to the level of sustainability. That subsidy sustained commercially-funded high-end drama, documentaries on television, investigative journalism, and a long list of genres each with passionate if numerically small audience followings, even to detailed court reporting at the level of local and regional media. But that subsidy is no longer available. If the models to provide some of these genres through television commissions are faltering, the new opportunities online enable arts and other genres to become their own commissioners and distributors to large audiences, building brands such as Tate, Royal Shakespeare Company and many others that are already showing global potential in the online world.
7. Just as convergence is blurring the distinction between audio-visual and text in broadcasting, print, online and across different platforms, so the changes to the monetisation of content are affecting all media. The current regime for Public Service Broadcasting, covering the BBC, Channels 3, 4 and Five, set out in the Communications Act 2003 is not surviving the transition to a fully Digital



Britain. Ofcom's Statutory Review, published in January 2009, made a number of recommendations for the management of that transition.

8. The 2003 Communications Act in many ways predicted the changes from linear PSB television. It is now clear that the analysis and prescriptions are more likely to be effective if they start from the premise that the structure and the set of entities which have been collectively known as 'Public Service Broadcasting' are over. **In recognition of that the Government proposes to discuss with Ofcom how it can take best account of the wider delivery of public service content in the future and in particular, whether Ofcom's statutory obligation to regularly review and report on the extent to which the purposes of PSB on television have been fulfilled, with a view to maintaining and strengthening the quality of public service television broadcasting in the UK, should be amended to allow that review to consider the wider delivery of public service content.**
9. The Digital Britain Report makes a clear case for continued strong intervention to deliver public service content; a case accentuated by the rapid diminution of the advertiser-funded market surplus that has funded commercially-provided public service content. We also take as a given the fact of the Licence Fee as by far the most significant public intervention in the content market to secure public purposes. And we take as a given the importance of an independent, stable, well funded BBC as the cornerstone for the production and distribution of high quality public service content. The question in the new world is the extent to which there should be the BBC in one 'public service' corner and all other media and platform entities in another corner and what that would mean for consumers and citizens. And if, as a society, we decide that there areas that we want more than that, that we want plurality that the market unaided will not provide, we need also to decide how to fund it.
10. Today the market provides and can be expected to continue to provide a significant diet of entertainment, information about the world around us, soaps and some other forms of drama, material for younger children, some remaining provision of other genres such as religion and arts, and UK-wide and international news.
11. The emerging gaps in market provision are concentrating in particular on News in the Nations, regionally and locally, on material for older children including online content, and hard factual and documentary. Ofcom in their Statutory Review also identify other potential gaps, such as high-end drama and original comedy and satire and more generally, content that falls under the banner of innovative. However, in an era of limited funding, it is critical to distinguish between where plurality is desirable and where it is essential and to focus public intervention on the latter.



THE BBC'S EVOLVING ROLE AT THE CORE OF OUR SYSTEM

12. The changed environment set out above makes a strong, confident and independent BBC more essential than ever. The Government is committed to such a BBC as a gold standard for British media; and to a multi-annual financial settlement that provides the BBC with operational stability and independence from political intervention.
13. The BBC is a successful institution, held in very high regard both domestically and around the world. It continues to attract some of the brightest and best of British and increasingly multi-national talent, on screen, on radio, online, in engineering and technology and behind the scenes. In part the BBC has been so successful because of its great ability to combine the best of its traditions with a willingness to innovate, both in its services and in its own role. The strategic vision of its entry into the digital and online world over the last 15 years has been matched by few.
14. Today's circumstances require the BBC again to show the flair and leadership it has displayed in the past. Its role is evolving: from being first among equals in a limited number of analogue channels, to being a public service content partner with multiple other media organisations; and to being an enabler of Digital Britain. This last role was presaged in the Public Purposes in the most recent Royal Charter, the sixth of which is:

'helping to deliver to the public the benefit of emerging communications technologies and services, and in addition, taking a leading role in the switchover to digital television'.
15. The BBC has begun to develop its role as a partner with an increasing range of other media and cultural organisations, UK-wide, in the Nations and Regions and locally. Potentially the most significant of these partnerships is the prospective joint venture between Channel 4 and BBC Worldwide to strengthen both in broadcast television, pay television, DVD and multi-media activities. This is discussed later in this chapter.

BBC Partnerships

In December 2008, the BBC Executive outlined a series of partnership proposals designed to create sustainable financial and other benefits across the broadcast sector and wider creative economy. These partnership initiatives include:

- Bringing Internet services to the television screen through project Canvas.
- Opening the iPlayer and its supporting technology to other broadcasters.
- Opening the BBC's local and regional infrastructure including studio and gallery time, play out facilities, etc. to support the continued delivery of regional news beyond the BBC.
- Sharing the benefits of the BBC's investment and research into digital production and seeking to create a common standard for digital production across the industry.



Since the initial set of ideas was made public, a number of other partnership proposals have been developed including:

- Supporting the national and local newspaper industry through a range of initiatives including greater online linking and the syndication of BBC News video online.
- Partnerships with commercial radio alongside continued co-operation over digital radio and the future of DAB.
- Greater collaboration between the BBC and the cultural sector, enabling more public sector organisations to harness the power of digital content.

THE SCALE AND IMPACT OF THE BBC

16. The BBC has become increasingly important in its relative scale and importance in the UK marketplace. Today, the £3,600m a year Television Licence Fee funds provision by the BBC of two thirds of all networked UK-originated television content outside sports coverage. It funds 56% of all radio content in the UK and secures a commensurate audience share for the BBC. It funds the UK's largest online content site – bbc.co.uk – the 6th most visited site by UK users. Its online funding represents around a quarter of the total UK investment in professional online content. Through the Independent quota and the WOCC – the Television Licence Fee sustains over £400m of production by the Independent sector in television and radio and over £23m last year for independent online producers.
17. In infrastructure, the BBC sustains a significant, sometimes majority, investment in the digital terrestrial television network, in Digital Audio Broadcasting and in Freesat. And a ring-fenced element of the Television Licence Fee is used to fund the Help Scheme to assist vulnerable groups with Digital Television Switchover and Digital UK's public information campaign.

Application of the Television Licence Fee 2007-08

Content Expenditure	
Television	£1,862 m ²⁶
Radio	£460 m
Online	£114 m
Non Content Expenditure	
Infrastructure/Support	£575 m
Central BBC overhead (classified as part of Infrastructure/Support)	£421 m
DSO Help Scheme	£27 m

26 Including news and other programming provided to other broadcasters – e.g. S4C



18. The relative growth in the scale and importance of the BBC in the overall digital content ecology, give it a commensurate public responsibility. The BBC's partnership proposals are one means by which the BBC is seeking to demonstrate its recognition of those responsibilities.
19. The BBC's size and the nature of its funding mean that it can – and does – condition the wider marketplace, particularly new or emerging markets in this sector. This is a critical issue now. Globally, the development of the Internet is rapidly reducing the scope for high yield advertising inventory; most other, paid-for, business models are nascent and fragile. That is compounded in the UK market where one of the most significant actors in the market is publicly-funded and is obliged by the terms of the Agreement, where it provides a new service funded by the Licence Fee, to make that service available to the public without charge.
20. Free is very difficult for any paid-for business models to compete with. Given the current nature of the market, new BBC activity has a higher risk than in the past of chilling or foreclosing market developments. Certainly there are considerable benefits from the BBC's ability to innovate. Submissions to Digital Britain argued that commercial models, once allowed to establish, can produce the same degree of innovation. The development of pay-television is a good counterfactual: multi-channel, high definition, navigation, interactivity, storage and the other features of the PVR are innovations that have come from the pay platforms, which the free platforms have only subsequently adopted.
21. In these circumstances, the creation of and the actions of the BBC Trust have a critical role. The impact on the ability of the market to monetise services needs to be a crucial feature in the Public Value Test for any new BBC service. It is welcome that, in considering the Public Value Test on the proposed BBC local service, the BBC Trust accepted Ofcom's recommendation on the dynamic impact on the market and the likelihood of foreclosure. The Government believes that this is a sensible precautionary approach to adopt to new services, particularly in nascent new media markets.
22. The Government notes that the BBC Trust has also sought views on the public value and market impact of the BBC's proposed Project Canvas to bring broadcast and broadband together through hybrid IP-TV receivers. The ambition to bring together broadcasting and broadband services in a way that will ultimately benefit consumers is laudable. The specification of standards is of crucial interest to the wider market, both software and hardware, and those interested in providing services through such hybrid devices. **The BBC Trust is currently deliberating on Project Canvas and within that process it is considering whether, if Project Canvas is approved, it should be on the basis that its specifications do not foreclose commercial operators from providing monetised services via Canvas devices.** In practice this will mean at the least clarity about the ability to incorporate conditional access and scope for rival EPG/search gateways.



BBC WORLDWIDE

23. Commercial operators have also submitted views about the tension between impact in the market place and value for the licence-fee payer in the role and structure of BBC Worldwide as a wholly-owned, commercially-funded subsidiary of the BBC. In recent years, BBC Worldwide has been an increasingly vigorous and successful acquirer and exploiter of rights both domestically and in global markets. But that very vigour and success have given rise to concerns about a wholly publicly-owned body ranging widely into different commercial markets. These concerns have found voice in two recent reports, from the House of Commons Culture Media and Sports Select Committee and the House of Lords Select Committee on Communications. Both called for greater clarity and transparency in the relationship between the BBC and BBC Worldwide.
24. The Government supports that objective. However, BBC Worldwide has the potential to be a very significant global rights business for Britain and the Government believes that it would be a missed opportunity to limit BBC Worldwide to a narrow supporting role to the BBC. As indicated in the Interim Digital Britain Report, the Government believes that there is a case for greater financial and operational separation between BBC Worldwide and the BBC which would inject the greater transparency all wish to see. The Government will encourage the BBC Trust to continue to consider proposals to achieve that greater separation. These could include the sale of a part of BBC Worldwide. It would clearly need to be done in way that maintained the rationale for the 'first-look agreement' and protected the quality of the BBC brand around the world. The aim of these proposals would be to enable BBC Worldwide to have greater commercial freedom and to develop towards becoming a powerful, global British Rights Company, capable of generating additional revenue streams which could be re-invested in public service content.

PUBLIC FUNDING FOR COMPETITIVE PROVISION OF ESSENTIAL PUBLIC CONTENT

25. The Government believes that the market alone will not provide plurality in the ownership, commissioning, editorial and production of public service content that remains essential. That is particularly true of news. It is important for civic society and democracy for people to have a range of sources of accurate and trustworthy news at all levels, local, regional and in the Nations as well as UK-wide and international news that is guaranteed, beyond market provision. The Digital Britain consultation suggested this may be also true of children's content.
26. In the Communications Act 2003, Parliament charged the new independent regulator, Ofcom, with the task of undertaking Regular Statutory Public Service Reviews with the objective of "maintaining and strengthening the quality of public service broadcasting in the United Kingdom". Since 2003, Ofcom has conducted two full Statutory Reviews, most recently in 2008, both of which reflected extensive consultation and evidence based research.
27. These reviews highlighted the importance of plural news to citizens and the increasing challenges facing new provision particularly at local, regional and



Nations level. The issues facing Nations, local and regional news are set out in greater detail later in this Chapter. But it is evident that changes in the marketplace arising from audience fragmentation, ever-increasing inventory in the market and the impact on advertising price structures from the enormous growth in online advertising mean that commercially-provided local and regional news and news in the Nations, across all media – radio, newspapers, online and television – is facing an acute challenge. Unaided, there will be a substantial diminution in the range and quality of sources of commercially-provided local, regional and Nations news.

28. The BBC's partnership proposals are very welcome and fully in keeping with its new role. There may be deeper wholesale access arrangements to BBC news facilities that could enhance the impact of these proposals. But, in content, and especially in news, there is a question to be asked: if journalistic and editorial plurality is a key objective, how far the BBC itself can go in partnership? The BBC's own proposals in news partnerships acknowledge this question, referring to 'non-rivalrous' news material. Evidence submitted since the Interim Digital Britain Report suggests that the scale of the emerging deficit in commercially provided local, regional and Nations news may well outpace the capability of partnerships alone to address it.
29. So this combination of public policy needs and the market conditions requires us to ask the question as to whether additional funding is needed. It is clear that funding could achieve substantially more per pound of input in the hands of new operators using new media than to sustain a legacy broadcast network and studios for regional news built in and for the days of surplus in the system. Thus an investment at levels similar to today's could actually achieve a significant enhancement and broadening of the quality of news in the Nations, regionally and locally and its wider distribution and syndication across a larger number of platforms.
30. Traditionally funding came implicitly by cross subsidy from the local broadcasting franchise or from high margins in advertising inventory. Both sources are diminishing very rapidly. In the current public expenditure climate further calls on the Exchequer could not be contemplated, even if it were appropriate for Government to fund news in the UK directly. The funding therefore needs to come in some form from the existing public investment made through the Television Licence Fee, either directly or indirectly.
31. The challenge therefore is to maintain a strong and independent BBC, with multi-annual funding, but also to provide contestable support particularly in local, regional and Nations' news. As well as contestability, the new models need to deliver editorial independence both from Government and from the BBC's own editorial influence. These models also need to be sustainable.
32. As is apparent from the Box above, the Licence Fee is currently used for a multiplicity of services on multiple platforms and some of it is channelled through other providers and for services other than the BBC's services. At present the largest such element is the ring-fenced Digital Switchover Help



Scheme and Digital UK's Marketing Budget which represent about 3.5% of the total Licence Fee.

33. In Budget 2009 the Government said that it would consult the BBC Trust on how the emerging underspend in the Digital Switchover Help Scheme, through to 2013, would be used to help finance the delivery of a Universal Service Commitment for Broadband at 2Mbps (i-Player quality). Those discussions are underway and reflected in Chapter 3.
34. The Government will discuss with the BBC Trust ways in which a portion of the projected Digital Switchover Help Scheme underspend could be allocated to test a range of pilots testing different models for the creation of contestable funding for news before 2012.
35. The Government notes that there is an argument, strongly advanced by some, that the Television Licence Fee is indissolubly linked in the public mind with the provision of services by or through the BBC and that its permanent use to support content provided by others, however worthwhile, would confuse and weaken support for the Television Licence Fee.
36. **In the light of all of the above factors, the Government has therefore decided to consult openly on the idea of a Contained Contestable Element of the Licence Fee used by or channelled through other organisations, primarily for news. Under this option, from 2013 when Digital Switchover is concluded, the Universal Service Commitment has been met, and DAB roll-out funding has been agreed, an element broadly equivalent to the 3.5% currently used for the Digital Help scheme and Digital UK's marketing and communications budget could be maintained as a Contained Contestable Element.**
37. **Such a Contained Contestable Element would be independent of the overall level at which the Television Licence Fee will be set in the next multi-annual settlement (ie 2013 onwards).**
38. A key element of debate in the consultation on this option would be around ways to ensure that a Contestable Element was truly contained and could not over time become simply another form of general taxation. This might involve consideration by the BBC Trust and the Government of an agreed amendment to the BBC Agreement which would specify a maximum percentage of the Licence Fee that would become the Contained Contestable Element, open to be used by organisations other than the BBC and to tie the use of that Contained Contestable Element to the specific Public Purposes set out in the Royal Charter.
39. There are two organisations with specific responsibilities in relation to the issue of funding plural public service provision: firstly the BBC Trust, with their responsibilities in relation to the licence fee payers and for maintaining the independence of the BBC; secondly, the independent Statutory regulator, Ofcom with its duties towards maintaining and strengthening the quality of public service television broadcasting in the UK which cover the BBC but go wider. Evidence and views from these bodies in the consultation will be vital. In addition, there are other public service bodies such as S4C and C4



Corporation whose views will be pertinent, as will those of the wider market. Most importantly, however, are the views of the audiences and users who pay for these public services, and those who represent them.

40. The Government will be open to other ideas and proposals in the consultation period which meet the objectives of maintaining a strong, independent BBC, while providing a sufficiency of sustainable contestable funding to support public service content, particularly in local, regional and Nations news. For example, among the suggestions put forward is for the BBC Trust to set aside a similar proportion of the annual profits from BBC Worldwide for a Foundation.

C4 CORPORATION IN DIGITAL BRITAIN

41. The interim Digital Britain Report recognised the strength of the Channel 4 brand and continued validity of many of its original public purposes, but also the pressures on its commercial model and the need to re-invent its public purposes for the digital age. We believe that C4 Corporation (C4C) has a key role to play in providing a balancing mix of public service content alongside the BBC. It is publicly-owned. It is a major commissioner of independent content from across a wider range of producers than other commissioning organisations; and, in 4IP has begun to extend C4C traditional public service delivery of broadcasting into the online and multi-media world and develop innovative means of distribution in social media.
42. In the Interim Digital Britain Report, we stated that the Government would establish whether a long-term and sustainable public service organisation providing competition for quality to the BBC could be defined and designed drawing in part on Channel 4's assets and a re-cast remit, a greater focus on online and multi-media and able to develop innovative partnerships with the wider private and public sector, a 'PSB2'.
43. The Government believes it would now be right to update C4C's remit in keeping with the above objectives of recasting C4C for a Digital Britain. The original concept for Channel 4 was to be 'the open broadcasting authority'. That premise was good and, suitably updated, remains the right objective: C4C should be the open new media authority providing the seed-corn for creative innovation in the multi-media world.
44. C4C has itself proposed many of the elements for a new remit in the work it has undertaken in Next on Four. The Government welcomes that work and agrees that it provides an important series of aspirational goals for C4C. Although C4C has fared better than many advertiser-funded content companies through the current structural and cyclical changes, it has not been immune to them. Sustaining even current levels of content investment requires tough efficiency and productivity measures and new sources of revenue. Next on Four envisaged additional resources. Priority choices will therefore have to be made in current conditions.
45. The Government wants to see a Channel 4 able to sustain its role in the funding and creation of award-winning films. Television will, of course, remain a vital means of sustaining reach and range for the C4 brand. But the



Government believes that C4's current remit is now too television-centric for the role a recast and revitalised C4C should play in Britain's digital media. A recast remit is also a clear indication that the balance of C4's activities could shift over time, as the wider content market and the responsibilities of other major commercial television broadcasters evolves. The Government recognises that television advertising inventory will remain a significant part of C4's income, but part of that shift over time might be greater freedom to maximise that income in the broadcast stream while substantially enhancing the provision of online and multi-media public service content.

46. This will require C4C to develop further the skills it has built through 4IP to use techniques different from the broadcasting world to achieve reach and scale: as the more successful experiments online have shown, it is the ability to get audiences themselves to spread the content that is a key determinant of reach and impact.
47. It should also seek to develop partnerships – in the way that it has done successfully with the independent production sector – both on air and globally online with Britain's other major cultural institutions and brands that are increasingly generating public service content.

Channel 4 and Partnerships: the BritDoc Foundation

The Channel 4 BRITDOC Foundation was born out of Channel 4's documentary department four years ago and devised as a standalone, non-profit foundation with a remit to create new funding and distribution models for British-made documentary films.

As well as funding groundbreaking social-issue films (such as Bafta winner *Chosen*, double Sundance winner *Afghan Star*, Warners cinema release *Sounds Like Teen Spirit* and Tribeca winner *We Are Together*), the Foundation brokers relationships between filmmakers and the NGO, foundation and brand sectors in the UK to create better, more effective films. Channel 4 BRITDOC Foundation films are widely available: at cinemas, on DVD, on Channel 4 and online.

The Foundation manages a production fund of £0.5m annually, awarding small grants to leverage big returns. The average feature documentary grant is £33,000. On average, this investment is then tripled in match funding from other partners: international and US foundations, international broadcasters, NGOs (non governmental organisations), brands, individual donations (crowdsourcing) and private investors. Many of these partners have never funded public service media before but see that now, in a changing media environment, there is both a need and a benefit for their involvement.

The Foundation works with creative individuals with something to say about the world, nurturing independent voices. Any British director, or director based in Britain is eligible to apply for a grant from the Foundation via the website: britdoc.org. So far, 48 grants have been awarded out of nearly 2500 applications.



48. **The Government will therefore take the views of the Channel 4 Board on an updated statutory remit for C4 Corporation based on the following elements:**

Championing and promoting creativity and new talent across all digital media, by:

- **Investing in a wide range of original, innovative, high-quality audio-visual content, including film, which provides alternative perspectives and reflects the cultural diversity of the UK.**
- **Providing audio-visual services and programming that can stimulate learning and which will inform, challenge and inspire people, particularly older children and younger audiences.**
- **Maintaining a strong commitment to distinctive national and international news and current affairs.**
- **Enabling through partnership the development and reach of other public service content from British cultural organisations.**
- **Developing new services and applications to support its overall role, embracing the potential of all digital media to connect with audiences in new ways and to encourage the wider take-up of and participation in new digital media by audiences.**

The issue of children’s content

It is the general consensus that since the first dedicated children’s television service began transmitting on the BBC in 1946 British made children’s programming has remained amongst the best, if not the best, in the world. From the 1950s with Andy Pandy and Blue Peter, the 1960s with Animal Magic and Playschool, to the 1970s with Tiswas and Newsround right up to the 1990s with the Teletubbies children have been provided with a plethora of content that not only entertains, but also educates them about their cultural heritage and the values and principles which underpin our society.

This content also, because it has significant monetary value for broadcasters and producers, impacts positively on our national economy. For example, Bob the Builder and In the Night Garden are following on from the enormous world wide success of the Teletubbies, which, has been sold to nearly 100 countries and generated more £116m in sales since 1997.

However, at present, the reality is that when we talk about children’s content, we no longer focus on that legacy of success. Debate and commentary, instead focuses on the crisis that the children’s television industry has been facing since around 2003, perhaps earlier.



The reasons for why we find ourselves in this position – re-focused PSB requirements, increased commercial pressures, greater restrictions on advertising in and around children’s programming and significant changes regarding how children consume media – have been well documented and do not require further forensic examination.

What is clear is that, based on the evidence produced by Ofcom and others, including respondents to the Digital Britain Interim Report, there is widespread agreement across Government, Parliament, regulators and consumers that there is a market failure that needs to be addressed, despite the large volume of programming currently available (30 dedicated channels).

That is because the reality is that fewer than one in five hours of children’s programming broadcast is made in the UK, with less than 1% made up of new UK originations. Of course, the market could be expected to provide some of this content – Disney Channel, Nickelodeon and Cartoon Network all commission some UK programming, but this only represents around 10% of total investment in new programmes. Some form of intervention is therefore required, which is why we stated that plurality of public service provision for original children’s production for all ages, but especially for the over 10s was one of the priorities for Digital Britain.

We believe that the most appropriate way to future proof the provision of original children’s production in the UK is to enshrine within the newly defined remit for Channel Four, a solid commitment to children’s content, with priority given to older children – the area where there is the greatest market failure. We are looking forward to considering the proposal of Channel 4’s board.

In order to engage with and entertain, educate and empower today’s generations we accept the need to consider a wider perspective on children’s media content than has previously been the case.

Evidence clearly shows that the media consumption habits of children are altering rapidly, with children no longer seeing television as the most important medium available for them to consume and information and be entertained. This is clearly shown by the iPlayer’s younger audience age profile when compared to the BBC’s broadcast audience. Whilst acknowledging that different metrics are used to measure TV and iPlayer audiences, 37% of the iPlayer’s audience is believed to come from those aged 16-34. Yet that group accounts for just 17% of the BBC’s broadcast audience. As a result, we would expect Channel 4 to ensure that delivery will not be restricted to traditional broadcasting, with online delivery actively encouraged.

49. A measure of success for the new remit and delivery by Channel 4 would be the extent to which they succeeded in stimulating competition for innovation and quality from the leading public service content provider in the children’s market, the BBC. This is likely to push at the depth of educational content



offered to children and young people and the levels participation and creativity, including content creation, by children and young people.

50. The current framework gives the sector regulator, Ofcom, the primary role in the governance, licensing and regulation of C4C. The independent Board of the C4 Corporation is responsible for ensuring that Channel 4 meets its financial and public service responsibilities. It is a unitary plc-style Board, with a non-executive Chairman, appointed by Ofcom, with the approval of the Secretary of State, other non-executive directors similarly appointed in consultation with the Chairman. The Chairman and non-executive members appoint the executive members of the Board. C4C has a remit and specific duties. It has a series of specific quotas and must publish annually a statement of programming policy setting out how it intends to meet its public service commitments in the coming year and how effectively it has delivered them in the preceding year. We note C4C's inclusion of a public impact statement for the first time in its annual report for 2008, and welcome this as a useful framework for demonstrating the delivery of C4C's public purposes.
51. In certain circumstances, including if C4C were in future to become the recipient of significant sums of public money, these arrangements may need to change, to ensure proper 'separation of powers' and accountability for such public funds, perhaps to something closer to the Welsh Authority/BBC Trust model (or indeed towards an umbrella public service trust model providing accountability for a range of such bodies).
52. In looking to secure a long-term and stable financial footing for Channel 4 the Government has considered a range of structural options and invited expressions of interest from third parties for the development of innovative partnerships. This process evinced a number of commercial approaches, some of which are still being considered by the Board of C4C. The main options we examined in detail were a joint venture between C4C and BBC Worldwide; a merger between C4C and a private sector partner, creating a new commercial entity, majority publicly owned but underpinned by private capital; and a standalone C4C, either retaining the current linear TV model with a more focused public service remit, or delivering substantially more of its public service obligations online, enjoying a cross subsidy from a more fully commercial core TV channel progressively relieved of PSB obligations. Each of these options was examined in detail for its potential to sustain plurality of public service content in the Digital Britain.
53. On balance, the Government's conclusion, which has been strongly supported by the Board of C4C is that a minority privatisation, even on terms that provided significant additional funding over the short to medium term to invest in television programming, could not be assured of delivering the public policy objectives previously outlined over the long term.
54. The Government looked at C4C's current and prospective commercial position. The Government concluded that it could not make available direct Exchequer



funding given current public service priorities. Moreover, it was possible that such direct funding could over time alter the ethos that has made C4C a valued part of the public service mix.

