Enabling a Connected Society

Report of the Next Generation Broadband Taskforce

Department of Communications, Energy and Natural Resources
Roinn Cumarsáide, Fuinnimh agus Acmhainní Nádúrtha

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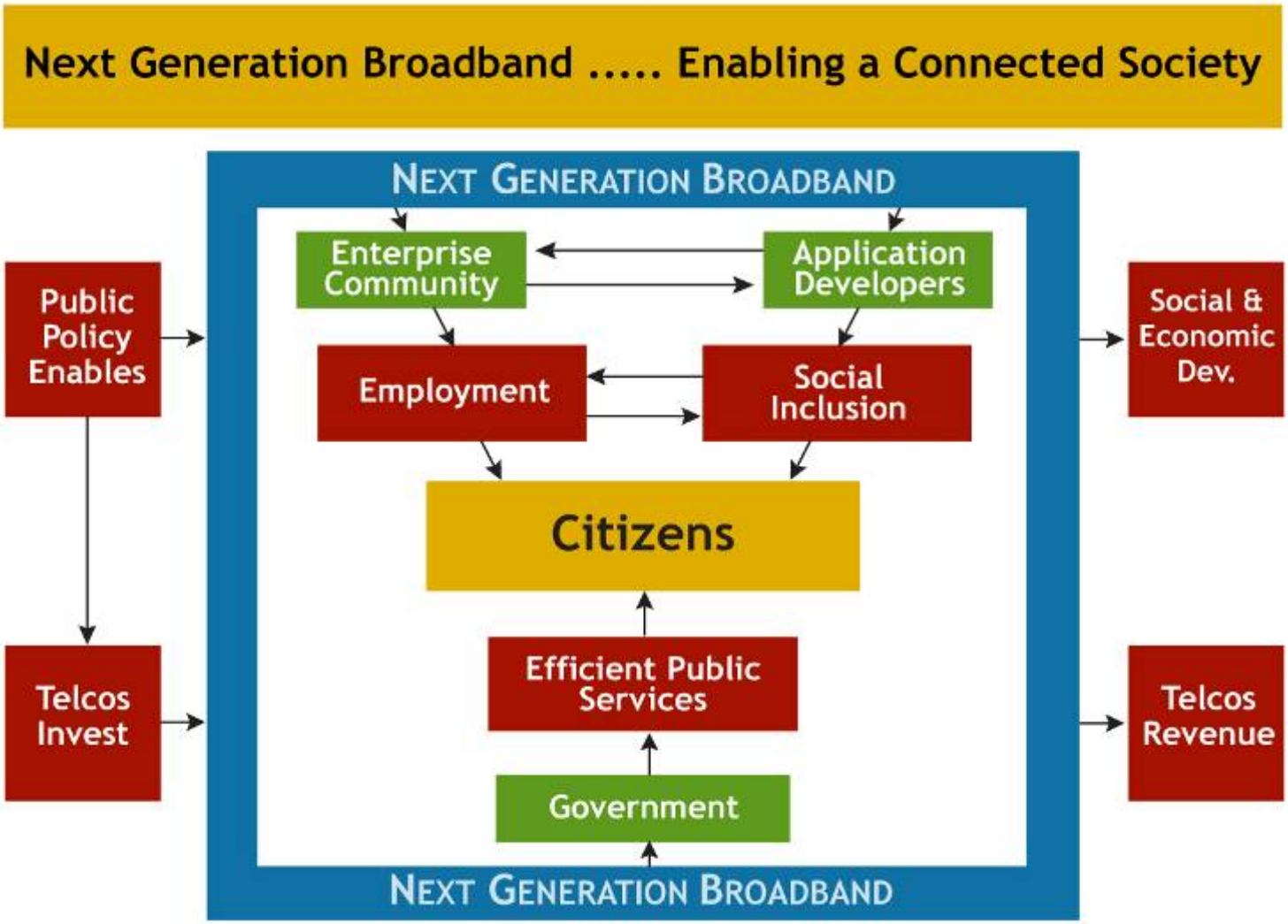
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Foreword by Minister Pat Rabbitte, T.D.

Minister for Communications, Energy and Natural Resources

Today, almost everybody in Ireland has access to competitively priced broadband. Over the past five years, the number of broadband subscribers has grown from 437,000 to over 1.652 million. Being online has brought many benefits to many people. Rapid improvements in technologies and speeds promise even greater benefits.

The advent of higher speed Next Generation Broadband (NGB) will bring significant development opportunities to Ireland in terms of growth, entrepreneurship and jobs in existing and emerging sectors. Additional potential benefits, particularly in the delivery of health and education, are also possible. The Programme for Government recognises those opportunities and has committed to facilitating the provision of faster broadband to every home and business in the State.

The potential gains, in terms of productivity, competitiveness and regional development, are especially important in the current economic climate. Forfás and the National Competitiveness Council have identified the roll out of high speed broadband as the top infrastructure priority for enterprise. A country's digital reputation also tends to have a positive influence on foreign direct investment.

Our perspective is shared across Europe. The EU's Digital Agenda requires Member States to meet ambitious broadband targets and, by the end of 2012, to publish plans which will result in those targets being achieved. We must match, if not surpass, other countries' high speed broadband ambitions.

On taking office last year, two key high speed broadband challenges demanded my attention. The first challenge was, and is, how to facilitate the rollout, by the commercial market operators, of the high speed broadband infrastructure and technologies required throughout Ireland. The second challenge demanding attention concerns Government intervention: if the Government is to intervene to address possible market failure, what is the best way to do so?

This report is firmly focussed on the first challenge. As part of addressing this challenge, I convened the Next Generation Broadband Taskforce (NGBT), which included the CEOs of the companies responsible for most of the investment in telecoms infrastructure in Ireland. This report contains details of the Taskforce's analysis and industry

recommendations. I look forward to feedback on the recommendations in this report from other interested stakeholders, before finalising policy as to Ireland's response to the second major challenge.

I would like to thank the CEOs and their colleagues for their considerable input to the Taskforce and its Working Groups. I would also like to thank the observers from ComReg, Forfás and the Telecommunications and Internet Federation (TIF) for their attendance and observations throughout the process. It is now my intention to move swiftly, after consultation on these recommendations, to publish Ireland's National Broadband Plan.

Pat Rabbitte, T.D.

Minister for Communications, Energy and Natural Resources

Introduction and Executive Summary

Background

Reflecting the increasing importance of digital engagement for Ireland's economy, jobs and society generally, the Programme for Government commits to an ambitious rollout of next generation or high speed broadband to every business and home in the country. This ambition is shared in Europe and recognised as a key enabler for growth, competitiveness, delivery of services, and a more connected and informed civil society.

It is against this background that the Next Generation Broadband Taskforce (the Taskforce) was formally established by Mr. Pat Rabbitte, T.D., Minister for Communications, Energy and Natural Resources, supported by Minister of State, Mr. Fergus O'Dowd, T.D.. Its specific purpose was to create a forum at which key industry stakeholders could highlight the legislative, policy and regulatory levers that will facilitate greater investment in high speed broadband services across Ireland. It was also designed to identify where gaps in commercial service provision are likely to occur between now and 2020.

Through collaborative analysis between industry and Government, the Taskforce aims to assist Government in developing an informed and ambitious National Broadband Plan for Ireland which delivers on the objective of faster broadband to more places as soon as possible.

To that end, the Taskforce and the five Working Groups reporting to it has considered how further investment by the commercial service providers could be enabled and maximised so that it continues to expand the provision of high speed broadband to as many homes and businesses as possible. Consideration was given to issues such as appropriate targets for broadband speed; demand stimulation; the removal of barriers currently perceived to hamper investment; private sector investment plans; and spectrum policy.

Members of the Taskforce

The Taskforce was chaired by the Minister for Communications, Energy and Natural Resources, Mr. Pat Rabbitte, T.D., supported by Minister of State, Mr. Fergus O'Dowd, T.D.. Its membership included the CEOs of the six main electronic communications network operators in Ireland: BT, eircom, Hutchison 3G Ireland (3), Telefonica O2, UPC and Vodafone. In-depth consultation with this group was vital given their significant

annual telecommunications investment. The CEOs of four other operators were invited to join the Taskforce to help provide the perspective of service providers with less market share in the Irish market. The Commission for Communications Regulation (ComReg), the Telecommunications and Internet Federation (TIF) and Forfás also participated in an observer capacity. The Taskforce established five Working Groups which examined key issues impacting on industry investment in next generation broadband. The conclusions of each of these Groups are detailed in this report.

A full list of the members of the Taskforce is available on page 76.

Members of the Taskforce look forward to Government's response to its recommendations and to continued further engagement with Government with a view to realising the investments in broadband that the Taskforce believes are critical to contributing to Ireland's economic recovery.

Views of Other Stakeholders

The views of a wider stakeholder group including citizens, other service providers and businesses are important. Companies which did not participate on the Taskforce may have additional views or insights that are important in facilitating the further rollout of high speed broadband. Consumer groups, the business community and telecommunications users generally may also wish to provide input into the policy making process. The Minister has indicated that these views will be sought in taking forward a new National Broadband Plan for Ireland to be published by the end of 2012.

A full list of industry recommendations and requirements for the roll out of high speed broadband is set out on page 19.

Next Steps

The Government has indicated a strong commitment to facilitating the continued delivery of faster broadband to more places as soon as possible. While the existing constrained fiscal and economic conditions will impact on the Government's room for manoeuvre, the Minister has identified the following next steps:

- a time bound public consultation seeking the views of all stakeholders on how best to facilitate the further rollout of high speed broadband in Ireland; and

- publication, by July 2012, and implementation of a new National Broadband Plan for Ireland, approved by the Government, and informed by the findings of the Taskforce and the views of the wider stakeholder community.

Executive Summary

Next Generation Broadband – Enabling a Connected Society

The global revolution in telecommunications technology presents Ireland with a once in a generation opportunity to become a truly connected society. Harnessed well, it will underpin competitiveness, create jobs and drive social inclusion and connection to every corner of our society.

How a country competes in this century will be defined by the relative quality of its digital infrastructure. Just as railways defined the 19th century and the industrial revolution and electricity transformed society in the 20th century, the use of information and communications technology (ICT) and Internet services is already altering how society and business interacts in the 21st century. High speed broadband (also known as Next Generation Broadband - NGB) is a key enabler for this new connected society. As a country, we need investment in high speed broadband infrastructures and services. These services are the foundation of our future competitiveness and will be a driving force in job creation and rebuilding Ireland's economy.

Access to information and services through the Internet is already dramatically changing Ireland's overall enterprise, social and civil environment. The major increase in the number of smart devices alone over the last number of years demonstrates how technology can alter the course of citizen and business interaction.

Cloud computing, facilitated by high speed broadband, is becoming increasingly important for business applications and is already a focus for Government. In addition to business applications such as design, manufacturing, inventory, production control, shipping logistics, accountancy and payroll functions, the use of cloud computing for social connectivity has resulted in the proliferation of applications for smart phones and tablet devices. Services such as social media, streaming video, video sharing and the evolution of HD content are all driving a need for extra bandwidth.

The full range of opportunities that a new digital economy presents can only be further unlocked if the requisite infrastructure is in place to support the development of new applications; new connectivity; new ways of doing business; and new ways of delivering public, private and community services to citizens.

The Digital Agenda for Europe (DAE) highlights "ultra fast Internet access" as a building block for growth and jobs. Many countries like Australia, the Netherlands, Singapore, South Korea and Sweden have already decided that ubiquitous high speed broadband networks will be central to their future. This is a challenge which Irish policy makers also

need to consider in rebuilding Ireland's economy and securing Ireland's future. Ireland has the opportunity to be one of the new digital economies of the world and action is required to build competitiveness and to realise the wealth of societal benefits that a digital economy provides.

From a global perspective, intellectual property will also be a significant driver of the European economy. Ireland, long recognised for the intellectual property created by its people, has a unique opportunity to establish itself as a leader in this developing economy through the creation, deployment and utilisation of next generation technologies, applications and services. To achieve this, high speed broadband infrastructure will be required.

The availability of high speed broadband can have a transformative impact on society. Many persuasive reports from well respected sources have highlighted the benefits of high speed broadband as outlined below.

1) Economic growth – In a study completed for the European Commission, the McKinsey Global Institute[1] estimates that the Internet accounts for on average 3.4% of GDP and as much as 6% of GDP in advanced economies. In a number of countries, the Internet has accounted for 10% of GDP over the last 15 years and has doubled to 21% in the last five years.
2) Jobs – Small and medium enterprises (SMEs) are a significant driver of innovation and job creation in Ireland. SMEs with a strong web presence have been shown internationally to grow twice as quickly, export twice as much and create twice as many jobs as those who have a minimal web presence[2].
3) Competitiveness – In its November 2011 report "Ireland's Advanced Broadband Performance and Policy Priorities"[3], Forfás advocates the provision of advanced broadband infrastructure for all towns with a population greater than 1,500. Forfás has stated that advanced broadband services are crucial to achieve the productivity growth necessary to improve competitiveness, sustain high-level incomes and ensure Ireland captures new opportunities for entrepreneurship and jobs across all sectors.
4) Continued Attraction of Foreign Direct Investment – (FDI) The availability of high

[1] Internet Matters: The Net's sweeping impact on growth, jobs and prosperity. Matthieu Pélissié du Rausas, James Manyika, Eric Hazan, Jacques Bughin, Michael Chui, Rémi Said, May 2011. Available at: http://www.mckinsey.com/Insights/MGI/Research/Technology_and_Innovation/Internet_matters
[2] Internet Matters: The Net's sweeping impact on growth, jobs and prosperity. Matthieu Pélissié du Rausas, James Manyika, Eric Hazan, Jacques Bughin, Michael Chui, Rémi Said, May 2011. Available at: http://www.mckinsey.com/Insights/MGI/Research/Technology_and_Innovation/Internet_matters
[3] Irelands Advanced Broadband Performance and Policy Priorities, November 2011. Available at: http://www.forfas.ie/publications/2011/title,8528,en.php

speed broadband will enable the most advanced uses of cloud computing technology all across Ireland and deliver additional jobs and investment from global corporations. FDI already accounts for 240,000 direct and indirect jobs in Ireland.

5) Healthcare Reform – eHealth technologies such as remote monitoring and remote diagnosis provide a tangible opportunity to shift the balance of healthcare away from the hospitals and into the community with benefits for patients and the healthcare system as a whole.

6) Transport – Use of high speed broadband for increased eWorking and interactive traffic management will reduce peak traffic flows, impacting positively on energy use, carbon emissions and efficiency generally.

7) Education and eLearning – High speed broadband provides a platform to transform the educational experience by bringing dynamic resources into the classroom and enabling seamless communication between teachers, students and parents. The Government's 100Mbps to Schools Programme will provide the infrastructure necessary to underpin a transformation in the delivery of education at second level.

8) Citizens, Consumers and Government – Ubiquitous high speed broadband gives all citizens access to the same information and opportunity regardless of age, class or location. Studies have shown that the consumer savings generated by the Internet in 2009 ranged from €7 billion in France to €46 billion in the United States (US)[4]. In the United Kingdom (UK), average household savings of £1,000 per annum have been identified as a result of shopping and paying bills online[5].

   Interaction with Government through Internet services provided by the Department of Social Protection, the Revenue Commissioners and the Property Registration Authority, among others, can be measurably more efficient for both citizens and Government. As the range of eGovernment, eHealth and eEducation services inevitably expands, the need for higher bandwidth will follow.

9) Regional Development – Deployment of high speed broadband helps to resolve many of the key issues associated with remote regions thereby enhancing the local productivity capacity of local economies.

[4] Internet Matters: The Net's sweeping impact on growth, jobs and prosperity. Matthieu Pélissié du Rausas, James Manyika, Eric Hazan, Jacques Bughin, Michael Chui, Rémi Said, May 2011. Available at: http://www.mckinsey.com/Insights/MGI/Research/Technology_and_Innovation/Internet_matters

[5] The Connected World – Lessons for the Irish Economy, Dr. David Dean, Boston Consultancy Group; Presentation given at Farmleigh House, November 2011

The Next Generation Broadband Taskforce

The Taskforce has identified the targets that industry would expect to reach for high speed broadband services which will ensure that Ireland takes full advantage of the opportunities offered as well as identifying potential gaps in service provision. The Taskforce has also set out a list of requirements and recommendations that industry believes are necessary to deliver on these targets. These include the stimulation of consumer and business demand; planning and related development matters; the management of spectrum; and the role of State entities in providing access to infrastructure and services.

The recommendations of the Taskforce are in some cases complex and challenging for a whole range of Government, industry and public stakeholders. Members of the Taskforce believe that Government and industry have an urgent and shared responsibility to deliver an environment which encourages continued investment in high speed broadband infrastructures. These services are the foundation of Ireland's future competitiveness and would drive and enable significant changes in the way citizens interact and society is organised.

