



**TOWARDS E-WALES:
A CONSULTATION ON EXPLOITING
THE POWER OF ICT IN WALES**

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GWYBODAETH · GALLU · ARLOESI · SEILWAITH

KNOWLEDGE · CAPACITY · INNOVATION · INFRASTRUCTURE



Llywodraeth Cynulliad Cymru
Welsh Assembly Government

Foreword

- (i) This consultation is about information and communication technology¹ (ICT), and how we exploit it to achieve our goals for economic success, public service reform and social inclusion in Wales. **It is aimed at those who are in a position to make decisions which, in some way, affect the lives and livelihoods of individuals, businesses and communities in Wales.** However, we welcome responses from anyone with an interest in improving how we live, work and do business in Wales, our public services, and our profile in the world.
- (ii) *Towards e-Wales* marks the start of a new phase in our approach to exploiting ICT. I want it to be marked by an approach which is alive to the reality of massive technological development around the world, and visionary as to how such development can transform our lives, our economy and our society in a positive way. The challenge ICT presents is becoming more intense, but the opportunities more exciting than ever – it is now globally recognised that technology is developing at such a pace, and to such an extent, that it is starting to make real differences to the ways people, their businesses, communities and governments operate and interact.
- (iii) To get the most of these developments for Wales, we start from a good position: in our use of ICT to date we can point to a rich record of ideas, experimentation, innovation and delivery in Wales. As a result we have a wealth of experience and expertise concerning the power of ICT, and its implications. We seek to build on that success through focusing on building our knowledge and our capacity to exploit it more widely and fundamentally.
- (iv) This is against a backdrop where we have been energetically setting out our broader vision and plans for transforming public services, invigorating the Welsh economy, and ensuring communities and people are equipped for life in the twenty first century world. We recognise that ICT, used effectively, is a key factor in making the difference between mere survival as a country, and success. We want to see ICT exploited in the most appropriate and effective ways to help us achieve our goals to make Wales a better country.

- KNOWLEDGE . CAPACITY . INNOVATION . INFRASTRUCTURE
- (v) Therefore, we need to nurture the creative dynamic we can already see in Wales, to deliver benefits on a far higher scale and underpin the radical changes we seek in our public services and economic performance. I have heard it said that 'the best way to predict the future is to invent it'. I want Wales to be seen as a country which embodies that sentiment in the way it exploits ICT, through its firmness of action, its unity of purpose, and its passion to succeed.
 - (vi) We do not pretend to have all the answers in this document, but we need the support of all key stakeholders in government, public services, business and our communities to build our aims into firm and achievable actions. For that reason we seek your reflection and comment and I encourage you to use this consultation to renew our commitment to working together to get the best out of ICT.

Andrew Davies
Minister for Enterprise, Innovation and Networks

¹ ICT refers to any electronic technology that is used to communicate, provide, store or find information. Obvious examples are personal computers, the internet, e-mail, telephones, mobile phone, television. Less obvious examples include Geographic Information Systems.

Note to readers:

The topic of information and communication technology covers a vast range of scenarios and issues across public services and economic policy. To capture these in this consultation has therefore meant that this document is large.

To make the document easier to navigate, it may be helpful to note that our specific questions about:

ICT and public services...can be found on pages 47-52.

ICT and economic performance...can be found on pages 52-54, 57-59.

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Towards e-Wales: a consultation on exploiting the power of ICT in Wales

Background and executive summary

1.1 Our vision:

That our exploitation of ICT embodies our country as economically vibrant, innovative and creative, efficient and inclusive. That our economy and society is dynamic, prosperous, and inclusive, thriving on strong human networks, and underpinned by an electronic infrastructure that is at the leading edge of innovation, which allows all our communities, real or virtual, from our largest towns and cities, to our most rural locations, to engage and thrive in equal measure. Our culture is recognised globally for its uniqueness, creativity, versatility, and confidence. All citizens know how ICT can help them to reach, inform, and influence others and can use it as a normal part of daily life. Our businesses, both public and private, are exemplars of service and efficiency, through intelligent application of ICT which underpins robust management and confident operation by a skilled and motivated workforce.

1.2 From the outset of the Assembly Government's existence, effective exploitation of ICT has been recognised as a key means of doing business, enriching its policies and strategies on economic performance, and public service reform. The National Assembly for Wales has enabled members to use ICT for communications and voting since its outset. The Welsh Assembly Government was one of the first in the world to publish the minutes of cabinet meetings on the World Wide Web.

1.3 The launch of our ICT strategic framework, *Cymru Ar-lein*, in 2001 marked a key milestone in terms of recognising the power of ICT to transform life and prosperity in Wales. It provided a focal point for building an ICT dimension throughout our business and policymaking. In the ensuing years Wales has seen considerable ICT infrastructure development, innovative projects, and bold public

service policies which place ICT as the key enabler of successful delivery. In some cases, Wales is recognised as having been at the forefront. This is a strong foundation, and this document highlights these achievements and the progress we are continuing to make in exploiting ICT.

- 1.4 However, we now need to go further and faster in our exploitation of ICT to achieve our goals of a prosperous and inclusive society. ICT is playing an ever more crucial role in all our lives. Activities and services we take for granted would be of poorer quality, more limited scope, or more expensive to carry out without ICT. In addition to this, our bold strategy for public service reform, *Making the Connections*, and the refreshed economic strategy *Wales: a vibrant economy (WAVE)*, provide the right opportunity to revisit our strategic approach to ICT. These developments present us with significant opportunities to exploit ICT to a far greater extent, to deliver higher impact benefits to the citizens of Wales through better public services, better opportunities in their lives and work.
- 1.5 This consultation document, *'Towards e-Wales'*, provides the first step in this process. It has been prepared by the newly formed e-Wales Division in the Assembly Government, which will be responsible for driving forward an enhanced approach to ICT policy, working across all parts of the Assembly Government, and together with our stakeholders and partners.
- 1.6 To do this, we need to be sure that **all** our policies reflect how critical ICT is becoming to many aspects of life. This means focusing on the role of ICT in our policies to improve economic performance, health, education, local services, communities, and all other actions important to the overall quality of life and work in Wales.
- 1.7 Specifically, this consultation seeks your input on how best to:
 - ensure all citizens can exploit the opportunities offered by ICT;
 - ensure ICT transforms the accessibility, responsiveness, quality and efficiency of public services in Wales;
 - maximise opportunities for ICT to heighten Welsh economic performance;

- foster an environment of innovation in ICT, in which the benefits to economic performance go hand in hand with improvements to public services;
- ensure all citizens, communities and businesses in Wales can benefit from developments in telecommunications infrastructure.

1.8 It is recognised that expertise and experience in exploiting ICT already exists across Wales. However, we seek to focus action around building and embedding:

- **greater knowledge and understanding of where and how ICT can bring significant benefits.** This includes proposals to scope an e-Wales observatory to gather and distribute information on patterns and trends in ICT development, and strengthen the evidence base of the impact of ICT; raise public understanding of ICT; ensure advice and information about ICT security is appropriately widespread; raise the international profile of significant ICT innovation and success in Wales; learn more about how innovation and success in other countries can benefit Wales.
- **capacity to exploit it to a far higher degree than has been possible to date.** Through joined up working across the Assembly Government, and with external stakeholders, the aim will be consistency in the skills and resources necessary to exploit ICT appropriately in policy design and delivery. It will also include informing, and being informed by, policy developments beyond Wales (e.g. at UK Government and EU levels and beyond). In addition, it will include developing the delivery capacity of the e-Wales Division to lead on major cross-cutting ICT developments, with support and engagement from different areas of policy. A further important dimension will be ensuring the empowerment and capacity of citizens to exploit ICT to access and influence public services, and benefit their lives and careers.
- **a culture of innovation with ICT which can further stimulate public service reform and economic success.** This includes exploring ways of creating a greater critical mass of innovative ICT behaviour. The strategy seeks feedback on options for

achieving this which might include, for example, strengthening networking between project groups in different public policy areas; identifying improved mechanisms for translating innovative pilots into mainstream delivery; ways of encouraging private sector interest and investment in exploiting ICT innovation.

- **an electronic infrastructure which is fit for purpose and underpins economic competitiveness and a 21st Century public service.** This includes ensuring Wales is at the leading edge of new and enhanced broadband capabilities; and ensuring the public service electronic infrastructure evolves to a smarter state of operation which supports public services to work collaboratively, helps citizens to receive more seamless and co-ordinated service delivery, and enables economies of scale in procurement and support, and smooth interaction where this enhances business objectives.

- 1.9 Three specific phases are proposed and described for achieving effective exploitation of ICT in Wales:

Phase one: focuses on setting foundations, identifying strengths opportunities and priorities (in many respects this describes the current position).

Phase two: focuses on building capacity and confidence. During this phase there will be expected to be increasing signs of critical mass in ICT policy capacity and delivery emerging through evidence in policy design, shared ICT developments and operations, and knowledge exposition and sharing.

Phase three: reflects normalisation of joined up delivery and ICT development, with clearly defined impacts on economic performance and public service improvement and efficiency. In this phase Wales will be recognised internationally for ICT innovation and exploitation.

- 1.10 It is not expected that these phases will be achieved uniformly, as in some areas of policy capacity and performance we are already achieving significant outcomes and establishing a reputation for excellence. However, they are intended to denote a stage at which they become the prevailing characteristic of ICT policy in Wales.

- 1.11 It is important that, as a country, we think and act smartly and collectively. The process of working together therefore has to be considered carefully, so that it is genuinely inclusive, but manageable and effective in driving forward action.
- 1.12 Wales is already rich in action, creativity and innovation with ICT. We have an exciting foundation on which to build a robust and sustainable transformation of our public services and economy.

ICT: the global perspective

- 2.1 The early years of the 21st Century are dominated by changes on a seemingly unprecedented scale in terms of their size and rapidity. Economic bases are shifting towards countries such as India and China; assumptions about economic and social progress are being challenged by concerns about global political and economic instability, climate change, crime and terrorism; communities everywhere are changing as economic circumstances and greater personal opportunities mean populations are more mobile than ever before, and experience ever greater exposure to different cultures, influences and patterns of behaviour; questions are continually asked about the balance of power between the individual, the state, and big business.
- 2.2 At the same time opportunities are opening up as never before for individuals: to do new kinds of work, travel, communicate, create, and influence. ICT is helping break down barriers previously insurmountable because of geography, language, culture, and disability. It can therefore be a tremendous force for good. It is continuing to accompany, influence and drive changes and opportunities for individuals, communities and whole countries, and presents new challenges to be overcome.
- 2.3 ICT is seen as a vital pre-requisite for competitive advantage, and an important goal in many domains such as economic productivity, public services, and social inclusion (as typified by the European Commission's eEurope Action Plans, 2002 and 2005). ICT has been seen as a tool for helping both perpetrate and tackle high level crime and international terrorism. As concern grows over the environmental impact of carbon emissions and other pollutants from industrialised societies, greater use of ICT is seen both as helping address these concerns (through reducing the need for physical travel to do business and access services, and supporting more efficient use of resources generally) as well as adding a new dimension to these concerns (for example through the processes of hardware manufacture and disposal). ICT is synonymous with our views on government and big business: some may welcome the fact that it helps inform us easily and instantly about entitlements, benefits and opportunities

relevant to our needs and preferences. Others see it as a pervasive challenge to individual privacy and freedom of choice.

- 2.4 What is clear is that ICT is inseparable from the wider debate on all of these issues. For some years the term 'the information society' has been accepted as a paradigm for economic and social development and success at regional, national and supra-national levels through successful exploitation of complex communications networks. However, as modern economies have sought to make the shift from the post-industrial society to the information society, there is a broad consensus that the next paradigm is that of the 'knowledge-based economy and society'. Just as land, labour and capital were viewed as critical factors of production in the industrial revolution, knowledge is now fast becoming accepted as the critical success factor for competitive advantage in the increasingly competitive global economy, and a vital determinant of social inclusion, and empowerment of individuals and communities.
- 2.5 Competing on the basis of cost alone is no longer viable for most 'advanced' economies since lower cost economies, particularly in eastern Europe and Asia, are increasingly able to outperform them. Whether the issue is manufacturing or services, success is increasingly associated with demonstrating 'added value' through higher quality products and processes, through innovation, and through high quality jobs. All these centre around the acquisition and exploitation of 'knowledge', whether it relates to an individual's skills and aptitudes; the networks to which individuals, businesses and communities are linked to share information; and the research and development undertaken by business and government to improve services and performance.
- 2.6 Objectives such as prosperity and improved quality of life, inclusion and equality of opportunity, are closely tied to competitive success and economic performance. Whilst ICT and the information society will not in themselves create a vibrant economy and society, there is ample evidence that investment in, and effective adoption of, ICT does confer important economic and social benefits. Between 1996 and 2003, US productivity growth rate (2.2%) outstripped that of the EU-15 (1.4%). Lower EU labour productivity growth rates in the mid-1990s have been attributed more or less equally to lower investment per employee

and to a slowdown in the rate of technological progress and the contribution of ICTs to growth was half that observed in the US. "The IT sector is an important and growing source of secure high value-added employment. The European IT sector represents 6% of European GDP compared with 7.3% in the US, while European investment in IT capital goods has consistently lagged behind the US by around 1.6% of GDP in the recent past."²

- 2.7 There is growing evidence of the importance of ICT investment and associated infrastructures in achieving competitiveness and growth, and we know that ICT is a principal means of getting more efficient and higher quality products and services in both the public and private sectors. For example, the World Economic Forum's Global Information Technology Report for 2005-06 reaffirms the link between economic performance and investment in ICT. Similarly, the European Commission's 2004 Competitiveness Report estimates that 90% of all future innovation in the automobile sector will be driven by ICT and approximately 18% of EU-15's productivity growth since the mid-1990's – despite lagging behind that of the US and other global competitors – is attributable to ICT investment. Moreover, technological development plays a key part in achieving higher growth rates and research and development (R & D), in particular, is a key driver for innovation and thus of increased competitiveness.

"The evidence is overwhelming that the higher research and development expenditure, the higher subsequent productivity growth. One of the preconditions for any increase in European productivity growth is to raise R & D spending. Studies demonstrate that up to 40% of labour productivity growth is generated by R & D spending and that there are powerful spillover effects into other areas of the economy, depending on the way in which the money is spent."³

- 2.8 However, the knowledge society as a concept means more than simply an increased commitment to R & D and ICT investments. It spans all aspects of the economy in which knowledge is at

² "Facing the Challenge – The Lisbon strategy for growth and employment", Report from the High Level Group chaired by Wim Kok, November 2004.