55. The Government considered the option of a merger between today's BBC Worldwide and today's C4C, involving the move to a BBC Worldwide with greater structural separation from the BBC and a recast C4C, particularly in relation to the ownership of rights. The Government concluded that at this stage further work needed to be done by both the BBC and BBC Worldwide on the practical and strategic implications of further structural separation. Equally, significantly changing the terms on which C4C negotiates and acquires its content rights would have had wider consequences for the existing rights regime and for what is a successful UK production sector.
56. The Government also took the view that a straight asset transfer from the BBC to C4C in whatever form would have had significant competition implications. The parties have worked on a series of partnerships of scale, including around digital channels, advertising and DVD sales. The Government welcomes this work and believes that such ventures have the potential to deliver significant value to both parties. We have made clear to both parties that we are ready to facilitate such joint ventures if commercial terms can be agreed, with the appropriate approvals within the parties' governance arrangements and any relevant regulatory clearance. Alternatives to the joint ventures with BBC Worldwide have also emerged over recent months: the Board of C4C is right to explore whether those make commercial sense and can strengthen C4C.

THE IMPORTANCE OF NEWS AND LOCAL JOURNALISM FOR DEMOCRACY

57. A major new study, commissioned by Oxford University's Reuters Institute for the Study of Journalism, argued earlier this year that we need to think openly and dispassionately about ways to fund the news in Digital Britain.
58. As the economic foundations of news publishers come under great pressure, especially in local and regional markets, there's an imminent danger that large parts of the UK will be left without professionally verified sources of information. Information is the lifeblood of a vibrant economy. A strong, viable and diverse news media is also integral to democratic life. When a newspaper goes under, we lose more than a tax-paying business. We also lose an institution's memory; archives, values and community relationships that have, in many cases, been built through generations. Worst of all, we risk losing the talent of seasoned editors and journalists.
59. To sustain the vital civic function of journalism, citizens, Government and business will need collaboratively to devise new ways of funding the news. The commercial model will continue to play an important role, especially as publishers explore the potential of new platforms and technologies. But it will also need to be supplemented with a range of alternative models – for example, local ownership, community media and non-profit organizations.



60. Digital television delivers a large number of international news channels into our homes, including global brands such as Fox News, Star News, CNN and others. These are complemented by newspapers who are increasingly becoming providers of audio-visual news through services such as Telegraph TV. In addition to these purely market provided players, there remains a critical role for companies such as ITN, the UK's leading independent producer of public service broadcast news and the current Appointed News Provider to ITV. ITN competes to tender national news to other broadcasters including currently providing Channel 4, competing in particular with Sky News, the current provider of news to Five. Today, ITN has evolved into one of the UK's most innovative multimedia companies with skills and experiences in producing news and other content for television, mobile and broadband. As we look forward, the views and role of the established UK news providers such as ITN and Sky News will continue be of great importance.
61. Local websites of all shapes and sizes are providing community news and information to hundreds of thousands of people. Most of these sites are volunteer run, using free publishing platforms like www.wordpress.com with no hard costs. They show that grass roots media can provide an accurate, reliable, popular sources of news and information without regulation or subsidy. Their news values and thresholds are new, reflecting grass roots interests and priorities.
62. Community sites with no costs can serve very small, human news geographies of a single ward or a few streets. Community websites with no old media legacy are able to discriminate between types of media production to suit local needs. The written word and photos predominate, sound and video are in a minority. In some communities with established local sites the readership within the community appears comparable to that of traditional news media.
63. Digital Britain is at the beginning of a new and possibly disruptive wave of local news, generated by communities for communities using free online media. Over the medium term this has the potential to be good for local pluralism and expression as commercial funding for traditional media diminishes. 4IP and Screen West Midlands are making a major investment in Talk About Local to create hundreds of new community websites by giving community activists the simple skills. Digital Mentors are taking a similar approach on a smaller scale.



Demotix: a new approach to the news

Demotix is a street journalism website and newswire.

Founded on the principles of freedom of speech and freedom of knowledge, Demotix enables freelance, amateur and citizen journalists to share their stories with the world, and license them to the mainstream media. Its vision is both global and ultra-local.

Demotix launched officially in January 2009. The creators of Demotix saw how citizen journalism could both supply the very foundations for free expression all over the world, and revolutionise the way news is sourced.

Demotix has been particularly successful at covering news the mainstream media cannot reach, and came to prominence with its user-generated reporting of the war in Gaza and the G20 protests, where the depth and quality of its news gathering measurably surpassed that of the mainstream media.

Demotix has already seen its images on the front cover of The Guardian, Spectrum (of the Sunday Times), and al-Masr al-Yaum; has licensed its content into the Telegraph, the BBC, the Guardian, the Times, the London Paper, the Huffington Post and others all over the world, and has placed its news galleries into The Telegraph, Le Monde, Future News (Lebanon), the Himalayan Times (Nepal), OpenDemocracy.net, and elsewhere.

Demotix, with a core team of only 4 staff members, has over 5,000 users from over 120 countries and territories around the world, uploading between 40-50 news stories daily.

In March 2009, Demotix won the Guardian Media Awards 09 for Independent Journalism, the biggest industry prize in the UK.

64. However, the impact of the content revolution is to demolish existing structures faster than new ones come into being. In news above all it would be unwise to leave a gap in plural provision between the old and the new. So in addition to trusting to the medium-term potential of online hyper-local news, we also need to help the more traditional media in building bridges to the future.
65. At the heart of our commitment to UK media is the Government's commitment to a free, independent and active press. Whether at a local, regional or national level it is essential that high quality, independent journalism should continue to thrive and keep UK citizens informed.
66. The basic framework for the press, online and offline is right. We continue to support self-regulation of the press as the best way to ensure that reporting is accurate, fair, and independent and treats both those who are part of the news and those reading the news fairly.



ENSURING A LOCAL MEDIA FRAMEWORK FLEXIBLE ENOUGH TO ALLOW CONSOLIDATION

67. The Interim Digital Britain Report said that the Government would invite the Office of Fair Trading (OFT) together with Ofcom and others to undertake an exploratory review across the local and regional media sector.
68. During that Review, there were representations from industry and others that regional and local newspapers are in crisis. Structural changes brought about by the advent of the Internet, coming together with the economic challenges of the current international climate, have created very significant changes in the markets in which local and regional titles have operated.
69. The OFT have concluded their Review and it is published today alongside this document.
70. The report makes it clear that the OFT fully recognise the very significant structural challenges to the traditional business models of local and regional press. The OFT are confident that the existing merger framework as it applies to media in general, and local and regional newspapers in particular, is sufficiently robust and flexible to take into account the various considerations that need to be brought to bear, but modest changes would be advantageous.
 - There have been significant structural changes in the local media and advertising markets, in particular towards online and innovative platforms. Many of the most important advertiser groups for regional and local newspapers have transferred substantial spend to Internet-based methods of advertising their products.
 - The UK merger regime is designed to protect competitive rivalry between firms, and hence protect consumers from any negative competitive effects of consolidation. The regime is **evidence-based** and is therefore already capable of reflecting market developments, such as increasing competitive constraints between different types of media, when assessing local or regional media mergers. It is quite possible that print advertising faces sufficient competitive pressure from advertising on other media, especially the Internet, to protect consumers (readers and advertisers) in the face of a merger. This, though, will depend on the specific facts of the case and may vary between regions.
 - The regime is **flexible**, in that it is capable of taking account of the evidence in each case, including valid 'failing firm' arguments, efficiencies and customer benefits. For example, if there is clear and compelling evidence that a merger will be beneficial (or neutral) for the market, and therefore consumers, it will normally be cleared. Or if, in the context of local or regional press, there is compelling evidence that a title would close in the absence of a proposed merger, and that there is no realistic alternative purchaser, then it is unlikely that that element of the merger would lead to a substantial lessening of competition.



- The issues to be considered will vary case by case. Consequently the OFT believes that further research would be best carried out in the context of a notified merger, and is not warranted absent a notified merger. The OFT's final report on its review will, however, provide relevant **guidance** to market participants and interested parties.
 - Notwithstanding the fact-specific nature of any given merger, some general lessons could still be learnt from a detailed inquiry into any specific merger or transaction involving the local and regional press. For example, the analytical methodologies employed are likely to be similar across mergers within the same sector. Any such merger or transaction could benefit from **pre-notification discussion with the OFT**, or alternatively, if the case is likely to raise significant competition issues, from the **OFT 'fast-tracking' the merger to the Competition Commission** with the parties' agreement.
 - The OFT review recommends that **no legislative change** is required to the existing merger regime under the Enterprise Act.
 - Representations were made to the OFT that the **media public interest provisions** should be altered, for example to include the need for 'independent investigative journalism' as a consideration. The review notes that public interest considerations have never so far been used in respect to regional or local press mergers, but the OFT recommends that BIS should consider these representations, as well as take account of the ongoing Ofcom review of Media Ownership Rules.
 - The OFT notes broad concern amongst stakeholders about the potential impact on commercial publishers of local authority publications. The review recommends that Government should consider the costs and benefits of any intervention or guidance to limit the scope of local authority publications.
71. The Government has discussed the penultimate point about the public interest test with the OFT and Ofcom. The Government has concluded that the existing framework provides an adequate mechanism for considering the importance of having a source of independent news and reporting at a local and regional level across the UK. At the most basic level the competition authorities' guidance suggests it is unlikely that they would reach a finding of a substantial lessening of competition (SLC) in a situation where, in the absence of a specific proposed merger, the last remaining title or titles in an area would close. This should protect communities against the risk of losing their independent reporting voice as a result of the merger control process.
72. However there may also be other consumer interests, over and above the simple continuation of news coverage. It is probable that Ofcom, with their extensive knowledge and understanding of media markets, might be well placed to advise the OFT on these issues. **The OFT therefore propose to amend their guidance to ensure that in cases relating to local and regional newspaper mergers raising prima facie competition issues the OFT will ask**



Ofcom to provide them with a Local Media Assessment covering relevant factors arising from their understanding of media markets, which may include views on:

- The scope of relevant product and geographic markets.
- The relevant counterfactual to the merger (including the risk of title closure).
- Competitive effects of the merger.
- Exceptions to the duty to refer, and in particular:
 - whether the markets are of insufficient importance (de minimis) to warrant reference;
 - whether there are 'relevant customer benefits' – such as higher quality (which could e.g. reflect the range and quality of reportage) or greater choice of products – which might be weighed against an identified substantial lessening of competition.

which the OFT will then take into account in reaching their conclusions.

73. The OFT review also noted the adverse impact on local newspapers of the increasing role of local authorities in taking paid advertising to support local authority information sheets. Clearly, if such advertising grows to the extent that, coupled with the other pressures on local commercial media it renders them unviable, that would be against the public interest. While local authority information sheets can serve a useful purpose for local residents and businesses, they will inevitably not be as rigorous in holding local institutions to account as independent local media. **In the same way that Ofcom plays a valuable role in its Market Impact Assessments in relation to proposed new BBC services, the Government is therefore inviting the Audit Commission to undertake a specific inquiry into the prevalence of this practice, its impact and to make recommendations on best practice and if restraints should be placed on local authority activity in this field.**

MODERNISING THE LOCAL MEDIA OWNERSHIP RULES

74. The Communications Act 2003 requires Ofcom to conduct a statutory review of the media ownership rules every three years. Ofcom are now undertaking such a review and are expected to report back later this year.



High level summary of the rules

Type	Principle	National/local	Media (ie TV/Radio etc)
Local Cross Media Ownership Rules	Rules which prevent one entity from owning different types of local media over specified market share levels.	Local	Radio, Television (Channel 3) and newspapers.
National Cross Media Ownership	Rules which prevent one entity owning both a Channel 3 licence and greater than a 20% market share in one or more national newspapers. Also prevents a national newspaper owner (with a greater than 20% market share) owing more than a 20% interest in a company which holds a Channel 3 licence.	National	Television (Channel 3) and national newspapers.
Local Radio Ownership Rules	Detailed rules about the number of analogue and digital radio licences one entity can own in specified geographical areas and limits on ownership of local DAB multiplexes whose coverage overlaps.	Local	Radio
National Radio Ownership Rules	A rule that one person cannot own more than one national radio multiplex	National	Radio
Public Interest Test	Rules which mean that for media mergers the Secretary of State may intervene on "public interest grounds". These grounds include media plurality. Ofcom's role in these cases is to provide advice as appropriate.	Local and National	Radio, television and newspapers.
Restrictions on holding broadcast licences	Rules which prevent or limit control of television and radio by certain owners whose influence might cause concern. (e.g. political parties and religious bodies.) There are also a number of qualified restrictions (e.g. Channel 4 and S4C may not hold Channel 3 or Channel 5 licences).	Local and National (depending on specific rule)	Radio, television and newspapers (depending on specific rule)
Appointed News Provider Rules	Rules for the provision of national and international news to Channel 3 by an independent news source independent of the BBC, not under the control of political or religious bodies and suitably well funded.	National	Television (Channel 3)

75. The Government has asked Ofcom in this current review to consider specifically the impact of the current local ownership rules on the longer term sustainability of the local media market. The media ownership rules are a layer of constraint over and above the competition rules set out in the media mergers regime. The Government believes that an arguable case could now be made for greater flexibility in the local radio and cross-media ownership rules to support consolidation of local media groups which taken together would allow for greater economies of scale and a sustainable local voice alongside that of the BBC. For example, a local radio stations and local newspaper could consolidate and share news gathering resources, reduce overheads and help build local brands through cross-promotion.
76. In local radio, Ofcom has already made a number of recommendations for change, essentially rationalisations. The Government accepts these. The Government also looks to Ofcom in their current review to consider whether



the current ownership 'points system', which has the effect of requiring a minimum of two commercial radio stations alongside the BBC in any given locality, is any longer desirable or sustainable.

77. The Government looks forward to the evidence based recommendations from Ofcom's review and stands ready to bring forward an Order to give effect to any necessary changes to the local media ownership rules.

Supporting sustainable multi-platform regional news

78. As discussed earlier, competition in news at the level of the Nations and regionally and locally is under threat. Over time – and in some Licence areas very soon – it is clear that the old Channel 3 newsgathering, production and broadcasting economics will become unsustainable. They will need to be replaced by updated, lower cost production and distribution methods; they will need to be multi-media though still significantly video based. Though more sustainable than the current model, they may well need some independent public finance. Since the publication of the Interim Digital Britain Report proposals have been advanced from a range of sources for a series of contestable licence awards for multi-media regional, local and Nations news, provided by independently financed news consortia. The Government welcomes this concept.

What is an IFNC?

Independently Financed News Consortia are a joining of interested parties who will provide a more ambitious cross-media proposition and enhanced localness compared with current commercial television regional news; but which, to maximise audience reach, will also broadcast in the regional news slots in the schedule of current Channel 3 Licensees.

Consortia would include but not be limited to existing television news providers, newspaper groups or other newsgathering agencies.

IFNCs would be chosen against public criteria. As essential criteria these are likely to include: the ability to achieve reach and impact; high production and editorial standards to sustain accuracy and impartiality; and the financial stamina to sustain the service at quality throughout the period of the award. Criteria for desirable outcomes could include the ability to raise the proportion of total activity devoted to journalism; commitments to distinctiveness and original/investigative journalism; commitments to multi-media training and willingness to/arrangements for syndication of news stories to other news organisations, whether nationally, regionally or locally.



IFNCs would be awarded on a contestable basis to maximise public value. The commercial national news service will have access to IFNCs' regional news footage for stories of UK-wide significance.

The Government and Ofcom will examine whether advertising minutage or other revenue-raising opportunities should be made available to the IFNCs in the Channel 3 regional news slots, to provide a supplementary stream of commercial income, recognising the impact of any such changes on the rest of the commercial market.

The necessary governance arrangements will ensure that IFNCs deliver value for money, with sufficient reach and impact to justify the public investment; are editorially independent; simple and transparent in their set-up and on-going administration, properly accountable for their use of public funds and capable of providing regional news programmes based on clear service level agreements.

79. **Subject to the outcome of the consultation on contestable funding mechanisms for news and other public purposes set out above, the Government is minded to mount three pilot IFNCs before 2012, aiming to begin in 2010 – one in Scotland, one in Wales (where S4C have already done work to develop a related initiative) and one in an English region which would be the most likely to demonstrate true contestability, without involving the current Channel 3 incumbent licensee. One of the objectives of the pilots will be to test the scope and scale of commercial funding.**
80. Third parties wishing to join the pilots in Scotland and Wales would need to meet essential criteria, including being either an existing news provider with an established audience in the relevant Nation (e.g. a local newspaper or radio station), a media production company or other broadcast, local television or multi-media company with a track record of delivering news or current affairs in the Nation; and can meet financial integrity and compliance tests. This approach reflects the particular requirements of the Nations, as highlighted for example in the work of Blair Jenkins. Similar criteria will be applied to the overall composition of the Consortium for the English region. Third parties with clear business and financial integrity with experience in news provision would tend to be in a stronger position.
81. The Channel Islands governments elect constructively to adopt United Kingdom broadcasting policy. The role of the C3 Licensee, Channel Television, as a provider of local news is particularly salient for the Channel Islands. We will therefore discuss with the Channel Island governments the extent to which they wish to initiate arrangements similar to the proposed pilots in Scotland and Wales.

SUPPORTING ORIGINAL HIGH QUALITY INDEPENDENT CONTENT ACROSS THE UK ONLINE AND ON AIR: THE FRAMEWORK FOR THE INDEPENDENT PRODUCTION SECTOR

82. The Interim Digital Britain Report said that a forward look was desirable at how the relationships between independent producers and those who commissioned their work could evolve in the multi-platform digital age. To that end the Government commissioned and has published research by Perspective Associates and held a series of workshops involving both independent producers and commissioners, both the traditional broadcasters and new media commissioners including online commissioners from elsewhere in the public sector. The conclusions of that work are as follows.
83. Firstly, there is broad agreement that the Independent Production Quota and the 2003 Communications Act Framework for the Terms of Trade (governing the release of programming into the secondary market and new media rights) are working well.
84. Secondly, despite some concerns from broadcasters, the Government is satisfied that Ofcom's guidelines within which Terms of Trade are agreed between producers and broadcasters are at a sufficiently high-level to allow for innovative agreements, particularly encompassing new media rights. The Government agrees that regular reviews of the guidelines could chill the commercial market while the reviews were undertaken; but welcomes Ofcom's readiness to review their guidelines if a significant body of stakeholders wished it.
85. Thirdly, issues will arise in the transition from first-window to first use, around shorter/deeper window periods and about holdback provisions in the fully digital age. But the Government believes that the Framework is sufficiently flexible to allow these to be resolved commercially which is both the Government's and the regulator's preference.
86. Fourthly, the BBC's implementation of the recommendations of the 2004 Review of BBC Online by Philip Graf and its 25% quota for the commissioning of externally supplied online content was an important bedrock for new media production in the UK. The Government noted that the definition of qualifying eligible spend includes significant technical and operational activities, contrary to the spirit of the Graf Review recommendations and welcomes the efforts of the BBC Trust to align the definitions more closely with the recommendations of the Review.
87. **Fifthly, the BBC's voluntary introduction of its New Media Rights Framework in 2007 has been widely welcomed and provides a model that Digital Britain recommends should be adopted more widely in Government and other public bodies who commission online content.**
88. Sixthly, while there remained a market power/incentives argument for maintaining the Independent Production Quota at its current levels and the Terms of Trade framework on those broadcasters who currently hold public



service licences, no compelling case was made to extend rules beyond provisions of the AVMS Directive to any other broadcaster or commissioner.

BBC New Media Rights Frameworks

The headlines for the five New Media Rights Frameworks are as follows:

- Framework 1 – The Supplier owns any stand alone content proposal they bring to the BBC; the BBC has an exclusive licence only.
- Framework 2 – The BBC retains all rights in a stand alone new media commission based on an existing BBC created format, associated with an in-house programme or based on a developed idea.
- Framework 3 – The Supplier licences their existing third party content or services to the BBC on a non-exclusive basis.
- Framework 4 – The Suppliers licences their off the shelf technology product to the BBC on a non-exclusive basis.
- Framework 5 – The Supplier licences their off the shelf technology product to the BBC on a non-exclusive basis, but the BBC owns (or may take a non-exclusive licence in) the bespoke development which it specifies and pays for.

Source: BBC

SUSTAINING A CONTENT PRODUCTION BASE IN THE NATIONS

89. The Government welcomes the BBC's partnership with the Gaelic media Service and the successful launch of the Alba service, the BBC's partnership discussions with STV Group plc in Scotland, and the BBC Trust's targets to source 12% network production to come from the Nations by 2012 and 17% by 2016. The Government endorses the emphasis the Trust has placed on sustainable growth and notes that the initial proposals for Scotland propose relocating the production of a number of long-running programme strands. Nonetheless in view of the rapidly increasing pressures on commercially commissioned production in the Nations, **the Government looks to the BBC Trust to encourage the BBC to seek to exceed its targets for enhanced network production in Scotland for 2012 and subsequently for 2016 to adopt a comparable approach for Wales and Northern Ireland.**



Broadcasting in Scotland

The independent panel chaired by Blair Jenkins, sat from August 2007 to September 2008, carrying out an independent investigation into the current state of television production and broadcasting in Scotland, triggering a wide-ranging and frequently passionate debate about the future of the industry and the services it provides to audiences in Scotland. The panel published its final report with recommendations on 8 September 2008 arguing for a number of changes to ensure more high-quality creative content is produced in Scotland in the future than ever before and a number of particular recommendations, including the formation of a new Scottish Digital Network, comprising an integrated broadcast and broadband service.

90. STV Group plc and UTV Ltd face high audience expectations in their respective Nations. They have a numerically limited market; and relatively significant production costs should they wish to develop their businesses to scale. The Government has a keen interest in ensuring that the Nations are able to sustain a content production base. In addition to the IFNC concept discussed above, and the Government's suggestion to the BBC Trust to accelerate its targets for network production in the Nations, **the Government therefore recognises the case that while they continue to produce the majority of their output for their respective Nations, they have equivalent status to qualifying independent production companies for the purposes of independent production quotas applying to the BBC, C4, ITV plc and five in the UK-wide market. The Government proposes to bring forward any necessary legislation to give effect to this objective following a consultation.**

LOCAL TELEVISION

91. Ofcom's recent PSB Review raised the issue of what role local television might play among the opportunities that exist for more local services. Ofcom has commissioned economic analysis on the economic sustainability of various types of local television services to consider the issues for local TV. We received responses to the Interim report from United for Local Television, the Scottish Local TV Federation and others on this issue.
92. The Government is keen to see local television develop on a multi-platform basis. Other initiatives within this report offer excellent opportunities to demonstrate the role that local television can play in the wider local media ecology. In particular, IFNCs could provide opportunities for local television operators, along with other news providers, to contribute to local news provision.
93. More opportunities are being created for local TV than ever before through the release of geographically targeted interleaved spectrum for auction. Some local TV providers have already purchased spectrum and further packages of spectrum will be released for auction. Some local TV services are successfully provided online and so have much lower unit costs. The measures to roll out



and increase the take-up of broadband will increase the reach of local TV operators.

94. Although Government is keen to see local TV thrive, the reservation and gifting of radio spectrum for local TV providers would be a significant intervention. In the current economic climate, funding is more than usually limited. The rolling out of broadband and increasing take-up, and the development of IFNCs – both of which initiatives would benefit local TV – are currently a higher priority for that funding than local TV. We will keep the issue of local TV under review in the light of Ofcom’s further economic analysis and review of local media.

LIBERALISING THE CHANNEL 3 AND CHANNEL 5 LICENSEES

95. In its second PSB Review, Ofcom noted that the value of the existing public service Channel 3 licences will decline further between now and the completion of Digital Switchover and that the regulatory obligations attached to the licences would therefore require further review over the period. The Government accepts Ofcom’s analysis. We consider that there is a strong case for the progressive liberalisation of the Channel 3 licensees so that they can move towards becoming fully commercial networks, serving the interests of their shareholders whilst continuing to delivering a focused, sustainable public service commitment centred on original productions and news. This would allow, ITV for example, to provide highly valued popular entertainment, alongside a range of other programming and national and international news in a way which is consistent with both proportionate regulatory obligations and its own commercial incentives.
96. We expect the regulatory regime for Channel 5 to follow a similar path, although we note Ofcom’s view that its current, more limited regulatory obligations are likely to be sustainable up to and beyond digital switchover.
97. Liberalisation should be the clear direction of travel. But the Government does not believe that it would be in the public interest to enable complete liberalisation at one step.
98. Regional news has been at the heart of ITV’s historic privileges and obligations but it is also by far the most costly element of its current public service commitment. We welcome the Partnership memorandum with the BBC which offers some reduction in ITV’s costs over the next few years. Beyond that, we have set out in this Chapter the Government’s proposals to pilot a new means of funding and delivering news for the Nations and Regions, via IFNCs, with a view to full roll-out across the UK from around 2012. This promises to progressively relieve ITV of the costs of delivering these obligations, while sustaining plural provision of news at Regional and National level. **The Government proposes to work with Ofcom to enable any appropriate amendments to the relevant Channel 3 Licensees’ regional news obligations in order to allow for the development of IFNCs.**



99. **Beyond regional news, the Government recognises that Ofcom may need to adjust ITV's other public service obligations up to and beyond the completion of digital switchover, in line with the diminishing value of the licences. The Government is willing to consider legislative change if adjustments beyond Ofcom's current powers are considered necessary.** However we note that there are two obligations in particular which currently carry little, if any actual or opportunity cost and which we believe will continue to be important elements of ITV's public service contribution, at least in the medium term. The first is an out of London production obligation. While ITV plc retains its Granada production business in Manchester, it is more than able to meet the licence obligations that Ofcom imposes. The Government would, of course, need to revisit the position were ITV plc to separate structurally its broadcasting and production businesses. The second is the Independent Quota and Terms of Trade. It is right that plurality of commissioning, production, ownership and distribution is implicit in any public service content privilege. But in practice an ITV that seeks to maximise audience reach and share will also be an ITV that commissions more than a quarter of its output from independent producers, as it does today. And, as discussed earlier in this Chapter, the Terms of Trade have benefited both broadcaster and producer: they recognise the producer's ownership of the creative property but also oblige the broadcaster to pay only for that element they actually wish to use – a feature that has reduced by more than a quarter the previous production costs to broadcasters.
100. Ofcom's analysis suggests however that the change in the market since ITV plc's (and Five's) remaining analogue licences were last valued means that ITV plc may be paying more than the value of those licences in the remaining three years of their life, impacting on the funds available to meet public service commitments. **The Government is therefore prepared to bring into force Sections 272 and 273 of the Communications Act 2003. This has two effects: firstly it ensures that ITV's (and Five's) programming remains available on all specified platforms for the remaining duration of their public service licences; secondly that Ofcom can bring forward by a year the re-valuation of their remaining analogue licences.**
101. **The Government also notes that Ofcom intends to have a further consultation of the different provisions applying to the Channel 3 and Channel 5 Licensees on advertising minutage and the current requirement to sell-out all minutage.** Ofcom's recently concluded review of its rules proposed retaining them, at least until 2010, in recognition both of the uncertainty in the market ahead of the Competition Commission's consideration of the Contract Rights Renewal (CRR) Remedy; and given the current cyclical state of the wider television advertising market the likely impact of a sudden addition of advertising inventory.
102. ITV plc has also argued for relief from obligations it entered into when the Carlton-Granada merger occurred. These are essentially the CRR (currently



referred by the OFT to the Competition Commission, which referral recognises the significant changes in the market since 2003) and the specific obligations in relation to the minority Channel 3 Licensees: SMG plc, UTV plc and Channel Television Ltd. These are matters for the independent competition authorities. In relation to the minority Channel 3 Licensees, the Government sees no public policy case in isolation to argue for a change to the status quo; to the extent that the parties mutually require it, greater flexibility can be built in via changes by Ofcom to the networking arrangements, which statutorily Ofcom must approve.