Broadband in Ireland Today

Notwithstanding the economic challenges facing Ireland, the telecommunications industry is continuing to invest in voice and broadband infrastructure. Approximately €2.5 billion[6] has been invested commercially in the last five years. In addition, the Government, assisted by the European Union (EU), has invested around €350 million in recent years to provide competitive services in areas where the commercial market cannot deliver. This combined private and public sector investment has seen the range, quality and value of telecommunications services available in Ireland transformed over the last ten years. Together with rapid technological developments, this has led to a significant increase with traffic growth in excess of 30% annually. While this level of traffic growth is driving the need for next generation infrastructure, the level of investment required to meet the needs of an emerging digital economy is significant, particularly where there are low population densities.

All parts of Ireland now have access to at least a basic broadband service. In terms of higher speeds the Taskforce notes that approximately 610,000 homes (approximately

[6] Telecommunications and Internet Federation (TIF)

one third of all homes) will have access to headline speeds in the region of 100Mbps by the end of 2012, primarily through significant recent investment in cable technology. Fixed wireless services of 30Mbps are currently available to 500,000 homes, including approximately 80,000 outside of the cable footprint. In the areas not served by cable, consumers generally have access to headline speeds of between 3Mpbs and 24Mbps (depending on the area) through fixed line, mobile and satellite services, with fixed wireless providing higher speeds in some areas.

Larger commercial customers generally have access to the high speeds they require and the Taskforce did not identify this as an area of particular concern. Affordable access to higher speeds may however be problematic for smaller businesses and companies who wish to provide eWorking facilities for employees.

Notwithstanding the current levels of investment, it is acknowledged that provision of a reliable and consistent service at an affordable price continues to be a challenge in some parts of the country, particularly in rural areas.

Targets for the Rollout of High Speed Broadband in Ireland

The Programme for Government strongly commits to high speed broadband expressed as “fibre to the home (FTTH) or fibre to the cabinet (FTTC) for 90% of homes and businesses in Ireland with mobile solutions addressing the remaining 10% which is more difficult to assess”. The DAE sets targets of ubiquitous access to basic broadband by 2013, which Ireland will meet, and ubiquitous access to 30Mbps by 2020. In addition, it sets a target of 50% of EU households subscribing to 100Mbps by 2020.

While industry investment beyond 2015 is currently difficult to assess, industry has indicated that the following broadband penetration levels will be delivered as a consequence of commercial investment:

- over 50% of the population will, by 2015, have access to headline speeds of between 70Mbps to 100Mbps. This equates to over 1 million of the 1.9 million premises (homes and commercial premises) in Ireland and approximately 54% of all homes. Of these, 700,000 premises will be capable of obtaining speeds at or above 100Mpbs. These services will be delivered via cable, fibre advanced DSL Vectoring and fixed wireless;
- a further 20% to 35% of the population will, by 2020, have access to headline speeds of between 30Mbps to 100Mbps delivered through advances in copper, mobile and 4G fixed wireless platforms; and

- 15% to 30% of the population may only have access to the basic level of services currently available, by 2020.

The Taskforce notes that spatial distribution patterns in Ireland make the delivery on a commercial basis of high speed broadband to more isolated rural areas cost prohibitive for industry.

Industry Recommendations/Requirements:

- There is no case for the Government to make any intervention in the areas where cable and fibre are projected to provide speeds of between 70Mbps to 100Mbps.
- Government might wish to consider a market intervention for the 15% to 30% segment of the population where commercial investment is unlikely to occur.
- In light of the ambitions in the Programme for Government, Government might also wish to examine measures which would accelerate and enhance the rollout of high speed services in the less densely populated 20% to 35% population band.
- A formal mapping of the projected industry trajectory should be undertaken by the Department of Communications, Energy and Natural Resources (DCENR), in co-operation with industry, in order to verify the market gap and inform the level of market intervention that might be required.
- The Government should consider a target for adoption of basic broadband by citizens and SMEs. This would drive demand for services and, as new applications emerge, the move to higher speeds should follow.

Stimulating Demand for Broadband Services – An Enabler for Growth

The Taskforce notes ComReg statistics suggesting that 35% of households in Ireland do not subscribe to a broadband service; that around 20,000 Irish enterprises do not have internet access and that some 21% of Irish adults have never used the Internet. Overcoming this lack of engagement, particularly in relation to the SME/enterprise sector is considered a serious challenge.

The Taskforce also highlighted the importance of minimising a "digital divide" where disadvantaged segments of the population become more marginalised if they are not equipped to participate fully in a society that is increasingly reliant on online and digital services.

Industry Recommendations/Requirements:

- The Government, in partnership with industry (both the telecommunications service providers and the content providers), should co-fund a national awareness campaign aimed at presenting a positive and compelling case around the benefits of the Internet to the various target groups not currently digitally engaged, with particular emphasis placed on the SME sector.
- DCENR should complement its ongoing investment in high speed connectivity to schools and its funding for digital inclusion initiatives by working closely with stakeholders to produce a new National Digital Strategy aimed at providing a strategic and long-term structure to the development of ICT in the economy and to society in general.

Making Investment Easier – Removing Planning and Road Works Barriers

In order to achieve the ambitious targets which industry have identified for the rollout of high speed broadband in Ireland, significant infrastructure works will be required. Fibre to the home or cabinet (FTTx) and backhaul infrastructure will require road openings and extra civil works while new mobile and fixed wireless technologies will require over 2,000 new installations to be installed across Ireland. The more efficient and cost effective the various approval systems are for infrastructure build-out, the faster industry can deliver high speed services to communities.

A number of current challenges were identified including:

- a need for a more strategic approach to planning;
- inconsistencies between Local Authorities in the level of Planning and Development Contributions (PDCs); and
- the imposition of mast exclusion zones by Local Authorities.

Industry Recommendations/Requirements:

- A forum to enhance engagement between Local Authorities and telecommunications operators should be established.
- Site sharing by operators, the use of planning exemptions and the use of public infrastructure should be used to minimise the need for new mast sites.
- Investment could be incentivised through fair and transparent planning charges and development contributions.
- Consideration should be given to revising existing Telecommunications Antennae and Support Structures Guidelines (July 1996).
- Decisions by An Bord Pleanála should be examined by Local Authorities and their elected Members with a view to identifying policy issues raised and reducing the number of Local Authority decisions that are overturned by An Bord Pleanála.
- A single national online interface for roadwork applications should be developed, with timely processing for road opening applications.

The Role of Spectrum in Providing High Speed Mobile and Wireless Broadband Services

The use of radio spectrum as a platform for the delivery of fixed wireless and mobile broadband services is increasingly important. In Ireland, where demographics and spatial distribution patterns make the delivery of fixed line services challenging, the use of spectrum to deliver broadband is particularly relevant. While policy on spectrum is a matter for DCENR, the day to day management of spectrum and assignment of spectrum resources is a matter for ComReg.

The additional spectrum which will be released following the switchover from analogue to digital TV services in October 2012 (digital dividend) will facilitate innovative new technologies and the rollout of high speed broadband services.

Providing these advanced services over the coming years will require significant investment by operators and the delivery of new infrastructure including over 2,000 installations.

Industry Recommendations/Requirements:

- The industry representatives recommended a move to an indefinite licensing regime to encourage investment.
- DCENR's spectrum policy paper should be updated and followed by a modernisation of the Wireless Telegraphy Act 1926.
- ComReg (and the Competition Authority as appropriate) should facilitate spectrum trading, pooling and sharing.
- Engagement between ComReg and industry in open session or multilateral engagement would facilitate a deeper understanding, on both sides, of issues arising.

The Role of State Entities in Facilitating Greater Broadband Coverage

State entities and companies, as well as assets in State ownership, could, in the right circumstances, further facilitate the rollout of high speed broadband.

A number of commercial State companies operate as active market players in the telecommunications sector, utilising their assets to provide fibre and other telecommunication services to the market. Their market participation is similar to that of any private sector company, in accordance with their commercial mandate. Other commercial State companies provide access to their land and assets on a commercial basis to industry but do not actively participate in the market itself. A range of non-commercial State entities, including Government agencies, Departments and Local Authorities, have building, land and other assets which are made available commercially to market operators. Many of these entities do not however have dedicated telecommunications expertise. The Taskforce particularly stressed the importance of making these assets available, as they could assist in delivering high speed broadband to less commercial regions.

The Taskforce believes that all of these assets and services should be optimised to assist in the rollout of high speed broadband.

Industry Recommendations/Requirements:

- The Government should set out a clear policy position on the operation of State entities in the telecommunications market:
  - In the case of commercial State companies and their assets / services, this policy should consider open access, competition, market based pricing and engagement with private sector operators. It should encourage terms and conditions that are transparent and proportionate, which facilitate access on a basis that is fair and reasonable to both parties and which has regard to the commercial mandate of companies where applicable.
  - In the case of other non-commercial State assets which may or may not currently be available to market participants this policy should identify open, fair and transparent processes, including pricing, to bring these assets to market.
- In all cases, access to State owned assets and services should be subject to normal competition law, EU State Aid rules, statutory obligations and be consistent with Government policy on the rollout of high speed broadband.
- Consideration should be given to amending legislation where appropriate to enable State entities and regulators to facilitate making infrastructure available to the telecommunications market for the purpose of rolling out services and in line with the Government policy objectives as proposed above.
- State entities and Departments should be mandated to provide a single point of contact for telecommunications operators seeking to access assets or services.
- DCENR should assist the relevant State entities in developing policies to deal with industry requests for use of their assets and report on progress.

Full List of Industry Recommendations/Requirements for the Rollout of High Speed Broadband in Ireland.

The Taskforce identified five key areas that need to be addressed to facilitate faster roll out of high speed broadband in Ireland. These are targets for broadband speed; demand stimulation; infrastructure barrier removal; spectrum policy; and access to and use of State entities and assets. Following deliberations at Working Group level, industry has identified a series of recommendations and requirements which industry believes are necessary if the rollout targets they have identified are to be realised. These recommendations and requirements will require further consideration by other stakeholders and Government Departments, some of which were not involved in the Taskforce. The development of a National Broadband Plan should be critically informed by these recommendations and requirements as well as by the views of the broader stakeholder community. The full list of recommendations and requirements is set out below.

Targets

1) Government and industry should consider a formal mapping exercise to verify the industry investment trajectory outlined in the Report of the Working Group on Targets dealt with on pages 33 to 35 of the overall Report and to identify in sufficient detail those areas which will be served with high speed broadband at the predicted speeds in the timeframe considered.

2) Government intervention could be considered necessary to provide high speed broadband services for the 15% to 30% of the population that may not be served through commercial investment.

   The Government may also wish to consider whether the speeds that are likely to be available to the other segments of the population, outside of urban areas, meet the needs of an emerging digital economy and society and whether there are further measures which could accelerate or improve services in this band.

   It would be important however that any State intervention would only occur in a manner compliant with applicable EU State Aid rules to avoid undermining existing or planned private sector investment.

3) The State should consider targets for the take up of broadband services by various segments of society, including SMEs and citizens generally, and consider concrete measures to incentivise these groups to engage.

4) Government may also wish to consider whether an interim target/s for 2015 should be considered with industry, delivered in such a way so as to ensure that consumers and business can expect a certain minimum standard of service and speed regardless of location or time of day.

Demand Stimulation

5) The Government, in partnership with industry (both the telecommunications service providers and content providers), should co-fund a national awareness campaign aimed at presenting a positive and compelling case highlighting the benefits of the Internet to the various target groups not currently digitally engaged, with a particular emphasis on the SME sector. Additionally, DCENR should urgently develop a comprehensive new National Digital Strategy which reflects the full range of issues, benefits and challenges required to make Ireland a modern digital society and economy.

6) While it is acknowledged that the ongoing intervention of training funded by the corporate, community and voluntary sectors is producing positive outcomes in terms of increasing the numbers who are digitally engaged, there is a crucial need to invest in awareness raising measures. While it would ultimately be a matter for Government to decide, any such campaign should have clear targets in terms of a timescale over which penetration and take up rates would be increased (measured through both SMEs and households).

7) The Centre for Management and Organisation Development (CMOD) led eGovernment Strategy paper, to be published in 2012, should focus on the increased availability of online services and should include mechanisms to improve the degree of integration and co-ordination in the delivery of public ICT services to citizens.

8) Consideration should also be given to mandating online interaction with selected Government services within a defined time period. While the Working Group understands that the primary rationale for the new eGovernment strategy is to reduce costs and increase efficiencies in the delivery of public services, the opportunity should also be taken, in line with the clear targets in the DAE, to ensure that public sector websites and online services are brought in line with international web accessibility standards so as to make them more accessible to people with a disability.

9) Given the economic and financial status of many of those not digitally engaged, financial stimuli, through tax incentives or phased payments through the social welfare system, should be given to incentivise the purchase of PCs/laptops. The current allowance from the Department of Social Protection (DSP) at €22.22 should be extended to include all electronic communication services and it should be left to each individual customer to choose their preferred service provider. This extended scheme should be directly administered by the DSP and be open to all operators, irrespective of technology platform.

10) The current rate of eWorking available in the Irish public service should be significantly increased so as to increase the demand for residential Internet connectivity. The Civil Service, as a very significant employer, should be used as an exemplar and the focus should be on areas where such developments would not impact adversely on the delivery of customer service.

11) The Government should continue to invest in broadband for schools to ensure we have a current and future generation of digitally skilled citizens. Such investment will increase overall demand not just in the schools themselves but in the wider community in which they are located. The proposed change to the Junior Certificate cycle should be used as an opportunity to include computer science as a core subject and collaborative national and international project work facilitated by high speed connectivity should be encouraged. In addition to the very welcome investment to provide high speed broadband connectivity to all of Ireland's second level schools, it is also important that schools and teachers are further supported through the development of improved digital content and through ongoing teacher training and development of ICT skills.

12) The Irish SME sector is losing large volumes of business opportunities through its lack of engagement with the Internet. Initiatives aimed at addressing this should be supported and should include the City and County Enterprise Boards, SOLAS (formerly FÁS) and other relevant State agencies. The WebActivate programme was very successful in terms of engaging SMEs and should be reintroduced without delay. This should occur in parallel with various marketing and awareness raising initiatives designed to sensitise SMEs to the potential for them to grow their business.

13) While the focus in this report has been on engaging those who are not currently Internet users, it is also acknowledged that areas such as eLearning and eHealth offer very significant potential in the future in terms of economic and social

benefits through increased efficiencies, lower costs and increased demands for bandwidth and services. The early market advantage for small Irish companies in the areas of next generation Internet, transport, mobile applications, eLearning, eHealth and energy management should be capitalised on.

14) While there are many areas that can create demand, the socio-group in the age bracket 25 to 54 are likely to be the ones to have most influence both on younger and older demographics. When targeting demand initiatives, particular attention should be given to this group as they are most likely to be direct consumers of high speed technologies or those who fund or facilitate others to do so (such as children, education, elderly).

Infrastructure Barriers Removal

15) There should be an increased level of engagement between Local Authorities and telecommunications operators to ensure that the benefits of faster broadband and the consequent need to rollout high speed broadband is fully understood. It is suggested that a forum to facilitate this engagement is established. This forum should be used to assist in the development and delivery of a methodology to communicate benefits to the community and assuage fears regarding the deployment of telecommunications infrastructure.

16) Local Authorities should work with telecommunications operators at a pre-planning stage to help operators achieve 100% coverage. This co-operation should address the concerns of the Local Authority without imposing unreasonable cost and time burdens on the industry, which could result in impeding the rollout of broadband infrastructure.

17) Elected members and officials of Local Authorities should carefully examine decisions from An Bord Pleanála to see whether they raise any policy issues which could have implications for their development plan polices, in particular where a Local Authority decision has been overturned. This approach could substantially reduce the current high number of Local Authority decisions (such as those for exclusion zones) that are overturned by An Bord Pleanála[7].

18) The need for new sites should be minimised by:

    i) maximising site sharing;

[7] Source: Page 16, ESRI Working Paper No.401: "How impact fees and local planning regulation can influence deployment of telecoms infrastructure", August 2011, Gorecki, Hennessy, Lyons.

ii) the use of infrastructure which is exempt from the requirement to obtain planning permission;

iii) Local Authorities and the telecommunications operators reviewing and, if necessary, making recommendations as to how the planning exemptions in the Planning and Development Regulations might be updated to facilitate this process; and

iv) utilising, where appropriate, public infrastructure (such as public lighting poles) for the rollout of telecommunications infrastructure.

19) Telecommunications operators should make a fair contribution to the common good. Local Authorities should liaise with the operators to determine a planning contribution level and calculation methodology that is fair, transparent and incentivises investment when preparing development contribution schemes.

20) Local Authorities should avoid attaching planning conditions which require telecommunications operators to monitor the levels of non-ionising radiation from masts. All members of the Working Group were agreed on the need to make progress on this issue as soon as possible. The current arrangement creates unnecessary duplication as ComReg already sets requirements and audits compliance.

21) Local Authorities should work together, in consultation with the telecommunications operators, to achieve a more consistent interpretation across all Local Authorities of those aspects of the Planning and Development Regulations which cover planning requirements and charges.