³ Kok Report, *ibid*.

the heart of creating added value. This ranges from high-tech manufacturing and ICT through knowledge-intensive services to the overtly creative industries such as media and architecture. According to the Kok Report, as much as 30% of the working population will be working directly in the production and diffusion of knowledge in the manufacturing, service, financial and creative industries alike in the near future.

- 2.9 ICT also plays a critical role in knowledge production and distribution, and in knowledge management. Of equal importance to accelerated adoption of ICT, is the need for effective adoption of ICT. Increasingly, there is a view that the real benefits of ICT (increased competitiveness, productivity gains, cost reductions etc.) accrue only when it is used in a transformative way. Simply computerising and putting on-line existing processes achieves little (other than to make more visible how inefficient such processes really might be).
- 2.10 Governments throughout the world are therefore recognising the significance of the accelerating development and mass deployment of technology in our economies and societies. There are few who disagree that in the last few years this has reached a stage where 'it may fundamentally change the way we work, live and interact.'⁴ As a result, Governments are focusing increasingly on ensuring that the benefits of ICT are not just confined to the world of business and commerce. In some instances this has led to reviews of, and sometimes changes to, laws and regulations, for example to uphold privacy and security, but also to embed a strong relationship between ICT and organisational effectiveness.⁵
- 2.11 It is increasingly accepted that public services, which form a major part of the economy, need to demonstrate an equivalent ICT enabled transformation to that experienced by industry in the last decade, to make them more accessible, responsive and cost-effective. In many cases it is recognised that much has already occurred in terms of introducing an ICT dimension to public services, but there is much more to do demonstrate that these significantly improve the service, or demonstrate more effective use of resources.

⁴ i2010 – A European Information Society for growth and employment", European Commission 2005.

⁵ E.g. The Information Technology Management Reform Act (USA 1996) which, among its purposes, has required Government agencies to make explicit links between IT procurement, organisational efficiency and service delivery.

- 2.12 New content creation, services and business models are driving growth and jobs. For example, Western European online content markets are expected to triple by 2008 (with the consumer part growing tenfold)⁶. These developments are expected to multiply across the sector, today already accounting for 8% of EU GDP.
- 2.13 Convergence of technologies, infrastructure and applications is expected to provide citizens with access to a great diversity of attractive services and rich media and content on a wide range of devices. Digital convergence is, and will continue to, create four challenges – the ever increasing need for speed to deliver rich content; the need for increased legal and economic certainty to encourage rich content and new services; the need for enhancing devices and platforms so that they can ‘talk to each other’ as well as services which are portable from platform to platform; and making the internet safe.
- 2.14 It is for this reason the European Commission launched ‘i2010 – A European Information Society for Growth and Employment’ in 2005 to promote an open and competitive digital economy and emphasises ICT as a driver of inclusion and quality of life. i2010 seeks to create an integrated approach to information society and audio-visual media policies in the EU and it contains 3 key pillars. These are the need for (i) an open and competitive market for information society and media (ii) strengthening of innovation and investment in ICT research to promote growth and more and better jobs and (iii) achieving an inclusive information society that promotes growth and jobs in a manner consistent with sustainable development and that priorities include better public services and quality of life.

⁶ Source: European Information Technology Observatory (EITO) 2005.

The Impact of ICT

- 3.1 Whether we are communicating with others, working, travelling, buying or selling goods, learning, caring, or at leisure, technology is playing an increasingly essential part in what we do and how we do it. The technology itself is rapidly becoming increasingly sophisticated, more efficient, and more reliable. Just a few years ago, the sort of processes and applications we are already taking for granted were confined to a much smaller community of users, were more expensive to operate, or more limited in their scope.
- 3.2 Technology has moved from being an innovative but marginal dimension to being essential. However, the shift has been faster in some areas than others. To large businesses, technology has for many years been essential to global competitiveness and survival, through:
- making everyday business processes more efficient;
 - enhancing information and knowledge of patterns and trends in their markets, their suppliers, and their competitors;
 - enabling business and communication to be carried out rapidly over large distances.
- 3.3 New technologies such as Broadband, Wi-Fi and voice over internet protocol (VoIP) are reshaping the telecommunications sector and the nature and use of applications such as mobile phones, personal digital assistants (PDAs), personal computers, television. At the same time there are signs of growing convergence – a mobile phone can also be a camera, a television and a PDA. We are now beginning to see ICT have a visible impact on all areas of life, work and leisure:
- 3.4 ***The world of work:*** It has been decades since the microprocessor chip started having an impact on what we manufactured and how we manufactured. It is now normal to see businesses of all kinds and sizes using ICT to trade and operate 24 hours a day. ICT has changed the way the workforce operates, where input, retrieval and sharing of information is faster and more crucial to competitiveness and productivity, whatever the nature of the work. Evidence has shown that the effective exploitation of ICT has been a major

factor in the substantially higher rates of productivity growth in the USA from the late 1990s when compared with Europe. We have also seen the growth in new kinds of industry, developing and supplying new kinds of ICT application, or creating and supplying digital content. ICT has an impact on the way we work. This can be positive (greater flexibility, mobility, and choice of work) as well as negative (such as through the risks of repetitive strain injury, risks to eyesight, sedentary working). Many of the negative aspects of ICT are recognised and addressed in health and safety practice and guidance for those using ICT. ICT requires new skill sets among the workforce, but opens up a number of personal, community and economic opportunities.

- 3.5 ***The world of commerce:*** Market analysts 'Verdict'⁷ have identified that over 14 million UK consumers bought £8.2 billion of goods online in 2005 (compared with £9.4 billion spent in department stores). Whereas total retail sales in the UK grew by 1.5% compared to 2004, online shopping in the same period grew by 28.9%, with one of the strongest areas of growth in online shopping being among consumers aged over 55. Online retailing is seen as attractive because it offers the ability to trawl for availability and best price, at a time to suit the individual. New online shopping services have emerged and quickly become household names, specialising in activities such as holiday and travel bookings, trade and exchange of goods between individuals.
- 3.6 ***The world of leisure:*** new ways to share information, and exchange thoughts are emerging, bringing a whole new language such as 'blog'⁸ and 'wiki'⁹ and a culture of group communication on a global scale. Communities sharing similar interests form and thrive unhindered by physical distance, content composition is possible by non-technical users and, through the internet, debate rages over topics of the day on many thousands of online forums between individuals. An offshoot of such behaviours is that firms are increasingly finding online discussion forums between citizens

⁷ Verdict Research: 'e-retail 2006 – online retailers re-mould the landscape' (February 2006).

⁸ 'weblog' – an online journal where individuals share their thoughts and interests with the world. It can be an effective tool for keeping groups of people in touch with one another.

⁹ a type of website that allows the user to add, remove, or otherwise edit all content, quickly and easily. This ease of operation makes a wiki an effective tool for collaborative writing. The most widely known example is the 'Wikipedia' the 'free' encyclopedia where anyone can amend or add to the information presented.

a useful additional source of information about trends, concerns and opinions on products. The online visibility of products is an increasingly important factor in sales. People planning to travel increasingly seek information and advice about destinations, and make bookings, over the web. ICT is also transforming the nature and scope of hobbies and games, creating imaginatively themed competitions and challenges for personal consoles or online electronic networks, thus introducing a new social dimension to personal interaction. Digital television makes possible greater specialisation and choice in mass entertainment, with increasing interaction between viewer and service providers possible using the TV as the medium. Interest in photography has grown since the advent of digital cameras.

- 3.7 ***The world of learning:*** the United States, Australia and the United Kingdom have become major exporters of higher education by means of electronic technology. Countries such as South Africa and India are importers of distance-learning programmes as they endeavour to expand educational opportunities for their citizens quickly¹⁰. ICT makes it possible for people anywhere in the world to register for courses and learn online, and has sharpened the concept of education itself as a competitive industry, where academic quality and ICT innovation are seen as key factors which will keep providers a step ahead of increasingly global competition. Rapid changes in ICT capacity have stimulated an ongoing debate about how they can best be captured to offer the potential learner (of any age) a range of better learning experiences in topic, timing, format and plan, and what this means for the role of the educator. The contribution of ICT to the speed, effectiveness and cost of workforce training (in any kind of work environment) is an issue for firms seeking to maintain a competitive edge.
- 3.8 Work is underway to develop a \$100 self powered, wireless broadband enabled laptop computer by *One Laptop Per Child* (a non-profit organisation based in Delaware, USA and created by members of the Massachusetts Institute of Technology Media Lab). The aim is to revolutionise learning opportunities by making possible distribution of affordable laptops to children by Governments, especially developing countries, which might not otherwise have had access to such technology.

¹⁰ Ian Roffe, *Innovation and e-learning*, University of Wales Press, 2004.

- 3.9 **The citizen of the 21st century world:** ICT is opening up opportunities for the individual citizen not possible to previous generations, and helping overcome barriers such as location, disability, or mobility. As ICT makes new applications possible, expectations of citizens of all ages are changing dramatically. The ability to communicate through mobile phone or text from any location is taken for granted. Through the internet, information can be accessed at any time and, increasingly, from any location. Individuals have greater choice in how they communicate. It has already been seen how people use ICT to work, shop, learn, and spend their leisure time. Geographic information technologies make possible the capture and presentation of a whole variety of data which can educate people and organisations in a whole variety of ways, for example, where we might seek to live or visit, including climate, amenities, local services and the environment. Public services are also changing as ICT makes new ways of offering services possible which better meet the needs of citizens. 'Smart homes' can allow people who may otherwise have required long term care in an institution to live in relative independence in their community while maintaining contact with carers, who can monitor remotely that they are well. More and more health problems can be diagnosed remotely by specialists, with less need to travel to see them. Alongside these opportunities, there is an increased expectation that service access, responsiveness and outcomes will improve. People increasingly assume e-mail correspondence will be turned around more quickly than conventional written communication, and that information can be more readily stored and retrieved, making service responses more efficient.
- 3.10 These examples illustrate how readily people are already taking opportunities to apply technology, so that for many they have soon become an essential part of daily life. This also has implications in terms of the skills and confidence people need in order to take advantage of new ways of communicating, working, socialising and accessing services.

ICT in Wales

- 4.1 Public services, businesses, and people in Wales are recognising and responding to the opportunities presented by ICT. These are some examples of the progress and successes to date:

A few facts and figures on ICT in Wales

Work

- 830,000 people (64% of the workforce) in Wales use ICT in their day-to-day work.
- 90% of new jobs require IT user skills.
- Over 400,000 employees need to increase their IT user skills to meet growing demand.
- Over the coming decade, the IT industry in Wales is expected to grow between 21 – 31% and an average of 5,000 people a year are required to enter the IT workforce, filling increasingly complex, high value-added roles.

(source: e-skillsUK)

Leisure

- 80% of Welsh homes have digital television, compared with 70% average for the UK.

(source: Ofcom)

- The first UK trial of digital TV switchover took place in Carmarthenshire in 2004.

Learning

- Welsh schools were the first in the UK to benefit from mass distribution of digital whiteboards into the classroom, supporting lessons with interactive audio visual displays.
- Wales was the first UK country to offer free internet connections in all public libraries (including branch libraries).
- Wales hosts one of the most extensive academic videoconferencing networks in Europe, linking all its further and higher education institutions.

Networks

- Bridgend County Borough Council was one of the first local authorities in England and Wales to establish a wireless Wi-Fi network in the town centre, where people can access the internet, regardless of which service provider they use.
- At the beginning of 2006 39% of Welsh homes had a broadband internet connection¹¹ (and 99.5% of Welsh households can receive broadband¹²).
- In 2006 South Wales will experience the most radical 'next generation' telecommunications network transformation of its type in the world.

4.2 Following the lead set by the *Cymru Ar-lein* strategic framework, key Welsh Assembly Government strategies, and public service projects and programmes, have already made significant progress in exploiting of ICT to benefit all aspects of work and life in Wales. This has included laying the infrastructural foundations, embedding ICT in key public policies, ensuring all business and communities which can benefit from ICT are empowered to do so, and pioneering new ways of applying and exploiting ICT. Some examples include:

¹¹ Ofcome figure.

¹² BT estimated coverage figure.

- **Broadband connectivity** – Wales has achieved rapid and substantial progress towards having affordable first generation broadband connectivity (between 512kbps- 2Mbps) available throughout the country. This has been through a combination of market driven development, rollout and take up, and Assembly Government intervention where there has been market failure. This is bringing many kinds of opportunities to individuals, businesses, services and communities to do business, engage, communicate and interact.
- **The Lifelong Learning Network** – this multi agency infrastructure project has connected schools (primary, secondary, and special), libraries, ICT learning Centres and Unitary Authorities access to broadband Internet. More importantly, it has connected the 22 unitary authorities of Wales, and offered opportunities for collaboration, such as in use of the network to provide disaster recovery through the Disaster Recovery Consortium.
- **Public Sector Broadband Aggregation** is being designed to address the aggregated broadband connectivity requirements of public sector organisations, in order to deliver significant economies of scale at the procurement stage, and ensure commonality in standards of telecommunications network connectivity across the public sector. This is seen as underpinning moves towards greater co-ordination and co-operation across public services, and supporting the *Making the Connections* agenda.
- **BT 21CN** – In 2006 people in the Cardiff, Pontypridd and Bridgend areas will be the first in the UK to enjoy phone calls, broadband and Ethernet services over BT's 21st Century Network (21CN) when it is rolled out to a regional concentration of customers for the first time. The most radical next generation network transformation programme of its type in the world, 21CN will enable BT and the rest of the communications industry to deliver a new generation of converged communications services designed to make the personal and professional lives of people more flexible and businesses more efficient. It will give customers greater control over the way they choose to use communications services in the future. BT has cited Wales's track record in pioneering the benefits of, and attracting inward investment in, advanced communications and information technology, as one of the reasons for selecting the area for the rollout.
- **Informing Healthcare** – this major long term programme aims to exploit ICT to create the infrastructures and information services necessary to join up and improve patient care across the NHS in

Wales. In 2006 this programme will include a continuation of action to develop the electronic infrastructure (building on work undertaken in 2005 to define a national technical architecture for the NHS), support for innovative service improvement projects, and further development of underpinning components (such as the individual health record, the *My Health Online* portal). One of the key successes in the e-health agenda has been the progress made with **Telehealth**. NHS Wales is widely recognised as being at the leading edge of developments in telehealth¹³ across the UK. A number of trials in Wales have demonstrated the potential to develop new health service delivery mechanisms independent of the constraints of time, distance, accessibility or availability of limited resources.