103. As for the CRR this is again a matter for the competition authorities. The Government notes, however, that the OFT, on 29 May, advised the Competition Commission to look at both the definition of ITV1 – due to changes in the way that it delivers its programme schedule, as well as considering whether it was possible to find a new, more proportionate remedy, which creates less costs and distortions than CRR but which would still address any remaining detrimental effects of the Carlton/Granada merger arising from ITV1's unique position in the supply of mass audiences and likely future changes in the market.

CASE STUDY

Small Business: Frances Matthews

County Garden Services, a small landscaping company in rural Derbyshire, has begun to get inquiries via its website.

The family-run business, on the outskirts of Ashbourne, has only recently embraced online marketing. But Frances Matthews, whose husband Steve runs the company, is seeing a quiet revolution in the way the company operates.

Garden suppliers now respond to queries by email. Plants and equipment are ordered online, and customers pay electronically – helping to improve payment days and cash generation. Arguably the biggest upheaval has been in accounting and salaries.

Frances no longer has to withdraw cash each Friday for the company's four-full time gardeners, and tax returns are now filed over the Internet. But there have been teething problems. "We have had major problems this year with online PAYE returns, and at one stage we had to revert back to the old paper system."

Even so, most issues have been resolved online, either in email dialogue with County Garden's accountants or using the Inland Revenue help desks.

To minimise the risks of a data breakdown and adverse impact on the business, the company relies on a software system – Sage – to provide technical support for small companies. Frances expresses frustration that the technical support staff will not always help with older operating systems, or sometimes try to sell an upgrade. But overall, she sees no going back. "It has transformed record keeping and payments, but the biggest bonus is the security it brings."





Chapter 6

Research, Education and Skills for Digital Britain

"...Used well, technology strongly develops the study and learning skills children need now and in the future, including the fundamentals of "e-safety"...Even now, a reasonable grasp of ICT is needed in education and employment, and it will become increasingly important to command ICT skills to prepare for technologies of the future. The foundations for this engagement are best formed in primary schools, where children's enthusiasm for ICT is evident. ...We must avoid raising a population divided between ICT "haves" and "have nots" because this would pose a considerable threat to both economic wellbeing and social cohesion..."

Sir Jim Rose

AMBITION: TO MAKE THE UK A WORLD LEADER IN RESEARCH, INNOVATION, TECHNOLOGY AND CREATIVITY, BY INSPIRING THE NEXT GENERATION AND CREATING THE ENVIRONMENT FOR DIGITAL TALENT TO THRIVE

Building the foundations of our competitiveness in the Digital Economy

1. Our society and our economy are being transformed by the development and use of innovative digital technologies. 55% of current UK GVA comes from technology-intensive sectors,²⁷ and over the next 5 to 7 years these sectors could contribute a further £35bn to GVA.²⁸
2. This further growth is dependent on research and innovation. And it is dependent on our having enough people with the right skills, in the right place, at the right time to develop, apply and maximise the impact of those new technologies for our economy.

27 Office of National Statistics: Change in GVA by industry

28 IT and Telecoms Insights 2008: the impact of ICT on productivity, e-skills UK/Adroit Economics and Regeneris Consulting.



3. In “New Industry, New Jobs”, Government described the importance of building on the foundations of Britain’s competitiveness to ensure British businesses are able to access growing global markets. Investment in innovation, research and skills is at the heart of this new industrial policy. Through a new activism we will focus our skills system, the knowledge in our universities and the way we support research through our record investment in science and our burgeoning support of innovation in creativity to meet the demands of sectors such as Digital Britain that are vital for the future economy. And we will use these levers more strategically to meet the demands and opportunities Government creates in making key decisions, buying goods and services and regulating industry.
4. In this chapter, we describe how the UK can turn its excellence in science, research and technology into innovation so we can create and take advantage of new opportunities within the digital economy. We also describe how we will develop the talented workforce necessary for UK businesses to succeed.

Research

5. Many UK companies are already well positioned to benefit from Digital Britain. The UK has strengths in wireless technologies and optoelectronics. CSR is the world leader in Bluetooth and chips designed by ARM are in most mobiles sold globally. It is at the forefront of emerging technologies such as plastic electronics and femtocells. We need to continue to invest in research and innovation to keep pace with fast moving technological change and to enable new companies to be created. We also need to ensure companies have the high level skills needed to exploit the opportunities of Digital Britain.
6. The Research and Development (R&D) tax credit schemes offer significant support for R&D through the tax system, including software directly employed in R&D. Under the SME scheme companies may deduct 175% of qualifying costs on R&D from income when calculating their profits for tax purposes (130% for large companies) and losses may be cashed in with HM Revenue and Customs. The latest national statistics show the success of the schemes. Over 36,000 claims had been made by 2006-07, with over £2.8 billion of relief claimed. It is estimated that around £50m of tax credit support is claimed annually by companies in the software consultancy and supply sector.
7. The UK has a world-leading research base, funded principally through the Research Councils. The co-ordinated, multidisciplinary **Digital Economy Programme will in its first three years invest £120m in new research and training to prepare the country for the next 20 years of digital evolution. This includes three new research hubs, launched in 2009 with funding of £12m each, whose research programmes address the core issues facing Digital Britain.**



Nottingham: the digital economy and ubiquitous computing

As people search the Internet, access services and engage in online transactions, they leave a digital trace which can be used to target services and resources and to provide market intelligence. This is now extending to include information about people's interactions with the surrounding environment: positioning technologies allow us to locate and track the movements of people and resources, whilst video systems allow us to capture how people move in shopping centres and through parks. With mobile phones and portable devices, we can then localise people's access to services in a way never possible before. Understanding the nature of this growing record of human activity and developing new socially acceptable ways to exploit it offers transformative opportunities for a future Digital Economy.

Newcastle/Dundee: the digital economy and social inclusion

Due to the close link between Social and Digital Exclusion, as more services are delivered online, there is a real danger that those who lack access to technology, or who struggle to use it, will fall further behind. However, there is also the potential for the digital economy to transform the lives of the excluded. A multi-disciplinary team, with expertise ranging across technology, business, society, homecare, transport and the creative arts, will identify why groups of people are excluded, and show how the digital economy can have a positive impact on them. Focusing on three important groups – older people, people with disabilities and disaffected youth – it will, for example, explore how sensor-based systems can help people with dementia to live safely for longer in their own homes, by prompting them through everyday tasks. The benefits will be felt not only by the individuals affected, but also by the UK economy, and by those working to maximise the impact of future policy.

Aberdeen: the digital economy and rural UK

In rural UK, sparser populations, greater distances, and lack of critical mass affect social and economic inclusion and business activity. The low penetration and high costs of digital access, compared with urban areas, present challenges for the harnessing of untapped rural economic and social potential. One opportunity, with high potential impact in the transport and mobility area, is to augment existing travel information by real-time 'travel markets' to improve the efficiency and availability of flexible transport solutions and to encourage modal shift from car use.



8. The Research Councils are also developing the UK skills base with an investment of £34m in seven Doctoral Training Centres, where PhD-level research is combined with taught modules to create a new generation of knowledge leaders for Digital Britain.
9. Coupling this research excellence with the Government's agenda for industrial activism ensures that new thinking and new technologies are exploited to create sustainable and profitable new business models. The Technology Strategy Board has been set up to encourage innovation for wealth creation and quality of life, and is endowed with a cross-governmental leadership role to achieve this.
10. The Government has assigned to the Technology Strategy Board the role of championing and leading the public technology and innovation efforts required to realise Digital Britain. This will involve investing with businesses, and coordinating activities with those being pursued by the Research Councils, NESTA, regional agencies and others, as well as engaging with the various departments of Government that have an influence on the digital agenda or who wish to deliver services through digital means.
11. Digital Britain reaches beyond media and communications to penetrate into many market sectors. There is already active Government support for communications-enabled innovation across this space:
 - **Creative Industries:** Accessing and commercialising content in a digitally networked world
 - **Health:** e.g. Assisted Living, Informatics
 - **Transport:** Intelligent transport systems and services
 - **Energy and built environment:** Smart grid and smart meters (DECC) and smart homes
 - **Education:** Social inclusion.
12. **The Technology Strategy Board have assigned an initial budget of £30m, to advance this Digital Britain-related innovation.** The digital infrastructure of the future comprises the "pipes" that deliver information, alongside the tools and services that enable users to extract value from it. As the economics of Digital Britain evolve, the following three areas need to be addressed through innovation in business models, technology and use:

ECONOMICS OF THE NETWORK

13. It will soon not be possible to run a business effectively unless it is equipped with high-bandwidth access to the Internet. These are the roads of the 21st Century, and alongside a public service requirement for universal access, the UK Government must seek next generation access that is scalable to 1Gb/s and beyond. Internet traffic is doubling every 21 months, and South Korea will be responding this by rolling out 1Gbps Internet in 2012-13. To make a similar investment cost-effective in the UK, we need to reduce the cost of deployment



and to create a commercial environment in which investment results in a shorter pay-back time.

14. Access to the home is required; businesses will increasingly be operated from the home, and commercial services to the home are likely to drive network revenues for the foreseeable future. The Technology Strategy Board will encourage technology development for ultra-fast broadband, and look for more cost-effective ways to deploy new infrastructure “pipes” whilst maximising the efficiency with which existing infrastructure is used. It is already investing in Next Generation Access infrastructure technology, with £1m of feasibility studies in progress to enable an anticipated €7.5m of investment with UK business in a the European ERANET+ (PIANO+) Photonics 21 programme in 2010.

ECONOMICS OF CONTENT AND SERVICES

15. The digital economy is changing the nature of business, so business models need to adapt to remain competitive. New methods to extract revenue from content and services are needed, in a world where direct communication between users allows copyright protection to be bypassed and content to move without central control. We need a better understanding of how to make infrastructure both resilient and intelligent, and make business models sustainable, so as to bring benefits to business, individual users, network operators, and the providers of content and services. The Technology Strategy Board will encourage innovation to make digital infrastructure more content- and context-aware, and develop digital test-beds, where businesses and users can explore the effects of alternative operating models, e.g. controlled suspension of copyright protection, new advertising and charging models.

USER PROTECTION AND EMPOWERMENT

16. As digital services are delivered through these new means, there is a continual need for new thinking about security, privacy and usability, and to ensure that these are designed into the system from the start. New technologies are needed to ensure that the system can be used with confidence and trust, and to help the user extract useful information from a deluge of data. To achieve this, we need to ensure that communications channels and services adapt in response to individual users’ requirements. The Technology Strategy Board will encourage technology development in intelligent systems for management of data and services, including new and more responsive interfaces, and will assess user satisfaction with the results.
17. These initiatives will adopt a holistic, integrative approach to the challenges, coordinating across Government and with business, and bringing together interests from throughout the value chain to agree ways forward.



SKILLS FOR A DIGITAL BRITAIN

18. Of the UK's working age population, 5% already work in the digital technology sector. To support the further growth of the sector, we need to tackle the skills gaps that currently exist in the sector and support the 130,000 new entrants that will be required each year for the next decade – working in increasingly highly skilled, complex and senior roles.²⁹ For the digital media sector, it is estimated that a further 84,000 people will be required by 2017.³⁰
19. Half of employers in the digital media sector and one in five in the digital technology sector report skills gaps. Over 20% of companies trying to recruit digital technology professionals report difficulties in attracting applicants with the right skills, and 92% of these companies report a negative impact on their company's business as a result.³¹
20. To achieve the supply of the high quality professionals that can build Digital Britain we need to equip this workforce with contemporary hybrid skills in specific digital technologies. The IT professional workforce, alone, in the UK has almost doubled in the last 12 years: from 550,000 to around one million today, and is forecast to grow strongly over the coming decade. But to achieve sustainable economic performance we need to go further by ensuring we also have a greater capability in, and engagement with, the 'hard' subjects that underpin technological innovation – computer science, mathematics and the physical sciences – and with the skills of our world class creative industries which can then adopt, innovate and exploit these technologies for economic benefit. This means overcoming some long standing and deep-seated challenges: the decline in our national engagement with hard sciences; our tendency to set up divisions at an early age between technology and creativity and between both sectors and business.
21. Following the publication of the Interim Digital Britain Report, the Government asked the two Sector Skills Councils (SSCs) covering digital sectors, e-skills UK and Skillset, to submit a detailed report on the skills issues associated with the future growth of the digital sectors, including recommendations for action to address those skills needs. Their report, Digital Britain: creating the skills for the Digital Economy,³² highlighted the importance of: ensuring a healthy pipeline of talent into the workforce of the digital sectors; supporting the expansion of entry-level employment opportunities in the digital sectors; and, accelerating the development of the skills of the existing workforce.
22. The Government acknowledges the SSCs' clear articulation of the challenges facing the digital sectors, and is committed to playing its part in addressing these skills challenges ensuring that the skills of the workforce as a whole

29 Digital Britain: creating the skills for the Digital Economy, e-skills UK and Skillset, 2009.

30 Figures based on data published in 'Working Futures 2007-2017' and in 'Creative Industries Economic Estimates Statistical Bulletin' (DCMS)

31 Ibid.

32 http://www.culture.gov.uk/reference_library/publications/6071.aspx



compare with the best in the world, and ensuring that we have the skills we need to succeed in the digital economy.

23. The analysis and recommendations in the SSCs' report has informed the development of policy and action as set out in this chapter – and in the forthcoming Higher Education Framework and Active Skills papers.
24. The skills needed for Digital Britain are not just another 'vertical' subject area. They underpin everything we do in the 21st Century. 22 million employees use technology daily in the workforce. Successful, emerging economies have already embraced this message. So we need a step change in approach at all levels – in schools, vocational training, higher education and in the current workforce.
25. The *Leitch Review of Skills* worked closely with the Devolved Administrations in Scotland, Wales and Northern Ireland. The UK Commission for Employment and Skills was established to advise the Government on the policies, strategies, measures and targets needed to become one of the top eight countries in the OECD for skills, jobs and productivity.
26. The UK Government embraced the Leitch targets for England and the recommendations were converted into PSA targets for the current Comprehensive Spending Review period (to 2010-11), and for long-term targets to 2020 (whilst noting that the 2020 Leitch Ambition was very stretching).
27. In February 2009, the Scottish Government published an update to *Skills for Scotland: A Lifelong Skills Strategy* (www.scotland.gov.uk/skills). Significant developments have been made since the publication of the original strategy to address the challenges outlined in it, including in respect of skills utilisation.
28. In Northern Ireland, the Government had already broadly adopted similar aims to those outlined in the Leitch Review and is developing a detailed strategy to be published in 2009. However, it is worth noting that existing Northern Ireland targets do largely align with the Leitch Ambition over a 10 year timeframe (to 2015).
29. The Welsh Government published a new skills and employment strategy in June 2008: *Skills that Work for Wales*. It adopted the ambition to have a world class skills profile by 2020 and confirmed the existing number of short-term targets for qualification attainment by 2010.

Developing Digital Life Skills

30. In Chapter 2 we highlighted the importance of developing Digital Life Skills.
31. In an increasingly ICT-mediated society, digital life skills underpin both employability and social inclusion. Following publication of the Digital Britain Interim Report, John Denham, Secretary of State for Innovation, Universities and Skills commissioned Estelle Morris to undertake an Independent Review of



ICT User Skills. The review was asked to consider the extent to which the need for basic ICT skills is currently being met in England and the state of current provision, and to make recommendations for further action.

32. Estelle Morris' review:

- Adopts the term 'Digital Life Skills' to identify a set of basic ICT skills an adult requires to take their first steps online – *using a computer to safely enter, access and communicate information*.
- Reiterates the importance of the role that Digital Life Skills play in the health and wellbeing of UK citizens and the wider UK economy. In summary, Digital Life Skills have an impact on an adult's equality of access to information and services, employability, social inclusion, engagement in further learning, and also on wider business productivity.
- Finds that whilst the number of people who lack basic ICT skills has reduced, and will continue to reduce as result of existing policy initiatives and demographic change, a significant proportion of the 11.6 million adults who were regarded as digitally excluded in England in 2008 remain at risk of continuing exclusion, with the digital divide widening for those most at risk: those adults over 65, socially excluded, or with few or no qualifications.
- Concludes that despite a number of successful projects and initiatives, a more concerted approach is now needed to make provision available and ensure that adults can access the skills they need to get online.

33. The review's main recommendation is the development of a 'Digital Life Skills Entitlement' to enable adults without Digital Life Skills to:

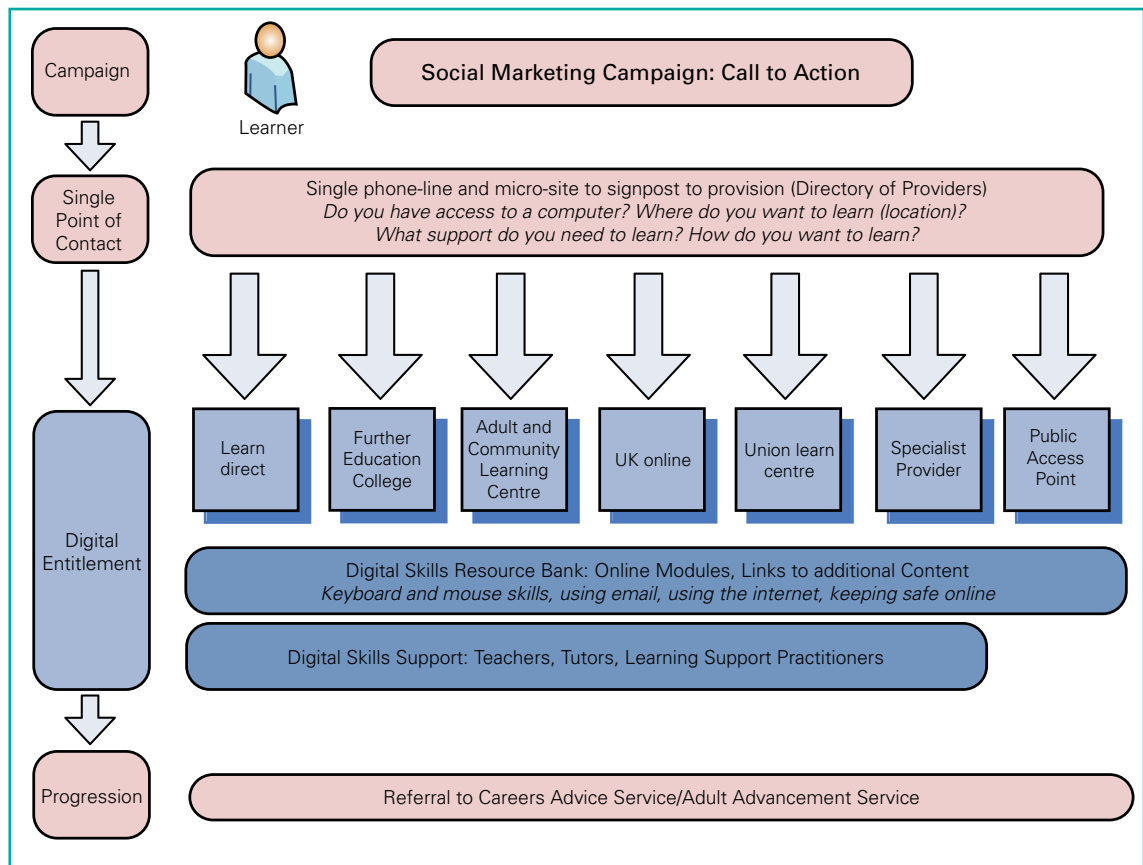
- Request up to nine hours to cover a core set of online learning modules, building on the 'myguide' service;
- Approach any learning provider in the scheme and receive support to learn the basic skills they need to get online – through a UK online centre, Adult and Community Learning Provider, FE College, learndirect, a Unionlearn Centre or other approved provider; and,
- Access to a single helpline and website will be provided with online learning modules and links to a range of free resources, provided and supported by broadcasters and other commercial suppliers.

Figure 7 illustrates how such an Entitlement might work in the current skills landscape.

34. The Government welcomes the recommendations of the Estelle Morris review. The development of the Entitlement could provide one of the foundations for digital participation and for the employability skills required throughout the future workforce. BIS will work with other Government departments to take forward these recommendations.



Figure 7: Digital Life Skills Entitlement



DIGITAL EDUCATION – ENSURING THERE IS A HEALTHY PIPELINE OF TALENT

- 35. In response to the needs of employers, Government is striving to develop a national curriculum that offers seamless opportunities in digital competencies from entry-level school age through to Further Education (FE) and Higher Education (HE), to equip the future workforce with relevant digital skills to succeed.
- 36. The Government’s endorsement of the Rose Review of the primary curriculum is an important step in engaging children in digital competencies. It upgrades ICT (information and communications technology) to a new core competence within the primary curriculum, alongside English, maths and personal development. The aim is to embed ICT across the curriculum to cultivate digital competence essential for learning, business and life. It is also confronts girls’ negative perceptions of ICT that start very early on; currently, while just under half of students taking ICT at GCSE are female, only 10% of A-level Computing students are female and 15% of applicants to Computing degrees are female.³³
- 37. In today’s schools, young people are increasingly being prepared for a Digital Britain by using digital technology in the classroom, from “mashing up” archive film in history and citizenship lessons using *iMovie* to teaching science with digital cameras and animation software. By learning to ‘read’ films, young people

33 e-skills UK, ‘Technology Counts IT and Telecoms Insights 2008’.

are picking up new ways of being literate which are essential if they are to excel in the digital world. The *Film: 21st Century Literacy Strategy* recognises that such an education needs to be embedded more widely and consistently if Britain is to be a world leader in the digital market. The Strategy aims to create more opportunities for young people to increase the range and complexity of content they have access to, and to use film technology more creatively across the curriculum. A film education can help move young people on from being passive viewers or unreflective creators of content to active and informed critics.

Through UK Film Council funding (£750,000 over the next three years) the **Film: 21st Century Literacy Strategy** is helping to lay the foundations of a digital education.

The Film: 21st Century Strategy is funding 12 pilots across the UK over the next three years. The Strategy will create a bank of evidence to demonstrate the impacts of a digital education through film on young people, will offer blue-prints and models for further roll out, and will develop a Continued Professional Development model to support teachers and educators.

38. Of course, Sir Jim Rose's report recognises that ICT skills alone are not sufficient to equip primary school children. He places a welcome emphasis on the importance of developing creative skills, both as subjects in their own right, understanding the arts, including but not limited to art, design, drama, music, dance, creative writing and also using creativity across the curriculum in all subject areas.
39. Needless to say, the development of creativity and the use of the imagination is vital for the development of the range of talents needed to create intellectual property and wealth in all areas of Digital Britain. The Government launched a series of pathfinders in Creative Britain 2008 for a new cultural entitlement of five hours a week in and out of school for all children in England. These pathfinders will offer the first evaluation of the ways to extend these partnerships of the creative and cultural sectors working with education providers to give every child the chance to work with professional creators to develop their own creative talent.

Find Your Talent pathfinder areas are working in ten areas of the country:

Bolton, North Somerset, Telford and Wrekin, Leeds, Tower Hamlets, Liverpool, Leicester and Leicestershire, Customs House, The Creative Foundation (Shepway), Push for Culture (South Hampshire)

With young people at the heart of their programmes they are working to deliver high quality cultural experiences to nurture and develop young people's full creative potential. This means offering a broad range of cultural experience including harnessing the explosion of interest and talent in audio-visual creativity among young people.