22) Local Authorities and telecommunication operators should work together to plan the coverage required within a county over a number of years. As part of this process, telecommunications operators should co-operate with Local Authorities and, if necessary, with ComReg to provide information to Local Authorities on site location of existing and planned sites, existing sharing arrangements and future sharing potential.

23) In the short term, it is recommended that the Department of the Environment, Community and Local Government (DECLG) draft a new circular letter regarding the Telecommunications Antennae and Support Structures – Guidelines for Planning Authorities (July 1996) which would:

i) amend advice with regard to five year temporary planning permission and advise that time limiting conditions on planning permissions be avoided except in exceptional circumstances;

ii) advise against the use of refundable bonds/deposits in relation to mast infrastructure;

iii) ensure that the circular letter is set in the context of the rollout of high speed broadband networks, including masts and antennas, where the positive benefits for economic and social development are taken into account;

iv) recommend the adoption of a policy that recognises the need to facilitate the deployment of telecommunications networks that will deliver 100% coverage in a manner which supports proper planning and sustainable development; and

v) address the inappropriateness of exclusion zones and their potential adverse impact on policy relating to infrastructure rollout.

In the longer term DECLG should review the Telecommunications Antennae and Support Structures – Guidelines for Planning Authorities (July 1996) to give effect to the above.

24) It is understood that there is currently a review of the overall operation of development contribution schemes by DECLG with a view to preparing guidelines under section 28 of the Planning and Development Act 2000, as amended. When this review is complete, which is expected to be before the end of 2012, it is understood that a draft of these guidelines will be published for a public consultation lasting approximately eight weeks. Industry should make a submission to the consultation process along the following lines:

i) development contributions for telecommunications infrastructure should facilitate infrastructure rollout of high speed broadband networks, including masts and antennas, recognising the positive benefits for economic and social development;

ii) the need to facilitate rollout that allows 100% coverage;

iii) the advantages of charging a low, or no, PDC;

iv) potential adverse impact of PDCs on policy relating to infrastructure rollout and how it may act as a barrier to investment; and

v) advise not to apply development contributions where renewal of permission for existing structures is sought.

The points set out above should also be included in updated guidance following completion of the current review by DECLG.

25) In order to address public concerns telecommunications operators should:

i) fund and co-operate with Local Authorities to organise a Design Competition, involving the public, to design a suite of visually attractive mast designs to be used in the rollout of new masts;

ii) communicate better with Local Authorities and the public to address concerns over health issues; and

iii) communicate better the benefits of broadband (i.e. articulate to the public in a way they can clearly understand the benefits for business, education, smart economy, social development etc.).

26) The recommendations in relation to planning and road opening issues should be monitored by members of the Working Group on a bi-annual basis. Where it is identified that the required impacts are not being achieved, further measures such as policy directions and/or new legislation should be considered.

27) A common online application for road opening permits should be introduced in all Local Authorities.

28) Fair fees in respect of these applications should be standardised across all Local Authorities.

29) Technical standards applied in respect of road opening permits should be standardised.

30) Staff resources in the Local Authorities should be managed to ensure the timely processing of applications including, where appropriate, Local Authorities co-operating to share services.

31) A forum should be established between Local Authorities and the telecommunications operators (and possibly other service providers such as water, electricity) to allow for the advance planning of projects that will require road opening permits. This should facilitate a co-ordinated approach to road opening applications in order to minimise the disturbance arising from these civil works.

32) There should be visibility of approvals and timeframes involved for the same geographic area so co-ordination can occur.

33) Statistics should be published for each Local Authority in respect of its performance in relation to the time it takes to process each road opening application.

Spectrum Policy

34) Industry representatives recommend that the investment disincentive is removed, preferably by the introduction of indefinite licences. In the event that finite licence durations remain as the preferred approach, the Working Group recommends that more certainty be provided to the market in the final years of a licence term.

35) Experiences of indefinite licensing regimes introduced in other countries should continue to be monitored over the medium to long term.

36) It is recommended that ComReg introduce a spectrum trading regime by the end of quarter two, 2012.

37) It is recommended that prompt and express confirmation is forthcoming from ComReg that spectrum sharing/pooling would be permitted by licences under the existing wireless telegraphy legislation. It is also recommended that guidelines would issue from ComReg and the Competition Authority in relation to spectrum sharing/pooling and competition/merger analysis, including locations/circumstances in which it is clearly permitted and not permitted. These should also have regard to the rollout of high speed broadband in areas where market failure has been identified, including rural areas, and to the achievement of high speed broadband targets.

38) Industry would welcome a shortening of the timeframe involved to achieve commercial licensed access to non-harmonised bands, especially where specific industry demand exists.

39) DCENR's spectrum policy paper should be updated taking into account the matters discussed by the Working Group. In particular, it is recommended that the policy paper addresses the overarching public policy issues and clearly establishes the policy outcomes required by Government in the area of spectrum and related communications matters.

40) The Wireless Telegraphy Act 1926 should be reviewed and proposals for a modernised piece of legislation brought forward.

41) There should be ongoing engagement between DCENR and industry with a view to informing Ireland's position on domestic, European and international radio spectrum issues.

42) Some form of open session or multilateral engagement between ComReg and interested parties to facilitate deeper understanding of issues arising is recommended.

43) Where network operators are mandated to build out network infrastructure in rural areas, the industry representatives recommend that ComReg would take a holistic economic view to reduce the total cost of ownership of the licence.

State Assets and Entities

44) In order to inform Government policy in this area, industry should prepare a paper identifying key gaps in infrastructure provision with a view to establishing where State owned assets and services might facilitate the closing of those gaps.

45) The Government should set out a clear policy position on the operation of commercial State companies and their assets / services in the telecommunications market. This policy should:

- consider issues such as open access where possible, competition benefits, market based pricing and engagement with private sector operators;
- encourage terms and conditions which ensure access to assets is transparent and proportionate; and
- confirm that State entities can negotiate access to State assets and services on a basis which is fair and reasonable to both parties having due regard for the commercial mandate of companies, where applicable.

46) The Government should also set out a clear policy position which underlines the importance of other non-commercial State assets which may or may not currently be available to market participants but which have potential to benefit the development of the market, particularly in areas where the commercial investment case is challenging. This policy should identify open, fair and transparent processes, including pricing, by which these assets can be brought to market in an environment that supports current and future commercial investment.

47) In all cases, access to State owned assets and services should be subject to normal competition and EU State Aid rules`, statutory obligations and be consistent with Government policy on the rollout of high speed broadband.

48) Consideration should be given to amending legislation where appropriate to enable State entities (for example as was the case for the National Roads Authority (NRA)) which are not currently active in the market place to make infrastructure available to the telecommunications sector for the purpose of rolling out services and in line with the Government policy objectives as proposed above.

49) Government policy and relevant legislation should mandate sectoral regulators to take account of Government policy to accelerate the rollout of, and investment in, high speed broadband in the regulation of related markets.

50) The relevant State entities and their parent Departments should provide a single point of contact for telecommunications operators seeking to access assets or services which are, or have the potential to be, useful to the telecommunications sector. These contacts should be available publicly to operators through the relevant websites as well as through the website of DCENR.

51) DCENR should, where possible, assist the relevant State entities in developing policies to deal with industry requests for use of their assets. This assistance could include, *inter alia,* the provision of standard contract templates and technical advice. DCENR should also work with the entities in question and with industry to assess progress periodically in this area and report to Government on developments.

Report of the Working Group on Targets

Introduction

Next generation (or high speed) broadband access targets have particular importance given (i) the Government's objective of accelerating the rollout of high speed broadband; and (ii) the specific targets contained in the European Commission's DAE.

This report of the Working Group on Targets concentrates on the Minister's invitation to express views on:

"….appropriate and realisable targets for high speed broadband penetration in Ireland….".

In this report the Working Group identifies issues affecting the setting of rational targets and quantifies its assessment of:

- the most likely level of increased investment in high speed broadband committed on a commercial basis;
- the associated, targetable increased speeds accessible to a proportion of the population and households arising from that investment; and
- has benchmarked those targets to the targets set by the DAE.

The Working Group considers it is a policy matter for Government, in the first instance, to establish any higher specific access targets.

The Working Group has considered the industry investment trajectory going forward and has identified how the market is likely to evolve by 2015, 2018 and 2020. In so doing, the types of broadband services likely to be available to business and consumers over this period have been identified and the gap between predicted investment and the level of investment required to achieve higher targets can be identified.

Industry has stressed that the trajectories in this analysis depend strongly on the delivery of measures recommended elsewhere in the full Taskforce report. In identifying what services are likely to be available in the future by area, the Working Group has identified three categories, namely:

- areas that will benefit from high speeds offered over a range of technology platforms which are principally urban areas;

- areas which will have higher speeds than currently available but lower than those available in urban areas, with less choice of technology platforms; and
- rural areas with highly dispersed populations which are unlikely to have new high speed services without further Government intervention.

The scenarios provided are not definitive and are less certain from 2015 given that most companies do not have investment projections after this time. Government may wish to consider whether the investment trajectory provides an adequate level of service for an emerging digital economy and digital society and whether some form of intervention, fiscal or otherwise, is required particularly in rural areas.

Main issues discussed

The issues considered by the Working Group included:

- the commitment to the rollout of high speed broadband in the Programme for Government;
- the DAE targets;
- the level of investment that has already occurred and the level of commercial investment that is likely to occur in the future;
- appropriate and realisable targets for Ireland in light of the proposed level of commercial investment;
- rural and urban configurations; and
- the role of the State in facilitating the rollout of high speed broadband.

Programme for Government

The Programme for Government commits to co-investing with the private sector and commercial semi-State sector to provide high speed broadband to every home and business in the State. This will be achieved by delivering fibre to the home or kerb for 90% of homes and businesses in Ireland with the remaining 10% provided with high speed mobile or satellite broadband.

DAE Targets

The DAE targets are:

- basic broadband available to all citizens by 2013;
- 30Mbps broadband available to all citizens by 2020; and
- 50% of EU households subscribing to 100Mbps by 2020.

The Working Group noted that the first two DAE targets are concerned with customer access while the third target is a measure of customer demand for high speed services.

It was also noted that the DAE targets represent headline speeds. These speeds do not always accord with the actual user experience which can vary according to issues such as proximity to a base station or a cabinet; signal barriers; and the number of users online at a given time. The headline speeds relate therefore to maximum possible download speeds which may vary in real time for the reasons outlined. A full outline of technologies and their associated speeds is detailed at Appendix I.

Current market position

Notwithstanding the economic challenges facing Ireland, the telecommunications industry is continuing to invest in voice and broadband telecommunications infrastructure. Approximately €2.5 billion has been invested commercially in the sector, over the last five years. In addition, the Government, assisted by the EU, has invested around €350 million in recent years to provide competitive services in areas where the commercial market cannot deliver. This combined private and public sector investment has seen the range, quality and value of telecommunications services available in Ireland transformed over the last ten years. Together with rapid technological developments, this has led to a significant increase with traffic growth in excess of 30% annually. While this level of traffic growth is driving the need for next generation infrastructure, the level of investment required to meet the needs of an emerging digital economy is significant, particularly where there are low population densities.

In relation to current market penetration for domestic premises, headline speeds of up to 100Mbps are currently available via cable and will be accessible to approximately 610,000 homes by the end of 2012. Headline speeds of between 3Mbps and 24 Mbps are available to most of these homes and elsewhere through a range of other

technologies including fixed lines, fixed wireless, mobile and satellite services which are provided by the commercial market.

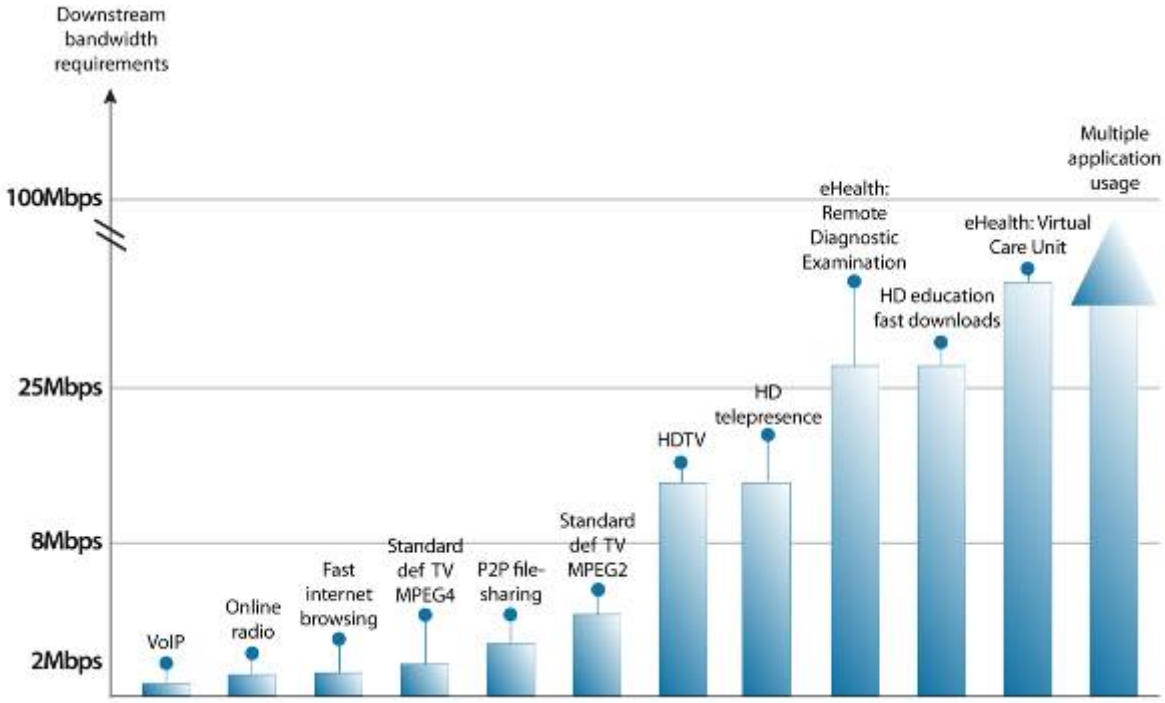
Larger commercial customers generally have access to speeds to meet their requirements, with speeds of up to 1Gbps and more available. It is generally accepted that this sector is well served although the issue of enabling eWorking is of increasing significance. The recently published Forfás report "Ireland's advanced broadband performance and policy priorities"[8] highlights the need to target the availability of high speed broadband for those SMEs outside larger urban areas, particularly in townlands with a population of 1,500 people or more.

User expectation at different speeds

The Working Group examined the different technologies and their capabilities with a view to aligning these with actual user requirements for applications possible at different speeds. The user speeds required for different applications are set out in Figure 1 which shows that at speeds of up to 20Mbps users can access voice-over-Internet, fast browsing, high definition digital television, file sharing and video conferencing. Above 25Mbps, advanced education and health applications are possible and from 50Mbps upwards multiple advanced applications are achievable, including multi media applications, eHealth virtual care, and further educational applications. It is clear that increased bandwidth will be necessary to support future business, health, education and other applications that will define Ireland's emerging digital society. The challenge is to ensure that investment does not lag behind the need for such bandwidth thus slowing down the potential for new applications and content to have a transformative impact on the economy and society generally.

[8] http://www.forfas.ie/media/ffs111107-NGNs.pdf

Figure 1



Source EU Commission "European Broadband: investing in digitally driven growth"

Current usage patterns in Ireland

Statistics from ComReg[9] show that 72% of domestic customers and 89% of SMEs using broadband are contracted at headline speeds between 2Mbps and 10Mbps. The penetration of higher speeds is however increasing particularly with cable now having an entry level offering of 25Mbps.

The Working Group stressed that price is an important determinant of headline speeds chosen as consumers tend to only purchase the speeds that they need for certain applications. In this regard it is noted that neither consumer electronics nor content services are yet available at levels to prompt widespread consumer demand for speeds exceeding 25 Mbps. This impacts on investment decisions by the investor.

Future private sector investment

A number of investments in NGB access infrastructure are expected over the coming years although investment plans post 2015 are more difficult to gauge given that most investment cycles are generally for a three to five year period. Investment plans are also

[9] http://www.comreg.ie/_fileupload/publications/ComReg1220.pdf (Figure 3.3.5)

subject to ongoing refinement and change and, in some instances, will be influenced by events such as the proposed auction of spectrum in the 800Mhz, 900Mhz and 1800MHz bands later this year. At the time of publication, the Working Group anticipates the following investments over the next three to five years:

- by 2015, it is expected that cable will have an available footprint of approximately 700,000 homes all of which will have access to a 100Mbps service. By 2018 and 2020 this figure is expected to be in the region of 730,000 and 745,000 homes respectively;
- by 2015, eircom plans to have invested in delivery of FTTC or FTTH in respect of approximately 1.04 million premises. This network will launch with downstream headline speeds of up to 70Mbps for FTTC based services and 100Mbps for GPON (Gigabit-capable Passive Optical Networks) based services which will be available to all service providers on an open access basis; and
- the planned auction of multi-band spectrum in 2012 will facilitate the rollout of new and advanced mobile and fixed wireless broadband. Higher speeds of up to 30Mbps for mobile utilising Long Term Evolution (LTE) and speeds of up to 100Mbps over 4G fixed wireless are projected to be available.