- **Informing Social Care** – this strategy and action plan introduced in 2004 focuses on the contribution that information systems can make towards the improvement of performance in social services and their partner agencies and organisations. It has established the e-care agenda for social work and social care in Wales. It supports a programme to ensure that vulnerable children and adults and those who care for them have the information necessary to make informed choices and decisions about their own care as well as being able to influence the shape of social care services generally.
- **The Welsh Video Network** – this service links and supports videoconferencing studios and other video facilities between all Further and Higher Education Institutions in Wales. It is regarded as one of the most advanced academic videoconferencing networks in the world, and independent evaluation has identified that it has delivered savings in terms of cost, travel time and administration; helped to promote the growth of distance learning in Wales; opened up new markets attracting new groups of students, and increased access to subject specialists. It has also provided a basis pioneering work in areas such as simultaneous translation.

¹³ the delivery of health related services, enabled by the innovative use of technology, such as videoconferencing, without the need for travel (source: en.wikipedia.org/wiki/telehealth).

- **Value Wales:** the 'buy4wales' and 'sell2wales' websites, established in 2004 following an Assembly Government review of procurement, have forged online links between public sector bodies seeking procurements of goods and services, and private sector suppliers. The overarching aim has been to enable the public sector in Wales to improve the value for money obtained from its procurement activities, while enabling businesses to search high and low value contract opportunities with the public sector. By the end of 2005 more than £1 billion worth of Welsh public sector contracts have been made available to businesses across Wales through the sell2wales website.
- **Careers Wales On-line** – this is believed to be the world's first all-age national online careers advice and guidance service, in operation since 2004. The bilingual service enables individuals to research career options; identify opportunities; record evidence of skills, work, development and achievements; and practice for interviews. In 2005 it was awarded the UK BAFTA award for best technical and social innovation. By the end of March 2006 125,000 personal accounts had been opened on the CWO: site.
- **Traffic Wales** – this is the traffic information service supported by the Welsh Assembly Government. Through two control Centres in North and South Wales, traffic on trunk roads and motorways can be monitored and managed through the use of CCTV and electronic signs. Internet protocol (IP) technology has replaced previously high premium bespoke solutions bringing significant savings in total cost of ownership, and providing inbuilt fault tolerance and service enhancements.
- **Public Transport Information (PTI) Wales** – Wales was the first part of the UK to introduce SMS (short message service) texting through the Traveline.TXT service. This provides bus users with timetable information by bus stop. In 2006 this is being enhanced to provide real time bus information.
- **Common Agricultural Policy (CAP) IT programme** – ICT played a pivotal role in improving administration of the CAP in Wales. Through a combination of personal support for farmers, use of geographic information (providing rapid and robust information about land) and design of a control and payment IT system, payments to farmers have been speedier.
- **Communities@one** – this Welsh Assembly Government initiative launched in 2006 aims to enable communities and individuals to

use ICT as a key community regeneration vehicle, through identifying opportunities for exploitation relevant to enhancing their quality of life and fulfilling their social, economic and cultural potential. It is backed by £9 million funding including support from EU structural funds.

- **ICT strategy for schools** – scheduled for publication in 2007, this will aim to identify priorities for enhancing teaching and learning quality in schools through application of ICT. It will build on earlier infrastructure projects (such as broadband connectivity, white-board distribution) and applications (such as NGFL Cymru). It will also complement action to develop ICT capacity and resources for post-16 and higher education and training.
- **Multi-application Smartcard** – this project has emerged as a result of strong interest in Smartcard applications across Wales. These have focused on access to a range of local authority services, enhancing delivery of national services (most notably the Assembly Government's transport concessionary Smartcard project), improving the management of such services, and underpinning action to widen use of a whole range of services, leisure facilities and enjoyment of our cultural assets. The Assembly Government will explore the business case for a multi-application card in 2006.
- **@your library** – CyMAL (Museums Archives and Libraries, Wales) is working in partnership with local authorities, the National Library of Wales, and other national public services to exploit ICT to open up access to libraries and their resources. This is not only to give access to those resources across Wales, but to enable libraries, through ICT, to be community based vehicles for accessing information, services and support relating to public services in general.
- **Single non-emergency number** – with funding from the UK Home Office Cardiff will, in 2006, pilot this service for citizens. This will enable the Police and local services to work together and share information in order to respond more efficiently and completely to reported incidents which are not appropriate to the 999 service, but which affect people and communities (e.g. abandoned vehicles, vandalism, anti-social behaviour). It is intended that SNEN will be rolled out to all of Wales in future phases.
- **Creative success – a strategy for the creative industries in Wales** – this strategy seeks to build on strengths already in place in Wales in the creative industries, which include the 'new

media' sector, to enable more creation, and exploitation of creative content as part of its approach. It recognises the increasing profile and role of digital content as an economic activity and asset.

- ***Institute of Advanced Telecommunications, Swansea*** – the IAT is a collaborative project, launched in 2005, between the Welsh Assembly Government, Swansea University and a wide range of multinational telecom companies, including Agilent, ALPS, BT, IBM, Marconi and Sony. It will pioneer research in areas including deep-space telecommunications, optical systems and networks, wireless communications and telematics, and make possible spin out enterprises.
- ***ICT advice and support to business*** – through a national network of ICT Centres impartial and objective advice has been delivered to in excess of 14,000 businesses over the past three years, informing businesses of how to best exploit ICT in a business context by reviewing their use of technology, providing hands-on demonstrations of both hardware & software for business use including try-before-you-buy Broadband access. This has complemented a programme of support specifically targeting small to medium sized enterprises (SMEs) across Objective 1 & 2 areas in Wales (which are eligible for European structural fund support), assisting Welsh SMEs who can benefit from more complex integration of ICT in their business operations.

4.3 ICT is also an established part of key Welsh Assembly Government strategies.

Wales: a vibrant economy (WAVE)

- 4.4 WAVE (published in 2006) sets out our strategic framework for economic development in Wales, and our commitment to, and measures to establish, a strengthened culture of innovation and entrepreneurship in Wales. The approach is built around Wales' core strengths, including an increasingly skilled, innovative and enterprising workforce and an advanced technology and knowledge base. These will be important underpinning factors in fostering growth and success for ICT services and industries in Wales.
- 4.5 It highlights several ways in which ICT will underpin economic growth:
- the benefits of ICT networks and services to less populated areas of Wales;
 - the greater scope ICT allows community organisations and individuals to participate;
 - the contribution of a robust ICT infrastructure to creating an attractive business climate.
- 4.6 To achieve these, WAVE has already set out commitments to:
- practical and tailored support to businesses to encourage investment in, and adoption of, ICT and to exploit the benefits of e-business;
 - promote the opportunities offered to individuals, communities and businesses by ICT, and assistance with the skills development necessary to exploit them;
 - improve access to affordable high-bandwidth ICT infrastructure;
 - establish centres of excellence to develop next generation digital services and secure ICT infrastructure, to put Wales at the forefront of the development and use of new technology.

Public service reform: Making the Connections

- 4.7 Since 2004, we have been leading action to transform public services in line with the needs of a devolved Wales in the twenty first century. Our strategic framework for doing this, *Making the Connections*, represents a major programme of public service review, reform and renewal in Wales in order to make the public services responsive to the needs of citizens, connect more effectively with their citizens, be efficient in their ways of working, and able to demonstrate best use of resources.
- 4.8 The strategic framework acknowledges that there is an essential link between technology and achieving multi-agency collaboration, citizen centred services, and improved operational processes. The 5 year Action Plan, *Delivering the Connections* (July 2005), confirms the pivotal role of ICT in improving public services, and providing more options for people in accessing and doing business with public services. In particular it seeks to draw upon the opportunities presented by electronic information, payment and purchasing systems, smartcard technology and broadband technology.

People, Places, Futures: The Wales Spatial Plan

- 4.9 The Wales Spatial Plan is a key high-level strategic guidance framework, which seeks to ensure we, our partners and agents develop policy in ways which take account of the different challenges and opportunities in the different parts of Wales, so that they can establish their own distinctive approaches to strategic policies in Wales. In this context it seeks to provide a basis for working together on a shared agenda. By doing so it seeks to ensure all parts of Wales prosper and develop according to their strengths and assets, and inter-relate in complementary, effective and sustainable ways. It recognises the role of technology is key in providing access to services and increasing economic and social opportunities.

ICT in Wales – The challenges ahead

- 5.1 Exploitation of ICT to date in Wales has laid a foundation of experience and expertise. This is valuable, but Wales is capable of achieving far more from ICT. There is no reason why, for example, in the twenty first century the most sparsely populated part of Wales cannot be the home of a world beating enterprise. Similarly, there is no reason why the most disadvantaged community (whether socio-economic, geographic, or a community of interest) cannot thrive and inspire its own and other communities. ICT, understood and applied with thought and inspiration, can help make these goals possible.
- 5.2 Such expectations are justifiable, in view of what has been seen to date in Wales, and what is happening beyond Wales. This fact is reflected in our key strategies, which all refer to the potential of ICT to enable and enhance delivery of goals for the economy and public services in future.
- 5.3 As a small country in an increasingly informed and competitive global marketplace, this is a challenge and an opportunity which cannot be ignored. However, while acknowledging the strengths already evident in Wales we need to be realistic about the challenges which need to be overcome if Wales is to compete successfully in the global knowledge-based economy, and achieve its long-term aspirations to become a prosperous economy, and a society that is dynamic, inclusive and sustainable.
- 5.4 Key amongst the broader challenges is the fact that, to achieve its ambitions, Wales has to grow faster than its competitors, rather than merely keep up with them, due to its lower-than-average GVA per head and its relatively low economic activity rates. This underlines the need for Wales to adopt radical solutions which can achieve this transformation in performance and participation.
- 5.5 In addition, like Europe as a whole, Wales faces an increasing dependency ratio. For the EU, the average ratio of persons in retirement compared with those of the present working age in Europe will double from 24% today to almost 50% in 2050. In the UK, it is estimated that the dependency ratio will worsen from

24% (2005) to 42% (2050). Given that, despite considerable improvement in recent years, Wales still has slightly lower activity rates by comparison with the UK average, the problems of a worsening dependency ratio, including a negative effect on public finances, are likely to be more acute in Wales unless activity and participation increase. European Commission projections¹⁴ indicate that increasing dependency ratios will result in GDP per head being some 20% lower than could otherwise be expected.

5.6 In addition to these broad challenges, Wales faces very specific challenges in terms of exploiting ICT:

- while more and more people in Wales are confident and familiar with accessing online information and services there remains a proportion of the population which is not. Our understanding of the reasons why, or what this might mean for future social inclusion and economic activity, is not complete;
- a need for confidence and assurance about the security and probity of the online environment: whether online information and data is safe from criminal behaviour; whether children and other vulnerable people are safe when interacting with others on line; implications (in terms of data protection or freedom of information) of sharing certain types of information and data between organisations;
- around 2,400 enterprises are active in Wales whose main business is computer or related¹⁵. However, overall activity has not yet reached a point where it is significantly altering the profile and performance of the Welsh economy;
- a continuing need to ensure that Welsh success in exploiting ICT in public services and in economic activity achieves recognition within and beyond Wales;
- relatively few large scale innovative ICT projects capable of delivering significant benefits and profile on a national scale. At the same time, there is a lack of consistent and clear processes for moving from small scale innovative ICT pilots to high impact and viable solutions;

¹⁴ Kok Report. *ibid*.

¹⁵ Inter-Departmental Business Register for the industry group covering computer and related activities.

- a prevailing characteristic of dispersed management and funding for ICT development in public services in Wales. This results, with a few key exceptions, in ICT being developed and applied through separate projects, which vary considerably in scale, context and rationale. Public sector ICT development therefore tends to reflect the complex supply chains and levels of authority and control, which exist across public services, instead of helping achieve the kind of transformations to service delivery, business processes and economies of scale more redolent of *Making the Connections*;
 - limited hard evidence of the full benefit of ICT on fundamental matters such as public service quality, access to services or use of resources. Knowledge is not always captured, visible or expressed in ways which can drive more significant and beneficial adoption, shape policies or design services;
 - the number of relatively small ICT developments make it an ongoing challenge to capture the full extent of exploitation, in ways which allow knowledge to be shared, strengths promoted and gaps tackled. This is particularly important in the public sector where such knowledge could help to avoid unnecessary duplication; achieve synergies and economies of scale; and ensure that good practice, which can be transferred, spreads and becomes consistent;
 - the public sector ICT infrastructure is currently made up of a large, complex set of stakeholders, which have traditionally created separate voice, data, video and mobile networks with a range of technologies – hardware, software and architectures. There exist multiple supplier contracts for products and services across Wales. The effect is to complicate opportunities for ICT-enabled enhancements to scope and economies of scale in public services.
- 5.7 Transforming Wales to become a dynamic and prosperous economy, and an inclusive and sustainable society therefore calls for action that will ensure ICT can be exploited confidently by citizens, drives increased competitiveness of its businesses, and transforms the quality and efficiency of public services.