40. By raising the education and training participation age to 18, Government aims to encourage students to achieve higher levels of qualifications. It is also rolling out a major programme of reforms to the curriculum for 14-19 year olds, including an emphasis on applying ICT knowledge in real life contexts. School will support all young people to achieve level 2 functional skills in ICT where possible and general qualifications are being revised to ensure their relevance in a rapidly changing work environment. New GCSEs in English, Maths and ICT, incorporating functional skills, will follow in 2010.
41. Specialist Arts and Music Colleges are supporting young people to develop digital life and work skills in day to day teaching through investment in professional standard software and hardware set in enhanced creative spaces such as recording, TV and radio studios and digital art and media suites. Many schools are running their own radio stations and TV stations and are creating the technical support teams for theatres so that young people are also able to develop the skills required by the creative industries. The recent Ofsted report 'Drawing Together'³⁴ identified that the best ICT practice was often found in specialist visual arts colleges, where teachers used it, for example, to model layout, superimpose imagery and deconstruct existing art.
42. Media Education, as distinct from Media Studies, is seen in an increasing number of Arts Colleges as part of an extended definition of literacy, ideally provided across the curriculum, but with opportunities for specialist teaching and assessment of learners' progression in relation to explicitly 'media' outcomes. There is also considerable support for the concept of media as part of the arts curriculum, using digital media to enhance traditional ways of working through the creative process and adding another dimension to students' learning. Arts Colleges are leading the way in developing innovative schemes of work which combine creativity with digital art.
43. Diplomas, the new qualification for 14-19 year olds, combine theoretical and practical learning and have been developed in partnership with over 5,000 schools and colleges, universities and employers. The first five Diploma lines have been taught in schools and colleges since September 2008 including IT, and Creative and Media and there will be 17 lines at 3 qualification levels available by 2012. The latter will help swell the numbers entering the digital professional workforce who can "hit the ground running" with enhanced practical and transferable skills, industry knowledge and business awareness. All Diploma learners will gain valuable transferable skills in English, maths, and ICT through the functional skills component of Diplomas.
44. Arts and Music Colleges have embraced the opportunities to work with the Creative and Media Diploma: staff and students are able to enjoy spending an extended period of their studies working in an area of particular interest, combining creativity and digital technology for real outcomes. At the heart of

34 Ofsted report "Drawing Together: Art, craft and design in schools " April 2009



the Arts and Music specialism is a commitment to providing the best opportunities for students to prepare for the digital age.

45. Specialist Arts and Music Colleges are at the forefront of a diversification in the suite of qualifications, offering awards in, for example, animation, music technology, sound and lighting, from a broader range of providers than the main awarding bodies. These vocational qualifications encompass digital technology in a way that prepares young people to take a full part in Digital Britain.
46. First Light is the UK’s leading initiative enabling young people to realise their potential via creative digital projects. It funds and inspires the making of short digital films, reflecting the diversity of young people’s lives through £1.1m of UK Film Council Lottery funds each year. First Light is also the lead organisation managing DCSF’s youth initiative Mediabox, distributing £8m over two years.

Creative Partnerships is one of the Government’s flagship creative learning programmes funded by the DCMS and DCSF. It is designed to develop the skills of young people across England, raising their aspirations and equipping them for their futures. Young people develop the skills they need to perform well not only in exams and extra-curricular activities, but also in the workplace and wider society. Working alongside Find Your Talent, it tests innovative ways of developing creativity.

Mediabox gives 13-19 year olds in England the opportunity to develop and produce creative media projects for film, television, radio, online and multimedia platforms.

The **Young Design Programme** created and run by the Sorrell Foundation gives schoolchildren the chance to work with university student designers to solve real problems.

Now funded by Becta, the e-skills UK programme **CC4G** (www.CC4G.net), gives 10-14 year old girls a new perspective on technology-related careers, while helping them to acquire valuable skills. Over the past three years, CC4G has engaged with more than 3,500 schools and 125,000 members. In 2009, CC4G will continue to deliver positive perception change on IT related careers through the existing format of out of hours clubs, as well as within curriculum time and will expand to include material for boys.

47. Government has invested considerably in both ICT infrastructure and in the provision of ICT kit in schools, with most now well-equipped to make better use of technology to support learning; and is establishing a network of nine regional ICT support hubs providing a range of Continuing Professional Development models that, among other things, improve teaching and learning. The education and training system is being supported through the Government’s Harnessing Technology³⁵ strategy to become fully confident in its use of technology.

35 http://partners.becta.org.uk/index.php?section=ppb&catcode=_ppb_pb_01&rid=15462



48. The Technology Strategy Board, in collaboration with BIS and Becta, is now exploring the feasibility and scope for an innovation platform to develop learning technologies to address national skills challenges.
49. A key concern with current teaching of ICT has been the lack of qualifications, skills and status of ICT teachers. ICT is recognised as a priority subject by the Government and the Training and Development Agency for Schools (TDA) and efforts are being made to recruit more specialist ICT teachers. All eligible trainees on postgraduate courses leading to qualified teacher status in England currently receive a £9,000 training bursary and a golden hello payment of £2,500 in the second year of teaching after induction has been completed satisfactorily. These incentives have helped reduce the number of ICT teaching vacancies in local authority maintained secondary schools from a peak of 2.8% in January 2001 to 0.8% in January 2009.
50. The £300m Home Access Programme, currently in pilot phase and due to be rolled out nationally in Autumn 2009, will promote the benefits of home access to families and give direct financial support to around 330,000 of the most disadvantaged learners whose families meet the eligibility criteria.
51. DCSF is working with schools and other delivery partners to improve the quality and impartiality of Careers Education (CE) within schools and strengthen and develop the Information Advice and Guidance (IAG). DCSF will launch its IAG strategy this Summer, drawing together the range of national and local online services. SSCs are involved in developing and updating job profiles on the jobs4u careers' database which has links to further detailed information, including SSC websites; the Apprenticeship vacancy matching service; Connexions Direct; Directgov; and to local 14-19 Prospectuses.

The £2.7m e-skills UK **Revitalise IT** project seeks to address the decline in uptake of IT-related degree courses, including work with employers and universities in the south-east to achieve greater alignment with the needs of employers and to transform student attitudes to IT-related educations and careers. The project will also work intensively with a small number of institutions with an interest in business IT to enhance their existing curriculum. The project will continue to 2010.

BUILDING HIGHER LEVEL SKILLS FOR A DIGITAL BRITAIN

52. World class research and high quality teaching in HE are crucial to compete successfully in the emerging global economy. HE has always had a core role in contributing to the success of the wider economy. Over the past 50 years, the massive increases in student participation levels, the constant development of new programmes and new institutions such as business schools, and the expansion of research have been driven by economic needs. It is more important than ever that HE should offer the education that will equip students for their current and future lives, to be able to respond to rapidly



changing needs in the digital sectors and the wider economy. Universities face the challenge of responding to student and business needs that are increasingly complex.

53. The UK needs a supply of a hybrid mix of higher-level digital and other skills if we are to remain competitive in digital technology and to continue to attract foreign direct investment. The sector needs a well-skilled recruitment pool with a particular focus on business skills, interpersonal skills and on higher-level technical skills.
54. The UK HE sector produces world-class graduates in the disciplines which underpin a Digital Britain (IT/Computing, Communications Technologies, and Creative Technologies). Yet we know that there are also problems getting graduates with the right skills into the right jobs at the right time.
55. Student demand for computing courses has fluctuated in recent years. There was a steep rise in demand and provision through the 1990s, followed by an equally steep fall in the first half of the present decade. The decline might be a reflection of perceived employment opportunities after the collapse of the dotcom boom and the waning of concerns about the 'Millennium Bug'. Since 2006-07 numbers have levelled off and accepted applicants have started to rise again for the current year, but we should not be complacent and should continue to promote the sector as an area with good opportunities for those with the right aptitudes.
56. There are around 13,000 media programmes at FE and HE levels serving an estimated 50,000 students. This is oversupply in terms of the digital media sector but provides valuable skills into the wider economy. However, too many courses produce graduates with general digital media skills but with insufficient specialisms to meet employer needs.
57. **In July we will publish a Higher Education Framework which will set out how the activist approach of *New Industry, New Jobs* will be applied in the HE sector.** It will be a comprehensive overview of the future role of HE, ensuring that Government supports the HE sector and employers, including in digital industries, in working together to address sectoral skills needs.
58. The HE Framework will call on universities to support the sectoral strategies promised in *New Industry, New Jobs*. It will set out how Government will make clearer signals to universities, so that new programmes can be established in priority areas, and existing programmes refocused. It will stress the importance of clear information being available about all programmes: what the student will study, how relevant businesses have been involved in the design and accreditation of the programme and what has happened to that programme's graduates in their early careers. It will also examine the issue of shaping learner demand, and how public funding mechanisms can be used to support subject areas that are most geared to future economic needs. The current revival of computer science course applications suggests that prospective students do pick up signals about employer demand.



59. Higher Education Institutions (HEIs) supply the highly-skilled people that Digital Britain needs. Those businesses, like any customer, need to articulate their needs, and what they will pay for those needs to be met. We want to speed up the move to a position where businesses in digital sectors routinely have this conversation with HEIs as suppliers of the skills businesses want. We will kick-start this process, which will evolve into a natural customer-supplier conversation without further Government intervention. Building on good work to date led by e-skills UK and Skillset in particular, we will bring together key players from Digital Britain industries and from HEIs to discuss how course content can be designed to meet sectoral needs, and what businesses are prepared to pay for this kind of tailor-made provision.
60. There are already many good examples of HEIs working with SSCs and employers to develop and deliver undergraduate and other higher level skills training programmes tailored to needs of employers, including through the explicit sector approval of courses. The Skillset accredited courses scheme recognises courses within the UK that offer exceptional standards of training in, for example, Screen Writing, Animation and Computer Games.

The **Skillset Media Academy Network** is formed from 19 Academies across the UK, centres of excellence in television and interactive media. Offering undergraduate and postgraduate courses, short courses and Continuing Professional Development, the Skillset Media Academies bring academia and the industry together to provide training that innovates to meet the challenge of the constantly evolving media industries.

There are five Skillset Media Academies in London including: **Ravensbourne College of Design and Communication**, which is relocating into a new state of the art building on the Greenwich Peninsula. The new building opens in 2010, and will be a centre of excellence for teaching and research in digital broadcasting. This is an outstanding new development, which the Government has supported. This Academy enjoys an international reputation for developing high level technical craft, creative content, entrepreneurial and business management skills, and for responding effectively to industry skills gaps.

Students have direct access to key players within the creative industries, to the very latest equipment and facilities, and the opportunity to showcase their talents at the annual Rave on Air event – the largest student-led broadcasting event in the UK. The Skillset Media Academies will use the synergy created through the partnership and its combined industry relationships to identify new opportunities for skills development. In addition to the breadth and depth of skills offered, this unique partnership will also capture cross platform and convergence opportunities and ensure that it is supporting the potential of the industry both for today and tomorrow.



61. In addition, DCMS has commissioned research into effective HE engagement with the creative industries that will inform the future skills the UK’s creative sector needs to retain its world-leading position. The wealth of existing good practice means we are now seeing new innovative course design for the IT sector where e-skills UK are working with HEIs to better meet employer demand.
62. Since 2007, we have prioritised growth in HE student numbers through employer-led Foundation degrees. A detailed National Foundation Degree Framework Specification has been produced by a consortium of ICT employers, HEIs and The Institute of Telecommunications Professionals to meet the needs of the ICT sector.

The Information Technology Management for Business (ITMB) degree

The Government encourages businesses to work with universities in devising courses suited to today’s business needs. The Information Technology Management for Business (ITMB) degree was designed by employers of IT professionals and universities with the support of the Sector Skills Council, e-skills UK.

ITMB, which is focused on deriving business benefit from technology, established a new model of degree course with equal weighting given to technical, business, interpersonal and project competencies. A growing band of employers – currently over 50 – support the delivery of the programme, for example delivering ‘guru’ lectures, offering work experience, donating competition prizes and providing careers advice.

With employers across the sector actively working together to develop and support the degree, students can be confident that their learning is immediately relevant and will give them a head start in their IT career.

With over 550 students currently studying ITMB at 13 universities, applications are increasing rapidly. It is also helping to address a gender imbalance, with the proportion of women on ITMB degrees (32%) being double that of IT degrees overall.

BUILDING THE SKILLS OF THE EXISTING WORKFORCE

63. We are implementing a ‘demand-led’ skills system that delivers what employers and individuals need. That demand-led approach is increasingly effective in meeting today’s skills needs; in particular, Train to Gain is successfully delivering high-quality work-based training for employers and learners.
64. However, if we are to rise to the challenges and seize the opportunities of the new global economy, the skills system must not only respond to current demand but also anticipate and respond to the skills needs associated with the future growth in the economy in areas such as Digital Britain.
65. A key element of this work will include developing with employers, the UK Commission for Employment and Skills (UKCES), and the network of SSCs,



including e-skills UK and Skillset, the analytical capability to quickly and effectively collect, process, and disseminate intelligence on current and future skills needs in key sectors and markets like the digital sectors.

66. The new Skills Funding Agency (SFA), which becomes operational later this year, will ensure that the skills system has the capacity and the funding available to respond to the skills needs identified in sectors, such as digital technology and digital content, which will be key for future growth.

THE ROLE OF THE SSCS

67. Sector Skills Councils play a vital role as advocates for their industries and in identifying and tackling sector-critical skills needs. The core remit of SSCs is to raise employer ambition and investment in skills; articulate the future skills needs of their sector, and ensure that the supply of skills and qualifications is driven by employers.
68. Skillset is the SSC for the broadcasting, photo imaging, audio visual and publishing sector. Skillset was one of the first SSCs to achieve a new licence, in May of this year. The re-licensing assessment showed Skillset to be particularly strong in partnership working with the HE sector, playing a leading role in the development of Screen and Media Academies. Skillset has also demonstrated strong performance in working across the four nations to achieve objectives. They have shown that they are of the highest calibre and providing a good service to employers in their sector.
69. e-skills UK is the SSC for information technology. e-skills UK has led sector specific solutions that have brought significant benefits for employers and learners, including the Computer Clubs for Girls programme which has helped around 125k girls in 3,800 schools; the Information Technology Management for Business degree that is now offered in 13 universities; and 30k skills passports that are being used by individuals to track progress in IT user skills.

NSA FOR IT

The Government is looking to invest £8.5m in a brand new National Skills Academy for Information Technology accompanied by a similar level of employer investment over a three year development phase. Once it has achieved final approval by the LSC later this year, the Academy, which is currently in a development and business planning phase, will be a destination of choice and excellence for industry training and world class skills. The Academy will put employers at the heart of skills training for their sector, with e-skills UK, providers and employers working together to transform the UK's ability to address its IT professional skills needs. The Academy will identify demand for future skills needs, ensure a responsive supply of excellent education and training, and ensure this is easily accessible by employers. It expects to train 10,000 IT professionals in its first three years.



Delivering business value from technology depends on highly capable IT professionals, who need constantly updated skills. Through the Academy, IT professionals will be able to develop their skills to universally recognised standards which provide global competitive advantage to companies of all sizes in every sector.

The Academy will improve the uptake of employer-valued learning and qualifications. It will make it easier for employers to identify and access appropriate high quality training and development programmes from a network of world class education and training providers. It will also enable employers and educators to develop innovative new skills solutions, such as programmes to develop capabilities such as the management of complex IT projects, global outsourcing and IT-enabled business change. This includes building on the existing investments of many of the Academy's employer partners who are working in partnership with universities to develop new degrees and Masters programmes to meet the needs of the sector.

The new Skills Academy will also support the development and expansion of apprenticeships in the IT sector by providing a centre of excellence in the delivery of training for sector apprentices at all levels, including Advanced and Higher Apprenticeships. It will also develop new delivery models to respond flexibly to demand for apprentices from SMEs. For instance, through its employer partners, it will open up high quality programmes from large organisations to smaller companies in the sector.

The Academy will enable employers to find the best training more easily and to achieve a greater return on training investment, and it will enable IT professionals to increase their skills and ability to add value for employers. Through the Academy, IT professionals will be able to achieve recognition for skills acquired on the job and from private training courses, employers' own training, and publicly funded provision in HE and FE.

TRAIN TO GAIN

70. Train to Gain is the Government's flagship skills service for employers. Since it was launched in April 2006, over 127,000 employers have engaged with Train to Gain and nearly 1 million learners have been supported to improve their skills and gain new qualifications.
71. Through the service employers of all sizes in the digital sectors can access quality-assured, impartial advice to help them identify and address their skills needs at all levels from basic literacy and numeracy, through to apprenticeships and higher level skills. Impartial, expert skills brokers will work with employers to help them identify their skills needs at all levels, and then source the top quality training – including apprenticeships – that will best address those needs. Government funding is available, to sit alongside the employers' own financial contribution, to pay for the training. Government funding is



specifically targeted at lower level skills which are essential if we are to address social and digital exclusion.

72. The Train to Gain offer to employers is tailored to meet the particular needs and circumstance of employers through 'sector compacts'. In support of the digital media sector, the Government has agreed a compact with Skillset, worth £11m over the next three years, to provide additional support for employers to invest in skills in areas – such as advanced media techniques, digital print and computer games development – needed to help the industry maintain its international position.

APPRENTICESHIPS

73. Although the primary skills needs for a Digital Britain are at the higher levels, apprenticeships provide an important entry route and career path into the digital sectors. The Government is committed to ensuring that apprenticeship programmes provide clear progression routes for young people and adults to employment and, if they want to, to continue studying in further or higher education. We will ensure that level 3 and level 4 qualifications within an apprenticeship programme have a UCAS tariff rating to support and encourage progression to higher education, where appropriate.
74. Skillset has developed apprenticeships in craft grades for film and TV, for photographers in Photo Imaging and in Quality Assurance Testing for Computer Games. As many roles in digital media require a hybrid of technical and creative abilities, there is a need for multi-skilled new entrants who are able to develop understanding of the whole production process and know how to undertake a number of different functions within it. Therefore, Skillset is developing a level 3 Creative and Digital Media Apprenticeship Framework as a cross-sector initiative. London and the North West of England are the first areas to pilot this new activity and Skillset is planning further expansion in the South West, Scotland and Wales. Responding to the needs for high-level skills, Skillset is currently piloting high-level Apprenticeships linked to the attainment of Foundation Degrees and offered in partnership between a Skillset Media Academy and an employer or employers.
75. As a predominantly graduate workforce that continues to recruit graduates but still needs to train them on their first job, the digital media industries would like to have apprenticeships and internship programmes for graduates and others entering digital professional careers. This requires development of new level 4 apprenticeship frameworks to provide a flexible route into the industry. By complementing current apprenticeship policy, these programmes will provide employer-designed apprenticeships and shorter-term internships with flexible training content that meets industry needs and provides an efficient bridge to work.
76. Apprenticeships are valuable at all levels but we expect with the rate and pace of transformation and utilisation of innovative digital technologies throughout



our economy, that the demand for higher level skills will continue to grow. Higher Apprenticeships are already available in IT and Telecoms – aimed at those who develop systems, software, services and communications infrastructure – and for IT users, to enable managers to understand the strategic implications of technology and to realise its full potential in the business context. These programmes include foundation degrees with additional units at levels 3 and 4 requiring competence in the work context.

The **BBC Vision Intake Pool** is an entry level programme designed to develop a more diverse pool of talent within the organisation which better reflects the diversity of the organisation's audiences. The focus is on selecting people with a passion and interest in the media. The programme targets people with a real understanding – or direct experience – of the issues facing the diverse communities which make up the UK. Potential is more important than any prior experience or qualifications. As such qualifications are not part of the sifting process.

CREATING EMPLOYMENT OPPORTUNITIES IN THE DIGITAL SECTORS

77. In some of the creative and cultural training centres such as the performing arts and music which are the starting point for many entering the creative industries, there are fewer requirements for higher education qualifications. Many of the entry points require enthusiasm, passion and talent rather than formal qualifications.
78. As we describe elsewhere in this report, the passion for news gathering and journalism has extended beyond the analogue definitions of professional and amateur. The new opportunities for local news gathering, community based initiatives in radio and online, and the development of local and regional consortia, offer tantalising opportunities to create new models for regional and even local training hubs.
79. The Government proposes that the pilots of local news consortia include the development of appropriate partnerships with local FE and HE and other appropriate local partners to enable them to act as training hubs and entry points at local level to journalism and other digital news jobs.
80. In the longer term, the creation of local news consortia could change the balance of training and job opportunities by creating centres of training and career guidance at a wide selection of local and regional centres. The local hubs should develop clear pathways and links to regional providers, taking advantage of professional training opportunities co-ordinated by Skillset or public service content and news providers.
81. The challenge is to create a new culture of local and regional training, fair and transparent entry points and erode the old privileges of unpaid internships, access to which can be a matter of who you know rather than what you know.



82. The initial findings of the Fair Access to the Professions panel chaired by Alan Milburn lays down a foundation to all the professions, as well as employers and the Government, to rise to the challenge to now go further and faster in breaking down the practical barriers that stand in the way of talented young people across the country being able to realise their aspirations. The panel will make its recommendations to the Government this Summer.
83. DWP, DCSF, DCMS and BIS are working together to ensure that training and investment in job creation is part of a coherent strategy across Government to maximise opportunity for all. The digital sectors will make a strong contribution to plans to provide between five and ten thousand jobs for young people in the culture and creative industries announced as part of the Future Jobs fund.
84. The creative sectors are well placed to contribute to Government's commitment that every 18 to 24 year old who is approaching 12 months unemployment or more will be guaranteed a new job, training or a paid work experience place. We are exploring how these sectors can access the £1bn Job Fund and help provide employment and training for unemployed young people. Young people bring as many skills as they learn, and have the power to transform our cultural and creative institutions.

INVESTING IN THE CAPABILITY OF BUSINESSES TO ADD ECONOMIC VALUE

85. UK SMEs make up nearly 90% of the economy and they need support to enable them to exploit advanced technology in order to transform their business processes. Digital business skills propel the economy, yielding efficiencies and bottom-line business benefits. Virtually every company in the UK, large, medium, small and micro, uses digital media for all sorts of business needs: human resources, public relations, finance, supply chains, marketing, training, interactive communications, relationship management and innovation. Matching skills capability to this ebb and flow, to this dynamic evolution, is a vital ingredient for the UK to remain in the vanguard of the global digital league.
86. For the UK to leverage competitiveness and productivity benefits, it is essential for those strategically influential business people – including in SMEs and the UK's four million leaders and managers – to have a solid grasp of the strategic implications of technology and to be able to deploy the skills (themselves and within their workforce) to realise its potential.
87. Companies that do not adopt digital technology fail to benefit from the productivity and competitiveness benefits it offers. It should be no more acceptable for those in leadership roles to lack an understanding of technology than it is to lack an understanding of finance.
88. SMEs, in particular, need targeted business support to help them understand the potential business benefits of ICT.
89. That is why **BIS, in collaboration with the Regional Development Agencies (RDAs), is spending up to £23m over three years piloting a range of**



business support interventions for SMEs to assist them to exploit advanced ICT to transform their business processes.

90. The creative industries, mostly themselves SMEs, have responded with enthusiasm to the rallying call of the Government to support and develop the talent of 18-24 year olds who may face unemployment in the next year. This provides a new impetus for Government to work to ensure that the tools offered through TTG equip the employer to support the unemployed trainee in these creative workplaces.

GOVERNMENT’S ROLE AS CUSTOMER AND REGULATOR

91. The Government believes that open markets are a source of efficiency and dynamism, and that competition breeds innovation and growth. A more active approach from Government to competitiveness as a whole, and to skills within that – as described in *New Industry, New Jobs* – does not imply a fundamental change in the Government’s view of the relationship between the market and the state.
92. That said the way the Government sees its own role in the market does need to change. Government has a fundamental role in setting the regulatory framework in which Digital Britain operates. Through that role, we must stand ready to address market failures which might otherwise significantly constrain economic performance, including businesses being handicapped in competing effectively in the market because of a lack of available skills, and businesses lacking the expertise they need to enter new or overseas markets.
93. Government is committed to ensuring that regulatory frameworks actively contribute to and encourage skills development.
94. Government’s role as a customer in the market also offers a unique opportunity to support and promote investment in innovation and skills. Government is committed to routinely considering and addressing skills issues through public procurement – worth some £175bn a year, including £14bn on IT contracts – both in letting new contracts, and working with existing contractors on a voluntary basis.
95. Within that overarching commitment, we have been working with public sector clients and suppliers in individual sectors to shape and make a reality of more specific commitments that will help address the particular skills issues in those sectors. **Whenever Government Departments and Agencies let major new IT contracts, they will now look to make it a requirement that the successful contractor has in place a formal training plan for the development of the project workforce. We will also look to promote investment in skills through Government’s procurement of creative content.**
96. To support clients and suppliers in making a reality of these commitments, DIUS and OGC recently published *Promoting Skills through Public Procurement*, a new guide to provide procurers across the public sector with practical advice on how skills and training can be embedded in public procurement.



THE ROLE OF THE PUBLICLY FUNDED OR PUBLICLY OWNED BROADCASTERS

97. Public service broadcasters have a unique responsibility in increasing digital participation and therefore the skills needed in a Digital Britain. The BBC already has a formal obligation under its Agreement to contribute to the preparation and maintenance of a highly skilled media workforce. In fulfilment of this obligation the Corporation continues to invest heavily in training programmes and to set standards for the entire industry.
98. The BBC and Channel 4 too have an important role to play. In particular, Channel 4 will have the opportunity under its new remit to enhance its contribution to engagement and development across the sector. Channel 4's own commitment to diversity issues for example might lead them to feel that this is an area in which they would particularly wish to lead, building on their Work Related Learning programme. **The Government will be working with Channel 4 and with Skillset in the coming months to ensure that this potential is fully realised.**
99. The Government would encourage all content providers individually and the Producers Alliance of Cinema and Television (PACT) to work with Skillset and the RDAs to ensure that they play their role in Future Jobs and other Industrial Activism, providing appropriate mentoring and training support to new SMEs, emerging individual creators and entrepreneurs as well as training opportunities for staff and apprenticeships.

CONCLUSION

100. Government is seeking to create a seamless strategy from the very young in primary education through a much improved education system founded on the building blocks of digital careers and a re-vitalised HE skills system better aligned to the needs of a 21st century digital economy.
101. The delivery of education and skills in this range of creative and technological abilities we need for Digital Britain has tested the ability of Government to join up the needs of employers, consumers and citizens with emerging entrepreneurs and workers. However, the best of our talent is in demand round the world, which shows we are on the right road, and increasingly our models of talent development are also being copied round the world. If our Industrial Activism creates the right markets in the workforce, the right policy incentives and the right consumer conditions, then our talents will reap the rewards they deserve here in the UK for the benefit of our citizens and our economy.



CASE STUDY

The Blogger

Judith O'Reilly has re-invented herself in the blogosphere. The former Sunday Times and BBC journalist has become a best-selling author after chronicling her London exile as "Wife in the North".

Shortly after launching the blog, the volume of users and recommendations from other bloggers attracted the attention of Penguin, which last year published a paperback version of her online diary, charting the troubled adjustment of an urban family to rural England.