All of the above services are likely to concentrate initially on urban areas with mobile and fixed wireless playing a key role in less densely populated areas where fixed line services are not as economical or in rural areas where capable fixed line infrastructure may not be available.

Predicted customer access to next generation broadband services.

The Working Group examined statistics arising from the 2011 census and underlying assumptions regarding unoccupied homes. The adjusted figures suggest that there are approximately 2 million houses (of which approximately 1.7 million are occupied homes) and 199,000 occupied business premises in Ireland. The recorded population is 4.6million delivering an average metric of 2.7 persons per occupied house. Using these statistics and underlying assumptions[10] and the investment trajectory to 2015, 2018 and 2020, the following trends in access to higher speed broadband options is predicted. Further details are provided at Appendix II.

[10] The assumptions are as set out in the NGBT report generally including the delivery of various recommendations. The assumptions applied do not include any provision for any future developments in regulatory rules which may be decided by the independent regulator/s.

- Larger businesses can already access high speed broadband services of up to and over 1Gbps as a general rule and this will continue to be the case. It is the SME and residential broadband categories, particularly outside larger urban areas, where customer availability of high broadband speeds is predicted to be most problematic.
- By 2015[11] over 50% of the population (concentrated in mainly urban areas) will have access to high speed broadband services with headline speeds of between 70Mbps to 100Mbps. This equates to over 1 million of the 2.2 million premises in Ireland. Of these, 700,000 premises will be capable of obtaining speeds at or above 100Mpbs. These services will be delivered via cable, fibre, advanced DSL / Vectoring and fixed wireless.
- By 2018[11], in addition to the 50% already served, a further 20% to 35% of the population in less densely populated areas are likely to have access to broadband services at headline speeds of between 30Mbps and 100Mbps through mobile and 4G fixed wireless connections. Headline speeds of up to 24Mbps will continue to be marketed over the fixed copper platform.
- By 2018, the remaining 15% to 30% of the population (in rural areas with dispersed populations) will continue to have a basic broadband service. Government intervention is likely to be required if speeds are to be increased beyond this level in these areas.
- By 2020[11], (the timeline set for completion of the DAE) over 50% of the population will have access to headline speeds of between 70mpbs to 100Mbps, a further 20% to 35% will have access to speeds of up to 30Mbps and 15% to 30% may continue only to have access to the basic level of services currently available.

The investment trajectory shows a clear urban/rural divide when it comes to future infrastructure investment to allow customer access to higher broadband speeds and services. The Working Group noted that the spatial distribution of Ireland's population makes the provision of high speed broadband services particularly challenging across all platforms by comparison with many other countries[12]. Fixed wireless and mobile will therefore always be a necessary solution to broadband penetration in more remote parts of Ireland.

[11] Based on current population levels.
[12] Ireland has a relatively low proportion of people living in urban areas at 62% compared to the OECD average of 77% and other higher EU countries, for example Germany >70%, Italy >75%, the Netherlands > 80%, Denmark >85% and the UK > 90%. . Population density is also low at 64/km2 compared to Germany 229/km2, Italy 200km2, the Netherlands 400/km2, Denmark 129/km2 and UK 253km2. See Appendix III for more detail.

The Working Group advised that measures to facilitate private sector investment, including measures around demand stimulation; removal of barriers; spectrum; and access to State assets will be necessary to achieve the predicted level of investment generally and to accelerate the rollout of 100Mbps products beyond 50% of the population.

Conclusions

On the basis of these deliberations, the Working Group concluded the following:

- Ireland will meet its EU target of ubiquitous basic broadband by 2013 upon completion of the Government's Rural Broadband Scheme;
- by end 2012 almost 36% of the population will have access to headline speeds of 100Mbps;
- over 50% of the population will, by 2015, have access to headline speeds of between 70Mbps to 100Mbps. This equates to over 1 million of the 2.2 million premises in Ireland. Of these, 700,000 homes will be capable of obtaining speeds at or above 100Mpbs. These services will be delivered via cable, fibre, advanced DSL/Vectoring and fixed wireless;
- by 2018, Ireland should meet 70% to 85% of the DAE target of 30Mbps to all citizens. The remaining 15% to 30% may not be reached by the EU target timeline of 2020 without Government intervention. Without further availability of 100Mbps services, the question of 50% of households subscribing to services of 100Mbps or more by 2020, which is the DAE target, could be challenging as commented on further below; and
- in those areas where it can be reasonably predicted that higher speeds and services will be available in a timely manner, there is no case for any direct Government intervention. However, other ongoing interventions identified elsewhere in this report will facilitate service providers to accelerate rollout and improve the commercial case for investment in areas otherwise unserved (e.g. planning, demand stimulation, spectrum availability etc).

Caution is advised in relation to assuming that the target of 50% of households subscribing to speeds of 100 Mbps by 2020 will not be achieved. In this context it is worth noting that:

- it is unclear which content requirements, devices or further technological advances may become available to stimulate demand and the consequential commercial case for further investment in this period;
- investment trajectories are unlikely to exceed a period of three to five years; and
- technological advances could significantly change the demand for higher capacity services and consequently positively influence investment plans. A look back at previous statistics on broadband take up in Ireland demonstrates the difficulty in predicting the type of services and demand which will evolve in less than a decade. For example, in 2004 only 3% of Irish households had a broadband connection compared to 58% by 2011. In addition, in 2005 55% of the population had never used the Internet which had more than halved to 27% by 2010.

An additional or alternative target for the take up of basic broadband by citizens may be more useful in the short term, given that 35% of Irish households[13] (approximately 595,000) still do not have a broadband subscription and approximately 20,000 Irish businesses do not have Internet access. Faster adoption of broadband by citizens and SMEs at any speed in the immediate to near term will assist in driving demand for higher speeds in the short to medium term.

[13] http://www.comreg.ie/_fileupload/publications/ComReg1220.pdf (Figure 3.4.2)

Industry Recommendations / Requirements

The following recommendations have been identified by the Working Group and noted by the Taskforce:

- Government and industry should consider a formal mapping exercise to verify the industry investment trajectory outlined above and to identify in sufficient detail those areas which will be served with high speed broadband at the predicted speeds in the timeframe considered.
- Government intervention could be considered necessary to provide high speed broadband services for the 15% to 30% of the population that may not be served through commercial investment.
- The Government may also wish to consider whether the speeds that are likely to be available to the other segments of the population, outside of urban areas, meet the needs of an emerging digital economy and society and whether there are further measures which could accelerate or improve services in this band.
- It would be important however that any State intervention would only occur in a manner compliant with applicable EU State Aid rules to avoid undermining existing or planned private sector investment.
- The State should consider targets for the take up of broadband services by various segments of society, including SMEs and citizens generally, and consider concrete measures to incentivise these groups to engage.
- Government may also wish to consider whether an interim target/s for 2015 should be considered with industry, delivered in such a way so as to ensure that consumers and business can expect a certain minimum standard of service and speed regardless of location or time of day.

Report of the Working Group on Demand Stimulation

Introduction

Investment in next generation (or high speed) broadband infrastructure and services can to some extent be speculative given the uncertain returns as a result of low demand from consumers. Consequently, the Taskforce asked that a Working Group on Demand Stimulation be set up to examine ways of stimulating this demand and increasing the number of people using the Internet on a regular basis.

Google recently engaged the Boston Consultancy Group (BCG)[14] to carry out some in-depth research into the Internet economy. BCG's research found that a successful digital economy requires three important factors: (i) existing and functional networks (enablement); (ii) willingness and capacity to conduct commerce (expenditure); and (iii) the willingness of consumers, businesses and governments to use the Internet (engagement). BCG's e-intensity index, which measures these three factors for 50 countries around the world, shows that Ireland is an average performer, doing slightly better on engagement but less well on enablement and especially expenditure. Some of the findings from the BCG report are discussed in more detail below.

At its first meeting the Working Group decided that rather than looking at ways of stimulating demand for high speed connectivity, it would instead focus on how to engage with the significant proportion of the population that currently do not interact with the Internet. The consensus was that once people engaged at a basic level it would be relatively easy to increase the demand for access to more services/digital content and consequently, higher speeds.

Consultation

In the course of its deliberations the Working Group engaged with the following stakeholders: Google, The Digital Hub, the Irish Small and Medium Enterprise Association (ISME), the Small Firms Association (SFA) and the Irish Farmers' Association (IFA).

In addition, senior representatives from CMOD attended one meeting of the Working Group to discuss the role and potential of online Government services in the area of demand stimulation.

[14] The Connected World – Lessons for the Irish Economy, Dr. David Dean, Boston Consultancy Group; Presentation given at Farmleigh House, November 2011

Main issues discussed

The Taskforce notes ComReg statistics suggesting that 35% of households in Ireland do not subscribe to a broadband service[15]; that around 20,000 Irish enterprises do not have internet access and that some 21% of Irish adults have never used the Internet.

This scenario is not unique to Ireland. The statistics cited above are a global phenomenon, even in modern industrialised societies such as the USA and Australia. The fact that the DAE contains very specific targets for digital inclusion reflects the existence of this problem throughout the EU. Clearly, there are major economic and social benefits to be gained by tackling this problem.

As is the case elsewhere, those in Ireland who are not digitally engaged can be summarised as follows:

- older people;
- socially disadvantaged and those who have received less formal education;
- unemployed;
- people with disabilities; and
- SMEs.

The primary reasons for these groups being excluded tend to revolve around cost, awareness and motivation. In some instances, access might also still be an inhibiting issue but this is no longer considered a major impediment in Ireland as, at a minimum, basic broadband is now widely available throughout the country.

The Working Group agreed that the following areas are key to any successful approach to stimulating demand by those not currently using the Internet.

Awareness

Lack of awareness about the benefits of the Internet is a major factor among the digitally disengaged and there is therefore a compelling need for a high profile national awareness campaign targeting the groups identified above. A specific focus is also required in order to engage the SME sector.

The Working Group acknowledges that DCENR, the corporate sector and the community and voluntary sector continue to do excellent work in relation to tackling digital literacy and awareness and considers it vital that Government continues to provide the funding required to enable such initiatives to continue.

[15] http://www.comreg.ie/_fileupload/publications/ComReg1220.pdf (Figure 3.4.2)

Online Government services

Wider use of ICT in the provision of Government services can act as an incentive for more citizens to go online as it can be logistically easier and cheaper to engage with the service remotely rather than having to travel to and queue at a public office.

The Working Group welcomed the emphasis and importance attached to broadening and deepening the role of eGovernment in the recently published Public Service Reform Programme. That document clearly states that the Government is committed to introducing a wide range of initiatives to improve citizens' access to and interaction with Government services. Additionally, the new Public Services Card will greatly facilitate easier access to Government services with the rollout of the first cards having already commenced.

Work has also commenced on the drafting of a new eGovernment Strategy which will be launched in 2012 aimed at driving greater innovation in the delivery of customer services. This work is being guided by a high level team of civil servants from across the various Government Departments (CIO Council[16]). A pilot project for the use of cloud computing in the public service is also planned for 2012.

The Working Group favours an incremental and well publicised approach to making it possible for all public interaction with Government to be transacted online within 3 years, with online as the mandatory format for the majority of such transactions within 5 years.

It is recommended that the drafting of a new and comprehensive National Digital Strategy by DCENR would also help put an improved structure and direction to efforts in this regard.

Fiscal Stimuli

Given that many of those not currently digitally engaged are often in marginalised societal groups, the Working Group considers that Government should give favourable consideration to fiscal incentives aimed at making it easier to purchase the necessary connectivity and hardware for Internet usage.

These incentives could include a PC scrappage scheme along with incentives aimed at making it more affordable for people to get online; for example the DSP could examine

[16] Public Service Chief Information Officer (CIO) Council

the practicalities of deducting the cost of hardware purchases from claimants' weekly social welfare payments.

Currently, where customers access the Internet using a landline the telephone allowance, under the DSP's household benefits package, can be used to cover the cost of calls or Internet usage up to the level of their monthly allowance which currently stands at €22.22. Similarly, if a customer wishes to subscribe to a bundle package for telephone and Internet, the telephone allowance can be applied to that package.

The telephone allowance is currently administered to 385,000 customers (of which over 61,000 are paid a direct cash payment). For approximately 324,000 customers the allowance is paid as a credit on a bill where the supplier is either the incumbent or operating through the wholesale line rental process. While DSP recipients can choose other providers, this is not currently automated and requires a complex process to switch providers with the allowance paid directly to the recipient. The Working Group recommends that all payments are automated and paid as a credit on a bill and that the DSP ensures that the automation of the crediting of the DSP allowance is provided to all operators in the market. This will enable greater switching and competition in this subsegment and allow operators to target innovative offers such as subsidised hardware which, in turn, will allow more of this sub-segment to get online without any increase in cost to the Exchequer.

eWorking

The Working Group is of the view that a significant increase in the availability of eWorking, particularly in the public sector, could result in increased demand for Internet services in the home. The concept is rapidly becoming the norm in many segments of the economy with consequent savings for those companies who are willing to embrace it. Technological developments have made such arrangements easy and cost effective to set up.

Furthermore, the Civil Service should act as an exemplar by substantially increasing the availability of eWorking for staff over the next three to five years where feasible and where its impact on customer service delivery would not be adversely affected.

As many people have Internet access at work and do not necessarily require it at home, this would result in a consequential increase in the demand for Internet connectivity in private residences.

Education

Digital skills should be a fundamental part of the school curriculum as this will ensure that future generations are digitally skilled. Households with children are more likely to have or to acquire devices that access the Internet. In addition, through their own expertise, children can be a significant source of assistance in passing on skills to parents and grandparents.

The Government's pilot project of installing 100Mbps of high speed connectivity to 78 second level schools has already resulted in increased innovation in the schools involved. The Working Group believes that the recently announced national rollout will have significant positive knock-on effects in a number of areas including the increased use of home connectivity when pupils and parents are engaging with their school online.

With the proposed change to the Junior Certificate cycle, there is also an opportunity to create demand through the innovative use of technology both as a core subject item and also by using technology to enable group learning, shared innovation and project work.

SMEs

Along with the marginalised groups identified above, the Irish SME sector has not embraced the potential offered by the Internet and, consequently, significant business opportunities are being lost.

The Internet must be seen as a fundamental requirement for all Irish businesses, irrespective of size. Recent figures produced by the BCG on behalf of Google estimates that as much as 5% to 7% of GDP in advanced economies and up to 25% of GDP growth can be attributed to the Internet. This report shows that UK based SMEs that have a website and market or sell goods and services online have shown in excess of 4% growth in sales over a three year period.

Irish consumers are enthusiastic online shoppers with a survey by Visa Europe[17] noting that Irish consumers spent over €3bn on online purchases in 2010. Figures produced in 2009 showed that 70% of online purchases went to non-Irish business[18]. Drawing on CSO data, ComReg estimates that approximately 20,000 Irish enterprises do not have internet access. With online spending growing at a rate of 40% per annum and high

[17] http://www.visa.ie/en/press_releases/articles/2011/irish_spend_%E2%82%AC296_billion_onli.aspx
[18] http://amas.ie/documents/AMAS_state_of_the_net_No15_nov09.pdf

street sales declining by 8% in 2011 (according to research by REI (Retail Excellence Ireland))[19], the question of SME engagement should therefore be an urgent priority.

In 2010, the Digital Skills Academy, supported by the Digital Hub, designed and delivered a pilot initiative known as WebActivate to provide SMEs with an effective online presence while simultaneously creating employment. This initiative differed from others in that it involved a trained web activator working in and with SMEs on a one-to-one basis to help them harness the potential of the web for business.

The potential in this area is clear from the pilot phase outcomes. Of the trainees that completed the training some 56% were in employment (most as a freelancer/sole trader) three months after completing the programme. SMEs also derived significant benefits including new revenue streams, new customers and new markets.

Initiatives such as WebActivate and the Google/An Post/Black Knight sponsored Getting Irish Business Online (GIBO) have shown very positive impacts and outcomes in terms of getting small indigenous companies to embrace the Internet as a marketing and transactional tool. These initiatives need to be built on.

It is the opinion of the Working Group that the SME sector must be specifically targeted in any national awareness campaign about the benefits of being online. The issue of providing specific skills training for small enterprises is also imperative. The findings of the BCG show that high speed connectivity is not an absolute essential for SMEs but that embedding the necessary skills sets to enable an enterprise to run and manage an online presence is.

This requires a concerted and well resourced campaign involving a wide range of stakeholders including Government Departments and State agencies to ensure the benefits that such a national campaign could reap are maximised.

There is a very clear message for all small firms and businesses - “increasingly, if you’re not online, you’re not open for business”.