- 5.8 In terms of economic development this will include examining what economic structures can best underpin e-enabled economic transformation (such as nurturing digital business ecosystems, centres of excellence, hi-tech clusters) and creating a networked economy and society in which fundamental re-engineering of business processes are enabled by ICT. A prime objective of such action must be to ensure ICT is exploited to meet individual and complex customer needs — in business-to-business, or business-to-consumer, government-to-business, and government-to-citizen relationships.
- 5.9 Whilst it is vital to ensure the competitiveness of Welsh business, the public sector has a vital role to play if Wales is to achieve its objectives. In order for Wales to transform itself to become a competitive knowledge-based economy and society, the public sector in Wales has to ensure an appropriate business and social environment. To do so, it must transform itself in ways that generate higher quality service to citizens, achieve efficiency and productivity gains and maximise use of resources. It has already been recognised through *Making the Connections* that public services in Wales must evolve from the current complex matrix of services into a service which is more highly integrated, complementary and citizen focused. In light of the global trends in ICT, and recognition of its impact on our lives, it is inconceivable that transformation of public services can be achieved successfully without ICT as an embedded part.
- 5.10 However, underpinning both these areas will be the success of Wales's investment in its most precious asset – its people. The productivity and competitiveness of the Welsh economy, and its strength as a knowledge based economy and society, are directly dependent on having a confident, highly skilled and adaptable population, able to embrace change, and demonstrate motivation, participation and creativity.
- 5.11 To achieve this, success in establishing Wales as a learning society and culture is vital, with lifelong learning not an option, but a necessity. The key competence will be to demonstrate an ability to respond to the two defining characteristics of a knowledge society: continuous change and the conversion of information into knowledge. We have set out progress to date in ensuring the people of Wales can meet this challenge, and we have

consulted on our proposals for future action, in our document *The Learning Country 2: delivering the promise*. This document reaffirms our commitment to education, lifelong learning and skills development as integral to cultural enrichment, community development, wealth creation and personal fulfilment.

- 5.12 In this context, 'how', 'when' and 'where' we learn will be as critical as 'what' we learn. Whilst preparing those now of school age for the knowledge-based society is of paramount importance, it must be remembered also that a substantial proportion of today's work force will still be part of labour market in the next 20-30 years, during which time technological developments and their associated impact will have transformed the skill set required for employability. Moreover, an ageing population means that older people need the skills, motivation and confidence to remain active contributors to society, while boosting participation of older workers in the labour market will be of increasing importance. Wales's education and training systems will therefore need to continue to adapt and evolve to meet rapidly growing, changing and increasingly diverse needs, and ensure the confidence, creativity, and employability of Welsh citizens, the competitiveness of Welsh companies, and growth of the Welsh economy. ICT will play a fundamental role in action to achieve a knowledge economy and society, from ensuring people have the confidence and skills to use ICT in their daily lives and work, to utilising ICT in the planning, design and management of learning itself.
- 5.13 Wales will also need to demonstrate that it is a successfully networked society, embedding creative dialogue between universities, scientists and researchers on the one hand and industry and commerce on the other, to drive technology transfer and innovation. Moreover, strong evidence from elsewhere points to the need for close physical co-location of universities and companies in the form of appropriate clusters in addition to virtual clusters based on ICT infrastructure. Many factors contribute to successful innovation and exploitation strategies – among them a sophisticated communications infrastructure and financial institutions willing to provide the necessary risk capital – but there is a need for supportive public authorities that facilitate the network structures driving creative interaction and create environments that attract knowledge workers and companies.

5.14 These factors present Wales with a substantial opportunity to exploit ICT to drive the transformation of its infrastructures, its performance, and its profile in the world. From this assessment of the challenges, four themes begin to emerge which form the basis of an e-Wales strategy and the focus of the work to be set in place by the Welsh Assembly Government to address the challenges identified. They are:

Knowledge: helping make the case for ICT compelling, relevant to need and circumstances, and up to date.

Capacity: having the right people in the right place, with the right resources to turn knowledge into action and delivery.

Innovation: nurturing creativity and exploiting it through high impact delivery.

Infrastructure: underpinning everything, ensuring equity of opportunity, maximising delivery.

ICT in Wales – The way forward in our exploitation of our digital ecosystem

6.1 We have set out in this document why ICT is hugely pervasive, affecting all aspects of life – at work, in study, and at leisure. ICT is itself evolving at a considerable pace, its impact on individuals, businesses, and communities, already significant, is going to increase. We have also set out our progress in exploiting ICT to date in Wales, and why we need to focus on the challenges ahead.

6.2 We want to promote a vision:

That our exploitation of ICT embodies our country as economically vibrant, innovative and creative, efficient and inclusive. That our economy and society is dynamic, prosperous, and inclusive, thriving on strong human networks and underpinned by an electronic infrastructure that is at the leading edge of innovation, which allows all our communities, real or virtual, from our largest towns and cities, to our most rural locations, to engage and thrive in equal measure. Our culture is recognised globally for its uniqueness, creativity, versatility, and confidence. All citizens know how ICT can help them to reach, inform, and influence others and can use it as a normal part of daily life. Our businesses, both public and private, are exemplars of service and efficiency, through intelligent application of ICT which underpins robust management and confident operation by a skilled and motivated workforce.

6.3 Through developments driven to date we have already seen that it is possible to exploit ICT to help turn Wales's small size to its strategic advantage. We seek to take this further, and create an environment where the power of ICT is promoted and exploited as an integral part of our policies for economic prosperity, public service reform and social inclusion.

6.4 We must, however, take care not to over simplify or generalise about the challenges, circumstances, opportunities and priorities. For this reason, the concept of creating a *digital ecosystem* is fundamental to the way ahead. The term 'digital ecosystem' is not new. It has been referred to in various countries and settings

for a number of years as a basis for strategic development of ICT applications. A useful way of describing it is as a *'geographical (or virtual) (area) where specific policies foster growth and employment and improve innovation, productivity and social inclusion, through the optimal use of local assets empowered by ICT'*.¹⁶

- 6.5 The general concept of an ecosystem takes account of diversity and complexity in any given situation, but one which thrives and evolves through achieving a successful and balanced inter-relationship between the different parts. It also recognises that diversity and complexity are enriching factors, where their value and inter-relationship are understood. It also reinforces the need to consider ICT not as a stand alone issue but together with how we organise what we do, and how we use and communicate information.
- 6.6 In that context we believe the conditions are right in Wales for real advancement to be made through adopting this approach in relation to ICT. It recognises the complex nature of the Welsh economy, society and public services infrastructure, and how ICT currently differs in importance and application throughout different services and settings.
- 6.7 A digital ecosystem approach seeks to find ways of enabling all these different actions and strengths to support each other, to ensure ICT is exploited effectively and appropriately. It takes into account a record of innovation and experience in ICT, while recognising that major Government strategies are focused on delivering transformation of our economy and society, centred on empowerment and well being of its citizens. We have identified four engines for creating in Wales a digital ecosystem for better exploitation of ICT:
 - Knowledge
 - Capacity
 - Innovation
 - Infrastructure

¹⁶ Innovative Ecosystems: a specific roadmap, European Commission Directorate Generale, Information Society and Media, January 2006

- 6.8 The engines apply equally to exploiting ICT in public services, empowering its citizens, and to enhancing the country's economic performance. The key is that they are interlinked and complementary. We seek to establish an environment – in effect a digital ecosystem – in which they work together and support each other to maximise the benefits of exploiting ICT:
- Excellence in e-business adoption and related practices by Welsh companies will strengthen their competitiveness, enable them to extend their markets and support a continuous innovation process.
 - Excellence in eGovernment and adoption of related good practices will improve the efficiency and quality of public services, thereby contributing to a better business environment for indigenous companies but also helping to attract inward investment, especially from enterprises in the knowledge-based sector. ICT adoption and process re-engineering are likely to be critical success factors in achieving successfully the reorganisation of public sector services delivery now proposed in Wales.
 - Excellence in eLearning will play an important role not only in extending the quality of learning and more cost-effective delivery of greater lifelong learning opportunities for Welsh businesses, organisations and citizens, but it can contribute also to strategies for increasing export earnings and inward investment.
 - Excellence in eHealth will better equip us to respond to increasing dependency ratios resulting from changing demographic patterns, new ways of applying health care (often themselves the result of technological developments), and the expectations of citizens and government for effective health care at affordable cost.

Knowledge

Promote robust knowledge of ict developments and confidence in their benefits

6.9 We have already referred to the overwhelming evidence of the importance of ICT to economic performance, and the scale of its impact on individuals, communities and countries. However, the pace of ICT development and adoption means that all people and governments are continually learning what this means for the way we work, live and interact.

6.10 Therefore, robust knowledge and evidence of the benefits of ICT is crucial to making the case for greater adoption compelling, whether it concerns winning a competitive business edge, improving public services, or enhancing individual and community opportunities. The pace at which new ICT applications emerge, and new capabilities become possible, make it all the more important that our approach to knowledge capture and sharing is rapid and robust.

6.11 In all cases, knowledge should mean greater understanding of the relevance of ICT, confidence in its benefits, and assurance of its reliability and security, whether in an individual, a business, or a community context. Confidence in ICT and commitment to exploiting it has to be underpinned by robust analysis and timely information about ICT developments, their implications on how we live and work, and where they are demonstrating benefits which could advantage Wales.

6.12 In addition, this is also about fostering an appetite from within Wales for more knowledge and promoting international awareness of how ICT is being exploited successfully in Wales.

Wales already demonstrates:

- *an international presence in ICT related research and development, especially through the Welsh higher education sector;*
- *considerable knowledge accumulated through years of ICT related innovations, developments and delivery in both public and private sectors.*

This strategy seeks action to ensure that:

1. *effective ways of capturing and expressing knowledge of ICT are in place, which can influence policymaking, decision taking and practice;*
2. *public understanding of the benefits and opportunities through ICT is widespread and robust;*
3. *appropriate advice and information about safe and secure use of ICT is consistent, up to date and accessible to all;*
4. *where ICT is being successfully exploited in Wales, it secures an appropriate profile and influence, within Wales and internationally;*
5. *knowledge of ICT underpins action to promote equality of opportunity, sustainable development and bilingualism.*

Ensure effective ways of capturing and expressing knowledge of ICT which can influence policymaking, decision taking and practice.

6.13 This is a challenge because of the wide range of situations in which ICT is present and can bring benefits, and the breadth of sources of knowledge of its impact; from specialist expertise to practical experience. There are currently many different and effective approaches to capturing and sharing knowledge of ICT. This objective is about achieving underpinning consistency, quality and visibility in knowledge of ICT.

6.14 In this respect we want to explore whether an e-Wales observatory might add value through a strategic focus on ICT knowledge gathering and dissemination. It would have clear objectives to:

- deliver information and evidence on significant ICT developments and trends relevant to informing policymaking in Wales;
- establish an international reputation for robust analysis and quality in its work;
- through its reputation, enhance the international profile of successful ICT exploitation in Wales.

- 6.15 Through its role as a magnet for intelligence on innovative and best practice in ICT development and exploitation, a number of benefits for Wales would begin to unfold:
- through demonstrating robust analysis, insight and leading edge knowledge of developments in ICT, the e-Wales observatory would develop an international reputation for being an invaluable source of information;
 - a cohesive Welsh approach to seeking out and interpreting global best practice, research , and development which can influence policy in Wales and provide a critical mass of research and intelligence on ICT;
 - an identifier of gaps in knowledge on the application of technology in public services in Wales;
 - a means of strengthening policymaking in Wales, through robust evidence of the impact, implications, and benefits of ICT;
 - a focused approach to identifying priorities for further research and innovation. This could either be through its advocacy of need for additional knowledge, a research function of its own, research and development it could commission, or be commissioned to undertake.
- 6.16 By emphasising the quality of its work, the reputation of the observatory will have an impact on other elements of the e-Wales strategic framework. In particular it will help underpin the emphasis we seek to place on capacity building and innovation, and will help underpin private sector interest in ICT in Wales. It will also support moves to promote Welsh excellence in exploiting ICT.
- 6.17 The observatory should be seen as an impartial, perhaps virtual, entity capable of reflecting and relating to all scenarios and environments where ICT can apply in public services in Wales. While its primary focus will be on supporting public policymaking, we are also interested in the opportunities which may exist to strengthen its impact and knowledge base with the wealth of knowledge generated through commercial exploitation of ICT.

Do you agree that an e-Wales observatory could add value to the capture and dissemination of ICT knowledge in Wales?

How might it be structured to ensure viability, effectiveness and quality?

What existing methods of capturing and sharing ICT knowledge should be taken into account when exploring the viability of an observatory concept?

What other methods of capturing and sharing knowledge of ICT should be explored?

Ensure that public understanding of the benefits and opportunities through ICT is widespread and robust.

- 6.18 Evidence of real benefits to people's lives will be a crucial driver of change, and a means of fostering universal enthusiasm, commitment and participation. There are a number of actions already in place in Wales to promote knowledge of ICT amongst citizens and communities, and supporting action to realise its benefits. These include actions by many working within the voluntary and community sectors, and are largely targeting issues around the 'digital divide' – those who might miss personal opportunities or services because they either cannot or will not engage with technology.
- 6.19 Such action is valuable and important. However, there are also many different people who choose not to use ICT, who do not fall easily into a category defined by, for example, geography or income, and who may not be reached by current action. As ICT applications increase there is the risk that access to ICT will be a significantly greater factor in social inclusion and prosperity. We have to be mindful of the risk that new and unanticipated categories of social exclusion may emerge over time as society becomes increasingly e-enabled. We also have to remember that the digital divide is not a static phenomenon, but is dynamic and ever changing as ICT, and its use, changes.

6.20 We want to ensure that action to increase public understanding of, and confidence with, ICT is continuous, and comprehensive, and takes account of changing ICT. This should include using existing structures and vehicles (including formal education and training), but exploring new ways of ensuring that all parts of society are reached through communication, advice and support. This is important to ensuring that the economic benefits of ICT go hand in hand with benefits to communities and citizens.

6.21 Success in this will be achieved when all citizens are able to make informed choices about when, where and how to use ICT.

Do you believe that there are particular groups of citizens in Wales who are not covered by existing initiatives to promote understanding and confidence with ICT?

What methods do you believe have proved most effective at reaching large numbers of people? What has made them effective?

Ensure appropriate advice and information about safe and secure use of ICT is consistent, up-to-date and accessible to all.

6.22 Underpinning a programme of public understanding must be publicly available and robust advice and assurances about safe usage of ICT when online. It is important that this information is accessible, in plain language and where necessary provided in different formats. This applies not only to individuals, of all ages, but to businesses and public services, especially when set against a background of heightened risks from international terrorism, or exposure to organised criminal activity. We have talked about the opportunities and benefits of ICT but, as with use of any system or network, participants need to be sure they are safe from exposure to inappropriate online content, viruses, fraud, or any other kind of criminal activity.