The emotional roller-coaster won followers from Indonesia to Australia and the US. "At a time when people don't know their own neighbour, there is a great deal of interest in what your virtual neighbour thinks," says O'Reilly, now working on her second book.

Her publishers, aware of the link between "digital word-of-mouth" and book sales, encouraged her to create a Facebook presence, while advertising the book-of-the-blog on YouTube.

The exercise has not been stress-free. "On a blog you can acquire trolls, which are anonymous critical commentators," explains O'Reilly. "You have to decide whether to live with them or not."

She monitored site traffic using Technorati, the service that shows which other blogs are connecting to Wife in the North, where users are from and how long they stay on the site. Such technology helps measure audience appetite and reaction to blog content, which O'Reilly warns can be both supportive and harsh.

Whatever the subject matter, she identifies some common themes in the blogosphere. "You need very little technical know-how. You can have a professional blog or a hobby blog for something like knitting or dog-breeding right through to politics. If a blog is authentic and you have a passion for saying what's on your mind, it shows."



Chapter 7

Digital Security and Safety

“We have always had the ability to create structures that are quite bewildering to us. A good example is a city. I would say that the Internet is more like a city than anything else. In cities there are slums, there are palaces of wisdom, libraries, museums, art galleries, theatres, places of entertainment and shops. And there are places in those cities where you would not want to go down dark alleys let alone have your children do so, but slowly we let our children learn to use the cities and they do.”

Stephen Fry – Digital Britain Summit

AMBITION: TO ENSURE THAT EVERYONE CAN LIVE AND WORK ONLINE WITH CONFIDENCE AND SAFETY

INTRODUCTION

1. As the move from analogue to digital is radically changing our network infrastructure, our creative industries, the delivery of Government services and many other areas highlighted in this report, so it will require our policy, regulatory and legal frameworks around security and safety to adapt to the transition to digital, global networks.
2. Most of the risks of the real world – short of direct physical harm – are replicated in the online world. Potentially harmful and offensive material can be created and disseminated, lies can be told, scams perpetrated, privacy invaded, vulnerable people led to harm themselves or others. And there is the risk of attacks to the system itself and individual parts of it which are critical to governments, businesses and individuals.
3. What is illegal offline is also illegal online. But whilst online the criminal is digital, the protector and enforcer is often still analogue: certainly our frameworks for online protection have not kept pace with 200 years’ development of consumer protection law and enforcement in the offline world. The Government recognises that, as a society, we need to catch up.



4. It is not the Government’s policy to react to the challenge of the change the Internet presents by retreating to a position of protectionism or oppressive regulation. But questions around online security, Internet governance, regulation and consumer protection will be brought into much sharper focus as we move toward a ubiquity of broadband where more and more of us are digitally domiciled.
5. Whilst ultimately, the Internet cannot be made risk-free if it is to function effectively, governments, businesses, civil society and individual users can and must share responsibility for minimising the risks. And due to its global nature, issues relating to governance of the Internet are often outside the jurisdiction of individual national governments and regulators. Responsibility for ensuring that Internet governance is effective therefore needs to be considered at three levels:
 - at the global level, recognising the cross jurisdictional nature of today’s networks;
 - at the national level, on those issues where appropriate national action remains a highly effective tool; and
 - at the consumer level, through appropriate action and by empowering all of us to take steps to protect themselves.
6. The rest of this chapter considers each of these three areas.

GLOBALISATION AND THE INTERNET

7. The Internet is the first truly global network, connecting nearly a third of humankind – now approaching 2 billion users – worldwide. It crosses international boundaries allowing instant global communication, sharing and dissemination of information across multiple international jurisdictions at the click of a button. Cyberspace does not have national borders.
8. Many of the companies that have evolved with the Internet are today instantly recognisable global brands. Companies such as Google, Yahoo, eBay and others have used the global scale of the Internet to reach millions of customers in timescales that were previously unimaginable. In 1999 Google employed 8 people. This year it became the world’s first \$100bn global brand.
9. The Internet is in essence a participative, generative network promoting interactivity, collaboration and conversation. It is a place where people can share and shape information, upload their own content and edit and recast other people’s creations, inviting all of us to become innovators, editors and creators. And we communicate, transact and share globally across the Internet. It is one of its greatest strengths.
10. It is also a fundamentally different network to its analogue predecessors, which were confined within national borders and subject to clear national jurisdiction. In considering questions around digital security, no free, democratically-ruled, country can afford to make the mistake of starting from our current systems



and considering how we can adapt them to the online environment. Rather, we must evolve new models and approaches that are in harmony with the global nature of the Internet.

11. Other countries with very different political systems may seek to adopt different approaches, based on keeping analogue systems of control in the digital age. The Government believes this to be both undesirable and unsustainable.
12. In a global economy we must respect the particular approaches that different countries adopt. We cannot assume that only one global model fits all sizes. But we should take the Internet pioneers' assumptions of freedom, entrepreneurialism and untrammelled innovation as the base model. Particular national approaches should be respected as the exception rather than as the rule. If some countries still seek to deny the global nature of the Internet, they must accept the consequences in slower access to information and growth. They cannot assume a veto on the Internet's worldwide growth or on its global governance.
13. One means of achieving this global coordination is firstly through the Internet Governance Forum (IGF), which provides an international platform for sharing information and best practice, addressing issues such as the global digital divide and increasing access to the Internet worldwide, trust, safety and the impact of future technologies. The IGF has, since 2005, provided a crucial platform for information sharing and dialogue on topics critical to global, social and political development, fostering the sustainability, robustness, security, stability and development of the Internet.
14. Some governments have criticised the IGF for not being able to take decisions. We in the UK believe however that this is in fact one of its fundamental strengths. Without being subject to the constraints of an international negotiating forum, the IGF is able to bring together all the key stakeholder experts from across the globe to identify the best policy approaches, the available technical solutions and the way forward for innovators at the edge of the Internet to have a real immediate impact.
15. In addition to the yearly sessions of the IGF, vital work undertaken by the Internet industry and its communities happens all year round. The UK was one of the first countries in 2007 to develop this multi-stakeholder model at the national level. Sponsored by the ".uk" registry Nominet with support from BIS and a Parliamentarian group led by Alun Michael, MP, the aim of the UK IGF is to prepare UK inputs in the run up to the global annual IGF and subsequently to disseminate its outputs to the wider UK Internet community while generally maximising UK stakeholder engagement in the IGF process. The UK IGF has become a role model for other national and regional IGFs which have emerged worldwide in the last 12 months.
16. The IGF today is at a crucial turning point. The IGF was set up for an initial period of five years. Discussions are now taking place about whether the IGF mandate should be renewed, and if so whether it should be changed in any



way, with the possible extension of the IGF beyond 2010. The final decision on the future of the IGF will be taken by the UN General Assembly in late 2010. **The UK Government supports the continuation of the IGF for a further five year term continuing to represent all stakeholders involved. The UK does not support any move towards the IGF transforming into a new UN Agency or being subsumed within an existing one.**

17. The second key multi-stakeholder forum with a crucial role in ensuring that the critical infrastructure of the Internet remains robust, resilient and supportive of innovation and growth, is the Internet Corporation for Assigned Names and Numbers (ICANN). ICANN provides a coordination role of the Internet's domain naming system. It is a not-for-profit private sector organisation based in California. There are countries that see ICANN's operational role with regard in particular to country code domain names and the introduction of non-Latin based scripts such as Arabic and Chinese as impacting on their national sovereignty over critical Internet resources.
18. The future role of ICANN's Governmental Advisory Committee (GAC) will be crucial in ensuring that ICANN's management take full account of the views of all governments on DNS issues that concern public policy. The UK will continue to contribute to the GAC's work in making recommendations that ICANN will adopt in its policy-making process, and to ensure that ICANN remains resilient, robust, immune to capture by any specific interests, and fully accountable to the global Internet community. **The UK strongly supports ICANN continuing as the unique not-for-profit multi-stakeholder organisation with responsibility for the management of the domain name system and it taking a leadership role in improving standards of the security in the key protocols, processes and technology that underpins the use of the domain name system.**

How Do Domain Names Work?

The domain name system (DNS) is the addressing system for the Internet and is used to give each host or computer on the Internet a unique name (e.g.. www.culture.gov.uk). There are two sorts of domain names: either Generic Top Level Domains (gTLDs) , such as .com, .org, or Country Code Top Level Domain (ccTLDs) such as .uk and .fr. Computers or hosts are identified by their IP number, a string of digits analogous to a phone number. 89.234.33.13 is the IP number for www.culture.gov.uk. It is the IP number which is used to route Internet traffic around the world, not the domain name. At the top of the DNS management structure is ICANN. ICANN co-ordinates these unique IP numbers around the world and decides which organisations can operate a particular Top Level Domain. The central register of .uk domain names is managed by Nominet, a not-for-profit company. Nominet is an active member of the ICANN ccTLD community.



19. In 2008, ICANN proposed the introduction of a new policy that would allow applications for an unlimited number of generic Top Level Domains (gTLDs). These would potentially include not only purely generic names like .sport but also geographical ones like .france and brand names like .nissan. If the current policy approval process runs its course and implementation of the application procedure is successfully put in place in 2010, ICANN's assessment is that it expects to receive approximately 500 applications from potential registries to run new gTLDs of which perhaps 200 may prove successful. Some of these new registries may well be based in the UK and this is expected to have a significant impact in promoting greater competition in the domain names market and in enhancing participation in the development of the global Internet.
20. The domain system is a crucial element in the Internet economy. Without a smooth running system, including a well functioning registration process, the Internet as we know it might grind to a halt with the knock on effects to the wider economy. The .uk domain system itself is an important asset for the UK. Nominet operates at the heart of e-commerce in the UK, running one of the world's largest Internet registries and managing over seven million domain names. It is highly respected within the domain name community including internationally.

Nominet's Corporate Governance Review

To address concerns expressed by the government about how Nominet's constitution and structure met its stakeholder responsibilities, Nominet commissioned an independent corporate governance review conducted by Professor Bob Garratt. The recommendations of that review were published in April 2009. They included creating a separate role of Managing Director; revise the system of voting for directors; appointment of non-executive directors; broaden the membership; revision of the voting arrangements to achieve a fair balance across the membership. The Government has welcomed the Review's recommendations which we hope will be implemented. We look forward to the response of Nominet's membership.

21. For years the .uk domain name industry has been self regulated without need for Government intervention and this has largely worked well. Nominet has ensured at the same time that all wider stakeholder interests are taken into account. There have however been reported abuses of the domain name system such as cyber-squatting, drop catching, pressure sales of domain names and poor registration practices. If the successful self-regulation were to fail through a failure to address the concerns identified in the Nominet governance review, then the Government would have to intervene in order to protect consumer interests and guarantee Internet users in the UK that the domain name system will remain coherent and continue to function in their interest.



22. In view of this, the Government has decided that on a precautionary basis it will seek reserve powers in any appropriate forthcoming legislation to regulate against the risk that the entry into the sector of a number of new, and as yet unidentified, players will mean we need a basis for industry cooperation. These powers may, for example, enable the Government to direct Ofcom to regulate the distribution of domain names in the UK, possibly by setting conditions and establishing a code of practice to which the industry would be required to conform.

THE NATIONAL APPROACH TO DIGITAL SECURITY

23. Whilst global collaboration will be increasingly important, there remains a significant and critical role for appropriate action at the National level to help shape a safer online world.
24. Ensuring that the UK has a world class approach to digital security will bring significant benefits:
- UK networks will be seen as safe and reputable (where perhaps others are unreliable or more vulnerable to criminal exploitation).
 - The intellectual property of businesses, universities and other institutions, which underpins a knowledge economy, will be better protected.
 - Businesses using UK networks will gain a competitive edge in the global marketplace.
 - UK citizens and business will prosper as the volume of business transacted securely online continues to increase.
 - UK citizens will have greater confidence in public service transactions; thus yielding efficiencies and cost saving.
 - And the businesses that have delivered secure functionality will have opportunities to sell their services globally on the back of UK success.
25. Any steps taken by Government must balance the needs and rights of the user, the reality of what is possible and the needs of business, delivering a proportionate policy and regulatory approach.
26. The rest of this Chapter considers the specific steps required at a National level to meet these ambitions, under three distinct headings:
- **High Level Cyber Security:** by which we mean the approach to high level network security and to serious and organised crime and terrorism, often taking place at a supra-national level;
 - **Personal Digital and Data Security:** by which we mean the approach to making consumers safer online in relation to online scams and rip-offs, identity and data privacy and personal network protection; and



- **Content Safeguards:** by which we mean protecting consumers from illegal content and protection of certain vulnerable groups from potentially harmful material, particularly children.

HIGH LEVEL CYBER SECURITY

27. If we are to be successful in meeting the complex and inter-dependent challenges of Cyber Security, it will be vital to work with all sectors in the UK, as well as international partners. E-crimes relating to illegal access, illegal interception, data interference, botnets and other issues often require today cross-jurisdictional cooperation.
28. The UK's National Security Strategy describes how 'cyber security' cuts across almost all the national security challenges that it identifies, and the need to address them in a coherent way. To this end, the Government is developing a Cyber Security Strategy to build a safe, secure and resilient cyber space for the UK, through both the beneficial exploitation of cyber space and the reduction of risks posed by those who seek to do the UK harm: the forthcoming Cyber Security Strategy will set out how the Government intends to approach this task.
29. It is important that our networks are resilient, that is that they can withstand and recover from deliberate attack and the impacts of problems such as severe weather. In the UK, the emergency plan for the communications sector is owned by the industry and the Government and industry work together to ensure that the industry emergency planning reflects the latest understanding of the nature of the threat and that lessons are learnt from events that have led to network problems (e.g. the 7/7 attacks in London). These arrangements hinge on rapid and effective communication between the companies in emergency situations and communications with the Government to allow the right level of central Government involvement in the management of the emergency on the ground. These communications arrangements are regularly tested and reviewed. **The Government will carry out a major test in late 2009 of our ability to manage and recover from a major loss of network capacity.**
30. It is important that there is a greater appreciation of the work undertaken to keep our networks running and allow a broader stakeholder input into that work. **For that reason we have asked the chairman of the Electronic Communications Resilience and Response Group (EC-RRG) to make publicly available the planned report to the Secretary of State for Business, Innovation and Skills on the work of the group in the past year and going forward.** We also welcome the intention of the group to hold a workshop to involve stakeholders in the direction of the Group.
31. Some elements of our infrastructure can be regarded as critical in terms of the nation's ability to carry out essential functions. The Government recognises that special attention needs to be paid to this infrastructure. Accordingly, the Centre for the Protection of National Infrastructure (CPNI) works with BIS to



identify key threats to critical communications infrastructure, and the Government works with the key companies to address any vulnerabilities that may exist. CPNI have also created a forum for industry experts to identify emerging problems and solutions.

32. A key question is how security can be assured at those points where one provider's network interconnects with others. An industry agreed voluntary adoption of minimum security standards will be the first step in preparing the UK for the forthcoming increased legal requirement on security standards that is likely to be introduced following the agreement of a new European Framework for the regulation of communications networks and services.
33. The work that has been undertaken in the UK in relation to Critical Infrastructure Protection and the resilience of communications networks has been one of the key models for the development of European policy thought in this area. In March this year, the Commission published a Communication on Critical Information Infrastructure Protection – "Protecting Europe from large scale cyber attacks and disruptions: enhancing preparedness, security and resilience" – which proposed activities that could be led by the Commission over the next two years. One of the drivers for this work was the attack on key web sites and Internet infrastructure in Estonia in 2007. It was fitting therefore that the Communication was discussed in a Ministerial Conference held in Tallinn, the capital of Estonia, in April 2009. This conference broadly welcomed the focus of the Communication on how efforts may be best directed to ensure that Europe improves its performance in understanding risk, taking appropriate resilience measures and testing those measures in exercises.
34. The UK will play a full part in the work arising from this Communication and also welcomes the opportunity to contribute to the broader issues around the direction of Network and Information Security policy in Europe that is expected to culminate in a Commission Communication in 2010. With our relative strengths in these areas, we are well placed to influence thinking in this area and to test the continued relevance of our policies against the wider European experience. One aspect of the discussion will be to look again at the role the European Network and Information Security Agency may play in delivering an economically stronger Digital Europe.
35. The Government also recognises that e-crimes, whilst not always of themselves different to offline criminal activity, do require particular skills to investigate them, which requires providing the necessary support for law enforcement. The National Hi Tech Computer Crime Unit was established as a specialist e-crime unit and was folded into the Serious and Organised Crime Agency in 2006. The Government recently announced the establishment of a specialist e-crime unit, the Police Central e-crime Unit (PCeU), based in the Metropolitan Police, and we will be establishing a National Fraud Reporting Centre. The Government supports the SOCA e-crime unit, which tackles cybercrime internationally. But a vast amount of e-crime is small scale and aimed at home users through the use of malicious software and deception. This is addressed in the next section.



36. We welcome proposals brought forward to us by Alun Michael MP, chair of the the Eurim e-Crime Group, to enhance the levels of coordination between different groups and initiatives across the e-crime spectrum. We believe that there is significant value in achieving this ambition. **We will therefore explore the formation of a new tripartite initiative, the Tripartite Internet Crime and Security Initiative, between parliamentarians, Government and business to look across the spectrum of issues and responsibilities and at a practical level look at promoting new efforts in the self regulatory sphere. This initiative, chaired by Alun Michael MP, will complement the work of SOCA, e-crime, the Police Central e-Crime Unit and the National Fraud Strategic Authority.**

PERSONAL DIGITAL AND DATA SECURITY

37. Consumers must be able to communicate, trade, order services and work online with confidence. The networks and services they use must be available and reliable. Their private data (e.g. bank details) must be secure from misuse or fraud. Consumers must have confidence and be able to check that people they are trading with or working with online are who they say they are and can be trusted.
38. Getting to this level of confidence requires users to know enough about the dangers from hackers, viruses and fraudsters to take basic steps to protect their own data. Service providers must react quickly to instances of fraud and to patch vulnerabilities that are discovered. And suppliers must make their products more secure against digital threats. We will not succeed in our goals if consumers turn away from the online world through fear that they will be robbed or that their personal information will be exploited.
39. Giving users basic advice about avoiding known problems online must be a cornerstone of any approach to improving security. To that end, the Government has worked with the private sector to create GetSafeOnline which offers advice in plain English on protecting your PC, avoiding online rip offs and taking care of your identity online. The GSOL initiative has reached maturity in terms of its ability to produce the right material for its audience, but lacks resources to deliver a greater impact.

Get Safe Online

Get Safe Online was launched in November 2005 as a major public-private sector initiative to raise awareness of online security. Get Safe Online is sponsored by the Government, Serious Organised Crime Agency (SOCA), Microsoft, HSBC, Cable & Wireless and Ofcom. It is aimed at consumers and micro-businesses. Government funding is provided by the Cabinet Office.



The Get Safe Online campaign is largely Internet based. The website (www.getsafeonline.org) is a one-stop-shop for reliable, up-to-date information about online safety, to give home users and small businesses the advice they need to use the Internet safely. It includes information on protecting your PC, yourself and your business as well as advice on topics such as Internet shopping, social networking sites (Facebook, MySpace), data theft and identity fraud.

The key messages of the campaign are that online sales and transactions are increasing at an incredible pace. Get Safe Online wants people to be able to continue using the Internet, enjoying the many benefits it has to offer, but also to be aware of the risks and take the steps necessary to protect themselves and their families online. In addition, people are increasingly opting to use the Internet when transacting or interacting with Government and it is important they are online safely and securely.

40. We believe that the GetSafeOnline campaign can provide a significant contribution to helping consumers to take steps to protect themselves, not least because the GetSafeOnline name and branding has significant potential and is easy for consumers to remember and therefore access. Government and the private sector will need to continue to work together to ensure that the potential of the GetSafeOnline initiative is maximised.

SECURING HOME NETWORKS

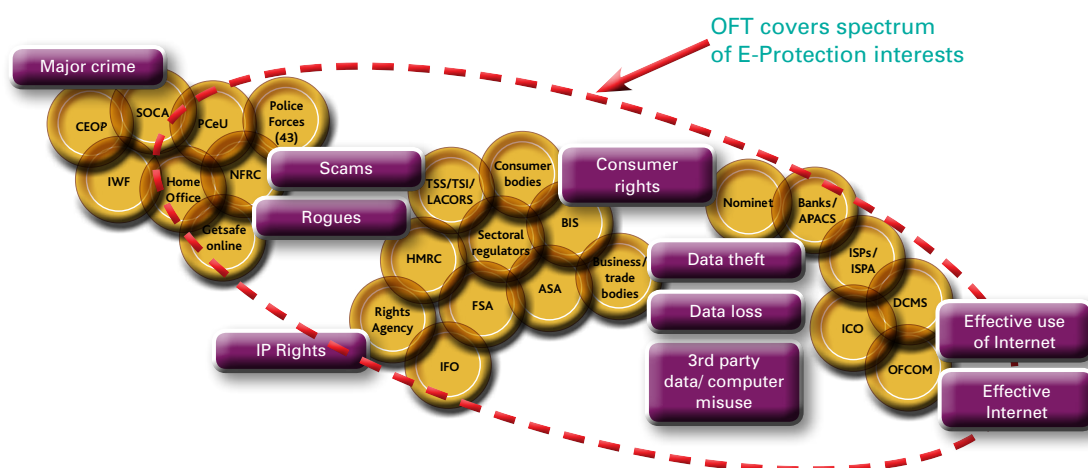
41. As home networks and technologies becomes more complex it might be thought that the challenges consumers face become even greater. However, this needs to be balanced against the reality that not only are consumers are becoming more able and used to technical products, but also technical products are becoming more user friendly in their design.
42. Providers such as Symantec and McAfee are today household names, providing easy to use and install security software at affordable prices both online and in physical form. These products make it easy for most people to take significant steps to protect themselves and their computers.
43. In addition, the market is increasingly providing a high level of after sales support to its customers through additional assistance in relation to dealing with technical complexity – a sort of “AA breakdown” assistance for your personal networking needs. As home networks become more complex, it is legitimate to expect that these types of service will continue to grow. Services such as “the Geek Squad” from Carphone Warehouse and “Tech Guys” at PC World provide consumers with fast and effective advice on a range of issues including computer optimisation, device set-up, software installation, parental control set-up and tuition, security and software installation, back-up services and many others.



ONLINE CONSUMER PROTECTION

44. Finally, the Government also recognises that existing mechanisms for consumer protection in the online world are complex and overlapping, with trading standards, the police, Ofcom and OFT all having a role. Good enforcement of consumer rights requires sufficient capacity to deal with the complex issues, effective joining up between agencies and the right interface with consumers. All of these are challenges that will require a fresh consumer strategy.
45. Online consumer protection is different because consumer behaviour is different online:
- Search costs may be different;
 - The cost and benefits of regulation may be different;
 - Consumer behavior may be different;
 - Consumer power may be different;
 - The balance of responsibilities in the transaction may need to change, or be reinforced; and
 - New forms of trading may pose new policy issues.
46. Added to this, the institutional structure for addressing the spectrum of consumer interests online is a very complex one. Today there are a large number of organisations wrestling with how best they can contribute to the challenge of protecting consumers online, including the police, the ICO, the OFT, Ofcom, the Home Office and others. The diagram below sets out the spectrum of organisations tackling e-protection issues in the UK today.

Figure 8: Institutions addressing consumer interests online



47. The OFT has made clear that to date it has not done as much as it would have liked to ensure that consumers can have confidence in the online medium and has put forward a five point plan, covering:
- Setting up a Consumer Direct front end with online reporting;
 - Acting as a clearing house for Trading Standards services;



- New enforcement activity;
- A new e-policy programme; and
- Campaign and consumer/business education activities.

48. The Government welcomes the OFT's offer to do more to play a full part in Digital Britain. Its knowledge and expertise from the offline world means that it can make a huge contribution in this area. If the OFT is to play a pivotal role, as it is equipped to do, it will require more clarity over its role, clarity over jurisdiction and the responsibilities of itself and other public sector bodies in this space and potentially additional funding.
49. **The forthcoming Consumer White Paper, to be published later this Summer, will outline how UK enforcers including the Office of Fair Trading, Trading Standards and the Police, as well as business, could work together on national issues regarding online fraud and other consumer protection crime in order to gather intelligence and tackle them effectively.**
50. A further growing area of concern for the Government is the disparity between the various penalties that Ofcom can impose under the Communications Act 2003 in relation to actions causing consumer harm. For example, where Ofcom has found breaches of the Broadcasting Code regarding phone-in scandals and the consumer harm they caused, it has been able to impose fines of well over £1m. Conversely, where Ofcom has found serious breaches of its rules on persistent misuse of a network or service, in particular in relation to extremely high numbers of silent calls (where the people receiving the calls had no method of knowing who had made them, with the resulting consumer harm), the statutory ceiling as currently set only allows Ofcom to fine up to £50,000. It seems to the Government that the discrepancy between these levels of fine is no longer sustainable or desirable. **The Government will therefore consult on the penalties that Ofcom is able to impose for contraventions of the Communications Act 2003 and, in particular, the level of the fine it can impose in relation to persistent misuse cases.**
51. Finally, one particular issue that has been raised with us is the funding of advertising self regulation. What has worked well in the offline world is the very small levy on all advertising collected by the advertising agencies on behalf of advertisers and paid to the ASA's Board of Finance. In the online world, this mainly holds true for banner advertising but this system appears not to be functioning so well for other forms of advertising, such as click through, as more and more advertisers place direct business with the aggregators, who to date have not adopted the vital collecting function of the agencies. The Government urges all parties to work together to resolve this because in the vital area of advertising consumer protection, online as well as offline, the alternative to effective self-regulation cannot be no regulation and often by default this becomes statutory regulation. This would not be the Government's first preference.