[19] http://www.retailexcellence.ie/index.php/research

Industry Recommendations / Requirements

The following recommendations have been identified by the Working Group and noted by the Taskforce.

- The Government, in partnership with industry (both the telecommunications service providers and content providers), should co-fund a national awareness campaign aimed at presenting a positive and compelling case highlighting the benefits of the Internet to the various target groups not currently digitally engaged, with a particular emphasis on the SME sector. Additionally, DCENR should urgently develop a comprehensive new National Digital Strategy which reflects the key issues, benefits and challenges required to make Ireland a modern digital society and economy.
- While it is acknowledged that the ongoing intervention of training funded by the corporate, community and voluntary sectors is producing positive outcomes in terms of increasing the numbers who are digitally engaged, there is a crucial need to invest in awareness raising measures. While it would ultimately be a matter for Government to decide, any such campaign should have clear targets in terms of a timescale over which penetration and take up rates would be increased (measured through both SMEs and households).
- The CMOD led eGovernment Strategy paper, to be published in 2012, should focus on the increased availability of online services and should include mechanisms to improve the degree of integration and co-ordination in the delivery of public ICT services to citizens.
- Consideration should also be given to mandating online interaction with selected Government services within a defined time period. While the Working Group understands that the primary rationale for the new eGovernment strategy is to reduce costs and increase efficiencies in the delivery of public services, the opportunity should also be taken, in line with the clear targets in the DAE, to ensure that public sector websites and online services are brought in line with international web accessibility standards so as to make them more accessible to people with a disability.

- Given the economic and financial status of many of those not digitally engaged, financial stimuli, through tax incentives or phased payments through the social welfare system, should be given to incentivise the purchase of PCs/laptops. The current allowance from the DSP at €22.22 should be extended to include all electronic communication services and it should be left to each individual customer to choose their preferred service provider. This extended scheme should be directly administered by the DSP and be open to all operators, irrespective of technology platform.
- The current rate of eWorking available in the Irish public service should be significantly increased so as to increase the demand for residential Internet connectivity. The Civil Service, as a very significant employer, should be used as an exemplar and the focus should be on areas where such developments would not impact adversely on the delivery of customer service.
- The Government should continue to invest in broadband for schools to ensure we have a current and future generation of digitally skilled citizens. Such investment will increase overall demand not just in the schools themselves but in the wider community in which they are located. The proposed change to the Junior Certificate cycle should be used as an opportunity to include computer science as a core subject and collaborative national and international project work facilitated by high speed connectivity should be encouraged. In addition to the very welcome investment to provide high speed broadband connectivity in all of Ireland's second level schools, it is also important that schools and teachers are further supported through the development of improved digital content and through ongoing teacher training and development of ICT skills.
- The Irish SME sector is losing large volumes of business opportunities daily through its lack of engagement with the Internet. Initiatives aimed at addressing this should be supported and should include the City and County Enterprise Boards, SOLAS (formerly FÁS) and other relevant State agencies. The WebActivate programme was very successful in terms of engaging SMEs and should be reintroduced without delay. This should occur in parallel with various marketing and awareness raising initiatives designed to sensitise SMEs to the potential for them to grow their business.

- While the focus in this report has been on engaging those who are not currently Internet users, it is also acknowledged that areas such as eLearning and eHealth offer very significant potential in the future in terms of economic and social benefits through increased efficiencies, lower costs and increased demands for bandwidth and services. The early market advantage for small Irish companies in the areas of next generation Internet, transport, mobile applications, eLearning, eHealth and energy management should be capitalised on.
- While there are many areas that can create demand, the socio-group in the age bracket 25 to 54 are likely to be the ones to have most influence both on the younger and older demographics. When targeting demand initiatives, particular attention should be given to this group as they are most likely to be direct consumers of high speed technologies or those who fund or facilitate others to do so (such as children, education, elderly).

Report of the Working Group on Infrastructure Barrier Removal

Introduction

The Working Group on Infrastructure Barrier Removal was established to address the perceived barriers and disincentives to the deployment of telecommunications infrastructure being experienced by the telecommunications operators. Its purpose was to (i) identify the issues; (ii) discuss with relevant stakeholders; and (iii) identify recommendations and a way forward to reduce and/or minimise the impact of these barriers.

Main Issues discussed

The Working Group identified the following barriers to the rollout of telecommunications infrastructure:

- the planning process for masts and antennas;
- the administrative processes associated with the installation of street infrastructure such as cabinets; and
- the administrative processes associated with the installation of underground road works relating to broadband infrastructure.

The Working Group also discussed electrical connection of telecommunications equipment and decided that recommendations were not currently required in this area.

In addition to meetings of the Working Group, South Dublin County Council hosted a workshop in November 2011 to further explore the issues. This workshop comprised representatives from Local Authorities, telecommunications operators, DECLG, DCENR and the Department of Transport, Tourism and Sport (DTTS). The City and County Managers' Association (CCMA) was also briefed on the issues discussed.

Mast and Antenna Issues

Planning Development Contributions (PDCs)

PDCs can be levied by Local Authorities under section 48 of the Planning and Development Act 2010 and are designed to contribute to "public infrastructure and facilities" provided by, or on behalf of, a Local Authority. Under the current legislation,

this infrastructure can include "the provision of high-capacity telecommunications infrastructure, such as broadband".

Two key issues identified by members of the Working Group, which were supported by evidence published by the Economic and Social Research Institute (ESRI)[20] were :

- the high variation in the level of contributions levied by Local Authorities on telecommunications operators ranging from zero to over €50,000 per mast with additional charges (of up to €20,000) per antenna; and
- the increasing levels of contribution charges being charged by some Local Authorities.

The industry representatives of the Working Group indicated that while they are prepared to make a fair contribution, the level of charges are acting as a disincentive to investment. One consequence arising from this policy is that a higher level of investment is likely to take place in those Local Authority areas that have lower contribution charges.

The industry representatives also cited the levying of contribution charges on existing radio sites where the planning permission is being renewed as an important issue.

Temporary Planning Permissions

Nearly all planning permissions granted by Local Authorities for masts and antennas are for a temporary five year period. The capital required for these types of investment can be up to €200,000[21] per site. At the end of the five year period companies must reapply for a new planning permission.

This policy is in accordance with existing DECLG planning guidelines[22] . The rationale and justification put forward by the planning authorities for temporary planning arises from the belief that technology would change rapidly and that the existing structures may not be required in the future. The reality in practice is that the majority of these masts have become permanent.

The industry representatives on the Working Group indicated that these masts represent significant investment; are critical to network availability; and that the temporary planning permissions present a level of uncertainty in terms of possible non-renewal at the end of the five year period.

[20] Page 9-10, ESRI Working Paper No.401: "How impact fees and local planning regulation can influence deployment of telecoms infrastructure", August 2011, Gorecki, Hennessy, Lyons.

[21] Information supplied by Vodafone

[22] See section 4.8 of 1996 Department of Environment and Local Government Guidelines - "Telecommunications and Antennae and Support Structures – Guidelines for Planning Authorities"

The evidence suggests that renewal of the temporary planning is almost always granted.

Vodafone has indicated that it failed to secure only 3 out of a total of 560 renewal applications following the renewal process. O2 also cited a similar experience.

The industry representatives submit that:

- these renewals are expensive and time consuming. There are direct costs associated with submitting planning applications, including putting in place bonds and deposits. There are also indirect costs such as timing delays in the full planning process and network planning uncertainty while the planning process is ongoing;
- capital could be better used elsewhere rather than in costly financial securities (such as bonds and deposits) to guarantee that sites will be reinstated to their former condition when the temporary mast is removed. As the vast majority of sites are retained, this financial capital requirement remains in place on an ongoing basis as temporary planning permissions are renewed by further temporary planning permissions;
- uncertainty and delays are caused and costs incurred by appeals to An Bord Pleanála when the application for renewal is made;
- there can be inconsistencies between the planning conditions attached by different officials within a Local Authority which can sometimes lead to changes of planning conditions when renewing a permission resulting in additional costs being incurred;
- costs and delays resulting from non-standardised procedures and processes apply to all planning applications and not just to renewals; and
- repeat charging of planning fees and PDCs are unwarranted.

The ESRI Report[23] indicates that it sees little reason for time limits for planning permissions for mobile masts. The Working Group agrees with this position.

Coverage restrictions

Local Authorities are entitled under legislation to impose mast exclusion zones in county development plans. When these exclusion zones are located in areas where people live and work, it can make it difficult for telecommunications operators to provide the needed

[23] Page 17 ESRI Working Paper No.401: "How impact fees and local planning regulation can influence deployment of telecoms infrastructure", August 2011Gorecki, Hennessy, Lyons.

signal coverage and telecommunications capacity in those areas. The people and companies located in those areas will be even more impacted in the future as the evolution of wireless technologies dictates the need for smaller cell sizes. If they cannot access higher broadband speeds there is a risk of them becoming digitally excluded.

The ESRI Report[24] indicates that 61% of appeals initially refused at Local Authority level were subsequently overturned by An Bord Pleanála. This would appear to indicate that there is a level of inconsistency between Local Authority decisions and decisions reached by An Bord Pleanála. The net effect of this inconsistency is delay and cost implications for the telecommunications operators.

Radiation monitoring

Some Local Authorities impose planning conditions which require telecommunications operators to carry out monitoring of non-ionising radiation from their networks and to advise the Local Authorities of the results.

DECLG has responsibility for policy relating to non-ionising radiation. Given that the telecommunications operators are required under the terms of their wireless telegraphy licences (and General Authorisation) to remain within the non-ionising radiation limits set by the World Health Organisation (WHO) and that ComReg monitors, on a sample basis, the levels of non-ionising radiation emitted from the operators' transmitters, it is submitted that this function should not be a matter for the Local Authorities. The Working Group understands that ComReg has a programme in place whereby the levels of non-ionising radiation emitted from telecommunications operators' transmitter sites are measured on a random sample basis to confirm compliance with licence conditions and that the results are published on its website[25].

Local Authority concerns in respect of health and environmental impacts

Community concerns on health and environmental impacts of masts have led to the elected representatives of the Local Authorities imposing conditions that have operational and cost difficulties for telecommunications operators.

The Working Group believes that the Local Authority members (and the public in general) need to be informed of the necessity for telecommunications infrastructure in areas where people live and work and of the importance of these networks and high speed broadband networks for economic and social development. Effective

[24] Page 16 ESRI Working Paper No.401: "How impact fees and local planning regulation can influence deployment of telecoms infrastructure", August 2011, Gorecki, Hennessy, Lyons.
[25] www.comreg.ie

communication is also needed to address the health, environmental and visual concerns relating to masts.

The industry representatives of the Working Group indicated that the rollout of high speed broadband and LTE networks will require the development of over 2,000[26] new smaller, and some additional medium sized, wireless sites to provide the necessary network capacity to provide higher broadband speeds.

There will also be a need for additional fibre for the expected increase in data traffic over the operators' access and backhaul networks. This will require additional underground infrastructure to be installed.

While the Local Authorities acknowledge the need for masts, they have indicated that they are keen to maximise infrastructure sharing using environmentally friendly and aesthetically pleasing designs.

Information supplied by the industry representatives of the Working Group indicates that there is already a considerable level of infrastructure sharing.

The Local Authorities indicate that they would consider making additional Local Authority infrastructure (such as street lights) available for use by the telecommunications operators and that this policy may reduce the need for new sites to be developed.

Greater Strategic Planning

Local Authorities currently receive planning applications on a piecemeal basis from telecommunications operators for individual masts. The Local Authorities state that it would be helpful for them if they could see the strategic plan for masts needed to provide coverage within a county over a number of years and work with the telecommunications operators to identify the issues and achieve the necessary signal coverage. This could, for example, include the Local Authorities receiving an overview of:

- what infrastructure would be needed across the county area;
- the number and size of masts which would be needed;
- what existing infrastructure could be used; and
- what public infrastructure could be used.

From the perspective of a planning official, it would be preferable to have an application which fitted into an overall clear plan and was supported by policy.

[26] This is around double the number of smaller sites that operators currently need. Figures presented by Vodafone to the Working Group indicate that its current total number of sites is 2,200

Industry Recommendations/ Requirements in respect of masts:

The following recommendations have been identified by the Working Group and noted by the Taskforce:

- There should be an increased level of engagement between Local Authorities and telecommunications operators to ensure that the benefits of faster broadband and the consequent need to rollout high speed broadband is fully understood. It is suggested that a forum to facilitate this engagement is established. This forum should be used to assist in the development and delivery of a methodology to communicate benefits to the community and assuage fears regarding the deployment of telecommunications infrastructure.
- Local Authorities should work with telecommunications operators at a pre-planning stage to help operators achieve 100% coverage. This co-operation should address the concerns of the Local Authority without imposing unreasonable cost and time burdens on the industry, which could result in impeding the rollout of broadband infrastructure.
- Elected members and officials of Local Authorities should carefully examine decisions from An Bord Pleanála to see whether they raise any policy issues which could have implications for their development plan polices, in particular where a Local Authority decision has been overturned. This approach could substantially reduce the current high number of Local Authority decisions (such as those for exclusion zones) that are overturned by An Bord Pleanála.
- The need for new sites should be minimised by:

  (i) maximising site sharing;

  (ii) the use of infrastructure which is exempt from the requirement to obtain planning permission;

  (iii) Local Authorities and the telecommunications operators reviewing and, if necessary, making recommendations as to how the planning exemptions in the Planning and Development Regulations might be updated to facilitate this process; and

  (iv)utilising, where appropriate, public infrastructure (such as public lighting poles) for the rollout of telecommunications infrastructure.

- Telecommunications operators should make a fair contribution to the common good. Local Authorities should liaise with the operators to determine a planning contribution level and calculation methodology that is fair, transparent and incentivises investment when preparing development contribution schemes.
- Local Authorities should avoid attaching planning conditions which require telecommunications operators to monitor the levels of non-ionising radiation from masts. All members of the Working Group were agreed on the need to make progress on this issue as soon as possible. The current arrangement creates unnecessary duplication as ComReg already sets requirements and audits compliance.
- Local Authorities should work together, in consultation with the telecommunications operators, to achieve a more consistent interpretation across all Local Authorities of those aspects of the Planning and Development Regulations which cover planning requirements and charges.
- Local Authorities and telecommunications operators should work together to plan the coverage required within a county over a number of years. As part of this process, telecommunications operators should co-operate with Local Authorities and, if necessary, with ComReg to provide information to Local Authorities on site location of existing and planned sites, existing sharing arrangements and future sharing potential.
- In the short term it is recommended that DECLG draft a new circular letter regarding the Telecommunications Antennae and Support Structures – Guidelines for Planning Authorities (July 1996) which would:

  (i) amend advice in relation to five year temporary planning permission and advise that time limiting conditions on planning permissions be avoided except in exceptional circumstances;

  (ii) advise against the use of refundable bonds/deposits in relation to mast infrastructure;

  (iii) ensure that the circular letter is set in the context of the rollout of high speed broadband networks, including masts and antennas, where the positive benefits for economic and social development are taken into account;

(iv) recommend the adoption of a policy that recognises the need to facilitate the deployment of telecommunications networks that will deliver 100% coverage in a manner which supports proper planning and sustainable development; and

(v) address the inappropriateness of exclusion zones and their potential adverse impact on policy of facilitating infrastructure rollout.

In the longer term DECLG should review the Telecommunications Antennae and Support Structures – Guidelines for Planning Authorities (July 1996) to give effect to the above.

- It is understood that there is currently a review of the overall operation of development contribution schemes by DECLG with a view to preparing guidelines under section 28 of the Planning and Development Act 2000, as amended. When this review is complete, which is expected to be before the end of 2012, it is understood that a draft of these guidelines will be published for a public consultation lasting approximately eight weeks. Industry should make a submission to this consultation process along the following lines:

  (i) development contributions for telecommunications infrastructure should facilitate infrastructure rollout of high speed broadband networks, including masts and antennas, recognising the positive benefits for economic and social development;

  (ii) the need to facilitate rollout that allows 100% coverage;

  (iii) the advantages of charging a low, or no, PDC;

  (iv) potential adverse impact of PDCs on policy relating to infrastructure rollout and how it may act as a barrier to investment; and

  (v) advise not to apply development contributions where renewal of permission for existing structures is sought.

  The points set out above should also be included in updated guidance following completion of the current review by DECLG.

- In order to address public concerns, telecommunications operators should:

  (i) fund and co-operate with Local Authorities to organise a Design Competition, involving the public, to design a suite of visually attractive mast designs to be used in the rollout of new masts;

(ii) communicate better with Local Authorities and the public to address concerns over health issues; and

(iii) communicate better the benefits of broadband (i.e. articulate to the public in a way they can clearly understand the benefits for business, education, smart economy and social development etc.).

- The recommendations in relation to planning and road opening issues should be monitored by members of the Working Group on a bi-annual basis. Where it is identified that the required impacts are not being achieved further measures such as policy directions and/or new legislation should be considered.