6.23 There is much already being done by various bodies to tackle this in Wales, including action enabled through connections between the Welsh Assembly Government and law enforcement agencies in Wales. Work has included advice programmes for businesses, and advice to parents about how to ensure their children are safe when online, and encouragement to young people to use the web safely. In particular, the establishment of an e-crime steering

group in Wales has begun examining the issues for business and how they might be addressed. Bodies such as WISE KIDS, a Wales based not-for-profit organisation, promotes safe and positive internet use for young people, parents, educators, communities and businesses. We recognise a need to ensure such programmes are sustained, up to date and reach all parts of society.

What additional action might be necessary to ensure robust advice and information reaches all citizens?

What might be the most effective vehicles for achieving and sustaining this?

Ensure that, where ICT is being successfully exploited in Wales, it secures an appropriate profile and influence, within Wales and internationally.

6.24 We have already identified that the observatory could highlight appropriate Welsh success, and demonstrate where Wales is innovative and strong in ICT. This is not only to serve the growth of good practice in Wales but to ensure that there is a sufficient international profile given to achievements, especially in the areas of innovation, research and development.

6.25 These examples can add value to moves to promote Wales as a worthwhile destination for international investment in ICT and knowledge based enterprise. As well as identifying opportunities to draw international recognition and respect for ICT exploitation in Wales, we will also seek to highlight success within Wales.

Could we be doing more to draw attention to Welsh exploitation of ICT to an international audience? What might this be?

What sort of examples could be captured?

Do you believe that there might be benefits in having a '.Wales' domain?

Ensure the knowledge of ICT underpins action to promote equality of opportunity, sustainable development and bilingualism.

6.26 Running through this and other Assembly Government strategies is recognition of the importance of these agendas. In all cases robust knowledge of the role of ICT in relation to sustainable development, equality of opportunity and bilingualism will underpin action in these areas. This might mean gathering, highlighting and interpreting existing research and information, or commissioning new research where gaps in knowledge are identified.

Sustainable development

6.27 Our action to exploit ICT can demonstrate a powerful contribution to sustainable development. This might be through helping to reduce use of transport by communicating and working over web based technology; reducing unnecessary investment in duplicating applications and technologies; helping sustain and enrich communities and reduce dependency on travel and relocation to access work and services; helping individuals achieve better value for money by informed use of the web for online purchases; helping public services save and reinvest resources through ICT enabled productivity gains. It also requires an understanding of the complex relationship between ICT and the environment: Good use of ICT has been shown to improve efficiency and use of resources, and contribute to reduction in carbon emissions through less reliance on physical transport. However, there are also environmental consequences of, for example, the life cycle of ICT hardware, and changing patterns of behaviour by people, such as home working, and use of electricity. Opportunities to utilise energy efficient ICT also need to be explored and, where appropriate, exploited.

Equality of opportunity

6.28 It is essential, if the Assembly Government is to uphold the commitment to equality of opportunity, that we are mindful of potential barriers to achieving the widest benefits from the opportunities ICT offers to individuals and their communities. For example, there are nine social groups identified from research

and experience containing significant numbers of people who have difficulties accessing the full opportunities and benefits of ICT. They are:

- People over 65.
- Adults with disabilities.
- Lone parents.
- Carers.
- 16-25 year olds without a car.
- People on low incomes.
- People living in designated deprived areas.
- Ethnic minorities.
- Migrant workers.

6.29 Knowledge from past and current initiatives and projects is key to ensuring such individuals achieve the full benefits and opportunities ICT can bring. Working with all Assembly Government departments, stakeholders and partners, this strategy needs to pay particular attention to how ICT can best inform and enrich action to support groups such as these. This also includes being proactive and monitoring what developments and trends in ICT support access for all members of society, regardless of circumstances; monitoring what use is being made of these in Wales, and other countries and the impact; ensuring that services developing an ICT interface are planned and designed to account for the needs of all; and identifying areas where greater knowledge is needed.

Exploiting technology to support a bilingual country

6.30 The Assembly Government's Action Plan for a bilingual Wales, *Iaith Pawb*, sets out actions to ensure that people can choose to live their lives through the medium of either Welsh or English, and that the presence of the language is a 'source of pride and strength to us all'. ICT is a powerful tool for underpinning this, through enabling ease of language selection in online information

and services, to suit the needs and preferences of the user. This has important implications for the way content is designed and presented, and for action to ensure that, in an increasingly online environment, the choice is of equal availability and quality. However, there are many lessons to be shared and learned in terms of planning and designing applications to make them clear and easy to use. Action could include identifying opportunities already being taken in Wales to:

- use ICT to deliver services in ways which are convenient and effective for all users regardless of linguistic preference;
- make best use of resources;
- identify potential for action which can place Wales as a leader in terms of research and innovation in the use of ICT to support a multilingual environment.

What existing sources of research and information should be exploited to support greater ICT knowledge in relation to the agendas of sustainable development, equality of opportunity and bilingualism?

What knowledge gaps need to be filled?

How best can knowledge and research be captured?

What role could an e-Wales observatory play in this specific context?

Capacity

Ensure businesses, public services and people in wales have the capacity to maximise exploitation of ict

6.31 Capacity building can mean many things to many organisations. Capacity building can take place at the policy level but it can also involve enhancement of skills, learning and knowledge. It can mean equipping our businesses and citizens with tools to undertake their daily life in an ICT enabled world. It can mean understanding the nature of a particular policy area or operation (e.g., education, health, local services etc), its stakeholders, and the issues and challenges it faces. It can mean demonstrating knowledge of ICT development and applications, and where they can benefit

policy goals and how to achieve them. It can mean being ready and equipped to take action to exploit ICT, on the basis of robust knowledge of the implications and benefits, if necessary transforming operations, and joining up operations, or providing national and common products and infrastructure to maximise the benefits. It can mean being able to recognise and respond to opportunities and challenges presented by rapidly changing ICT. It will be different for us all.

Wales already demonstrates:

- capacity to develop far reaching ideas and deliver them successfully (as the examples set out in chapter 2 illustrate);
- a recognition that successful exploitation of ICT is crucial to successful public services (in Making the Connections) and economic success (in WAVE).

This strategy seeks action to ensure that:

6. *ICT capacity lies at the heart of all policy design and delivery;*
7. *a public service e-strategy framework makes a major contribution to 'Making the Connections';*
8. *ICT policies to enhance the profile and performance of the Welsh economy are in line with leading edge and best practice internationally;*
9. *citizens have the skills and confidence to exploit ICT according to where, when and how they choose.*

Ensure that ICT capacity lies at the heart of policy design and delivery.

- 6.32 Capacity building is also linked to our ability to exploit it effectively. The important underlying issue concerning capacity is that there is no one correct set of proposals for exploiting ICT to deliver better public services and economic prosperity, especially when technology itself is changing, and new applications are emerging.
- 6.33 As already demonstrated parts of the public service in Wales are already working well to explore and develop new strategies and

services which exploit leading edge ICT applications and infrastructure. There are many exciting possibilities for promoting better efficiency and effectiveness which might include, for example, further sharing of back and front office (i.e. customer contact) services between different public bodies, speeding responsiveness through data and information sharing, and making it easier for the public to access information and services in a time, manner and place of their choosing.

- 6.34 It is vital that the full implications of these are understood by those responsible for policy and service delivery, so that action to exploit of ICT leads to genuine and sustainable improvements which reflect the aspirations of Making the Connections. Similarly, economic competitiveness depends increasingly on the extent to which businesses in Wales exploit ICT where it can offer a competitive advantage and open up new commercial opportunities. Businesses in Wales have demonstrated impressive achievements in terms of exploiting and developing ICT. Policy, advice and support from the Assembly Government should continue to underpin firms' capacity to do this, especially where ICT developments and applications are rapidly changing.
- 6.35 In order to embed capacity building, for any sector, there is a need to have the right people, in the right place, with the right resources to act to exploit ICT effectively.

What additional action do you believe the Assembly Government should take to exploit ICT effectively in policy on?

- Local government services?
- Education, lifelong learning and skills?
- Health and Social Services?
- Culture, Welsh language and Sport?
- Social justice, social inclusion, community regeneration?
- the environment, countryside and planning?
- Enterprise, innovation and networks.

What area(s) do you believe to be of highest priority? Why?

Design a public service e-strategy framework to deliver a major contribution to 'Making the Connections'

- 6.36 Complementing the focus on ICT policy capacity building, and the drive for public service reform being made through *Making the Connections*, will be the development of a public service e-strategy delivery plan. It is intended to capture the evolution of public services in Wales through ICT through a specific and measurable programme of development. To reflect the aims of *Making the Connections*, the public service e-strategy will be focused on enabling better quality of national and local public services, and greater flexibility in how services are accessed and delivered. At another level it should seek to ensure ICT plays its full role in supporting the holistic vision of quality of life and wellbeing in Wales, not only through core services such as learning, health and local services, but through opening up exciting opportunities relating to our cultural assets and amenities for recreation and leisure, for which public services in Wales are responsible, but which often involve close work in partnership with communities and businesses.
- 6.37 It should also include the key objective of ensuring citizen engagement and empowerment to strengthen and refine services and policies. One example of how ICT is being used to foster engagement has been through the *Funky Dragon* website, which supports the Children and Young People's Assembly for Wales, a peer led organisation which aims to ensure the views of young people are heard on issues which affect them.
- 6.38 The added advantage of ICT will be that excellence in Wales will be visible to a global audience, with further possible benefits for Wales in terms of profile, influence, and economic activity. Its precise shape and focus will be influenced by this consultation but it is likely to include measures to:
- identify priorities for detailed business case development and action;

- reflect and act on the forthcoming customer service core principles (for the Welsh public service), and the conclusions of the Beecham Review of public services scheduled for completion in summer 2006;
- take account of influential strategies including *Transformational Government* and *i2010*;
- incorporate action to make ICT policy capacity consistent across all public services, including ensuring that the workforce has the right knowledge and skills to maximise the potential of ICT;
- incorporate action which reflects the themes of knowledge, innovation and infrastructure in line with this strategy;
- reflect existing and resourced action to exploit ICT in public services in Wales;
- put in place manageable and effective ways of measuring progress;

6.39 The public service e-strategy delivery plan will clearly have resource implications which will require identification and business case development to secure long terms and sustainable action. It will also provide an opportunity to identify resource opportunities through European structural funds and, in line with this strategy, opportunities to exploit private sector resources and investment

6.40 This consultation is an essential starting point to building a framework which is cohesive and inclusive:

What priorities do you identify for exploiting ICT in public services in Wales?

What strengths do we have which can support the development of consistent ICT policy capacity?

How can we ensure the right balance between cohesion and co-ordination, and creativity and innovation?

What should be the balance between national and local action?

What national interventions need to be made to support local action?

How do we ensure that key decision takers have robust information and advice about the opportunities and challenges presented to their organisations by ICT and are able to exploit these?

What more needs to be done to ensure that public services have a workforce that is able to exploit ICT in the design and running of public services?

What good practice can we build on when identifying effective means of measuring progress?

Ensure ICT policies to enhance the profile and performance of the Welsh economy are in line with leading edge and best practice internationally

- 6.41 Enhanced economic performance in countries such as the USA in recent years reflects both the improved technical performance of US ICT companies, the large scale investment in adoption by users of ICT, and the effective use of ICT to transform company business models.
- 6.42 Europe has not exploited the same possibilities to the same degree. This is now recognised and, at a European Union level through the recently agreed *i2010* strategy, the effective exploitation of ICT has been identified as an essential enabler for improving economic performance and creating employment opportunities across Europe.
- 6.43 At a UK level, *Connecting the UK, a Digital Strategy*, published by the UK Government in March 2005, points out that if the UK is to thrive as an economy and as a society it must create a country which is at ease in the ICT world, particularly in light of the anticipated convergence and acceleration of ICT technologies and applications. This will have a sustained and increasing impact on most sectors of the Welsh economy. This acceleration and convergence of ICT will increasingly change market dynamics and bring about changes in company structures along with their products and supply chains.

- 6.44 The increasing maturity of segments of both the UK and Western European markets, particularly in the more traditional industries such as motor vehicles is leading to enhanced pressure on business margins, leading to a stronger case for spending on research and development, innovation. Changing ICT is also opening opportunities for new types of industry and products, such as those which centre around the supply of digital content and multimedia products and services.
- 6.45 In Wales, WAVE has identified that greater use and deployment of ICT can make a significant contribution to economic growth, productivity and jobs. Action by the Welsh Assembly Government to inform, advise and support businesses in Wales needs to continue to reflect the changing ICT environment, in Wales, and focus on means of promoting investment in ICT, research and development, and innovation. This includes improving and strengthening the collaboration between e-science and e-commerce.
- 6.46 Already Wales is well placed to do this, including through building on flagship programmes such as:
- the network of Techniums, specialist incubator facilities across Wales, for hi-tech, creative and knowledge-based businesses, linking public and private sector innovation with leading academic expertise;
 - Opportunity Wales, which helps SMEs engage in e-commerce;
 - the extensive programme of wider e-business support for SMEs already in place, including more complex integration of ICT in their business operations; and advice on advanced implementation of ICT into business management information systems;
- 6.47 Paragraphs 4.4-4.6 set out how WAVE intends ICT to support Welsh economic growth. The actions reflect the key role of small to medium sized enterprises (SMEs) and build on. They also recognise the important benefits to less populated areas of Wales, to community regeneration, and opportunities ICT opens up for individuals. In all cases ICT is a key enabling tool for supporting visibility to markets and customers (from a local level right through to a global level), creativity and enterprise. This presents exciting opportunities for SMEs, especially where they

offer niche products which can find a demand around the world. It can also underpin the significant steps being taken in Wales to encourage a vibrant 'social economy', through community and social enterprises.

- 6.48 The establishment of the Buy for Wales/Sell to Wales websites by Value Wales is enabling greater scope for efficiencies in public sector procurement, but also enabling Welsh firms to compete alongside other suppliers.
- 6.49 Paragraph 3.4 referred to ICT is also having an impact on the way we work. There is a continuing need to exemplify the benefits of ICT on workforce performance, while safeguarding against the negative impacts described. In this context public sector practices and private sector practices can learn from each other.
- 6.50 ICT may also have significant impacts on the nature of jobs. For example, customer service centres, or call centres, take on a different role where ICT enables different services to be joined up and multiple tasks to be performed at one point. Those employed require different skills of management, analysis, communication, and problem solving.
- 6.51 ICT also opens up opportunities to expand the workforce to incorporate those who may previously have been excluded. With an ageing population, many who in previous generations would be considered too old to form a significant part of the workforce, may be willing and able to participate in employment, with ICT playing a key role in how they participate. The Assembly Government's *Older People's Strategy* recognises the huge resource and potential of older people both as consumers and as participants in the workforce. ICT has a key role in the training or re-training of people with disabilities, or in adapting the environment to make it suitable for them to contribute economically.