DATA SECURITY AND ASSURANCE

52. The issue of privacy and security of data online is a serious and growing one. A small number of high-profile cases have demonstrated the strong feelings that data privacy can provoke, and the complex relationship we have to the handling of different types of personal data and different types of consent.
53. It is an issue that is likely to become more and more important over the coming months. Research conducted by the Communications Consumer Panel earlier this year confirmed that this is an area of particular concern for consumers and new business models such as targeted advertising and new services such as Google's Streetview have taken this issue to front of the public's mind.
54. If handled properly, new business models such as targeted advertising could be important revenue earners because, as Meglena Kuneva, EU Consumer Affairs Commissioner said in March this year: *"Personal data is the new oil of the Internet and the new currency of the digital world."*
55. The ICO and the Information Commissioner have taken the initiative in addressing the principles which should apply to the use of personal data, building on the bare legal requirements of the Data Protection Act and focusing on ways in which businesses and individuals can mitigate risks from the provision and use of online data. Businesses that collect and use personal data for commercial purposes are required to respect user rights including access to personal data. Businesses are legally responsible to the ICO. **We support the ICO's plans to develop a new code of practice "Personal Information Online" for consultation later this year.**
56. The challenge is to demonstrate value to consumers while ensuring that there is no risk of abusing personal data, for example by developing mechanisms to ensure transparency, and at this stage the industry has yet to bridge that gap. The Internet Advertising Bureau (IAB), the trade association for online advertising in the UK, holds regular events that focus on a guide to behavioural advertising. The IAB also acts as a source of information about Internet advertising issues and promotes industry-wide good practice principles for providers who collect and use data (personal and anonymous) for behavioural advertising.
57. The IAB also covers user education, notice and choice broadly mirroring the Network Advertising Initiative (NAI) principles in the USA, but adapted to the EU data protection framework. **The Government welcomes the IAB's proposal to launch a consumer information portal about behavioural advertising.**
58. In developing a digitally engaged community in the UK, and allowing the development of new businesses to generate economic growth and innovation, the Government of course needs to uphold protection of privacy and the principle of transparency. This will always remain a guiding principle. But we also need to ensure that apparent concerns are properly assessed and understood, and that artificial barriers do not spring up.



59. In addition, Government must be increasingly vigilant in the manner in which it handles data. Government has already invested considerable resources into improving their data handling capabilities and will continue to treat this as an area of priority. We consider this issue further in Chapter 8.

ONLINE CONTENT SAFEGUARDS

60. For the reasons set out above and in the context of the new global digital world we have described throughout this Report, the Government to date has supported industry's desire to adopt a self regulatory approach in relation to online content safeguards. The Government acknowledges that industry has taken some important steps forward and that a number of self regulatory initiatives are taking place. The Government's preference remains for effective self regulation, but with the emphasis on effective.
61. **In order to maintain acceptable media standards and continue to build public trust and confidence in the self regulatory system through an evolving media landscape, it is of critical importance to ensure that self regulatory systems are properly resourced.**
62. There remains scope for further development of information and tools to help users manage their online experience safely and securely. There are already sophisticated tools to support parental controls and search preferences, dynamically updated using artificial intelligence. But users need to deploy them. More could be done to meet the public desire for information so that we can all decide for ourselves what content to access and how to protect ourselves better.
63. The rest of this Chapter considers two specific areas of concern and the ongoing work on those areas. Firstly, tackling criminal material on the Internet. Secondly, child safety on the Internet.

CRIMINAL MATERIAL ON THE INTERNET

64. The Internet Watch Foundation, based in Cambridge and with just 15 employees, is tasked with minimising the availability of criminal content – specifically, child sexual abuse content hosted anywhere in the world and criminally obscene and incitement to racial hatred content hosted in the UK. It works with law enforcement agencies worldwide and operates a "notice and take down" procedure in relation to content on UK sites and a list of international child abuse sites that ISPs can block at the network level. The vast majority of UK networks use this list and discussions are under way to ensure that relevant consumer networks are comprehensively covered.
65. As a result of the partnership approach adopted by the IWF, less than 1% of child sexual abuse content, known to the IWF, has been hosted in the UK since 2003, down from 18% in 1997. The IWF's work remains invaluable to every part of the value chain in the UK's Internet industry. And, in a world of universal



availability, increasing take-up and enhanced services on the network the work of the IWF will become more and more important.

66. IWF's current income includes a contribution from the EU Safer Internet Action Plan with the bulk being derived from voluntary membership subscriptions. Its current income equates to some £1m per annum. This voluntary structure means that there is no certainty that the level of funding received now from the EU or from its membership will continue at this level in the future. In the current economic climate a voluntary funding base carries with it increased uncertainty over funding. Whereas having secure funding would allow the IWF to consider expanding its internal skill base, especially with regard to hiring additional technical expertise and raising greater awareness amongst Internet users about their role and remit. The IWF model of self-regulation is a success and is admired internationally, but if the regulation of criminal content is not adequately funded by industry, Government would need to consider statutory intervention. **We therefore call on the IWF membership to propose a more secure funding model for the future.**
67. The IWF has also been a model for international hotlines for reporting child abuse material, especially across the EU. Some operators already use its list of illegal sites internationally. Since most child abuse material originates outside the EU, there is a case for its operations to cover at least the whole of the EU. **We will therefore explore with the IWF and the European Commission the scope for a pan-European model with commensurate funding.**

CHILD INTERNET SAFETY

68. Secondly, child safety on the Internet. The UK Council for Child Internet Safety (UKCCIS) was founded following the report by Professor Tanya Byron into the risks from exposure to potentially harmful or inappropriate material on the Internet and in video games. Chaired by DCSF and Home Office Ministers, the Council brings together more than 100 stakeholders from across the Internet safety spectrum who have come together to work in collaboration for the good of children and families. The Byron Review envisioned a strategy, led by UKCCIS, which would have two core elements:
- better regulation in the form, wherever possible, of voluntary codes of practice that industry can sign up to; and
 - better information and education where the role of Government, law enforcement, schools and children's services will be key.
69. Four Working Groups have been established to take forward work on industry standards, video games, public awareness and better education. Building on their work, UKCCIS is developing its long-term Strategy to improve children's safety. Work on children's Internet safety will have direct benefits for all users. For example the Social Networking Guidance developed by the Home Secretary's Task Force on Child Protection on the Internet which preceded UKCCIS, applies



to all social networking sites. It has now been developed and adopted at EU level, with a self-reporting mechanism to help monitor compliance.

70. The Government has set up the Child Exploitation and Online Protection Centre (CEOP) to help protect children online. CEOP runs the 'Think U Know' website, which is the main UK law enforcement website for providing children, young people and adults with information on how to keep themselves safe online.
71. One of the recommendations from the Byron review was to provide an authoritative "one-stop shop" for public information on child Internet safety. This is likely to include a website portal based at Directgov. There would be significant merit in further consideration of how this portal could be effectively linked to the GetSafeOnline portal and to information on how to protect personal data online, including linking to the ICO's consumer advice, to provide a comprehensive "one stop shop" for all aspects of online safety.
72. **If such a portal were created, the National Plan for Digital Participation should be used to support and promote the one stop shop for the provision of full information about getting safe online.**

CLASSIFICATION OF VIDEO GAMES

73. **Finally, the Government will adopt a new and strengthened system of classification for boxed video games incorporating the newly enhanced Pan European Game Information system (PEGI).**
74. A consultation was carried out between July and November 2008, which solicited comments about four potential options to amend the current system for classifying video games.
75. We have selected the Enhanced PEGI system, as it combines the best of a pan-European self regulatory system designed specifically for video games with a strong UK based statutory regulator taking account of the views of the UK public. It will give consumers a single set of clear logos for video games that will apply across most of Europe, providing an international solution for game content regulation. It has the flexibility required to adapt to the challenge of rapidly-evolving technology in the games sector and will be highly effective in the online world.
76. This system meets all the key criteria set out by Professor Tanya Byron in her report "Safer Children in a Digital World" and will offer improved protection for children including, for the first time, making it illegal to sell games suitable for 12 and older to underage children.
77. PEGI Online is also part of the range of online safeguards helping parents and children determine what content is appropriate, including BBFC.online and the new system for regulating television on-demand being established to implement the Audiovisual Media Services Directive.



FUTURE APPROACHES TO ONLINE CONTENT SAFEGUARDS

78. Industry, working with Government and others, has taken some significant steps in relation to self regulation of Internet-based services. In addition to the other examples in this Chapter, we would cite the following:
- 1) Ofcom, in partnership with the Home Office and industry, has worked on the development of a British Standards Institute (BSI) Standard for Internet content control software, which will help parents to make informed choices about the best filtering products to protect their children. The first Kitemarks based on the standard are due to be awarded in 2009;
 - 2) A self-regulatory initiative facilitated by the Broadband Stakeholders' Group which has created Audiovisual Content Information Good Practice Principles. These commit signatories to providing clear, consistent information about commercially-provided audiovisual content. Signatories include AOL, BBC, Bebo, BSkyB, BT, Channel 4, Five, Google, ITV, Microsoft, Mobile Broadband Group (represents Orange, 02, 3, T-Mobile, Vodafone and Virgin Mobile), MySpace, Teacher's TV, Tiscali, Virgin Media, Yahoo!, ATVOD (Association for Television On Demand), BBFC (British Board of Film Classification), FOSI (Family Online Safety Institute); and
 - 3) The Home Office Task Force Guidance on social networking, which produced an evidence-based set of standards for providers of social networking services, including u18 privacy settings, educational material and report abuse tools. This work formed the basis of EU level guidance published in February 2009 – a good example of where UK leadership in this field is now benefiting users in other EU markets.
79. As this Chapter makes clear, the Government continues to support further action and vigilance from industry through self-regulation in the first instance. We urge industry to continue to build on its good work to date to help consumers make appropriate and informed choices about the content they view on the Internet.
80. However, it is clear that there remains an important set of public policy questions to be asked about standards on the Internet and much legitimate debate to be had about how as a society we want to address those questions. Too often those questions are shrouded by unhelpful and loose phrases such as "Internet regulation", which provoke unhelpful and vitriolic responses.
81. The Government considers issues of Online Safety and Security to be of the utmost importance and a continuing and informed debate is needed to ensure that as a society we make the right choices in the future. As we move toward a world of ubiquitous broadband, governments around the world will need to be increasingly engaged and open about the right mix of approaches to these issues.



CASE STUDY

Older E-Users

John and Marianne Pritchard-Jones, both in their eighties, would not describe themselves as “silver surfers”. But the couple are wedded to technology, which they say enables them to keep track of family and enjoy TV shows at a time of their choosing.

The pensioners are already on their second generation of digital equipment, using a new computer, high-speed Internet connections, mobile phones and a digital radio – much of it acquired at the insistence of their children and grand-children.

For Marianne, who uses her birth year – 1927 – in her email password, the main benefits include receiving Flickr pictures from a grand-daughter touring New Zealand. She also goes online to access Welsh-language television, while using desktop publishing to produce a local history of war memorials.

“I would never have produced such a thing without a computer,” she says. “But it took quite a while typing with two fingers.”

Likewise, her husband John uses the laptop for regular correspondence – including several letters to MPs – as well as Skype network for calls to family, book purchases on Amazon, monitoring ISA offers and keeping in contact with his local doctor. “It means I can order repeat prescriptions without visiting the surgery, and the tablets are delivered to our local pharmacy,” he adds.

Away from the computer, John and Marianne rely on digital terrestrial television for access to rolling news channels and digital radio stations such as BBC7.

While both applaud the speed and breadth of content available through digital technology, they complain it’s not reliable and horribly complicated to move service provider. “Broadband is much more efficient and quicker than the old system,” says John. “But when it breaks down it’s very irritating.”



Chapter 8

The Journey to Digital Government

"In the current economic circumstances businesses are facing up to real challenges of cutting costs in order to stay in business and emerge stronger from the downturn. The public sector needs to do likewise, looking for savings in addition to the routine savings departments are expected to make each year, so that the Government can continue to invest in excellent public services while maintaining sustainable public finances."

Operational Efficiency Programme: final report: April 2009

AMBITION: TO ENSURE THAT DELIVERY OF PUBLIC SERVICES IN THE UK KEEPS PACE WITH USERS' EXPECTATIONS OF NEW TECHNOLOGY AND THAT THE PUBLIC SECTOR IS EFFICIENT AND SMART IN PROCURING AND USING ICT SYSTEMS

The Government as a Player in the Digital Economy

1. As well as the regulatory and policy decisions described elsewhere in this document, the Government impacts the digital economy in significant ways:
 - 1) as a deliverer of public services;
 - 2) as a major purchaser of ICT systems products and standards;
 - 3) as a commissioner and controller of data and content, and gatherer, keeper and user of public and personal data; and
 - 4) as strategic hub for development of the nation's future digital strength.
2. This Chapter addresses measures to improve our performance in each of those four areas.
3. The journey towards Digital Government to date has been in two phases. The first phase, from the later 1990s to around 2004/05 was about driving Britain, private sector and public sector, from being a laggard, as we were in the mid-



1990s, to a leading economy in terms of e-readiness. Institutionally it was characterised by the e-Envoy and an e-Minister in Government and a new unified communications regulator, Ofcom, which radically altered the structure of the broadband market, giving Britain among the most widely available and affordable first-generation broadband services of any developed economy.

4. The proportion of public services online went from less than 30% of the total available (and that mostly alternative access to paper-based brochures) to 75% plus by 2005; though still in many cases they were an online replica of the offline service, based around the silos of providing departments rather than the actual public service needs of the citizen.
5. In this period, the public sector procured a range of substantial networks, from the research and Higher Education network Superjanet to the NHS network – the world’s largest virtual private broadband network – and the Government’s own network, the world’s largest wide area network; but again built and commissioned in silos with extensive and expensive duplication, different terms and conditions, different service standards, etc. This last is by no means a phenomenon unique to the United Kingdom: around the developed world departments of state exist largely as silos to address a particular set of relatively stable analogue-era interests and issues. They are not well adapted to the fluid, iterative nature of the digital world where technology interacts with and re-shapes the underlying business process (itself a concept imperfectly understood by the policy, rather than operationally-focused, parts of the public sector).
6. The second phase, since 2004-05 can best be described as ‘Government on the web’, characterised by the creation of the office of Chief Information Officer and the CIO Council across Whitehall and the institutional support for the Transformational Government programme in the Cabinet Office. Together these are driving towards more common procurement systems, smarter procurement, developing new ways of e-engagement with the citizen and effective savings, based on process re-engineering of online delivery of public services, particularly the large operational units such as JobCentre Plus; a process which HMRC have probably taken furthest with the complete ‘analogue switchover’ to online in the tax returns from all businesses.
7. The other changes flowing from Digital Britain mean that the time is now right to make the step change to the next, third, phase – not merely Government on the web, **but Digital Government Phase Three: Government of the Web.**

DELIVERY OF ONLINE PUBLIC SERVICES

8. Websites such as Directgov and businesslink.gov are successfully serving the citizen and business audiences for Government. Directgov today delivers a wide range of services and has more than 14 million visits each month. It is the place to go to apply for a job, plan a journey, find local services on a mobile phone, and find clear information about income tax, benefits and employment.



9. The delivery of online services have brought significant benefits to both Government and users:
 - Services such as NHS Choices have provided a step change in E-Health delivery in the UK. NHS Choices had 5.2 million visitors a month as at January 2009.
 - The Electronic Vehicle Licensing (EVL) scheme, which enables customers to tax their car online, saves the DVLA around £8m per annum, and attracted 18m users last year. For every additional re-licensing transaction that is processed through the EVL channel a further 93p will be saved.
 - The Government Whole Farm Approach enables farmers to provide a common set of information once to all of the interested agencies, reducing form filling by 15% and saving the industry £16.5m per annum.

The US Army

In February 2005 the US Army decided to automate some of its processes, transforming business processes across the Army Enterprise. The process sought to move to a fully electronic, web based solution. The results of the exercise were compelling, including:

- Savings estimated at \$1.3bn per annum by taking paper out of the organisation and improving their process work flow;
- Saving of countless labour hours – the implementation of e-forms is estimated to save every person in the US Army 30 minutes per day; and
- Greatly reduced lost documents by providing online reporting and tracking of forms.

10. Almost half of the UK population today have used the Internet in the last year to access information about Government or local council services or completed a Government form or process online, according to Ofcom research. And 42% of people said that they had looked for information online about a Government or local council service, or used services such as paying their road tax or registering for Child Tax Credits online. Among people who have the Internet at home, 55% have used these services online.
11. Additionally, the number of Government websites has been too large. A profusion of websites with targeted audiences and no overall architecture to link them can make the interface with customers confusing, and undermine each website's importance and value. To address this, we need to press on with cross-Government work in improving the offer to customers by streamlining the sheer number of Government websites and brigading them either through the Directgov portal (for citizens) or the Businesslink portal.
12. This progress is encouraging. However, in order to maximise the opportunity afforded by universal broadband for the delivery of online services, digital Government will need to become genuinely "of the web", not simply "on the



web”. That means designing new services and transactions around the web platform, rather than simply adapting paper based, analogue, processes. It also means more closely integrating web, telephone and face-to-face channels. **The Government has set a target of closing more than 95% of citizen- and business-facing websites and moving the content to Directgov and businesslink.gov by 2011.**

13. Bringing about this scale of change will require significant leadership and focus and a willingness to put this reform at the heart of Government activity as opposed to tacking it onto the side of existing ways of working.
14. The announcement of a 2Mbps Universal Broadband can signal the starting point for the preparation of a roadmap to a truly Digital Government. Government has already started this process.
15. Discussion with stakeholders inside and outside Government³⁶ has demonstrated a consistent view that Government should develop a roadmap to a new programme of Digital Switchover of Public Services (by which we mean online being the primary means of access, rather than one among many – though clearly with a safety net in delivery for those unable to access the service online). The services most suitable for earliest switchover will be identified by **six criteria**:
 - 1) **Transaction volumes**: is this a low value but very well-used service?
 - 2) **Complexity**: can users be expected easily to work their way through the process without assistance?
 - 3) **Customer groups**: is this service likely to be used by the general population, or is there a specific user group? (e.g. older people)
 - 4) **Legislative impacts**: what are the legal requirements on Government to use certain channels or signatures?
 - 5) **Physical verification**: is there a need for witnessing or token exchange
 - 6) **Efficiency**: what is the scope for cost savings that will provide better value for money in public service delivery?
16. **We propose starting a Digital Switchover of Public Services Programme in 2012. We will need to consider in more detail the ramifications of switching each service to digital but an initial list might include:**
 - **Student loans**
 - **Companies House registration**
 - **Personal tax returns for higher rate taxpayers**
 - **Electoral roll registration**
 - **School registration**

36 To take one example, IBM have proposed to us that Government should develop a “heat map” identifying those services that have the most potential to be candidates for ‘digital switchover’. The criteria listed here are adapted from their submission.



- Redundancy advice processing
- Debt advice

We suggest each Government department should identify, before 2012 and against the criteria outlined above, at least two such services to form part of the Digital Switchover of Public Services Programme. These targets should be set and monitored in the context of departments' individual customer contact strategies.

17. Rather than providing a barrier to the wider delivery to Digital Government, this simply emphasises the need to ensure that a roadmap to the future delivery of Digital Government will need to consider how and to whom the services are targeted and whether an online only or a multi-channel approach is needed, rather than a one size fits all approach.

EFFICIENT AND SMART PUBLIC SECTOR PROCUREMENT OF ICT SYSTEMS AND PRODUCTS

18. In delivering the second phase of Digital Government, the Government's Chief Information Officer (CIO) and the CIO Council have made huge progress in developing the capability and strategy in the public sector for efficient procurement and use of ICT. Work is well underway to create a Public Sector Network (PSN), to supersede the overlapping and duplicative patchwork quilt of departmental or sectoral (e.g. health or academic) networks. In keeping with the philosophy underpinning Digital Britain, the PSN concept has moved beyond physical networks to a virtual network with common design, standards, service level agreements, security and governance.
19. The CIO Council has also been laying the foundations for Digital Public Services by standardising on the desktop computer designs and approaches; the use of open source, open standards and reuse – ensuring all parties reuse the IP created by the Public Sector; the green ICT Strategy to drive sustainability as well as efficient and effective infrastructures.
20. This has put the UK's digital public procurement in a world-leading place. But, as ever, as we move to Phase Three of Digital Government, there remains further scope to drive significant improvements.
21. Martin Read's review of Government's back office operations and IT for Budget 2009 suggested that better management information was needed about expenditure on IT, governance of project management needed to be improved, costs should be cut, and procurement should be smarter, with more sharing of products and more central procurement rather than bespoke solutions for every department, ultimately leading to a common IT infrastructure.
22. The historic legacy of multiple different procurement contracts signed by different departments at different times militates against a 'Big Bang' adoption of PSN across all departments at once. However, the FCO's current OCEAN procurement will be the first to adopt the PSN concept.



23. Public procurement of major ICT contracts faces three big challenges. **Firstly**, the barriers to entry can lead to the Government or wider public sector becoming dependent on incumbent providers. The complexity and scale of both the tender process and procurement information demands can often also militate against entry to the market of smaller, innovative companies, to the detriment of public service users. The CIO Council recognises this challenge, and through its PSN concept aims to create a more open market in procurement and to reduce lead times – currently a typical IT procurement can take up to three years from initial approval to tender to the contract being signed.
24. **Secondly**, the structuring of contracts, and the offloading of risk to the supplier, can lead to rigidity in the relationship with suppliers, and can see the public sector cede control over delivery. This is particularly pertinent in relation to ICT, where services need to evolve constantly as technology does.
25. **Thirdly**, these two factors can combine to accentuate the bespoke nature of contracts, which can militate against scalability and sharing of core services, even where this would be more efficient.
26. **The Digital Britain Report therefore recommends that the CIO Council agree a small number of potential areas for tender, and ensure the availability of a simplified, fast-track process (consistent with EU procurement rules) aimed at allowing such innovative companies to participate at the main contractor level rather than seeking sub-contractor status with incumbent bidders who may not wish to fit the particular innovation into their wider procurement bid.**
27. In addition to the Public Service Network we need to be able to add business applications to create a 'G-Cloud', using Cloud Computing. At the time the Government procured its secure intra-departmental email system – GSI – it did not have the knowledge or procurement capability to specify and add applications to the basic network. Now, with the CIO and the CIO Council, Government does have the capability and cannot afford not to use it.
28. Cloud Computing is a model of shared network-delivered services, both public and private, in which the user sees only the service or application, and need not worry about the implementation or infrastructure. The cloud offers the ability to treat IT as a ubiquitous, on-demand service and to flexibly consume as much or as little as is needed. Cloud services are quickly and easily provisioned online and feature granular service catalogues and user-based pricing. The biggest IT companies are now rapidly introducing cloud services, with companies like HP and IBM both introducing cloud services and providing the infrastructure inside public and private clouds.
29. The CIO Council and the Public Sector Council of Intellect, the trade association for the UK high tech industry, therefore commissioned a strategy study to see whether the technical advances associated with Cloud Computing – server and storage virtualisation, systems management automation, image management, and self-service provisioning – could be used to provide a private cloud for Government – a 'G-Cloud'.



30. The “public” cloud – where services can run on any server anywhere in the world – has attracted attention from industry commentators. Achieving it, would be a first around the world for Digital Britain. But there are issues of meeting governmental needs for data location, security, data recovery, availability and reliability.
31. The strategy study has established a route-map towards the creation of a G-Cloud, as part of the rationalisation of data centres used by Government and the wider public sector. This would both allow Government to benefit from the core attributes of Cloud Computing e.g. enhanced user experience, flexible pricing, elastic scaling, rapid provisioning, advanced virtualisation while also maintaining the appropriate levels of security, accountability and control required for most Government systems, and lead to substantial savings in costs.
32. The G-Cloud delivery model would also help make other parts of the Government IT marketplace more cost-effective, flexible and competitive. It would support and encourage the adoption of higher levels of standardisation and sharing of IT services across departments. It would allow Government to provide more cost-effectively for peaks and surges in demand for e-Government services; and it would reduce the barriers to entry to the Government marketplace for application and other IT vendors, including SMEs, who would be able to provide services running on standardised, secure infrastructure without having to incur the costs of establishing and accrediting their own infrastructure (in the same way as companies such as 37Signals have used public cloud facilities).
33. **The establishment of a G-Cloud will however require investment in technical development and physical facilities, and the CIO Council and the Intellect Public Sector Council are now developing the strategic business case to justify funding the G-Cloud. Provided that this business case can be properly developed, the adoption of the G-Cloud will be a priority for Government investment to secure efficiencies, even within the very constrained framework for public expenditure, over the next 3 years.**
34. **In the meantime, all those Government bodies likely to procure ICT services should look to do so on a scaleable, cloud basis such that other public bodies can benefit from the new capability.**
35. All of the above are major developments (there are many other aspects of ICT procurement which this report does not have space to comment on) and they require a clear, single-point, single-minded management focus. The CIO and his Council have been significant drivers of Digital Government Phase Two reforms. But there are limits to the pace at which change can be driven by guidance, exhortation and discussion. Government as a whole cannot afford an excess of departmental particularism to frustrate the necessary drive to common systems and procurement.
36. **Currently, final sign-off for all new internal system procurements rests with individual departmental Accounting Officers; the Government CIO is consulted but it is not his decision. The Digital Britain Report recommends**



that the Government take the necessary steps to secure that the Government CIO has a 'double lock' in terms of accountabilities and sign off for such projects. That will secure Government-wide standards and systems.

RECOGNISING DATA AS AN INNOVATION CURRENCY

37. Data and information are the lifeblood of the knowledge economy. It is monetisable: businesses are built around the gathering, control and manipulation of data. But it is also a public good, and availability in data on the web has led to an explosion in user-generated, non-profit content and collaboration.
38. There are though two broad categories of data: the public and the personal. Public data (for instance geographical information, generalised census information, meteorological information), might attract a greater or lesser monetisable value but its existence raises few issues for privacy. Personal data, on the other hand (for instance individuals' date of birth, home address, family circumstances etc), is often necessary for identification or in delivering public services, but access to and use of it raises significant issues.
39. If we see data as an innovation currency in the digital age, public data has a value but is in open circulation; personal data is put in safe deposit.
40. In carrying out public duties, the Government and other public sector organisations collect and create vast amounts of both categories. We therefore have the ability to generate new opportunities for innovation, added value and growth in the wider UK economy and society, but we also have the responsibility to protect the safe deposit of personal data. Doing so requires a clear separation of policy between the two categories.