Road works, underground infrastructure and street cabinets

The delivery of the fixed telecommunications networks is achieved by the installation of cabled networks and cabinets along public roads. In some instances these networks are being updated to deliver next generation networks. Fibre optic cable is being rolled out to existing and new street cabinets and customer premises.

In order for the telecommunications operators to deliver the infrastructure, road opening permits are required from the Local Authorities. The operators have indicated that the response times from the Local Authorities to road opening permit applications vary from a few days to a few months. An additional problem arises from the different approaches and requirements taken by the Local Authorities to the applications by telecommunications operators and the different technical standards required by the Local Authorities.

In relation to road opening charges and costs, the industry representatives on the Working Group indicated that they were prepared to pay a reasonable cost. However, given that there are many Local Authorities in Ireland, the industry representatives are requesting that the fee structures, technical standards and processing times are harmonised across all Local Authorities.

The DTTS has undertaken to review the roadworks guidelines, generally known as the 'Purple Book', with a view to:

- reviewing and updating the "Reinstatement Standards and Specifications";

- reviewing and updating the roadworks permit process to a standardised approach supported by computer applications such as the Local Government and Computer Services Board's (LGCSB) Online Roadworks Control System; and
- reviewing and developing a standardised charging regime.

The LGCSB gave a presentation to the Working Group on the work they are completing in relation to the creation of an online application and tracking process for the management of applications for road opening permits. This initiative was welcomed and it was agreed that if the software application was taken on board by all of the Local Authorities it would greatly assist the telecommunications operators.

The Local Authority representative undertook to take up this issue with the CCMA with a view to encouraging the use of a standardised application process for road opening applications. The industry representatives also requested the CCMA to address the need to have appropriate personnel available in the local authorities to process the applications in a timely manner. This was considered to be an important issue particularly for the smaller Local Authorities where the absence of some key staff could have a significant impact on projects.

At the CCMA meeting of 17 November 2011 there was support from all County Managers present for a single national online interface to submit all applications for road works to the Local Authorities.

This system will include:

- dealing with the consent process to carry out road works;
- routing the applications to individual Local Authorities where multiple local stakeholders may need to consider the application (for example, Gardai, Fire Service, Water Service etc);
- actively manage the process, including using performance indicators, and escalating cases if they are not being responded to in a timely manner; and
- online payments.

Industry Recommendations / Requirements in respect of Road Works:

The following recommendations have been made by the Working Group and noted by the Taskforce:

- A common online application for road opening permits should be introduced in all Local Authorities.
- Fair fees in respect of these applications should be standardised across all Local Authorities.
- Technical standards applied in respect of road opening permits should be standardised.
- Staff resources in Local Authorities should be managed to ensure the timely processing of applications including, where appropriate, Local Authorities co-operating to share services.
- A forum should be established between Local Authorities and the telecommunications operators (and possibly other service providers such as water, electricity) to allow for the advance planning of projects that will require road opening permits. This should facilitate a co-ordinated approach to road opening applications in order to minimise the disturbance arising from these civil works.
- There should be visibility of approvals and timeframes involved for the same geographic area so that co-ordination can occur.
- Statistics should be published for each Local Authority in respect of its performance in relation to the time it takes to process each road opening application.

Timelines

The Working Group agreed on the need to make progress on the issues identified as soon as possible. Some industry representatives of the Working Group suggested possible specific timelines for the implementation of the above recommendations.

However, other representatives indicated that they were not in a position to commit to specific timelines without further consultation within their organisations.

The industry representatives on the Working Group defined its set of desired outcomes and timelines in relation to mobile infrastructure and road openings to support the broadband targets identified by the Working Group on Targets. This industry view is set out in Appendix IV. It was noted that these industry desired outcomes had yet to be considered in detail by the relevant Government Departments and Local Authorities whose agreement would be required.

Cross Government Implementation

The Working Group recognised that implementing the recommendations of this report will require cross-departmental and City and County Managers' support and involvement and, where necessary, central policy direction to prioritise implementation and ensure co-operation.

Continuation of Working Group

It is recommended that the members of the Working Group continue to meet bi-annually to monitor the impact of the recommendations made by it and, if necessary, suggest further recommendations.

Report of the Working Group on Spectrum Policy

Introduction

Radio spectrum (harmonised, non-harmonised, mobile, wireless and fixed wireless) is used to support many electronic communications services and applications and access to radio frequencies is an essential requirement for telecommunications, including broadband access. In recognition of the importance of this resource for telecommunications services, the key role that spectrum has to play in the rollout of high speed broadband and the investment challenge it represents, the Working Group on Spectrum Policy was established. Its purpose was to enable the DCENR to understand better industry views regarding spectrum and in particular the challenges faced by industry in this area. The Working Group also sought to examine ways in which spectrum policy could contribute to the attainment of: (i) the objective of "bigger broadband to more places as soon as possible"; and (ii) the targets agreed by the Working Group on Targets and Working Group on State Entities and Assets.

The terms of reference of the Working Group required that, in considering the various spectrum related matters, due regard would be given to national and EU legislation, the regulatory framework for electronic communications, competition law, DCENR's current spectrum policy paper and the wider economic and social policy objectives of Government. The Working Group was also mindful of the fact that the day-to-day management of the radio spectrum is a statutory function of ComReg under national law and that ComReg is independent in its exercise of this function. Ultimately, radio spectrum is a very important national resource and one which Government must ensure is utilised and managed in the public interest.

Main issues discussed

At the first meeting the Working Group decided to focus on the following issues which the industry representatives highlighted as being most important in terms of enabling investment: (i) optimal licence durations to encourage investment; (ii) spectrum trading; (iii) spectrum sharing/pooling; and (iv) maximising the use of non-harmonised bands to facilitate research, development, innovation and commercialisation by Irish based companies. Over the course of the meetings, issues relating to pricing and consultative mechanisms employed by ComReg were also raised and discussed. It was accepted

that the findings and recommendations from the deliberations of the Working Group would not impact on any spectrum management process currently underway.

While the DCENR representatives of the Working Group were very keen to understand the issues that could facilitate or fetter investment by industry in the rollout of high speed broadband, DCENR was also very conscious that the Working Group comprised a subset of a wider stakeholder group. From the outset, DCENR highlighted that the Department and the Minister would need to be mindful of wider public policy objectives throughout the discussions.

Optimal licence durations

The industry representatives of the Working Group believe that a major limitation of the existing licensing regime is that it does not incentivise investment from operators in new infrastructure for a number of years as a licence approaches its expiry date. For example, the current licences are granted for periods of up to 20 years after which all spectrum rights of use granted cease to exist and the spectrum can be reassigned. Given the desire to keep Ireland's broadband infrastructure competitive internationally on an ongoing basis and the high probability that the primary mechanism for delivering better broadband in very rural areas will be using wireless technology operating in licensed bands, the industry representatives believe that a mechanism needs to be found to ensure that operators are incentivised to continue to invest in the infrastructure on an ongoing basis.

In that context, the industry representatives presented the case for the introduction of an indefinite licensing regime. Their preferred option would have an initial fixed term (say 20 years) during which the licence could be revoked in a limited and narrowly defined set of conditions. Once the initial period has expired, the grounds for revocation would include the right to revoke for spectrum management reasons subject to a minimum notice period of five years. Alternatively, this may be defined as a process of automatic rolling renewal with a minimum term always equal to the notice period. As a second option, the industry representatives proposed the introduction of longer licences (for example 25 years) with a binding deadline for decisions regarding licence status five years in advance of expiry. They also proposed that in the event that the deadline for decision was not met, the rights of the licence holder should automatically extend by the period of the delay in issuing the decision.

The industry representatives stated that an indefinite licensing regime would provide a level of certainty that would benefit the market in terms of promoting and encouraging

investment; facilitating competition; opening up of secondary markets thereby creating new market opportunities; and increased trading prospects. The point was made that an indefinite licensing regime could also facilitate the development of a self regulating market which could ultimately lead to a reduction in administrative, management and resource costs. The introduction of an indefinite licensing regime in the UK was cited and an independent economic report from NERA Economic Consulting (NERA)[27], commissioned by a member of the Working Group, was circulated for consideration. The industry representatives support the findings of this report.

In summary, NERA concluded that there is a strong case for Ireland to adopt indefinite terms for mobile spectrum licences subject to suitable conditions being imposed to protect ComReg's ability to fulfil its statutory objectives. In particular, NERA found that:

- The current approach in Ireland of fixed term licences with no renewal option is inconsistent with ComReg's core objective of encouraging efficient use of spectrum. A shift to an indefinite licensing regime would provide stronger incentives for investment and for spectrum trading.
- There could be static and dynamic efficiency gains in Ireland of an estimated €250 million to €450 million over a 15 year period if a policy of indefinite terms were to be adopted.
- Indefinite licence terms are better suited to meet the relevant objectives of a spectrum manager, provide incentives for efficient utilisation of scarce spectrum, and promote competition and investment which should benefit consumers as well.
- Consumers are also likely to be better off with indefinite term licences. This is because, amongst other matters, indefinite terms may increase the scope for entry and make the market more contestable and competitive.
- Countries that have been at the forefront of spectrum management reforms have either implemented or are considering implementing indefinite licences. The United Kingdom has implemented indefinite licences. New Zealand and the United States have implemented similar concepts. Australia and Canada are both considering indefinite licences.

DCENR highlighted that in considering the optimal duration of spectrum licences, there are other factors to be taken into account including the wider social and economic policy objectives of Government, the income accruing to the Exchequer from spectrum

[27] http://www.three.ie/pdf/NERA%20Final%20Report%20on%20Indefinite%20Term%20Licences_04%20October%202011.pdf

licensing and the relinquishing of property rights to a State resource. Consideration must also be given to other relevant issues such as the risk of anti-competitive behaviour and hoarding of spectrum and the safeguards that might be required to prevent such behaviour. The industry representatives pointed out that many of these factors had been considered by NERA in its report. DCENR highlighted that the NERA report was considered by ComReg.

Of the two options that the industry representatives proposed, their clear preference is for the introduction of indefinite licences. Ultimately, licence duration is a spectrum management issue for which ComReg is responsible in accordance with the Communications Regulation Act 2002 (as amended). In the context of fixed licence durations, DCENR agrees with the industry representatives that more investment would be facilitated if greater certainty could be provided to the market in the final years of a licence term.

Spectrum trading

The efficiency gains and benefits that could be realised from spectrum trading were highlighted and, in this regard, the legislative revisions which have been introduced through the revised EU Regulatory Framework for Telecommunications were welcomed. The Working Group did, however, outline concerns relating to what it views to be a cautious approach by ComReg to the facilitation of trading. In particular, the clarification was sought on the status of the 1926 Wireless Telegraphy Act and the provisions of that Act which ComReg had previously indicated may need amending before trading could be introduced. Having discussed the issue with ComReg, DCENR advised that further legislative measures were not required to facilitate trading but that procedures as specified under Regulation 19 of the Framework Regulations[28] would need to be developed. Consultation by ComReg on these procedures is expected to be held in the first half of 2012. Notwithstanding this position, it was agreed that a modernisation of the Wireless Telegraphy Act 1926 (as amended) would be welcome.

The Working Group encouraged an accelerated consultation process and sought clarification on the role that the European Radio Spectrum Policy Programme (RSPP) would play in the identification of bands which would be tradable. Following further discussion with ComReg, DCENR clarified that these bands would be tradable in accordance with the rules and regulations set down by ComReg as well as relevant

[28] European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2011 (S.I. No. 333 of 2011)

competition law. The Working Group would welcome the commencement and conclusion of a consultation process in 2012.

In summary, the Working Group agrees that the facilitation of trading would be a positive development and welcomes the progress being made by ComReg in this regard. It is recommended that ComReg introduce a spectrum trading regime by the end of quarter two, 2012 and the members of the Working Group look forward to working with ComReg to ensure trading becomes a reality.

Spectrum sharing/pooling

Spectrum sharing or pooling is where two or more operators combine their spectrum to deliver a faster, more efficient service. The Working Group outlined the potential role that spectrum sharing or pooling could play in the context of rural broadband as it can facilitate both an increase to the speed of service available in served areas and the extension of broadband to areas where it is not available[29]. Given the regionalised nature of Ireland, sharing or pooling could be a very effective mechanism for delivering higher bandwidth to isolated areas. A specific suggestion was made regarding areas where market failure has been identified through the Working Group on Targets and the possible facilitation of sharing or pooling in those areas. Clarity regarding the ability to pool also impacts on the investment and planning decisions of operators. Whilst noting the references to collective use of spectrum in the RSPP and ComReg's views as articulated in their draft Spectrum Management Strategy Statement (ComReg document 11/28 [30]), the Working Group sought clarity on the procedural aspects of sharing or pooling.

Following discussion between DCENR and ComReg, DCENR advised that sharing or pooling proposals need to be assessed by ComReg and the Competition Authority, on a case-by-case basis, to consider compliance with telecommunications and competition law.

The clarification provided to date by ComReg was welcomed. However, the Working Group recommends prompt and express confirmation by ComReg that spectrum sharing/pooling would be permitted by licences issued under the wireless telegraphy legislation. It also recommends that guidelines would issue from ComReg and the

[29] For example, two operators may hold sufficient spectrum individually to deliver a service with a peak speed of 80 Mbps but by combining their spectrum into a 'single' carrier, they could double the peak service available to 160 Mbps and also increase the efficiency of their networks. Alternatively in a less populated area, it may not be commercially viable for two operators to separately build out services delivering 42 Mbps but by combining their spectrum, a service of 84Mbps may be viably delivered.
[30] http://www.comreg.ie/_fileupload/publications/ComReg1128.pdf

Competition Authority in relation to spectrum sharing/pooling and competition/merger analysis, including locations/circumstances in which it is clearly permitted and not permitted. These should also have regard to the rollout of high speed broadband in areas where market failure has been identified, including rural areas, and to the achievement of high speed broadband targets.

Innovative uses of non-harmonised bands

This discussion item was raised in the context of reported difficulties in attaining spectrum required to facilitate the commercialisation of innovative products and services. There was consensus that in order for Irish companies to be able to take the lead in technology development, a speedy spectrum allocation mechanism was essential.

ComReg's "Test & Trial Ireland" (TTI) is designed to support the needs of the wireless research and development community at home and abroad. Industry representatives of the Working Group suggested that while TTI works well, delays can be experienced once a company wishes to move to the next stage of commercialisation and secure the spectrum used in the trial on a fully licensed basis. This matter was raised with ComReg who pointed out that all spectrum, whether used to test or trial new devices or services, only becomes available for licensing through normal consultation and competitive processes.

In instances of developments taking place in non-harmonised bands the potential for there to be numerous industry participants seeking access to the bands in question is, by definition, limited. The industry representatives recommend that this would be borne in mind when ComReg is following and assessing its normal consultation and competitive processes.

TTI initiatives are mainly undertaken in harmonised spectrum bands in accordance with the nature of the applications received. Following discussion with ComReg, DCENR clarified that TTI imposes no particular restrictions on the use of non-harmonised bands and is favourably disposed to facilitating any applications received regardless of which band they relate to. Such facilitation could open up the potential for operators in other countries to use Ireland and ComReg's facilities as a test bed.

The Working Group recognised the benefits that the TTI process provides to industry to research and develop new applications and technologies. As the time window for commercialisation of a technology can often be limited, a shortening of the timeframe

involved to achieve commercial licensed access to non-harmonised bands would be welcomed, especially where specific industry demand exists.

Engagement between Industry and ComReg

Over the course of the meetings, it was felt that the views of ComReg on the issues being discussed would be useful given its responsibility for spectrum management. ComReg was invited to meet with the Working Group. Following consideration of the invitation, ComReg declined on the basis that two relevant consultation processes were ongoing, both of which were being managed in accordance with ComReg's statutory obligations and standing policies and that the integrity of those processes could be undermined if ComReg was to engage selectively with a subset of interested parties.

Industry representatives believe that ComReg's current approach of predominantly not meeting with industry (as a collective group) and not discussing matters of importance with industry because they are the subject of consultation is unduly legalistic and not conducive to efficiency and progress. The industry representatives have been frustrated by ComReg's failure to engage other than by means of formal consultation processes (in contrast with regulators elsewhere, for example Ofcom) and believes that this has hampered the regulatory decision making process.

While DCENR understands the views of the industry representatives regarding the possible benefits of meetings (in addition to written communications), the DCENR representatives on the Working Group also understand the reasons for the approach adopted by ComReg given the complex nature of spectrum management and the need to ensure transparency and integrity in the competitive processes for assigning spectrum.

Notwithstanding ComReg's concerns regarding due process, the Working Group believes that some form of open session or multilateral engagement with ComReg could facilitate a deeper understanding of issues arising.