What additional priorities (to those already identified in WAVE) might there be in terms of exploiting ICT for economic growth?

What additional opportunities might there be in Wales to encourage leading edge ICT enterprise and innovation?

Ensure citizens have the skills and confidence to exploit ICT according to where, when and how they choose

- 6.52 As ICT becomes increasingly prevalent in daily life and work, it is essential that citizens are able to make informed choices about how, when and where to engage with ICT. Much action is already underway in Wales to ensure citizens have the confidence and ability to exploit ICT. There have also been a number of innovative programmes to reach those most excluded from conventional opportunities to gain confidence and ICT skills (such as in the workplace or through education and training). However, evidence points to an ongoing need to ensure that confidence and skills are demonstrated across all parts of society. It is tied closely to action to demonstrate practical and visible benefits of using ICT, relevance to daily life, and promote greater take up of ICT as a means of doing business and accessing information and services.
- 6.53 Considerable sums are already being invested in ICT skills in education and training in Wales, but there is an ongoing need to ensure that such training is itself up to date with changing ICT applications and techniques, and relevant to need both in a work and a personal context. As part of the Skills and Employment Action Plan, specific steps taken to address this challenge include the collaboration between the Welsh Assembly Government and the UK e-skills Sector Skills Council to identify and supply the priority ICT needs of employers in Wales.
- 6.54 It is also important to recognise how ICT skills and confidence is developed through 'informal' learning (i.e. skills and confidence gained outside specific training and education courses or centres). This includes individuals' own exploration as well as support and mentoring from peers, through voluntary and community activities, and in familiar local settings such as homes, community centres and libraries.
- 6.55 The issue of ICT skills has already been the subject of a number of reviews in recent years in Wales, including action to assess its quality in schools, and ensure that the workforce in Wales (in both the public and private sectors) is equipped with the skills to exploit ICT effectively. It is important that a focus on this need is maintained and different actions are cross referenced where it is appropriate to do so.

What additional actions can help ensure citizens are empowered with the skills and confidence to exploit ICT when, where and how they choose?

Innovation

6.56 Innovation can be defined as 'the successful commercial exploitation of new ideas'¹⁷. It has been recognised as a key driver of productivity, generating competitive advantage and promoting sustainable growth. Many individuals and organisations demonstrate innovation on a small scale as a normal part of doing business, such as in introducing straightforward improvements to production processes, in new ways of managing people and processes, or in raising finance. However, ICT can enable significant transformations which can be widely applicable. High impact ICT innovation is seen as a significant economic asset, and fundamental to underpinning a knowledge economy.

Wales already demonstrates:

- *recognition of the strategic importance of innovation to future economic growth and success (as demonstrated in programmes such as 'Wales for Innovation');*
- *pioneering programmes to promote a culture of innovation and enterprise (the Wales Regional Technology Plan was one of the first four European regional innovation strategies);*
- *structures in place to promote national and trans-national innovation (through, for example, a national network of Techniums, and membership of the European Innovation Relay Network);*
- *a readiness and ability to innovate to improve public services (as demonstrated by the existing projects and programmes already highlighted in this document).*

¹⁷ 'Wales for Innovation: the Welsh Assembly Government's Action Plan for Innovation' 2002.

This strategy seeks to ensure that:

10. ICT innovation is a distinct feature of Welsh economic performance;
11. opportunities are exploited for public sector ICT innovation to benefit economic performance.

Ensuring ICT innovation is a distinct feature of Welsh economic performance.

6.57 It will not be enough for Welsh businesses and services to act merely as proactive adopters and users of applications developed elsewhere. Successful ICT innovation and development in Wales is important to positioning the Welsh economy to prosper in line with the aspirations of the WAVE strategy, through wealth creation on the back of ICT sector growth, its wider effect on the reputation and performance of the Welsh economy, and its contribution to a culture of research, development and enterprise. There is the additional important benefit of being able to exploit intellectual property (IP) linked to successful innovation.

6.58 Wales has an impressive track record of encouraging innovation to underpin economic transformation. Its strategy *Creative success – a strategy for the creative industries in Wales* (2004) is a recent example. We need to ensure that current action and investment by the Assembly Government is recognised within this strategic framework, so that opportunities are exploited to maximise ICT innovation, within moves to underpin a broader culture of innovative practice in the Welsh economy.

What successful practice to encourage ICT innovation can we build on?

What are the main challenges faced by businesses wishing to innovate with ICT in Wales, and how might they be met?

What IP issues must be taken into account?

Ensure opportunities are exploited for public sector ICT innovation to benefit economic performance.

- 6.59 ICT innovation also has an important role to play in public service transformation where trial and experiment with new and developing applications can place Wales at the helm of reform, and maintain an environment of ongoing refreshment and renewal of policy and services as ICT itself develops.
- 6.60 We have demonstrated in many areas a readiness to develop, use and adapt ICT to try out new ways of working and deliver better services across a range of areas. However, ICT innovation needs to have a much more significant role, if we are to achieve a true transformation of our public services in Wales, and achieve the step change we seek in the nature and performance of the Welsh economy. New ideas are essential to keeping our thinking on public service improvement fresh and dynamic.
- 6.61 Across our public services, we are not short of good and original ideas about how ICT can help us do things faster, more extensively, and with better use of resources. Considerable investment has taken place to back such ICT innovation. Where we have been less successful is exploiting such thinking on a significant enough scale to achieve high level benefits for public services and use of resources.
- 6.62 We wish to explore how we can achieve a greater critical mass in ICT innovation in public services which can enhance the impact and value of ICT, and be of economic value. This might include, for example, finding ways to strengthen sector specific networking and collaboration over ICT innovation; and identifying ways in which ideas with high impact potential can be examined readily and robustly. This would seek to maintain the focus on specific policy needs (such as health, education, and local services) but enhance the scale of particular developments where it would appear appropriate to do so (for example, innovations which could apply in many different situations, including across sectors).
- 6.63 A further benefit of stronger ICT innovation capacity could be its appeal to private sector resources and capacity to develop and deploy projects on a large scale. In this context a critical mass of public sector ICT innovation can lead to economic benefit, and encourage participation and growth of ICT enterprise in Wales.
- 6.64 We recognise that this idea is not just about creating a structure which encourages potentially high impact ICT innovation to take

place. It is also as much about establishing a culture across the public sector which can absorb innovation as an essential part of normal operations. A critical mass of public sector expertise, with a reputation for innovation in ICT, will complement and underpin our moves to strengthen the foothold of ICT industries in Wales.

Where do you believe high impact ICT innovation might be of most value to public services?

What strengths and structures do we already have which could support an approach?

How else might opportunities best be exploited for private sector engagement with the public sector over ICT innovation?

What other implications might need to be taken into account in investigating this approach?

Infrastructure

- 6.65 Affordable and ubiquitous access to advanced and open communication networks is critical for competitiveness and inclusion. Countries which have the most advanced networks have competitive advantage over those with less advanced infrastructures and are better able to attract and retain high tech knowledge based enterprises and well qualified people.
- 6.66 Advanced networks are a powerful enabler and a catalyst for accelerated change for consumers, companies, organisations and nations. Their use can disrupt existing processes, business models and industry value chains. When fully absorbed these networks change people's behaviour and drive much more intense and productive use of ICT and online content and applications and services. Societies which adopt and absorb the benefits of advanced and open networks quickly and deeply achieve significant benefits in terms of productivity, innovation, growth and competitive advantage over societies that don't.
- 6.67 The existence and exploitation of advanced networks creates opportunities such as the ability to transform delivery of public services, increase levels of trust in public sector institutions, build

a thriving content and media applications industry, make Wales an attractive inward investment location, boost education and ICT skills based and increase levels of innovation, enterprise and productivity. Lack of open and advanced infrastructure could result in failure to create new jobs, inability to attract inward investment, limited opportunities for infrastructure competition and inability to capitalise on efficiency and productivity gains.

- 6.68 Advanced infrastructure will affect us all in our day to day life – whether we know it or not. Telemedicine and e-health applications bridge time and distance and allow services to be provided to citizens in their own communities. Rural hospitals will increasingly be able to enjoy the same medical expertise available in urban areas. Electronic health monitoring is increasingly possible, with important benefits for assisted living.
- 6.69 For education and lifelong learning, access to and use of these networks strengthens the life-long learning process and enables students to obtain real-time learning from qualified teachers in areas where that instruction may not be available. Students can access alternative educational resources and be exposed to new forms of educational content.
- 6.70 From a business perspective networks can provide a step change in communications capacity and open up new commercial opportunities and provide a catalyst for change in the way businesses are organised and operate. Real benefits accrue when businesses exploit networks and so improve their productivity and competitiveness.
- 6.71 From a rural perspective networks play an important role in connecting farms and businesses to national and international markets. They help the development of the rural economies by facilitating advanced e-business process, particularly in the farm and food sectors. They can support diversification and improve opportunities for products and services.
- 6.72 Whilst almost everyone in Wales has access to some type of broadband communications network there are large swathes who do not have access to advanced networks. Whilst it is content, services and applications that will bring value to the Welsh economy these can only be realised provided there is an

appropriate infrastructure to support them. Whilst today 2M/ bits might be enough for a household this will not be the case in the future. Take high definition TV. It is estimated that this service will require almost 10Mbit/s of bandwidth to view a single channel, more if you intend to stream multiple HDTV channels. Add to that the additional bandwidth requirements of high speed internet, online gaming, video on-demand and so on, all of which may be required simultaneously within one household. Indeed, the recently published UK BSG's "Predicting Future Residential Bandwidth Requirement" Green Paper believes that by 2012 consumer bandwidth requirements will reach 23 Mbit/s downstream and 14Mbit/s upstream.

- 6.73 Whilst it would be naïve to create a future based on network speeds alone profound differences can be offered by advanced networks and converged devices. Together they create a world where things are visual, mobile and personal. Services can exist which connect not only people with each other but people with machines and machines with machines.
- 6.74 Children will increasingly be able to do their homework through a variety of methods including using WiFi to connect to their classroom portal, working alone or with friends, with whom they can discuss their homework using real time multiple videoconferencing. Remote home monitoring and home surveillance will be commonplace as will the ability to switch on your DVD recorder, washing machine heating or cooker remotely when you are stuck late on a train.
- 6.75 Technological convergence and interoperability will have many facets: for network operators, it can mean the ability to interconnect with other networks; for content or service providers, it can mean being able to run a service over any suitable platform. For consumers, it can mean the ability to purchase a device and use it to access services and download content from different sources. Indeed, audiovisual and multimedia content (in particular personalised rich content) will be viewed as prerequisites for effective economic and social interaction. Wales must ensure it is in the convergence 'fast lane' as we live in a world where "things", as well as people, will increasingly be constantly connected to a network, anytime, anyplace, and anywhere.

6.76 Mobility is now the norm and is rapidly becoming understood as far more than having a mobile phone or a PDA. The key concept is now user mobility – the delivery of a common set of information based services to a user based on their individual identity and location regardless of the technology or device that individual is using to access that information. Society will become based on ‘always on’, ‘everywhere on’, ‘whatever on’. Services are already becoming available which allow people to access their personal photos, music or video while they are on the move, wherever they are in the world. This is a trend that is set to continue.

6.77 Advanced seamless ubiquitous networks need to exist in Wales based on the following principles:

- Ubiquitous: connects everyone and everything.
- Universal: people friendly-contacts from heart to heart.
- User-orientated: integration of the user viewpoint.
- Unique: generation of individual vitality.

6.78 Networks will be most fully exploited in a society which is:

- Visionary: user centric but essentially visionary in nature – imagining an environment where you can seamlessly connect anytime, anywhere, anyone and anything.
- Holistic: forward looking, strategic approach to the impact of ICT focussing on the combined societal impact of converging technologies.
- Pragmatic: realistic about both the pros and cons and the component challenges of maximising benefits and mitigating threats.
- Seeing a paradigm shift in thinking: “broadband” to “networks”; from “utilisation” to “value creation”; from “usage” to “solutions”; from “digital content” to “everything” .

6.79 Advanced networks are not cheap. However, the opportunities they create, and benefits which can be derived from them are vast. The telecommunications market is still nascent and it is very innovative and market forces are pushing it towards wider and wider markets. Deployment costs can be reduced through collaborative work as well as savings in civil engineering costs for infrastructure can be made by exploiting the synergies between the constructions of ICT, energy, water or transport infrastructures.

This Strategy seeks to ensure that:

The people and businesses of Wales have access to an advanced and open infrastructure network which supports them however and whenever they want which will result in Wales having a ubiquitous networked society.

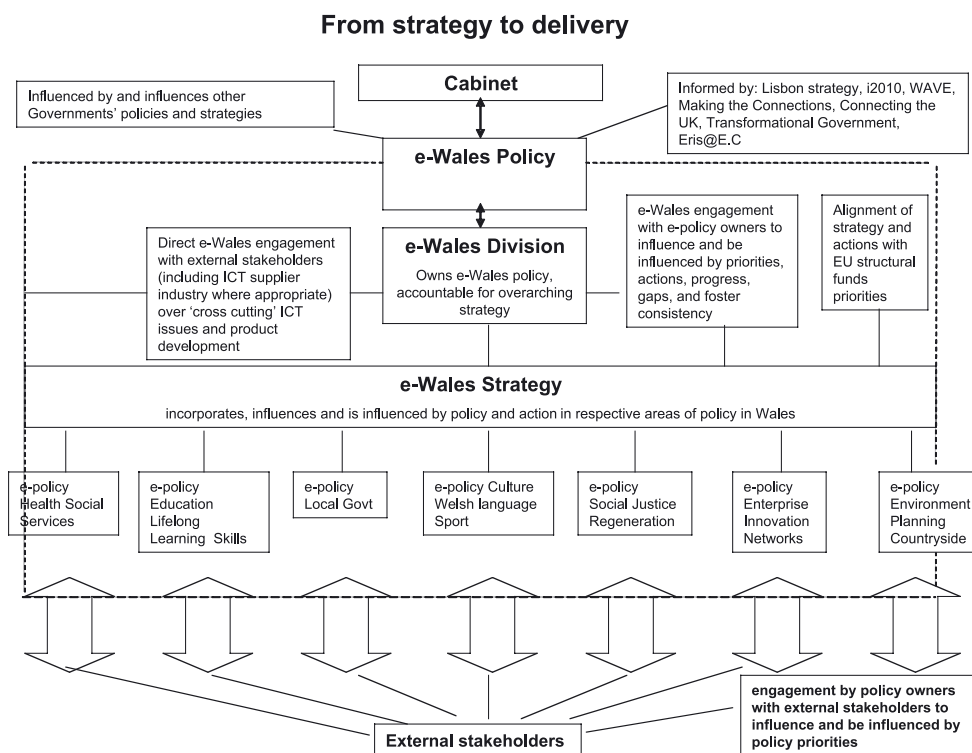
Wales is viewed as an ICT test-bed from which new products and services are created and refined which result in the creation of both indigenous growth and export opportunities.