DERIVING MAXIMUM VALUE FROM PUBLIC, ANONYMOUS, DATA

41. The US has taken the lead in increasing public access to high value, machine readable datasets generated by the Executive Branch of the Federal Government through the creation of www.data.gov, which provides a limited portion of the rich variety of Federal datasets presently available. It has also invited people to actively participate in shaping the future of data.gov by suggesting additional datasets and site enhancements to provide seamless access and use of Federal data. This gives people a single place to go for all anonymous Government datasets to make it easier to reuse and innovate with Government data.
42. In the UK, the majority of public sector information is covered by Crown copyright, and as such falls under the responsibility of OPSI who operate a Click-Use PSI Licence to allow for the commercial and non-commercial re-use of that information.
43. The Power of Information (POI) Task Force Report, published in February 2009, highlighted the lack of clarity in the licensing of information and data under Crown copyright. There is a common misunderstanding – not least within the public services themselves – that Crown copyright is a restrictive and



prohibitive structure that does not allow for the reuse of data. Further confusion arises from inconsistency between OPSI's guidance and the practical execution of licensing regimes by Government departments.

44. **Government has accepted the vision of the POI report, and set out in its paper of 13th May 2009 a series of initiatives aimed at achieving the principles of Open Information, Open Innovation, Open Discussion and Open Feedback as outlined below. Government is still working on some of these recommendations and an update on progress is planned for the Summer. The Cabinet Office will take a leadership role in catalysing this change.**
45. In order to deliver a single online point of access for all public UK datasets, bring forward specific proposals to make public data more accessible and useable, and drive use of the Internet to improve government consultation processes, **the Prime Minister announced on 10 June 2009 that Sir Tim Berners-Lee will form a panel of technical and delivery experts to deliver better use of public data.**

Government response to the Power of Information Task Force Report

- Recommendation 8: OPSI is developing a new licence model, building on the success of the Click-Use Licence. The new licence will not require users to register and apply, and will offer a higher degree of interoperability with other licences such as Creative Commons and GNU Open Document Licence. Details of the licence terms and conditions are available on the OPSI website.
- Recommendation 12: The current Crown copyright regime is in general permissive and grants extensive rights to reuse Government information, however user research has confirmed certain negative perceptions with many users regarding the terminology a barrier to use and reuse. The same research also showed a lack of awareness of the term 'Creative Commons'. OPSI is developing a simplified licensing model supported by easy to understand guidance that will build a level of clarity and reinforce the enabling aspects of licensing Government data.
- Recommendation 14: OPSI and COI will create a data service, akin to the proposed data.gov website, which will expose Government's data feeds in a well-ordered and useful way. It will provide a focal point for development using Government information. A basic service is due to go live within 3 months of the Government's response to the Power of Information Task Force report.

Source: Government response to the Power of Information Task Force report

46. In addition to central Government departments, a substantial amount of public sector information is collected, held and administered through trading funds, which charge fees to cover their operating costs. These trading funds include Ordnance Survey, Met Office, Land Registry, DVLA, Companies House and the UK Hydrographical Office.



47. Geographical data sets present some of the most valuable assets from which to develop online applications and services, as they provide a simple way to present complex information. New software and middle-ware applications allow geospatial data to be used in a wide range of innovative ways for both economic and social benefit. It allows parents, patients and relatives to garner a much wider range of information from Web 2.0 data mashing on location, facilities and qualities of key public services such as schools and hospitals; and to communicate census and societal data, and provide an opportunity for Government to deliver personalised location-based services.
48. The POI Task Force report set out under Recommendation 7 the need to prioritise the ‘freeing up’ of geospatial data held by Ordnance Survey. This was echoed by the Trading Funds Assessment, which concluded that there was a need to improve access to Ordnance Survey data and services for further innovative uses in economy and society. It also suggested that in the interest of preserving and maintaining quality, Ordnance Survey should operate through a self-funded, revenue model rather than direct funding from taxation.
49. **Ordnance Survey’s new business strategy, announced at Budget 2009, includes a commitment to improve access to data and encourage new entrants into the market. As part of its strategy, Ordnance Survey has launched an enhanced free digital mapping API (OS OpenSpace) and a clearer pathway from innovation to large scale commercial use. Government welcomes the opportunities this enhanced service will bring.**
50. **Government and OPSI, in consultation with OFT, will review progress with Ordnance Survey’s strategy on a regular, on-going basis, particularly over the next 6 to 12 months.**

Ordnance Survey: new business strategy

Ordnance Survey collects, maintains and publishes high quality and up-to-date geographical information for the whole of Great Britain. At Budget 2009, Government announced a new business strategy for Ordnance Survey in which it will continue to be self-funded and earn revenue by licensing its data, but it will make it easier for customers and other businesses to access its data and services.

The strategy covers five key areas:

- Innovation – an enhanced, free OpenSpace service to promote innovation and experimentation with digital information and a clear path from this service to greater commercialisation;
- Reform to the Ordnance Survey licensing framework – so that it is easier to use Ordnance Survey data and services in other applications;
- Reducing costs over time – to ensure that Ordnance Survey continues to offer value-for-money;



- Supporting the sharing of information across the public sector – to enable better public policy and services; and
- Creating an innovative trading entity – to explore further commercial opportunities around Ordnance Survey data and services.

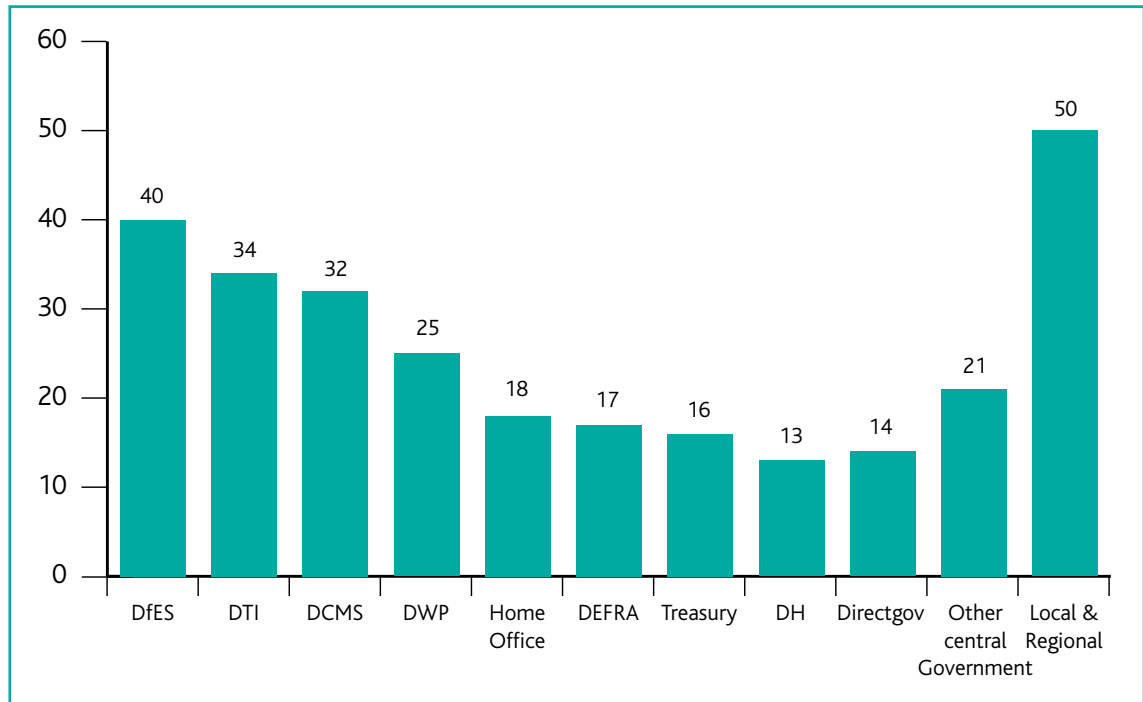
The Government has set key milestones for delivery over the next year and has recently consulted on its new strategy. Further details are available at: <http://strategy.ordnancesurvey.co.uk/>

Source: Shareholder Executive

GETTING FULL NATIONAL VALUE FROM PUBLIC SECTOR CONTENT

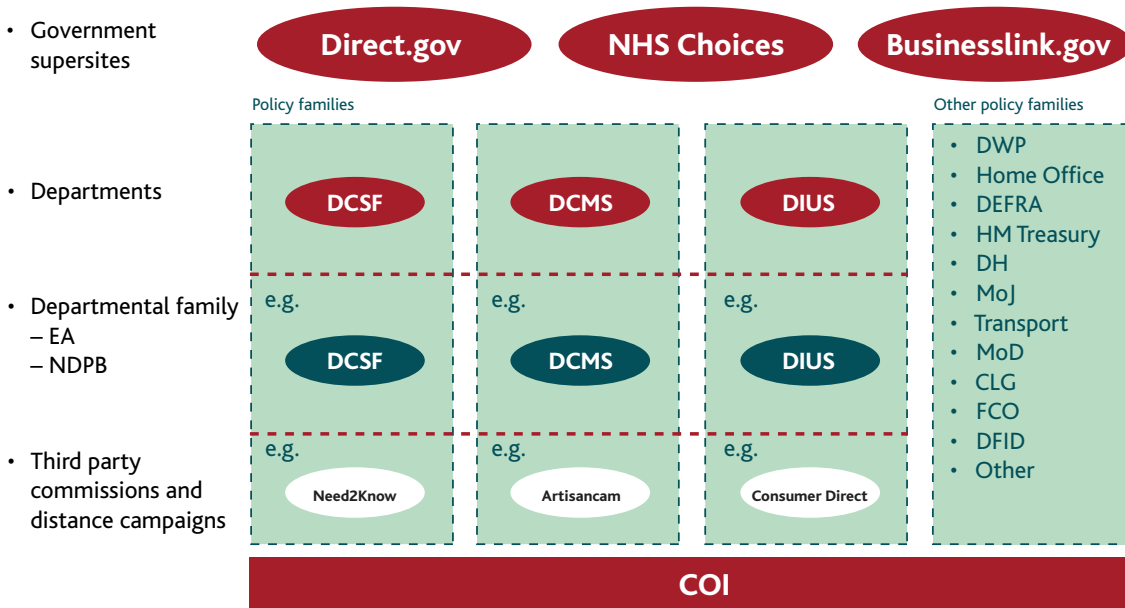
51. As we discussed in Chapter 5, public service content is no longer the preserve of the broadcasters. The public sector provides significant investment in the development of online content, services and applications in the UK. Research by Analysys Mason shows that Government commissioning may represent as much as 30% of total investment in professional UK online content (c.£280m in 2007).

Figure 9. Government spending on new media in 2006/07 (£m)



52. Beyond central and local Government, many arts, cultural and scientific institutions supported by public finance are also exploring the opportunities presented by digital media. The Royal Botanical Gardens, Kew regularly welcomes around 1.7m visitors to the gardens every year, while attracting double that in visits to its website. Digital media has become a core component of Kew’s public service offering, allowing the organisation to extend its reach and unlock new forms of collaborative and interactive knowledge sharing.

Figure 10: Key public sector commissioners of digital media projects (Source: MTM London)



53. Much of the digital media made available through Government and NDPB websites is commissioned from external suppliers under framework agreements that draw on guidance from the Office of Government Commerce (OGC). OGC states that the "overarching policy should be to achieve best value for money and the guiding principle should be that in each case the IPR should be owned by the party best able to exploit them".
54. Under the guidelines set out by the Office of Public Sector Information (OPSI), it is up to the commissioning department to decide whether copyright is retained by the producer or assigned to the Crown. It is OPSI's overriding recommendation that, wherever possible, IP under Crown copyright is made available for re-use by anyone, thereby maximising the potential economic benefit. This is consistent with the Government's approach to open source, open standards and reuse, where IP created by Government IT is available for re-use by anyone.
55. However, despite OPSI's guidance, it appears that the many of the frameworks used still prohibit the re-use of IP. For example, the terms of the COI Digital Media framework agreement explicitly restrict further use of the IP. Further, it appears that the definition of Intellectual Property may not be consistent across departments, and this lack of clarity is confusing the landscape for both commissioners and suppliers in interpreting and implementing best practice.
56. This resembles the approach adopted by broadcasters in relation to content-creators in the early stages of developing an independent production market. It makes sense to learn from the example and avoid the pitfalls. By adopting open frameworks and allowing for a commercial negotiation in the assignment and exploitation of IPR, the public sector could benefit from increased price



flexibility. Further, suppliers may be encouraged to drive innovation and increase the quality of the commissioned product, thereby maximising the resulting commercial opportunity.

57. Such incentives may help to foster competitiveness in the production market, as has been the case in the independent television sector. A common open framework for procurement would also allow for greater transparency when entering negotiations, and this would be particularly beneficial for SMEs with limited resource to administer different sets of rights agreements.
58. NDPBs have already started experimenting with more open and transparent procurement frameworks, and these are proving highly successful. The Royal Botanic Gardens, Kew has implemented a revenue sharing model with one supplier, allowing IPR to be retained while granting a non-exclusive licence to Kew. A similar model in operation at Tate allows coding and software IP to rest with the supplier while any content IP developed in-house is retained by Tate.

Categories of IPR in digital media

At a high level, digital media projects tend to incorporate four distinct categories of IPR, each of which can be broken down into sub-categories:

- Format: the core concept, format and idea underpinning a particular interactive experience;
- Content: design assets (e.g. icons, brand names, logos), original content and licensed content;
- Software: bespoke and licensed software; and
- Information: data and information supplied to or created by use of a digital media application.

Importantly, these categories of IPR have varying values, uses and licensing potential. In digital media, certain categories of software have considerable potential for reuse in other implementations – much of the value in digital media IPR is likely to reside here. In contrast (and unlike television) digital media formats and content tend to be highly bespoke, limiting the value of the IPR on a significant proportion of projects.

Source: MTM London

59. To demonstrate the potential for change in this area, the **National Endowment for Science, Technology and the Arts (NESTA)** will lead a pilot to develop, test and implement a simplified IPR framework for publicly procured digital media. The pilot will bring together stakeholders from across industry, and key public bodies including OPSI, COI, Cabinet Office, Kew, Tate and the Arts Council of England to:
 - Clarify a consistent set of terms and language across Government departments;



- **Test a set of frameworks on specific projects across different types of IPR, and analyse their performance, the potential for secondary exploitation and the benefits created; and**
 - **Share the findings with stakeholders and agree a new IPR framework for the procurement of digital media by public sector organisations.**
60. **The pilot is likely to be based on the BBC’s online commissioning rights framework** which allocates IPR according to the nature of the project across both content and technology production. However, the pilot framework will reflect the specific needs of public organisations and will draw on the experiences of OPSI and the OGC.
61. **The pilot will launch before the end of 2009 and will last for 12 months.** After this period, the pilot will be reviewed by the stakeholders. The primary output of the pilot will be a standardised IPR framework to allow simple procurement of digital media for adoption by Government and other public organisations.

THE SAFE DEPOSIT OF PERSONAL DATA

62. In the digital economy information, from the mundane to the highly personal, is easily disseminated and manipulated, but control and access to this information can be extremely valuable. The new forms of gathering and using personal data can lead to concern from users and mistrust not only of bodies and institutions but of the technology itself. To ensure that the UK economy and UK taxpayers gain the benefits of our ability to gather and use data, while retaining confidence that proper protections are in place, Government needs to play a leading role in the debate.
63. To take one example that does not involve the Government, behavioural advertising, in which users’ online activity is in some sense ‘monitored’ to provide advertisers with a better view of their audience, is considered by some to be one of the biggest concerns to users’ privacy online. The Government’s view is that the principles behind the current legislation are sufficient to protect any violations of data protection law through behavioural advertising. Targeted advertising is a new business model and, properly handled, could be an important revenue earner. It is though one that can provoke a very strong consumer reaction, and all those involved in the provision of behavioural advertising (including ISPs, advertising networks, advertisers and online publishers) will need to bear the value of their brand in mind.
64. Concerns over privacy are only multiplied when arms of Government are involved in data gathering. To address this, we need first to have strong information assurance protocols in place.
65. Information Assurance involves managing risks to the confidentiality, availability and integrity of data held on ICT systems. The Cabinet Office works with CESG, the national technical authority on Information Assurance, in conjunction with partners such as the CPNI and the Ministry of Justice, to ensure that there is an effective strategic approach to information assurance for the UK.



What is Information Assurance (IA)?

Information Assurance is the confidence that information systems will protect the information they handle and will function as they need to, when they need to, under the control of legitimate users.

There is little information that exists that will not at one time or another be stored or transmitted electronically.

Information on paper as soon as it is fixed or input into a computer, enters the electronic world. From here the information can be changed, deleted or broadcast to the world.

Electronic information must be readily available when needed and trusted to be accurate. Sometimes there are confidentiality concerns. Ensuring the confidentiality, availability and integrity of all electronically held information is the goal. "Information Assurance" is the term we use to describe this goal.

Through the use of appropriate security products and procedures we hope to achieve reasonable assurance that electronic information is adequately protected from unauthorised change or dissemination and ensure the information is always available.

CESG helps the owners of electronic information to determine the products and procedures to achieve Information Assurance.

66. Following a number of high profile data losses, the Cabinet Office conducted a review of cross-Government data handling procedures. The Data Handling Report published on 25th June 2008 put in place a set of mandatory requirements for Government departments to meet in protecting people's personal data and to restore confidence in Government's ability to handle personal data. These measures include improved technical precautions, greater scrutiny and accountability and a focus on cultural change including training and education.
67. Government departments have invested considerable resources to improving their data handling capabilities and improvements include enhanced technical precautions such as large-scale encryption programmes (over 30,000 laptops have been encrypted in the Ministry of Defence). Leadership and governance as well as greater accountability are being encouraged in the form of the establishment of a network of over 50 Senior Information Risk Owners (SIROs) at Board level within their organisations from central Government departments and agencies.
68. Cultural change has also been a major focus of efforts through education, training and increased professionalism. The Cabinet Office, in conjunction with the National School of Government, has rolled out a civil service-wide e-learning package with over 200 public sector organisations already accessing this training. By Spring 2009, more than 130,000 staff across the civil service



have received training in data handling, in support of the Data Handling Review commitment to train all civil servants who handle personal data.

69. To address the requirement for greater professionalism, the Cabinet Office has joined the Civil Service Information Security Accreditation Scheme with the Institute for Information Security Professionals to enable cross fertilisation between the public and private sectors. The Cabinet Office has also funded the development of an MSc in Information Security and Assurance for the Public Sector at Cranfield University, as part of the effort to educate the next generation of managers to better understand and manage information assurance and cyber security in complex business environments.
70. Going forward, the Government may need to consider further steps to ensure handling of personal data is firmly placed in the safe deposit category, on a similar footing to the handling of money. In considering this we need to build on the valuable work to date of the Information Commissioner and the progress in transparency and governance driven by the Cabinet Secretary's Data Handling Review.

A DIGITAL DELIVERY AGENCY FOR DIGITAL BRITAIN

71. Finally, we propose that as the result of this process, Government explores the possibility of a new Digital Delivery Agency to implement many of the key recommendations of Digital Britain.
72. In the past communications policy was delivered in silos of telecoms, content and standards, broadcasting, radio and spectrum. The Communications Act 2003 was the first important step in breaking down that siloed approach to reflect changing market circumstances. The creation of the converged regulator Ofcom was also an important step forward.
73. Whilst there has been marked progress in relation to policy development and regulation in terms of coordination, there is an increasingly complex picture emerging in relation to policy implementation and delivery. As we move forward, it is sensible to consider the case for a consolidation of the responsible delivery bodies.
74. The table below sets out the skill-sets for each of the key delivery bodies require to meet the task that Government has given them (Digital UK, Digital Radio Delivery Group, Stakeholder Consortium on Digital Participation, Digital Inclusion Task Force, USC Network Procurement Body). From this it can be clearly seen that there are some significant overlaps. Bringing some or all of these bodies together into one Digital Delivery Agency could bring significant benefits, including:
 - significant economies of scale;
 - greater ability to understand an increasingly converging marketplace;
 - better coordination across stakeholders;
 - removal of unnecessary overlaps;



- effective transferral of lessons learnt from one policy area to another;
 - better coordination of interlinkages and opportunities they present; and
 - greater clarity for consumers about where to go for help and advice.
75. As the most established of these bodies, Digital UK will have a particularly important role to play in helping Government to understand the opportunities and challenges in relation to creating a single Digital Delivery Agency.
76. **We therefore propose that DCMS, BIS and Ofcom carry out an assessment, to be completed by the end of this year, of the opportunity for bringing together either some or all of those delivery agencies either into one body or through a federated structure to achieve economies of scale and greater operational efficiency.**

	Digital UK (Delivering television switchover by 2012)	Digital Radio Delivery Group (Driving Digital Radio Upgrade by 2015)	Stakeholder Consortium on Digital Participation (driving digital participation)	Digital Inclusion Task Force (helping the socially and digitally excluded)	USC Network Design And Procurement Body (delivering the Universal Service Commitment by 2012)
Stakeholder coordination including commercial, third sector and consumer bodies	Yes	Yes	Yes	Yes	Yes
Working with multiple Government departments	Yes	Yes	Yes	Yes	Yes
Developing a clear communications campaign around complex and technical issues	Yes	Yes	Yes	Yes	No
Developing a rallying cry to drive take-up/participation	Yes	Yes	Yes	Yes	No
Considering national and regional variations and/or working with devolved administrations and RDAs	Yes	Yes	Yes	Yes	Yes
Managing technical network and coverage issues	Yes	Yes	No	No	Yes
Providing support to vulnerable consumers	Yes	TBC	Yes	Yes	No
Commercially driven management with public purpose	Yes	No	No	No	Yes
Using public funding to leverage additional commercial/other funding	No	TBC	TBC	Yes	Yes



CASE STUDY

Teacher: Emily Segal

Students of Emily Segal are encouraged to do something banned in most secondary schools: to use their MP3 players in the classroom.

The head of music at a leading state school in Harrogate, North Yorkshire, uses digital technology to record pupil progress, experiment with sound mixing and download the latest class-room compositions.

"We also use SD cards, which is like a little chip on which I can put 50 hours of recording, and then download on to an MP3 player – I can access a whole year-group's work," she says.

But e-music is just one part of the technology shift underway in Harrogate and other secondary schools across the country.

Such schools are also embracing the "Virtual Learning Environment" in which books are becoming a thing of the past, and most pupils email their homework. "In five year's time, I doubt we will have exercise books and all the resources will be in a VLE," according to the head of music in Harrogate. "I can tell exactly who has completed their work by looking online; there is no more of 'the dog ate it'."

Nevertheless, she acknowledges that not all staff are ready for the changes. "It depends what generation you're from. Some staff kick against it or don't like technology – others, particularly in languages, use it all the time."

But the trend appears to be in one direction. All student reports are now compiled electronically, and most dispatched by email. "Even the staff talk to each other by email. No-one goes to the staff room anymore."



Chapter 9

Delivering Digital Britain

"A goal without a plan is just a wish."
Antoine de Saint-Exupery

The Digital Britain Project

1. Digital Britain started in October 2008 and we published our Interim Report on 29 January setting out the framework of our ambition and 22 immediate Actions to take forward.
2. This Report represents the culmination of a significant process of stakeholder engagement, discussion and debate that has taken place since the Interim Report. Since 29 January we have had:
 - more than 250 written responses;
 - a Digital Britain Summit with over 250 attendees;
 - events in Scotland, Wales and Northern Ireland;
 - a series of roundtable events at Nesta on key policy issues;
 - a Digital Britain Online Forum which has received nearly 20,000 page views;
 - a Digital Britain Twitter Account;
 - more than 500 bilateral Ministerial and team meetings with stakeholders; and
 - a series of Digital Britain Unconferences, the output of which we are publishing today alongside this report.

The Final Report

3. The Report published today represents both the culmination of that process and the first step in delivering the Digital Britain agenda over the coming months.



4. Alongside this document today, we are publishing a number of key additional pieces:
- Consultation on a proposal to legislate to give Ofcom a duty to take steps to reduce copyright infringement.
 - Community radio consultation seeking views on changes to the current licensing regime.
 - Analysys Mason Report on drivers of/barriers to creative ambition in Digital Media in the UK.
 - Digital Britain: Attitudes towards Internet content among adults (BMRB for DCMS, March 2009).
 - Government response to the Video Games Classification consultation.
 - Details of the role of Champion for Digital Inclusion and the remit for the Expert Taskforce.
 - Estelle Morris's Independent Review of ICT User Skills.
 - Digital Britain Unconference outputs and other online feedback on the report (e.g. Write to Reply, Twitter, the Fake Wiki report and our own discussion forum).
 - Digital Britain Summit Children's Panel output.
 - Summary of responses to Digital Britain.

In addition, there are two documents related to Digital Britain being published by third parties today:

- The OFT's Review of the Local and Regional Media Merger Regime.
- Copyright in a digital world: What role for a Digital Rights Agency?, published by IPO.

Areas for Legislative Change

5. This document identifies a number of areas for legislative change. Broadly, these areas are:
- **Intellectual Property protection:** introducing measures on copyright licensing to tackle illegal file sharing aimed at deterring online copyright infringement.
 - **Radio:** changing the radio licensing regime to enable digital coverage to be extended and encourage investment by the commercial sector, alongside the BBC, in new digital content.
 - **Broadband Universal Service Commitment:** making changes to ensure that the UK has a first class digital infrastructure, in particular in relation to the Government's stated ambition for universally available broadband in the UK.



- **Public Service Content:** creating the environment for continued investment in, and creation of, high quality and innovative content, including necessary changes in the framework, remits and governance to reflect changes in the broadcasting environment caused by the shift to digital.
 - **Video games classification:** changing to the Video Recordings Act on how video games should be classified in the UK.
6. A Bill to give effect to these areas will be introduced as soon as Parliamentary time allows. A dedicated team – jointly staffed by BIS and DCMS – has been set up to undertake the necessary preparation.