Industry Recommendations / Requirements:

The following recommendations have been identified by the Working Group and noted by the Taskforce:

- Industry representatives recommend that the investment disincentive is removed, preferably by the introduction of indefinite licences. In the event that finite licence durations remain as the preferred approach, the Working Group recommends that more certainty be provided to the market in the final years of a licence term.
- Experiences of indefinite licensing regimes introduced in other countries should continue to be monitored over the medium to long term.
- It is recommended that ComReg introduce a spectrum trading regime by the end of quarter two, 2012.
- It is recommended that prompt and express confirmation is forthcoming from ComReg that spectrum sharing/pooling would be permitted by licences under the existing wireless telegraphy legislation. It is also recommended that guidelines would issue from ComReg and the Competition Authority in relation to spectrum sharing/pooling and competition/merger analysis, including locations/circumstances in which it is clearly permitted and not permitted. These should also have regard to the rollout of high speed broadband in areas where market failure has been identified, including rural areas, and to the achievement of high speed broadband targets.
- Industry would welcome a shortening of the timeframe involved to achieve commercial licensed access to non-harmonised bands, especially where specific industry demand exists.
- DCENR's spectrum policy paper should be updated taking into account the matters discussed by the Working Group. In particular, it is recommended that the policy paper addresses the overarching public policy issues and clearly establishes the policy outcomes required by Government in the area of spectrum and related communications matters.
- The Wireless Telegraphy Act 1926 should be reviewed and proposals for a modernised piece of legislation brought forward.
- There should be ongoing engagement between DCENR and industry with a view to informing Ireland's position on domestic, European and international radio spectrum issues.

- Some form of open session or multilateral engagement between ComReg and interested parties to facilitate deeper understanding of issues arising is recommended.
- Where network operators are mandated to build out network infrastructure in rural areas, the industry representatives recommend that ComReg would take a holistic economic view to reduce the total cost of ownership of the licence.

Report of the Working Group on State Entities and Assets

Introduction

Predictable access to and use of State assets by telecommunications infrastructure providers could lower the costs of deploying high speed broadband infrastructure thereby providing a more positive investment environment to support the rollout of retail customers' access to high speed broadband services sooner.

This report concentrates on the Minister's invitation to express views on –

"…the role of State entities in telecommunications infrastructure and service provision and whether there are areas in which this can be improved, or models which would allow these infrastructure / services to be optimised for the rollout of NGB…."

The Working Group considered the role of State companies and agencies in facilitating and driving the rollout of high speed broadband infrastructure. Considerations ranged from the participation of commercial State companies active in the telecommunications market, to the actions of commercial and non-commercial State entities which are not active participants in the telecommunications market and who could offer access to land, buildings or other assets to facilitate the rollout of high speed broadband infrastructure.

It was agreed that the State could play a considerable role in this regard, given the extent of the assets involved. Given this, the Working Group identified a need to articulate clear Government policies and supporting actions in this area and to align all of the relevant entities in pursuit of the policy objective to increase customer access to high speed broadband services.

Main issues discussed

The issues considered by the Working Group included:

- ownership and operational structures for State owned infrastructure;
- the extent to which State infrastructure is being utilised;
- opportunities to maximize the use and build out of State infrastructure; and
- State infrastructure which has the potential for use in the future deployment of communications networks and how this might be accessed or optimised.

State Assets and Entities

The Working Group considered that in relation to facilitating investment in telecommunications infrastructure, State entities can be grouped into two main categories.

The first category includes commercial State companies which operate as market players in the telecommunications sector, providing fibre services and other assets to the market on a wholesale open access basis. In general these assets and services are available to the telecommunications sector through established and dedicated telecommunication businesses which compete directly in some market segments on a commercial basis with other operators (private and public) within the telecommunications sector. Other commercial State companies provide access to their assets on a commercial basis, but do not actively participate in the market itself.

The second category involves State entities which do not have dedicated telecommunications businesses and/or which may negotiate access to assets on a case by case basis and/or may not currently offer any such access. The assets are wide ranging in nature and include access to buildings roof tops, ducting, street furniture (for example, street lighting) and land. The State entities responsible for these assets may be unaware of their full potential use to telecommunications services providers. As a consequence, negotiating access to and use of this group of assets can be more difficult depending on the entity and asset in question.

An indicative inventory of identified State assets is set out in Appendix V.

Access to State Assets.

Some members of the Working Group noted that it is in relation to the second group, where State assets are not fully commercialised, that the greatest benefit might accrue from targeted Government intervention.

Greater contractual flexibility in negotiating access to assets or services currently provided by State entities, particularly in rural areas, was sought by some members of the Working Group.

An additional view expressed by some members was that State entities' participation in the telecommunications sector can impact negatively on future private sector investment plans. This could arise, in particular, where a State entity has not settled its future capital investment programme in any geographic region. The uncertainty arising can increase the risk for other potential investors which may impact negatively on private sector

investment proposals in the same geographic region. In accordance with this view, State entities should be restricted to concentrating investment in those areas where there is market failure.

DCENR notes that commercial State companies are mandated to act commercially, similar to that of private sector participants, and that they bring added competition to the market. State investment in areas of market failure usually involves direct Exchequer funding to support the rollout of infrastructure or services which cannot be delivered commercially through the private or commercial semi-State sector.

Potential Use of State Assets

The Working Group agreed that State assets can be divided broadly into two groups; (i) active assets which include telecommunications infrastructure or services accessible to other service providers, and (ii) indirect or passive assets which can facilitate telecommunications infrastructure rollout by others. Active State assets include:

- telecommunications infrastructure;
- fibre; and
- telecommunications masts.

It was broadly agreed that a further number of key passive State assets could be utilised in the rollout of high speed broadband. The most valuable passive assets identified to facilitate such rollout include:

- ducts;
- buildings;
- land; and
- street furniture.

The key Government Departments with direct or indirect stewardship over these assets are:

- the Department of Transport, Tourism and Sport (CIÉ, road ducting);
- the Department of the Environment, Community and Local Government (Local Authority infrastructure and buildings);
- the OPW (public buildings);
- the Department of Agriculture, Food and the Marine (Coillte);

- the Department of Communications, Energy and Natural Resources (Bord na Móna, ESB, BGÉ, MANs).

It was also noted that opportunities should be explored for the leveraging of other infrastructure development programmes to secure synergies, for example water metering and planned upgrades of street lighting, other civil works, access sharing or meeting communications requirements.

In terms of future investment, the rollout of high speed broadband in urban and rural areas will require considerable infrastructure build-out including:

- approximately 2,000 new sites for antenna and associated mobile and wireless infrastructure;
- power connections to all new sites required for high speed broadband;
- ducting to provide fibre backhaul from base stations; and
- access to homes via existing or new ducting.

The Working Group noted that, in the right circumstances, access to and use of State assets will lower the costs of infrastructure deployment thereby allowing investment and the rollout of high speed broadband to happen more expediently and consumers to have access to high speed services sooner.

Issues Identified

The Working Group considered that impediments to the use of State assets are typically most challenging where the State entity does not have a structured commercial telecommunications service business in place.

In the case of some State entities, whether commercial or non-commercial, access to identified assets may not be possible or may be delayed or unduly restricted under current arrangements. The reasons are multifold and include:

- the entity may not have any designated person or unit to deal with access requests;
- the entity may not have the relevant expertise to process a request in the most effective and efficient manner; and
- there may be operational concerns, conflicting demands and health and safety issues which act as impediments.

It was also suggested that access to State assets in more remote locations will be particularly important because of the heavy reliance on wireless solutions in those areas.

In the case of State companies currently providing access and services many now have dedicated telecommunications businesses and some are actively providing services in the telecommunications market. Several such companies use existing assets (such as ducts and masts) for the deployment of telecommunications infrastructure (such as ESB Telecoms fibre-wrap around the electricity transmission infrastructure, BGÉ fibre ducting alongside gas pipelines). Some members of the Working Group, who avail of such services, would prefer greater flexibility in negotiating access to those assets.

The Working Group is agreed that a clear policy statement by Government in relation to the activities of commercial and non commercial State entities impacting on the rollout of high speed broadband would be desirable.

Industry Recommendations/Requirements:

State assets can have a significant role in accelerating the rollout of high speed broadband. The use of these assets should be maximised, where practicable, to create an environment that supports current and future investment. Accordingly, the following recommendations have been identified by the Working Group and noted by the Taskforce:

- In order to inform Government policy in this area, industry should prepare a paper identifying key gaps in infrastructure provision with a view to establishing where State owned assets and services might facilitate the closing of those gaps.
- The Government should set out a clear policy position on the operation of commercial State companies and their assets / services in the telecommunications market. This policy should:
  - consider issues such as open access where possible, competition benefits, market based pricing and engagement with private sector operators;
  - encourage terms and conditions which ensure access to assets is transparent and proportionate; and
  - confirm that State entities can negotiate access to State assets and services on a basis which is fair and reasonable to both parties having due regard for the commercial mandate of companies, where applicable.
- The Government should also set out a clear policy position which underlines the importance of other non commercial State assets which may not currently be available to market participants but which have potential to benefit the development of the market, particularly in areas where the commercial investment case is challenging. This policy should identify open, fair and transparent processes, including pricing, by which these assets can be brought to market in an environment that supports current and future commercial investment.
- In all cases, access to State owned assets and services should be subject to normal competition and EU State Aid rules, statutory obligations and be consistent with Government policy on the rollout of high speed broadband.

- Consideration should be given to amending legislation where appropriate to enable State entities (for example as was the case for the NRA) which are not currently active in the market place to make infrastructure available to the telecommunications sector for the purpose of rolling out services and in line with the Government policy objectives as proposed above.
- Government policy and relevant legislation should mandate sectoral regulators to take account of Government policy to accelerate the rollout of, and investment in, high speed broadband in the regulation of related markets.
- The relevant State entities and their parent Departments should provide a single point of contact for telecommunications operators seeking to access assets or services which are, or have the potential to be, useful to the telecommunications sector. These contacts should be available publicly to operators through the relevant websites as well as through the website of DCENR.
- DCENR should, where possible, assist the relevant State entities in developing policies to deal with industry requests for use of their assets. This assistance could include, *inter alia,* the provision of standard contract templates and technical advice. DCENR should also work with the entities in question and with industry to assess progress periodically in this area and report to Government on developments.

Members of the Next Generation Broadband Taskforce

Meeting with the European Commission and the European Investment Bank

Sitting, left to right: Secretary General, Mr. Aidan Dunning, Minister of State, Mr. Fergus O'Dowd, T.D., Minister Pat Rabbitte, T.D., Mr. Anthony Whelan (Chef de Cabinet to Commissioner Kroes, European Commission), Ms. Anna Krzyzanowska (DG Policy Coordination & Strategy, European Commission).

Standing, left to right: Mr. Ken Spratt, DCENR, Secretary to the NGBT, Mr. John Shine, Deputy CEO ESB, Ms. Katherine Licken, Assistant Secretary General, Mr. Seán Bolger, CEO Imagine, Ms. Dana Strong, CEO UPC Ireland, Mr. Conal Henry, CEO eNet, Mr. Jeroen Hoencamp, CEO Vodafone Ireland, Mr. Alex Chisholm, Chairman, Commission for Communications Regulation (Observer), Mr. Hristo Stoykov (European Investment Bank), Mr. Robert Finnegan, CEO Hutchison 3G Ireland, Mr. Colm O'Neill, CEO BT Ireland, Mr. Colm Piercy, CEO Digiweb, Mr. Paul Donovan, CEO eircom/meteor.

The following people were not present for the meeting, which took place on 24 October 2011: Mr. Stephen Shurrock, CEO of O2 Telefonica Ireland, Mr. Adrian Devitt, Forfás Observer and Mr. Tommy McCabe, TIF Observer.

In November 2011, Mr. Tony Hanway replaced Mr. Shurrock on the NGBT (as CEO at O2 Telefonica Ireland). Additionally, Mr. Torlach Denihan replaced Mr. Tommy McCabe as the TIF Observer.

The five Working Groups reporting to the Taskforce were chaired by officials from the Department of Communications, Energy and Natural Resources. Membership of each Group is detailed below.

Targets – 3; BT; eircom; e|net; ESB; Imagine; Telefonica O2; UPC; Vodafone.

Demand Stimulation: BT; Telefonica O2; UPC; Vodafone.

Infrastructure and Barrier Removal: BT; the City and County Managers Association (CCMA); the Department of Transport, Tourism and Sport (DTTS); the Department of the Environment, Community and Local Government (DECLG); Digiweb; eircom; ESB; Local Government Computer Services Computer Board (LGCSB); Meteor; Telefonica O2; UPC; Vodafone.

Spectrum Policy: 3; Digiweb; Imagine; eircom/Meteor; ESB Telecom; Telefonica O2; UPC; Vodafone.

State Entities and Assets: 3; BT; eircom; e|net; ESB; Imagine; Telefonica O2; UPC and Vodafone.

Appendices

Working Group on Targets - Appendix I

Potential Platforms to Deliver High Speed Broadband

Fibre to the Cabinet (FTTC) – speeds of 40Mbps to 100Mbps

Involves fibre from the exchange/node to the street cabinet with copper and Very-high-bit-rate digital subscriber line (VDSL) providing the link from the cabinet to the premises. Using VDSL2 technology for the final link to the premises, speeds of 40Mbps to 100Mbps are possible. These speeds may be affected by the distance to the cabinet.

Fibre to the premises (FTTP) – speeds of 70Mbps to 100Mbps

Involves fibre from the exchange/node to the premises. The speed available to the user is dependent on the degree to which bandwidth is shared or whether each premise is serviced by a point to point connection.

Speeds over fibre can be symmetrical which means that the download and upload speeds are the same.

In Ireland fibre trials (FTTx) are being undertaken by eircom at present with a view to commencing a programme of fibre rollout in 2012.

Cable – speeds of 25Mbps to 100Mbps

Modern cable connections involve a backhaul fibre ring from the exchange to the street cabinet with a coaxial cable providing the link to the customer's premise. Utilising Data Over Cable Service Interface Specification (DOCSIS) 3.0 technology, cable is capable of providing speeds in excess of 100Mbps unaffected by distance to the cabinet or exchange.

Cable technology is generally deployed based on asymmetrical connectivity. Upload speeds can range from 9Mbps to in excess of 120Mbps and download speeds from 38Mbps to 160Mbps depending on the version of DOCSIS employed. Recent trials have showcased speeds up to 1.37G/bits per second.

In Ireland, UPC is the main provider of DOCSIS3 type cable services to the home.

Asymmetric Digital Subscriber Line – speeds of up to 24Mbps

Digital Subscriber Lines (DSL) permits the delivery of broadband and voice services over current copper lines to customers' premises. Local loop unbundling permits a variety of service providers to provide alternative service level options to individual customers over the fixed line network.

DSL can be symmetrical but typically is asymmetrical with higher download speeds. Speeds experienced by the user also depend on the distance of the connection from the exchange. Upload speeds of approximately 1Mbps and download speeds of up to 24Mbps are possible depending on distance from the exchange and the number of users online at a given time.

Fixed Wireless – speeds of 1Mbps to 100Mbps

Fixed wireless involves the use of radio spectrum to deliver broadband from one fixed location (usually using antenna on a mast or building) to another within a specific geographical range (currently approximately 8km). It is directed at individual premises within a cell and does not move with the user or device, unlike mobile broadband. Technologies such as WiMAX, Long Term Evolution (LTE), and DOCSIS technologies can offer speeds of up to 100Mbps. LTE and DOCSIS4 are emerging new technologies in this area which enable higher speeds to be deployed.

Fixed wireless is generally deployed using asymmetrical technology. Upload speeds of 6Mbps to 50Mbps and download speeds of 14Mbps to 100Mbps are possible depending on the technology employed.

In Ireland fixed wireless broadband services are provided by a range of Internet service providers.

Wireless Mobile / Mobile Broadband – speeds of up to 30Mbps

Wireless Mobile, or mobile broadband, involves the use of radio spectrum to deliver broadband that can move with the device in the same way that mobile phone voice services travel across cells. This broadband is delivered from a fixed location (usually antenna on a mast or building) across a geographical range called a cell. The size of the cell can range from 500m to 30kms. The user can generally access this broadband connection at any location within the range (subject to line of sight).

Mobile broadband is asymmetrical and speeds experienced by users depend on the number of people online in a cell at a given time and the users proximity to the antenna

being used to transmit the signal. In practice, users can expect to experience approximately 10% of the peak speed available in a given cell. For example, in the comparable Government's National Broadband Scheme speeds of 14Mbps are transmitted by the base stations but actual user experience may vary significantly depending on the number of people using the system in a location at any given time.

In Ireland, mobile broadband services are provided by a range of telecommunications companies including all of those which provide mobile voice services.