Wales is seen as a country which excels in all areas of technology.

Wales has an infrastructure which is future proof and able to respond to technological advances.

Turning ideas into action

7.1 Success with this strategy depends on how well ideas are turned into action, and sustained to deliver visible benefits. This will be no small task. It is clear from this document that the reach of the e-Wales strategy is potentially substantial. It is also important to recognise that embedding ICT throughout policy and strategy means that delivery will be the responsibility of many different owners and stakeholders, as the following chart illustrates:



7.2 There may be many different ways of addressing challenges, and exploiting opportunities, which can complement each other and enrich the overall strategy. Achieving an holistic approach, with connected and complementary action.

7.3 It is therefore vital that the way forward is focused, the priorities sensible and understood, and action paced. This is where your input is critical. We need to prompt serious thinking about the options open to us and, where possible, achieve consensus over how best to move forward.

- 7.4 This document has also made it clear that, while we think we have identified key challenges and opportunities, we want that thinking to be tested to ensure our reasoning is robust. Although we have asked many questions in the course of this document there are others which will no doubt arise which may not have been addressed. The consultation is the opportunity for these to be raised. In particular, we are realistic about the challenge of achieving a common sense of ownership and inclusion. Without shared ownership and participation it will be difficult to sustain focus and direction, yet managing progress in an environment with many different kinds of stakeholder is a significant challenge.
- 7.5 Part of this consultation therefore addresses how best to:
- allow all involved to feel confident that they are able to influence decision making in ways which are effective and maintain progress;
 - achieve effective and productive engagement and dialogue which informs decision making and sustains ownership.
- 7.6 A key part of the answer to the questions rests with the Assembly Government and how we co-ordinate and communicate between our different departments, and work with partners.
- 7.7 In developing our approach to this we have identified two types of engagement, which can support our development and delivery of ICT policy:
- the nurturing and exchange of ideas, which can emerge spontaneously in the normal course of business, at any point in the 'delivery chain' of policy and services, from front line workers to those more engaged within the back office;
 - robust governance arrangements, which ensure co-ordination and management of processes to turn ideas into effective delivery and benefits.
- 7.8 The precise means by which engagement takes place will be influenced by the feedback received during this consultation, and the implementation plan which will follow this strategy. Action to prepare an implementation plan will include reviewing and

refreshing the arrangements for stakeholder identification and engagement.

- 7.9 Action to take forward the e-Wales strategy will also complement some of the radical steps the Assembly Government is taking to transform internal operations, review public services, and bring greater cohesion to key services (such as the *wales.gov.uk* website development, Public Service Management Wales, and Value Wales).

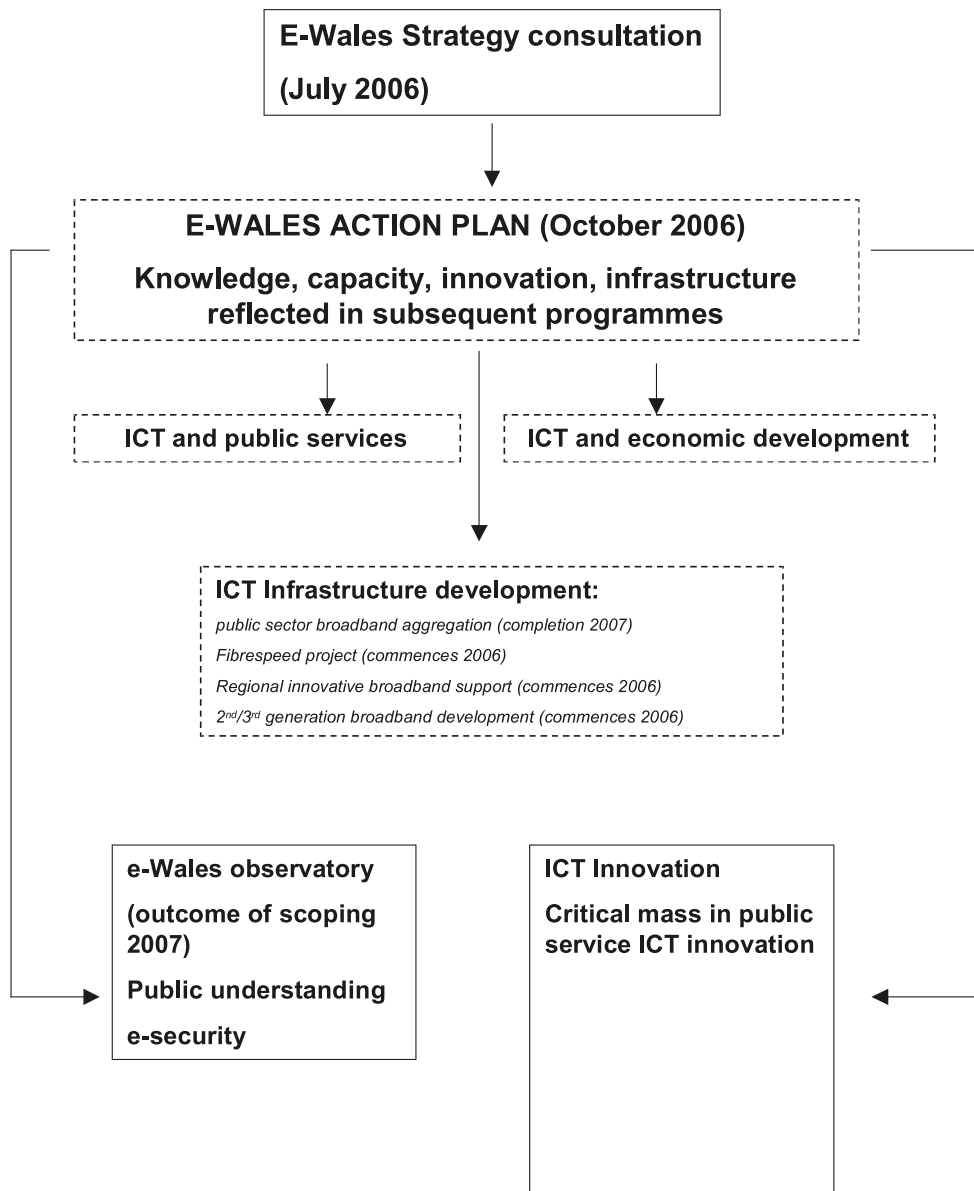
- 7.10 Against this background we will describe future progress with ICT policy and delivery in terms of three phases of development and delivery:

Phase one: focuses on setting foundations, identifying strengths opportunities and priorities (in many respects this describes the current position in 2006).

Phase two: focuses on building capacity and confidence. During this phase there will be expected to be increasing signs of critical mass in ICT policy capacity and delivery emerging through evidence in policy design, shared ICT developments and operations, and knowledge exposition and sharing (this describes the current position and moving ahead towards 2010).

Phase three: reflects normalisation of multi-agency delivery and ICT development, with clearly defined impacts on economic performance and public service improvement and efficiency. In this phase Wales will be recognised internationally for ICT innovation and exploitation (this describes the situation we aim to achieve from 2010. This reflects alignment with strategic milestone dates set by the Welsh Assembly Government, including *Making the Connections*. It also reflects the high profile milestone i2010).

- 7.11 It is not expected that these phases will be achieved uniformly, as in some areas of policy capacity and performance we are already achieving significant outcomes and establishing a reputation for excellence. However, they are intended to denote a stage at which they become the prevailing characteristic of ICT policy in Wales.



7.12 On the basis of the consultation on this strategy we will prepare an e-Wales Action Plan for publication in autumn 2006, incorporating the theme set out and focusing on priorities for action to exploit ICT in our public services and economic development strategy.

7.13 In the meantime the Assembly Government will continue to progress actions which have already been agreed and resourced, and which will themselves contribute as an integral part of the e-Wales action plan. These include the actions described in paragraph 3.5, as well as:

- progression of the National Smartcards business case, and determination of subsequent action;
- all Wales agreements with local authorities on technical standards;
- work to identify how Wales can best exploit existing services available outside Wales including, Government Connect¹⁸ and Directgov¹⁹ to benefit citizens and services in Wales;
- infrastructure development (include public sector broadband aggregation (PSBA); regional innovative broadband support (RIBS); introduction of Fibrespeed);
- signalling future priorities for support for Wales in EU structural funds programmes strategy and development (including ICT programmes, and administrative capacity);
- progression of the range of measures set out in WAVE to promote and support ICT exploitation by businesses in Wales, and foster growth of the ICT sector;
- increased engagement at a UK Government level, and with the EU to ensure the implications for Wales of emerging UK and European policy on ICT are understood, and to provide opportunities for Wales to play a proactive role in influencing policy design and delivery.

¹⁸ an initiative in England led the Department for Communities and Local Government and the e-Government Unit of the UK Cabinet Office. It brings together a range of essential tools, from technical solutions to practical advice, to enable improvement of e-Government service delivery.

¹⁹ A UK Government programme to organise and deliver, through a single website, a range of information and services from different government departments and public services.

How to respond to this consultation

Your input is needed if we are to ensure that implementation of this strategy is based on a robust understanding of your views, strengths, needs, concerns and priorities.

To identify this we have asked a number of questions which we would like you to consider. These are included in section 5 of the consultation document.

There are a number of ways you can respond:

Please send responses to the consultation to:

e-Wales consultation
Welsh Assembly Government
Unit 3a
Fairway Court
Tonteg Road
Treforest
Pontypridd
CF37 5UA

Or by email to: towardse-wales.consultation@wales.gsi.gov.uk

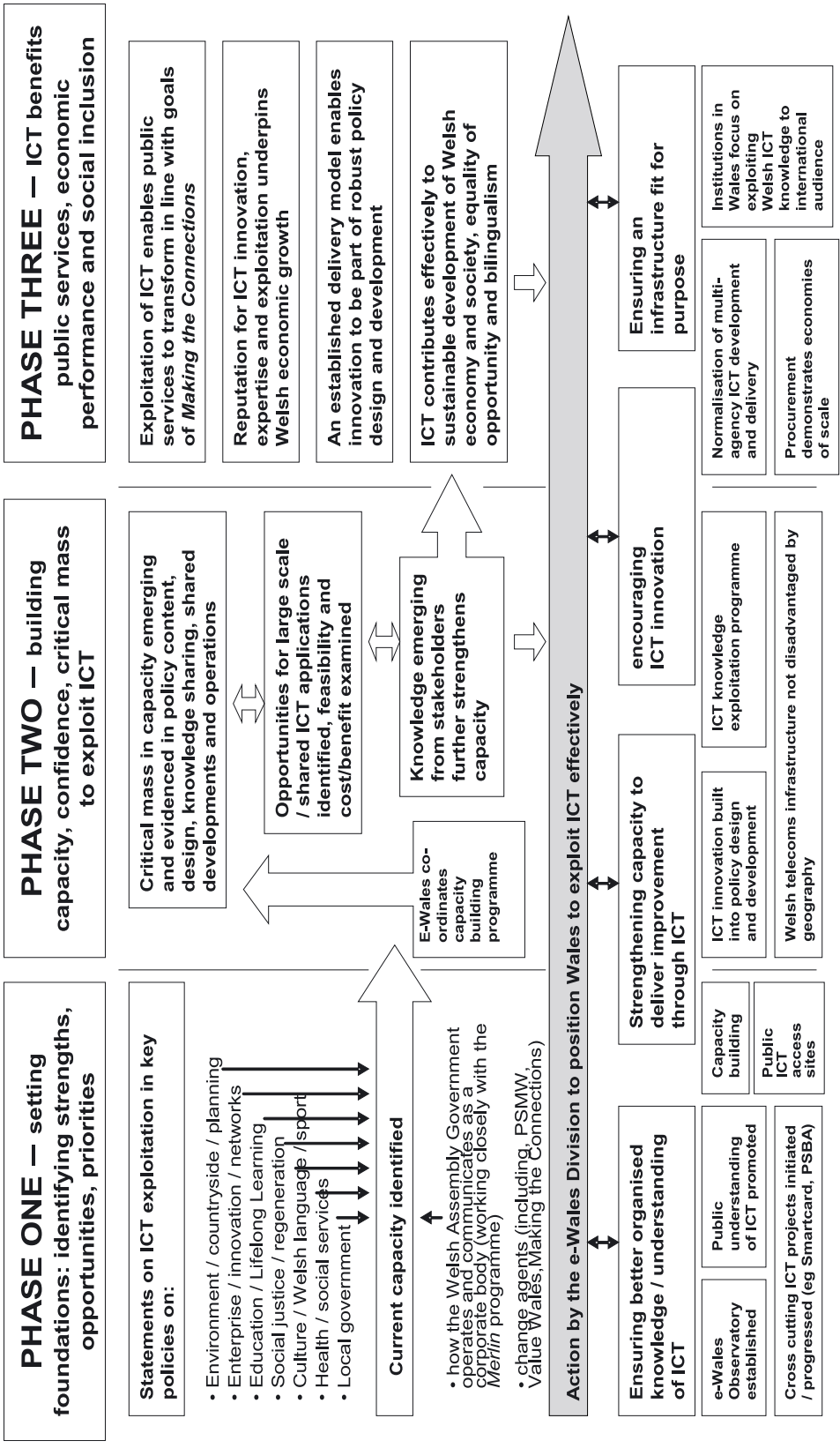
Please contact the team on 01443 846700 if you have any queries.