Timetable for further action

7. This Report has identified a number of outcomes, proposals and recommendations that will require further action, engagement or formal consultation. The table below sets out the major areas for further activity and their timing:

Chapter	Action	To be completed	Responsibility
2	The Government will look to Ofcom to formalise the Consortium of Stakeholders to drive a new National Plan for Digital Participation.	As soon as practicable	Ofcom/BIS
2	The Government will ask the Consumer Expert Group to consult and report on the specific issues confronting people with disabilities' use of the Internet in Digital Britain.	By the Autumn	Consumer Expert Group/BIS
2	The Government will write to the Channel 4 Board asking it how it can further contribute to driving Digital Participation.	Response expected by end of July	DCMS/ Channel 4
3a	In order to ensure the delivery of the Universal Service Commitment, we will establish a delivery body – the Network Design and Procurement Group – at arm's length from central Government.	By the end of July	BIS
3a	The Caio Report recommended relaxation of regulations on the installation of overhead lines to lower deployment costs. The Government proposes to launch a consultation, by Summer 2009, on the impact of any amendment to the Code governing this.	By the end of July	BIS
3a	The Government intends to consult on the proposal for a general supplement on all fixed copper lines for a Next Generation Fund.	By early Sept	BIS
3a	The Government will have an independently produced guiding technical arbitration on the timing and cost of 900 refarming (and other related issues), paid for by an industry fund.	By end of Sept	BIS/ Independent Spectrum Broker
3b	The Government will work with manufacturers so that vehicles sold with a radio are digitally enabled by the end of 2013.	Ongoing	BIS
3b	On Digital Radio, the Government has asked Ofcom to consult on a new map of mini-regions.	For Ofcom	DCMS/Ofcom
3b	Alongside the Digital Britain Final Report the Government is publishing a community radio consultation seeking views on changes to the current licensing regime.	By end of Aug	DCMS/Ofcom
4	Alongside the Digital Britain Final Report, the Government is consulting on a proposal to legislate to give Ofcom a duty to take steps to reduce copyright infringement.	By end of Aug	BIS/Ofcom



Chapter	Action	To be completed	Responsibility
4	The Intellectual Property Office is considering the scope to amend the copyright exceptions regime in areas such as distance learning and the preservation of archive material and intends to announce a consultation on these later this year.	Consultation to begin in 2009	IPO
4	The Government launched its copyright strategy at the end of December 2008.	Ongoing	IPO
4	The Government intends to consult on legislative reform in respect of orphan works.	Mid Sept	IPO
4	The Technology Strategy Board will lead and coordinate the necessary investment for Next Generation Digital Test Beds and has allocated an initial budget for £10m for this purpose.	Ongoing	BIS/Technology Strategy Board
5	The Government will consult openly on the option of a Contained Contestable Element of the Television Licence Fee, carrying forward the current ring-fenced element for the Digital Switchover Help Scheme and Marketing (c.3.5% of the Licence Fee) after 2013.	By early Sept	DCMS
5	We will take the views of the Channel 4 Board on the draft updated statutory remit for C4 Corporation as set out in this Report.	Response expected by end of July	DCMS/ Channel 4
5	The OFT will amend its guidance to ensure that in cases relating to local and regional newspaper mergers raising prima facie competition issues the OFT will ask Ofcom to provide them with a Local Media Assessment.	By the end of the Summer	OFT
5	The Government is inviting the Audit Commission to undertake an inquiry into the practice of local authorities taking paid advertising to support information sheets.	By the end of the Summer	Audit Commission
5	Commercial public service broadcasting liberalisation, including regional news, analogue licences and advertising minutage	Ongoing	Ofcom
6	The Technology Strategy Board has assigned an initial budget of £30 million to advance Digital Britain related innovation.	Ongoing	BIS/ Technology Strategy Board
7	The Government will carry out a major test in late 2009 of our ability to manage and recover from a major loss of network capacity.	Late 2009	BIS/ Cabinet Office
7	The Information Commissioner's Office plans to consult later this year on a new code of practice in relation to "Personal Information Online".	By end 2009	ICO
7	The Government will consult on the penalties that Ofcom is able to impose for contraventions of the Communications Act 2003 and, in particular, the level of the fine it can impose in relation to persistent misuse cases.	By end of Aug	BIS/DCMS
8	Led by the Contact Council, chaired by the Cabinet Office, Government will take forward proposals for developing a Digital Switchover of Public Services Programme starting in 2012.	Ongoing	Cabinet Office
8	We propose that DCMS, BIS and Ofcom carry out an assessment, to be completed by the end of this year, of the opportunity for bringing together some or all of the delivery agencies either into one body or through a federated structure to achieve economies of scale and greater operational efficiency.	By end 2009	DCMS/BIS/ Ofcom



The International Dimension

8. The UK is strongly regarded as innovative in both technology and in the creative industries by those customers of British companies and by those who have already established a base in the UK. However, our reputation is often impeded by out of date notions about British capability, creativity and strength of innovation. Within the UK, the Information Age Partnership, chaired by Lord Mandelson, with an executive chaired by Sean Finnan of EDS UK and Ireland, works to provide leadership and ensure the UK is at the forefront of ICT deployment.
9. Internationally, UK Trade & Investment in partnership with private industry are working to improve the reputation of the UK as a place in which to invest and also to promote UK companies as the partner of choice for overseas based companies. UKTI have led Marketing Strategies in the ICT and Creative sectors to improve the marketing of the UK and have already launched online toolkits that can be used by UK business to strengthen their marketing overseas.
10. The UK ICT & Creative Industry Marketing Strategies aim to improve the way the UK ICT industry is perceived and promoted internationally, in order to achieve three key benefits for the UK ICT and Digital Content Industries:
 - increased trade with international customers for UK Technology and content firms;
 - increased investment into the UK from international businesses;
 - improved reputation of the UK and its ICT and Creative industries internationally.
11. The ICT and Creative Strategy Implementation Boards (Chaired by Larry Hirst, CBE, Chairman IBM EMEA and Sir John Sorrell respectively) are made up of industry leaders and Government Departments, and have been meeting since 2008 and come together every quarter.
12. The strength of Digital Britain is in its strong network of universities, business and people and that this strength is multiplied when the country works together. The UK ICT and Creative Marketing Strategies form a platform to allow the UK to demonstrate its strengths to foreign companies which are looking to invest in the world and for those companies to find their partner of choice. **The Government therefore encourages all sectors of the Digital Community to get involved in cross promoting the UK through the strategy to grow and enhance our digital proposition to the world.**

The Next Steps

13. The actions in this Digital Britain Report represent an ambitious and far-reaching programme of work in which Government, Ofcom and all parts of the industry must play their part. Some of these actions can be carried out immediately, some will require a longer implementation period, and some are longer term targets which will only come to fruition over several years.
14. There is no room for complacency. The Government intends to do all it can to achieve the policy objectives we set out in this report, and urges all others to join it in the effort. The prize on offer is great. It will require a common effort to achieve it.



Annex: Actions from the Interim Report

The following table indicates how we have addressed the actions from the Interim Report since January.

ACTION PROPOSED IN THE INTERIM REPORT	FOLLOW UP IN FINAL REPORT
<p>Digital Networks – Next Generation Access Networks</p> <p>ACTION 1</p> <p>We will establish a Government-led strategy group to assess the necessary demand-side, supply-side and regulatory measures to underpin existing market-led investment plans, and to remove barriers to the timely rollout, beyond those declared plans, to maximise market-led coverage of next generation broadband. This strategy group will, by the time of the final Digital Britain report, assess the case for how far market-led investment by Virgin Media, BT Group plc and new network enterprises will take the UK in terms of roll-out and likely take-up; and whether any contingency measures, as recommended by the Caio review, are necessary.</p>	<p>The Strategy Group has carried out its assessment, which is covered in Chapter 3a. The work of this Group has provided the analysis for the relevant decisions in this report.</p>
<p>ACTION 2</p> <p>Between now and the final Digital Britain Report, the Government will, while recognising existing investments in infrastructure, work with the main operators and others to remove barriers to the development of a wider wholesale market in access to ducts and other primary infrastructure.</p>	<p>We set out our analysis and conclusions in relation to the development of wholesale markets in access to infrastructure in Chapter 3a.</p>
<p>ACTION 3</p> <p>The Valuation Office Agency has provided new, clear guidance which addresses the problem of clarity over business rates identified by Francesco Caio in his report, and will ensure that they respond to any queries from existing and new investors and maintain clear, helpful guidance. For its part, the Government will ensure that the guidance is widely understood by potential investors.</p>	<p>Since the interim report, the Valuation Office Agency has held discussions with stakeholders through the Broadband Stakeholder Group to clarify and discuss the impact of non domestic rates. Following these discussions, the VOA will be working with consultants to provide greater clarity and modelling. This issue is noted in Chapter 3a.</p>
<p>ACTION 4</p> <p>We will, by the time of the final Digital Britain Report, have considered the value for money case for whether public incentives have a part to play in enabling further next generation broadband deployment, beyond current market-led initiatives.</p>	<p>In Chapter 3a we set out our full and final analysis of the market-led investment throughout the country in this critical national infrastructure and, our conclusion that there is no obvious means whereby the market, unaided, will serve the Final Third of the population and our proposals for addressing that deficit.</p>
<p>ACTION 5</p> <p>The Government will help implement the Community Broadband Network’s proposals for an umbrella body to bring together all the local and community networks and provide them with technical and advisory support.</p>	<p>We have implemented these proposals and made funds available for the formation of the umbrella body. This issue is covered in Chapter 3a.</p>



ACTION PROPOSED IN THE INTERIM REPORT	FOLLOW UP IN FINAL REPORT
<p>Digital Networks – Existing and Next Generation Mobile Wireless Networks</p> <p>ACTION 6</p> <p>We are specifying a Wireless Radio Spectrum Modernisation Programme consisting of five elements:</p> <ol style="list-style-type: none"> Resolving the future of existing 2G radio spectrum through a structured framework, allowing existing operators to re-align their existing holdings, re-use the spectrum and start the move to next generation mobile services. This must be achieved whilst maintaining a competitive market. If this can be done, the economic value of the spectrum would be enhanced. Existing administered incentive pricing (AIP) levels would be adjusted to reflect that enhancement. The Government believes that an industry-agreed set of radio spectrum trades could represent a better and quicker solution than an imposed realignment. There is an opportunity for industry to agree a way forward by the end of April 2009. In the absence of an industry-agreed trading solution by then, Government will support an imposed solution. Making available more radio spectrum suitable for next generation mobile services. Ofcom has proposed the release of the so-called 3G expansion band at 2.6GHz. The Government will support proposals from Ofcom to play a key role in a pan-European alignment of the Digital Dividend Review Spectrum (the so-called Channel 61-69 band), being released by the progressive switchover from analogue to digital broadcasting, pioneered by the UK. This will free up radio spectrum particularly valuable for next generation mobile services. Greater investment certainty for existing 3G operators: The Government wishes to encourage the maximum commercially-sensible investment in network capacity and coverage. But the further into a fixed term licence one goes the greater the disincentive to invest. We want to resolve this issue now as part of the structured framework. As part of the structured trading framework existing time-limited licences could be made indefinite and subject instead to AIP beyond the end of the current term. If this were achieved the Government would look to ensure that the AIP then set reflected the spectrum's full economic value and hence would capture over time the return equivalent to the proceeds that would have been realised in the market from an auction for a licence of the same period. Greater network sharing: the Government and Ofcom will consider further network sharing, spectrum or carrier-sharing proposals from the operators, particularly where these can lead to greater coverage and are part of the mobile operator's contribution to a broadband Universal Service Commitment. Commitments by the mobile operators to push out the coverage of mobile broadband eventually to replicate 2G coverage and mark their significant contribution to the broadband universal service commitment. 	<p>Following the interim report, the Government asked an Independent Spectrum Broker to facilitate discussions between mobile operators and recommend a way forward. Our response to his recommendations and next steps are covered in some detail in Chapter 3a.</p>



ACTION PROPOSED IN THE INTERIM REPORT	FOLLOW UP IN FINAL REPORT
<p>Digital Networks – Digital Television Networks ACTION 7 We will consider at what point and at what cost the standard offer provided by the Digital Television Digital Switchover Help Scheme could have a return path capability, and we will ensure that such a capability is available as an Option.</p>	<p>Since the Interim Report, industry has agreed an open standard for a return path on the terrestrial platform – the MHEG interaction channel – and equipment should be available by early 2010. This issue is covered in detail in Chapter 3a.</p>
<p>ACTION 8 We will examine how the marketing and communications activity around Digital Switchover could be enhanced to use the region-by-region programme of publicly funded information and advice on one form of digital transition to provide impartial information on wider opportunities of digital beyond digital broadcast television.</p>	<p>Digital UK is responsible for managing the switchover communications activity. In Chapter 2 we set out our proposals for driving Digital Participation, including enhanced coordination with Digital UK. In Chapter 8 we outline proposals for considering bringing together some or all of the various bodies charged with digital delivery, including Digital UK.</p>
<p>Digital Networks – Digital Radio Networks ACTION 9 We will take action to support DAB Digital Radio in seven areas:</p> <ol style="list-style-type: none"> a. We are making a clear statement of Government and policy commitment to enabling DAB to be a primary distribution network for radio; b. We will create a plan for digital migration of radio, which the Government intends to put in place once the following criteria have been met: <ul style="list-style-type: none"> – When 50% of radio listening is digital; – When national DAB coverage is comparable to FM coverage, and local DAB reaches 90% of population and all major roads. c. We will create a Digital Radio Delivery Group which includes the retailers, the Transmission Networks, the BBC, the Commercial Radio Companies, the Car Manufacturers, consumer representatives and the device manufacturers, whose role would be to increase the attractiveness, availability and affordability of DAB and to advise on the Digital Migration Plan. d. We will work with the BBC to explore how they could extend their digital radio coverage to replicate at least current FM analogue coverage. e. As recommended by the Digital Radio Working Group, we will conduct a cost-benefit analysis of digital migration. f. We will consult on new legislation to allow a one-off five-year extension of existing community radio licences, to bring them in line with other radio licences and recognise the important role they have in delivering social gain. We also intend to re-consider the rationale for the current restriction of 50% of funding from any one source. g. We will commission an independent expert examination of the economic viability, continuing social contribution of, and most effective delivery methods for, local radio services and the relevance of the existing localness legislation. 	<p>This issue is addressed in detail in Chapter 3b, which sets out our detailed strategy for UK radio.</p>



ACTION PROPOSED IN THE INTERIM REPORT	FOLLOW UP IN FINAL REPORT
<p>Digital Content – Economics of Digital Content</p> <p>ACTION 10</p> <p>In the final report we will examine measures needed to address the challenges for digital content in more detail, including opportunities for providing further support to foster UK creative ambition and alternative funding mechanisms to advertising revenues.</p>	<p>This Action is addressed in Chapter 4, in particular through our proposal for a number of Next Generation Digital Test Beds to facilitate experimentation, including around funding mechanisms.</p>
<p>Digital Content – Rights And Distribution</p> <p>ACTION 11</p> <p>By the time the final Digital Britain Report is published the Government will have explored with interested parties the potential for a Rights Agency to bring industry together to agree how to provide incentives for legal use of copyright material; work together to prevent unlawful use by consumers which infringes civil copyright law; and enable technical copyright-support solutions that work for both consumers and content creators. The Government also welcomes other suggestions on how these objectives should be achieved.</p>	<p>This is addressed in some detail in Chapter 4, including next steps.</p>
<p>ACTION 12</p> <p>Before the final Digital Britain Report is published we will explore with both distributors and rights-holders their willingness to fund, through a modest and proportionate contribution, such a new approach to civil enforcement of copyright (within the legal frameworks applying to electronic commerce, copyright, data protection and privacy) to facilitate and co-ordinate an industry response to this challenge. It will be important to ensure that this approach covers the need for innovative legitimate services to meet consumer demand, and education and information activity to educate consumers in fair and appropriate uses of copyrighted material as well as enforcement and prevention work.</p>	<p>This is addressed in Chapter 4.</p>
<p>ACTION 13</p> <p>Our response to the consultation on peer-to-peer file sharing sets out our intention to legislate, requiring ISPs to notify alleged infringers of rights (subject to reasonable levels of proof from rights-holders) that their conduct is unlawful. We also intend to require ISPs to collect anonymised information on serious repeat infringers (derived from their notification activities), to be made available to rights-holders together with personal details on receipt of a court order. We intend to consult on this approach shortly, setting out our proposals in detail.</p>	<p>This is addressed in Chapter 4.</p>
<p>Digital Content – provision of Original UK Content</p> <p>ACTION 14</p> <p>To inform whether any change to the merger regime is yet desirable or necessary in relation to the local and regional media sector, the Government will invite the OFT, together with Ofcom and other interested parties, to undertake an exploratory review across the local and regional media sector and make appropriate recommendations.</p>	<p>The OFT have published their review alongside this Report and our detailed response to that Review and the resulting proposals are set out in Chapter 5.</p>



ACTION PROPOSED IN THE INTERIM REPORT	FOLLOW UP IN FINAL REPORT
<p>ACTION 15</p> <p>The existing Terms of Trade between the independent producers and broadcasters have worked well. In light of new entrants to the market, new business models and new distribution channels, it makes sense to have a forward look at how the relationship between independent producers and those who commission their ideas could evolve. This review will focus on the appropriate rights holding agreements and definitions required for a multi-platform digital future, on the overall health of the sector and on continuing to ensure that viewers, listeners and users get the best and most innovative content and programming.</p>	<p>The outcome of the publication of our discussion document on the UK television production market and resulting roundtable sessions are set out in Chapter 5.</p>
<p>ACTION 16</p> <p>In the final Digital Britain Report, we will establish whether a long-term and sustainable second public service organisation providing competition for quality to the BBC can be defined and designed, drawing in part on Channel 4's assets and a re-cast remit. It would be a body with public service at its heart, but one which is able to develop flexible and innovative partnerships with the wider private and public sector. While it makes sense to begin by looking at public sector bodies – Channel 4 and BBC Worldwide – the Government is currently evaluating a range of options and organisational solutions for achieving such an outcome.</p>	<p>This issue is addressed in detail in Chapter 5.</p>
<p>Universal Connectivity – Network Universal Connectivity on Digital Networks</p> <p>ACTION 17</p> <p>We will develop plans for a digital Universal Service Commitment to be effective by 2012, delivered by a mixture of fixed and mobile, wired and wireless means. Subject to further study of the costs and benefits, we will set out our plans for the level of service which we believe should be universal. We anticipate this consideration will include options up to 2Mbps.</p>	<p>This issue is addressed in Chapter 3a, confirming our intention to deliver a universal service commitment at 2Mbps and setting out plans to establish a delivery body – the Network Design and Procurement Agency.</p>
<p>ACTION 18</p> <p>We will develop detailed proposals for the design and operation of a new, more broadly-based scheme to fund the Universal Service Commitment for the fully digital age – including who should contribute and its governance and accountability structures.</p>	<p>This issue is addressed in Chapter 3a, where we set out the funding and contribution sources for universal broadband.</p>
<p>Universal Connectivity – take-up of universally available broadband</p> <p>ACTION 19</p> <p>We will encourage the development of public service champions of universal take-up. The Digital Inclusion Action Plan recommended the appointment of a Champion for Digital Inclusion and expert Task Force to drive the Government's work on digital inclusion. Clearly, the work of the Champion will be important in encouraging take-up.</p>	<p>We set out in Chapter 2 our full plans to drive Digital Participation. In addition, we are today announcing the appointment of the Champion for Digital Inclusion.</p>
<p>ACTION 20</p> <p>We are inviting the BBC to play a leading role, just as it has in digital broadcast, through marketing, cross-promotion and provision of content to drive interest in taking up broadband. With other public service organisations, the BBC can drive the development of platforms with open standards available to all content providers and device manufacturers alike.</p>	<p>The Government welcomes the appointment of the BBC's Online Access Champion and the increasing role of the BBC in driving Digital Participation, including through the National Plan set out in Chapter 2.</p>



ACTION PROPOSED IN THE INTERIM REPORT	FOLLOW UP IN FINAL REPORT
<p>ACTION 21</p> <p>A Public Service Delivery plan: we commit to ensure that public services online are designed for ease of use by the widest range of citizens, taking advantage of the widespread uptake of broadband to offer an improved customer experience and encourage the shift to online channels in delivery and service support.</p>	<p>This issue is addressed in detail in Chapter 8.</p>
<p>Equipping everyone to benefit from Digital Britain – Digital Media Literacy</p> <p>ACTION 22</p> <p>The current statutory and specific remit on Media Literacy is contained within s.11 of the Communications Act 2003. As this report makes clear, since 2003 there have been significant market changes in the availability of digital technologies and how they are used. We will ask Ofcom to make an assessment of its current responsibilities in relation to media literacy and, working with the BBC and others, to recommend a new definition and ambition for a National Media Literacy Plan.</p>	<p>We welcome the Report of the Digital Britain Media Literacy Working Group and set out our response in Chapter 2.</p>

List of Acronyms

2G	Second Generation Mobile services – see also GSM
3G	Third Generation Mobile services – see also UMTS
AAP	Association of American Publishers
ADSL	Asymmetric Digital Subscriber Line – a broadband technology using the copper phone network
AG	Authors Guild
AIP	Administrative Incentive Pricing – the annual charge on some spectrum licence holders aimed at ensuring efficient spectrum use
ASA	Advertising Standards Authority
AVMS	Audio Visual Media Services Directive
BBC	British Broadcasting Corporation
BERR	Department for Business, Enterprise and Regulatory Reform
BIS	Department for Business, Innovation and Skills
BPI	British Phonographic Institute
BSI	British Standards Institution
BTOP	Broadband Technology Opportunities Programme – a US government project
C4/C4C	Channel 4/the Channel 4 Corporation
CDPA	Copyright, designs and Patents Act 1988
CGI	Computer Generated Imagery, or Common Gateway Interface
CIO	Chief Information Officer
CPNI	Centre for the Protection of National Infrastructure
CRR	Contract Rights Renewal Remedy
DAB	Digital Audio Broadcasting
DCFS	Department for Children, Schools and Families
CLG	Department for Communities and Local Government
DCMS	Department for Culture, Media and Sport
DIUS	Department for Innovation, Universities and Skills
DMB-A	Digital Multimedia Broadcasting – Audio
DNS	Domain Name System
DOCSIS	Data Over Cable Service Interface Specification – a technology for next generation broadband services over the cable network
DQ	Directory Enquiries
DRM	Digital Rights Management or Digital Radio Mondiale
DSL	See ADSL
DSO	Digital Switchover (usually of TV)
DTT	Digital Terrestrial Television
DVLA	Driver and Vehicle Licensing Agency
DWP	Department of Work and Pensions
ECRG	Electronic Communications Resilience and Response Group
EPG	Electronic Programme Guide
FDD	Frequency Division Duplex – a means of managing radio spectrum for mobile services (see also TDD)



FTTC	Fibre to the Cabinet
FTTH	Fibre to the Home
GAC	Government Advisory Committee – an advisory body for ICANN
GHz	GigaHertz, a measurement of frequency in radio spectrum
GSM	Global System for Mobile, a 2G mobile technology
GSOL	www.getsafeonline.org
GVA	Gross Value Added
GW-h	GigWatt hours – a measure of energy consumption
H&SA	Health and Safety Executive
HDTV	High-definition Television
HE	Higher Education
HEIs	Higher Education Institutions
HSDPA	High-Speed Downlink Packet Access – an enhanced 3G service for data transfer
HSPA	High-Speed Packet Access – an enhanced 3G service for data transfer with greater symmetry between the up- and down link.
IA	Impact Assessment
IAB	Internet Advertising Bureau
ICANN	Internet Corporation for Assigned Names and Numbers
ICT	Information and Communication Technology
IGF	Internet Governance Forum
IP	Intellectual Property or Internet Protocol
IPTV	Internet Protocol Television – television services delivered over the Internet
ISB	Independent Spectrum Broker
ISDN	Integrated Services Digital Network – a data transfer technology using the copper phone network
ISP	Internet Service Provider
ITMB	Information Technology Management for Business degree
JISC	Joint Intelligence Select Committee
Kbps	Kilobits per second
KTN	Knowledge Transfer Network
LTE	Long Term Evolution – so-called 4G mobile services offering greater data rates
Mbps	Megabits per second
MHEG	Standard for delivery of multimedia information, developed by the Multimedia and Hypermedia Experts Group
MHz	MegaHertz – a measurement of frequency in radio spectrum
Misc 34	The Cabinet Sub-committee responsible for Digital Inclusion
Moj	Ministry of Justice
MoU	Memorandum of Understanding
MP3	Digital audio encoding format
NCB	National Children Bureau
NESTA	National Endowment for Science, Technology and the Arts



NGA	Next generation access – also known as next generation broadband, or superfast broadband
NGM	Next Generation Mobile – see LTE
NGN	Next Generation Networks – upgrades to the telecommunications infrastructure in the core and backhaul parts of the network
NTIA	National Telecoms and Information Administration – a US government body
OECD	Organisation for Economic Cooperation and Development
Ofcom	The Office for Communications
OFT	Office of Fair Trading
OGC	Office of Government Commerce
OPSI	Office of Public Sector Information
PACT	Producers Alliance of Cinema and Television
PC	Personal Computer
PEGI	Pan-European Game Information – an age rating system for video games
PLR	Public Lending Right
PSB	Public Service Broadcasting
PSN	Public Sector Network
PVR	Personal Video Recorder
RDA	Regional Development Agency
SABIP	Strategic Advisory Board for IP Policy
SDN	S4C Digital Networks
SFA	Skills Funding Agency
SLC	Substantial Lessening of Competition
SME	Small and Medium Enterprises
SOCA	Serious Organised Crime Agency
SSC	Sector Skills Council
TDD	Time Division Duplex – a means of managing radio spectrum for mobile services (see also FDD)
UCAS	Universities and Colleges Admissions Service
UK CES	UK Commission for Employment and Skills
UKCCIS	UK Council for Child Internet Safety
UMTS	Universal Mobile Telecommunications System – a 3G mobile technology
USC	Universal Service Commitment
VOA	Valuation Office Agency
VoD	Video on Demand
WEEE	Waste Electrical and Electronic Equipment Directive/Regulations
Wimax	A wireless data transfer technology





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