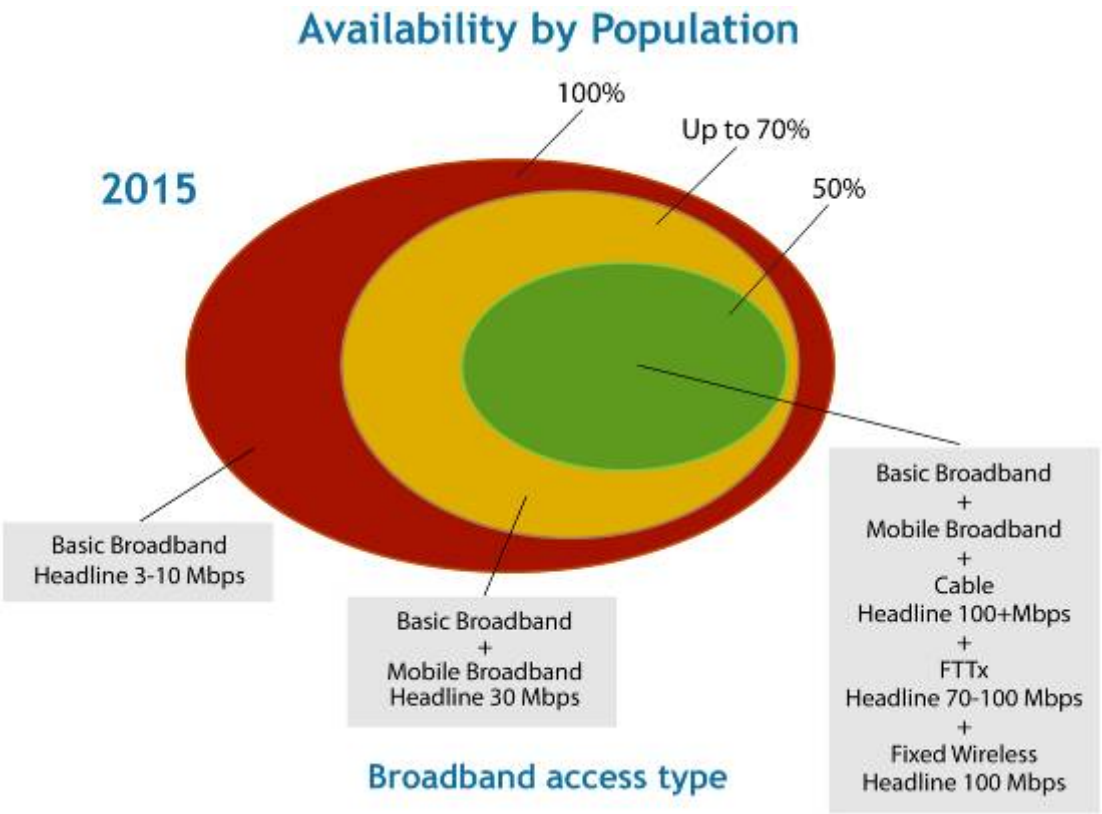
Satellite – speeds of up to 10Mbps

Satellite based broadband services solutions offer universal access within the footprint of the orbiting satellite provider using wireless links to ground based mobile and fixed terminals. They are particularly useful in serving remote areas unserved by DSL, cable and mobile broadband. Some broadband providers in Ireland are currently marketing satellite based broadband services offering speeds up to 10 Mbps.

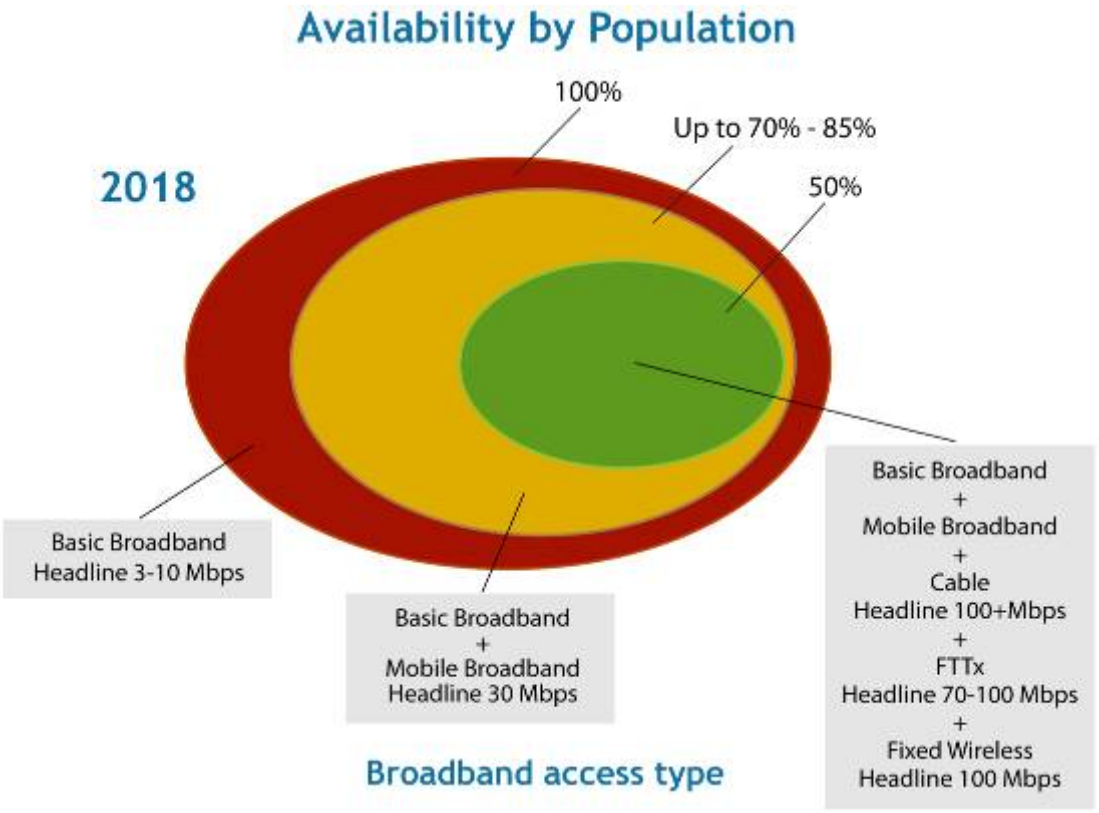
Working Group on Targets - Appendix II

Industry Investment Trajectory and its Impact on High Speed Broadband Penetration

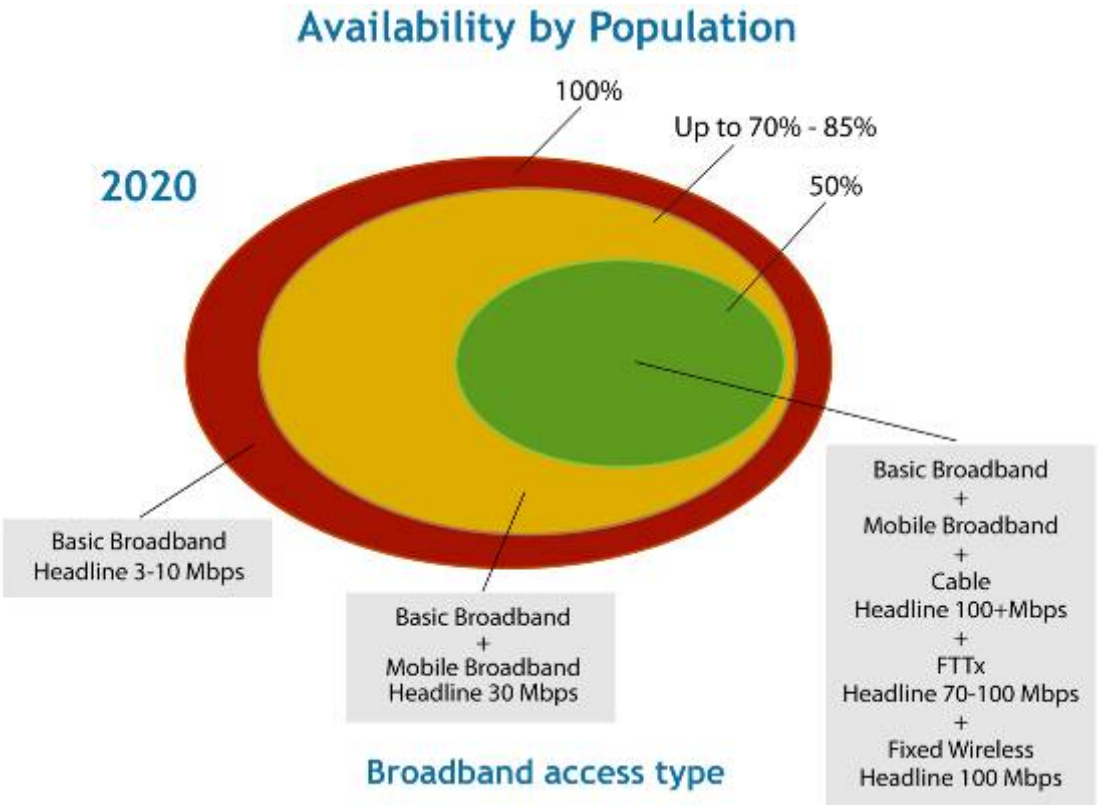
Date	EU Targets	Industry Trajectory.
2013	100% basic broadband	Deliverable 2011/2012 - Industry and Government Intervention
2015	No EU target for 2015	Cable: 100Mbps + available to 700,000 homes (41% population). Fibre: 70Mbps to 100Mbps available to 1.04 million premises (over 50% of population). Mobile: Max 30 Mbps (70% population) 4G Fixed Wireless: Up to 100Mbps in urban and outside urban areas.



2018	No EU target for 2018	Cable: 100Mbps available to 730,000 homes Fibre: 70Mbps to 100Mbps available to 1.04 million premises Mobile: Max 30 Mbps to 85% population 4G fixed Wireless: Up to 100Mbps in urban and outside urban areas.



2020	100% coverage at speeds of in excess of 30Mbps 50% household take-up in excess of 100Mbps	Cable: 100Mbps + available to 745,000 homes Fibre: 70Mbps to 100 Mbps available to 1.04m premises Mobile: Max 30Mbps to 85% of population 4G fixed wireless: Up to 100Mbps in urban and outside urban areas. 70% to 85% coverage at speeds of or exceeding 30Mbps will be met 50% of households subscribing to 100Mbps is challenging



Working Group on Targets - Appendix III

Population comparisons

	Fixed bb /100 PERSONS.[31]	Urban population % of all[32]	Pop/Km2[33]
Denmark	35-40	>85%	129
Netherlands	35-40	>80%	400
Switzerland	35-40	>70%	188
Germany	30-35	>70%	229
Sweden	30-35	>80%	21
South Korea	30-35	>80%	505
UK	30-35	>90%	253
Canada	25-30	>80%	3
New Zealand	25-30	>85%	16
Japan	25-30	>65%	337
USA	25-30	>80%	32
Japan	25-30	>65%	337
Finland	25-30	>60%	16
Australia	20-25	>85%	3
Ireland	**20-25**	**>60%**	**63**
Hungary	15-20	>65%	108

[31] Forfas Ireland's Advanced Broadband Performance and Policy Priorities (2011)
[32] As above.
[33] http://www.worldatlas.com/aatlas/populations/ctypopls.htm

Working Group on Infrastructure Barrier Removal - Appendix VI

Industry Proposals

The telecommunications industry delegates on the Working Group have clearly defined below a set of desired outcomes in relation to mobile infrastructure and road opening to support the broadband targets identified by the Working Group on Targets. The purpose of these changes is to remove barriers to investment, and promote and allow the efficient use of scarce capital funds by the telecommunications industry in Ireland.

The telecommunications industry delegates are aware that these requirements are significant in scale and scope and are committed to working with the Working Group to achieve the best possible outcome. It is recognised that these issues can only be addressed with cross-departmental and City and County Managers' support and involvement. A reasonable time for the conclusion of consultation, solution design and implementation for these items would be 18 months.

Mobile Infrastructure

No temporary planning permissions for telecommunications masts, except in exceptional circumstances.

Extend planning exemption to include standardised design, e.g. 15m pole type mast, within specific visual amenity and sitting guidelines (reference similar exemptions in England and Wales).

A new standard Licensing/Wayleave system to use Public and Local Government property for approved standardised mast design e.g. use of space at roadsides and junctions.

Extend planning exemptions for added antenna to an existing tower to the structural capacity of the tower having regard to latest scientific and technical guidelines. The planning permission process generally restricts the number/size of antennae on a tower to some maximum level at present; additional antennae requiring an operator to seek additional planning permission.

Time for decision from An Bord Pleanála to be consistent and ideally within 8 weeks.

Guidelines on mast sharing should take account of exceptions and allow for alternative masts to be required e.g. for commercial reasons to avoid monopoly supply in an area reducing investment.

Removal of exclusion zones having regard to latest scientific and technical guidelines (Industry understands the complexity of this request as it is contained within county plans.)

Ideally telecommunications masts should be exempt from planning contributions. Failing that a standard fee should be set per structure with no fee for additional antennae e.g. €1,000 per mast.

No individual bonds for mast removal; an agreed Industry-wide or individual company national bond might be an option.

Road Openings

A single national online system to be implemented for consent applications and approval.

A single standard €150 administration charge for all applications. No long term damage charges to be levied.

No individual bond or deposit requirements; an agreed Industry-wide or individual company national bond might be an option.

SLA for response to all consents to be set at 5 working days. Or, a tiered system to be implemented which takes account of the complexity of major works requiring more time and the urgency of emergency works.

A defined target for of all consents granted within 4 weeks to be set at 75% initially with an agreed timeline e.g. 6 months to reach 99%. Or, a tiered system to take account of the complexity of major works and the urgency of emergency to be implemented.

A standard reinstatement regime to be defined for all areas.

Clear reasons to be provided for any consent rejections. An appeal mechanism for consent rejections and consent conditions to be implemented between the Local Authorities and operators.

Working Group on State Entities and Assets – Appendix V

Indicative Inventory of State Assets

Public Entity	Useful Infrastructure	Commercial or Non- commercial	Has existing telecoms related business
Bord Gais – (Aurora)	Dark fibre ducts along gas pipes	Commercial	Yes
Coillte	Antenna Sites	Commercial	Yes
ESB – (ESB – Telecoms)	Electricity network – sites, structures and conduits	Commercial	Yes
Iarnrod Eireann	Railway lines – (BT have fibre along the path)	Commercial	No[34]
Local Authorities	Local Authority owned infrastructure – ducts, site locations, Structures (e.g. streetlamps)	Non-commercial	No
National Roads Authority (NRA)	Road ducting on national roads	Non-commercial	No[35]
Office of Public Works (OPW)	Structures for masts (e.g. buildings, masts)	Non-commercial	No[36]
Railway Procurement Agency (RPA)	Laying fibre along RPA owned infrastructure	Commercial	No

[34] BT provide wholesale managed services over fibre laid along Iarnrod Eireann's rail network.

[35] Legislation is in place allowing the NRA grant access to its ducts in national roads. See Communications Regulation (Premium Rate Services and Electronic Communications Infrastructure) Act 2010.

[36] The OPW has concluded commercial arrangements with operators to allow some State infrastructure be used to facilitate telecommunications infrastructure rollout.

RTE Transmission Networks Limited (RT NL)	RTE sites and mast structures	Commercial	Yes
Waterways Ireland	Tow paths along canals	Commercial[37]	No[38]

[37] Waterways Ireland is a commercial cross-border body.
[38] Waterways Ireland has entered into a commercial arrangement with a telecommunications operator in which it has allowed tow paths along some canals to be used as conduits for dark fibre. Waterways Ireland does not operate a telecommunications business

Glossary of Terms

BCG:	Boston Consultancy Group
BGE:	Bord Gais Éireann
CIÉ:	Córas Iompair Éireann
CMOD:	Centre for Management and Organisational Development
ComReg:	Commission for Communications Regulation
CCMA:	City and County Managers' Association
DAE:	Digital Agenda for Europe
DCENR:	Department of Communications, Energy and Natural Resources
DECLG:	Department of the Environment, Community and Local Government
DOCSIS:	Data Over Cable Service Interface Specification
DSL:	Digital Subscriber Line
DSP:	Department of Social Protection
DTTS:	Department of Transport, Tourism and Sport
ESB:	Electricity Supply Board
ESRI:	Economic and Social Research Institute
EU:	European Union
FTTC:	Fibre To The Cabinet
FTTH:	Fibre To The Home
Gbps:	Gigabit per second
GIBO:	Getting Irish Business Online initiative
GPON:	Gigabit-capable Passive Optical Networks

ICT:	Information and Communications Technology
IFA:	Irish Farmers Association
ISME:	Irish Small and Medium Enterprise Association
LTE:	Long term evolution
LGCSB:	Local Government and Computer Services Board
MANs:	Metropolitan Area Networks
Mbps:	Megabits per second
NGB:	Next generation or high speed broadband
NRA:	National Roads Authority
PDCs:	Planning and Development Contributions
RSPP:	Radio Spectrum Policy Programme
RTÉ:	Raidió Teilifís Éireann
SFA:	Small Firms Association
SME:	Small and Medium Enterprise
TIF:	Telecommunications and Internet Federation
TTI:	Test and Trial Ireland
VDSL:	Very-high-bit-rate Digital Subscriber Line
WHO:	World Health Organisation