Responses are sought by 31 October 2006.

Responses to this consultation may be published and attributed. If you would prefer your response not to be published, or to be published but not be attributed, please state so in your response.

By submitting your ideas to the consultation, you agree to their use in this way and foreclose the possibility of subsequently applying for a patent on those ideas. If you are in any doubt as to your legal position, please seek professional advice.

Building e-Wales - creating a digital ecosystem



Annex 1

Preface to Policy Gateway Integration Tool Summary

1. The Welsh Assembly Government created the Policy Gateway Integration tool to help staff develop policies that not only help deliver the Assembly Government's strategic agenda but do so in a way that fulfils our commitments to sustainable development, equality of opportunity and social justice. The tool enables staff in different parts of the Assembly Government to work together to generate new ideas and approaches to the way we work.
2. The tool also helps the Assembly Government offer more structured dialogue and debate around key policies. We include a copy of the summary of the tool with this consultation so that you can see how we have considered the impacts of this policy, and to give you a chance to think about this too. The summary of the tool will help you to compare this policy to our commitments in the same way we have, and to give you the chance to tell us if you can see any potential problems, opportunities or gaps.
3. The tool session for this policy brought together a group of people who were able represent the interests of each of the Assembly Government's policy departments. They discussed the potential impacts this policy would have on our guiding themes of sustainable development, equality and social inclusion, our current key areas (helping more people into jobs, improving health, developing strong and safe communities and creating better jobs and skills), and the strategic agenda *Wales: A Better Country*. They did not judge whether the policy is right or wrong, but whether the impacts appear to be more or less sustainable.
4. We know that we have to be realistic. In our experience, changing one element of a policy may well have implications for other elements, causing problems where none had previously existed. This is because social, economic and environmental issues are connected in ways that are not always obvious. This means that, although we might identify an area where the policy could be improved, it might not possible to tackle that

area without having an unwanted impact on what we want to achieve. The challenge for us will be to make the best possible policy by maximising what is good whilst minimising, as far as we can, anything potentially poor or undermining.

- We keep the Policy Gateway Integration tool under review and, from time to time, make changes so that it continues to reflect the Assembly Government's priorities. If you have any comments on the tool itself (rather than the policy outcomes it shows) you are welcome to email them to us at strategicpolicyunit@wales.gsi.gov.uk or by post to Strategic Policy Unit, Welsh Assembly Government, Floor 3, CP1, Cathays Park, Cardiff, CF10 3NQ.

Policy Gateway Summary

The results below represent the agreed outcomes of the e-Wales strategy being tested against the Assembly's Integration Tool. Two policy gateway sessions were held with representatives from Department for Education and Lifelong Learning, Culture, Local Government Policy and Culture, Making the Connections, Department for Health and Social Services, Environment, Planning and Countryside and Value Wales. At the final session representatives from Department for Education and Lifelong Learning, Department for Health and Social Services, Environment, Planning and Countryside agreed with the following comments.

Key: U – Undermining; P – Poor; N – Neutral; F – Fair; G – Good; E – Excellent

Wales: A Better Country Commitment	Overall Contribution	Explanation						
1. Promoting the Economy	<table style="border: none;"> <tr> <td style="text-align: center;">U <input type="checkbox"/></td> <td style="text-align: center;">P <input type="checkbox"/></td> <td style="text-align: center;">N <input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;">F <input type="checkbox"/></td> <td style="text-align: center;">G <input type="checkbox"/></td> <td style="text-align: center;">E <input type="checkbox"/></td> </tr> </table>	U <input type="checkbox"/>	P <input type="checkbox"/>	N <input type="checkbox"/>	F <input type="checkbox"/>	G <input type="checkbox"/>	E <input type="checkbox"/>	The consultation document clearly demonstrates how ICT has a positive effect on developing the economy and improving economic performance.
U <input type="checkbox"/>	P <input type="checkbox"/>	N <input type="checkbox"/>						
F <input type="checkbox"/>	G <input type="checkbox"/>	E <input type="checkbox"/>						
2. Action on social justice for communities	<table style="border: none;"> <tr> <td style="text-align: center;">U <input type="checkbox"/></td> <td style="text-align: center;">P <input type="checkbox"/></td> <td style="text-align: center;">N <input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;">F <input type="checkbox"/></td> <td style="text-align: center;">G <input type="checkbox"/></td> <td style="text-align: center;">E <input type="checkbox"/></td> </tr> </table>	U <input type="checkbox"/>	P <input type="checkbox"/>	N <input type="checkbox"/>	F <input type="checkbox"/>	G <input type="checkbox"/>	E <input type="checkbox"/>	The consultation document aims to promote social inclusion and demonstrates the transformative potential of ICT.
U <input type="checkbox"/>	P <input type="checkbox"/>	N <input type="checkbox"/>						
F <input type="checkbox"/>	G <input type="checkbox"/>	E <input type="checkbox"/>						

Wales: A Better Country Commitment	Overall Contribution	Explanation												
3. Action in our built and natural environment	<table style="width: 100%; text-align: center;"> <tr> <td>U</td> <td>P</td> <td>N</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>F</td> <td>G</td> <td>E</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	U	P	N	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	F	G	E	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The consultation document recognises the importance of sustainable development, however it is intended to lead towards a strategy and action plan and is therefore not appropriate for it to contain specific targets and priorities.
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F	G	E												
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4. Strengthening Wales' cultural identity	<table style="width: 100%; text-align: center;"> <tr> <td>U</td> <td>P</td> <td>N</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>F</td> <td>G</td> <td>E</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	U	P	N	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	F	G	E	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The consultation document acknowledges the importance of strengthening Wales' cultural identity and makes reference to raising our profile through use of the observatory.
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F	G	E												
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5. Ensuring better prospects in life for future generations	<table style="width: 100%; text-align: center;"> <tr> <td>U</td> <td>P</td> <td>N</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>F</td> <td>G</td> <td>E</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	U	P	N	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	F	G	E	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The group recognised the potential of ICT in providing future generations with the enhanced skills and confidence to help them build a prosperous future.
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F	G	E												
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6. Supporting healthy independent lives	<table style="width: 100%; text-align: center;"> <tr> <td>U</td> <td>P</td> <td>N</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>F</td> <td>G</td> <td>E</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	U	P	N	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	F	G	E	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The consultation document recognises the importance of improving the health of people in Wales. However, it is intended to lead towards a strategy and action plan and is therefore not appropriate for it to contain specific targets and priorities.
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7. Promoting openness, partnership & participation	<table style="width: 100%; text-align: center;"> <tr> <td>U</td> <td>P</td> <td>N</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>F</td> <td>G</td> <td>E</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	U	P	N	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	F	G	E	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The process of promoting openness, partnership and participation will become of key importance when the strategy and action plan are taken forward.
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F	G	E												
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Summary Comments:

This is a high level strategic document. Responses received through the consultation process will lead towards the development of an implementation plan. At present it is not appropriate for it to contain specific targets and priorities.

Annex 2

Race equality Impact Assessment summary

Assessment of Relevance: The Screening Process Report

Assessor's name:	Jim Cowan
Department:	EIN
Policy/function assessed:	e-Wales strategy
Date:	24 April 2006
Outcome of the screening process:	Medium relevance
Counter signature by line manager/team or leader/head of department agreeing with outcome decision	Michael Eaton

1 Identifying the main aims of the policy

1.1 What is the purpose of the proposed policy? What evidence is there for the need for the policy?

The e-Wales strategy aims to enable more robust exploitation of information and communication technology (ICT) in all areas of public policy in Wales. This is through seeking ways and opportunities for different policy areas and organisations to collaborate over development of ICT applications, and collaborate through ICT. This is in order to deliver demonstrable benefits from ICT to public services, economic growth and social inclusion. The strategy is needed because of recognition that ICT could bring much greater benefit to these areas than we are currently able to identify. It is believed that the problems exist because the impact of ICT is still not considered as an integral part of strategy and policy development, current collaboration is not systematic, and evidence of the impact and benefits of ICT is not comprehensive, underpinning or widely enough shared. The strategy seeks feedback from stakeholders over whether they share this view, and their input on the priorities for tackling the issues.

1.2 What are you trying to achieve through the proposed policy, and why?

Consensus that ICT should be more effectively embedded into policy and strategy; agreement to the broad approach proposed, and input to shaping a constructive approach to developing better exploitation of ICT. The strategy consultation is to be used as the basis of developing an implementation plan.

1.3 Who is intended to benefit from the proposed policy, and how?

Ultimately it is intended that all individuals benefit by better exploitation of ICT in public services and business: being better served by public services which are more responsive, accessible and efficient through appropriate use of ICT; through having greater opportunities in an economy strengthened by ICT; through having greater access to information and services because of the availability of ICT, and the confidence and skills to exploit it.

This strategy seeks collaboration and focus from all policy areas and public services to achieve this.

1.4 Is responsibility for the proposed policy shared with another organisation? NB: *If a partnership is involved in delivering the policy and you are only one of several bodies in its membership, you will still need to consider it's relevance but should involve all members of the partnership in the process.*

Yes – ensuring that policy and services exploit ICT will be the responsibility of each relevant policy area. The e-Wales Division **WILL NOT** be in a position itself to act on issues it identifies, but will be able to add value through providing an overarching focus on best use of ICT, facilitating shared approaches, and helping to share knowledge where appropriate.

2 Collecting information

2.1 What up to date and reliable information (census, research, survey or monitoring data for instance) is available in respect of the issues and the beneficiaries your policy affects?

In many cases, research and evidence is currently highly segmented. Part of the consultation focuses on making the evidence base re-garding the role and impact of ICT more robust, understandable and relevant to wider policy.

<p>2.3 Can you examine data derived from ethnic monitoring conducted by your own organisation? If so, what is the quality of this data (e.g. how effective are response rates in ethnic monitoring systems? how recent is it? what coverage and relevance does it have?) and what steps are being taken to improve it?</p>
<p>We are not aware of any recent ethnic monitoring specifically relating to ICT. Part of the strategy focuses on strengthening the evidence base to support the Assembly Government's commitments to equality of opportunity, and asks questions about how best to achieve this and current activity.</p>
<p>2.4 If no relevant data is currently available are you able to draw on the experience of similar organisations implementing similar policies? If so, specify.</p>
<p>The European Commission and the UK Government both have strategies in place (i2010 and Transformational Government) which recognise the need to exploit ICT better to improve public services, and that part of this process involves building a better understanding of ICT and its impact on people and services. The Welsh approach needs to be seen in this context.</p>
<p>2.5 If no relevant data is available, is it practicable to carry out a study, survey or simple consultation exercise to fill in the gap? If so, what plans might you develop for these?</p>
<p>Not at this stage (i.e. as a prior necessity to publishing this consultation) – research into this issue should be part of the strategy and action plan which follows this consultation, and which the consultation process itself could help shape and inform.</p>
<p>2.6 If you consider at this stage that the policy is relevant to race equality but you cannot find adequate sources of data to guide even an initial screening process, what recommendations are you making to colleagues to accelerate the establishment of an effective information base, beyond those already set out in your organisation's race equality schemes and action plans?</p>
<p>This is included as an integral part of the strategy proposals: Paragraphs 6.28-6.29 state the importance of understanding the role of ICT in supporting the Assembly Government's commitment to equality of opportunity, as part of the section on 'knowledge', which asks questions about sources of current knowledge, gaps, best methods of capturing knowledge and informing policy.</p>
<p>3 Deciding if the policy is relevant in respect of the any of the strands of the duty to promote race equality</p>

<p>3.1 Will the proposed policy involve or have consequences for the people your organisation serves and/or employs? If so, what are these?</p>
<p>Yes – there will be a need to find ways of sharing knowledge and projects to enhance the benefits of ICT. This could entail different ways of working with service providers and stakeholders, sharing ownership and resources. There will also be a need for certain staff to have stronger understanding of how ICT might affect or influence the policy area in which they work – therefore there will be a skill/knowledge/capacity issue.</p> <p>This consultation document also recognises that different citizens will have different capacity to exploit ICT for their own personal benefit. This could include issues such as skills, confidence, disability, language or any other circumstances affecting their ability to access information and services using ICT. It acknowledges that our understanding of all these factors in Wales, and how they might be tackled, and by whom, might not be thorough.</p>
<p>3.2 Could these consequences differ according to people’s racial group, for instance because they have different needs or different ability to access a service? If so, set out how.</p>
<p>It is possible (e.g. where there may be an issue of the language of web based information and services). There might be other issues (e.g. cultural issues, financial issues) affecting ability and readiness to use ICT. The consultation seeks views and advice on the best practicable ways of building knowledge of these issues and help ensure, where appropriate, that best practice is followed when developing ICT applications.</p>
<p>3.3 Will any aspect of the proposed policy discriminate indirectly against people from some racial groups? If so, on what grounds can the policy be justified as a proportionate means to achieve a justifiable objective?</p>
<p>No – this is a consultation, part of which asking for feedback and input on ways of strengthening our knowledge of ICT and its impact.</p>
<p>3.4 In what ways may the proposed policy affect relations between certain racial groups, for example because it may be seen as favouring a particular group or denying opportunities to others?</p>
<p>Not appropriate at this stage as nothing as specific is being proposed.</p>
<p>3.5 Is the proposed policy likely to damage relations between any particular racial group(s) and your organisation? If so, in what ways?</p>
<p>Not appropriate at this stage as nothing as specific is being proposed – this consultation seeks engagement and input.</p>

4. Recording the decision on relevance

We consider the e-Wales consultation to be of low to medium relevance to our responsibilities under our race equality duty. This is because the document itself is not proposing any specific action which directly affects particular racial groups, or race relations. However, it does recognise that ICT has an important relevance to equality of opportunity, and our knowledge base of this relationship needs to be considered and if necessary strengthened. It asks for input and feedback on this, so that public service providers can in future have the right information to act appropriately when developing ICT enabled services.

4.4 If you have assessed relevance as medium, you should consider whether a full assessment is practical and proportionate at this stage.

A full assessment is not necessary at this stage, as the consultation seeks information and input, rather than proposing specific actions. It has an objective of enhancing the knowledge base of the relationship between ICT and equality of opportunity. A race equality impact assessment is more likely to be appropriate for actions arising from this consultation.

NOTES

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