



Key Issues in Relation to Broadband Infrastructure

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1. Introduction and Background

In this submission the Western Development Commission (WDC) sets out briefly what we believe to be the key issues in relation to broadband infrastructure. The WDC is a statutory body whose primary purpose is to promote, foster and encourage economic and social development in the Western Region (counties Donegal, Sligo, Leitrim, Mayo, Galway, Roscommon and Clare).

The WDC works in co-operation with national, regional and local bodies involved in western development to:

- review and monitor development policy and its implementation in the region, identify any changes and adjustments needed and make appropriate proposals to government departments and agencies;
- identify and implement development initiatives, or facilitate their implementation by other relevant organisations; and
- assist businesses, social enterprises and projects including infrastructure provision by managing the WDC Investment Fund amounting to €34m of exchequer finding.

As part of its remit, and of its strategic aim of contributing to the creation of a high quality economic and social environment in the Western Region, the WDC has been active in articulating the key broadband issues at regional and national level.

In *The State of the West*, published in 2001, we pointed out the impact of deregulation of the telecommunications industry on the provision of telecommunications infrastructure. We argued that, if free market principles continued to determine rollout, then profit-driven providers would continue to target areas with high-density business and residential usage, leaving much of the Western Region with very limited broadband provision. Direct government intervention to address market failure in areas of more scattered population was essential.

In December 2002, in *Update on Telecommunications in the Western Region*, the WDC concluded that although there had been considerable government action to address the problems of market failure (including the Metropolitan Area Networks (MANs) programme and the strategic commitment to securing widespread availability of affordable, broadband infrastructure and services within three years), areas outside of larger centres had little coverage. Sixteen key recommendations in the report were aimed at accelerating rollout to the regions.

The WDC was represented on the Information Society Commission (ISC)¹ and chaired the Broadband Working Group. This involved extensive consultations with key interests in the public and private sectors in relation to broadband issues. At the end of 2003, the

¹ The Information Society Commission was an advisory body to the Taoiseach from 2001-2004. See www.ISC.ie

ISC produced a strategy document entitled *Ireland's Broadband Future* which provided a thorough analysis of the significance of the availability of broadband infrastructure for Ireland's economic growth and competitiveness, including highlighting the role of broadband in regional development.

This report included case studies from firms in the regions which showed the very real imbalances that exist in access to broadband services and the huge cost differentials which affect regions' competitiveness and act as a brake on economic development. Economic analysis of the benefits of broadband showed that investment in regional broadband infrastructure is cost effective, and can potentially overcome many of the problems that are associated with unbalanced regional growth. Ten key recommendations to Government were contained in the report. Several actions to address the issues raised were announced by the Minister at its publication.

The ISC, in late 2004, in a further input to Government entitled *21st Century Infrastructure*, again drew attention to the continuing gap in broadband access between larger towns and smaller centres. Significant advances had been made in rollout nationally and in larger regional centres in 2004. These included the completion of the MANs and the appointment of E-net to run them; the commitment to further rollout to all towns over 1,500 population; a proactive approach to competitive pricing by Comreg; and the initiation of the Schools Broadband Programme. Nevertheless, at the time Ireland's broadband penetration rate was only one-fifth of the average level in competitor countries, and our international ranking improved by only one place during 2004. Relatively little progress had been made in delivering affordable broadband to smaller centres and rural areas.

The ISC urged Government to restate its commitment to seeing Ireland within the top decile of OECD countries for broadband, involving widespread availability of service speeds of 5MB/s to the home, and substantially higher for business users. It recommended continued public funding and support to assist in broadband deployment and to stimulate competition.

In 2005, the WDC was again proactive on the broadband issue both at national and regional level. As a result of a request from the Minister for Community, Rural and Gaeltacht Affairs, the WDC actively promoted the County and Group Broadband Scheme (CGBS) in the Western Region. This scheme was initiated by the Department of Communications to address broadband needs in areas outside of larger towns and cities. The scheme is co-ordinated by regional and local authorities.

Of the 119 projects approved nationally under the CGBS at the end of 2005, 43 (36%) are located in the seven western counties. The size and number of communities included in the schemes varies considerably and the schemes approved include some inter-county partnerships. By the end of the year only a minority of these were actually up and running, with the remainder due to come on stream in early 2006.

The WDC was represented on the Steering Committee for *Benchmarking Ireland's Broadband Performance* and welcomes its publication. We also welcome this opportunity to present a short submission as requested in the Report and hope that it contributes to advancing the debate.

2. The WDC's Response to the Questions in the Forfás Benchmarking Report

Increasing Broadband Availability

Given Ireland's spatial patterns, what is the most effective way(s) to accelerate the rollout of broadband services to all?

A National Strategy

Given the competitiveness and productivity issues currently facing the Irish economy, it is essential that the continued deterioration in Ireland's position identified in the Benchmarking Report is reversed. In 2005, Ireland's broadband penetration rate was roughly one-quarter the average level in competitor countries, but Ireland's ranking had fallen by one place from 18th to 19th place out of 21 countries – a return to its 2003 position. The increase in supply during 2005 has been mainly via ADSL technology (over existing telephone lines) but the services in Ireland provide relatively low speeds compared to other European countries. The Government target to be within the top decile of OECD countries for broadband services by mid-2005 was not reached. Being in the top decile would mean widespread availability of service speeds of 5MB/s to the home and substantially higher for business users, and Ireland is a long way from achieving this at present.

Particularly worrying in the benchmarking report is Ireland's poor ranking on the Small Business Broadband Innovation Index (a measure of the quality of broadband service), where Ireland is positioned below newer EU states such as Estonia, Lithuania, Slovenia and Slovakia. To achieve a significant improvement in Ireland's performance in international rankings, the WDC believes that Government needs to take a leadership role by regarding broadband infrastructure as a **basic utility** similar to energy, water or voice telephony, and by putting in place a clear strategy that sets out a new set of goals for universal broadband rollout and a time scale for its achievement.

The analysis in the Benchmarking Report indicates clearly why other countries have outstripped Ireland in broadband rankings. Thus, the strategy needs to take account of the experiences in comparator countries and address the issues in an integrated way. This would involve identifying each element of the strategy as a set of inputs and outputs from the private, public, and voluntary/NGO sectors in key areas of rollout, competition, ICT literacy, education and demand.

The national strategy should target the needs of different market segments – large businesses, SMEs, micro-businesses and domestic users. It should include both shorter-term targets for first generation broadband services and provision for migration to the progressively higher bandwidths that will be necessary to support the next generation of

innovative, interactive content and applications, including the delivery of enhanced public services.

To ensure widespread engagement with this strategy, we would urge the appointment of a relatively small advisory group that would have the independence and standing necessary to engage all key stakeholders, while equipped with appropriate and effective linkages to a responsive policy-making environment. This group should act as a liaison and stimulus between government and stakeholders while eschewing partisan representational activities.

Address the Spatial Divide

The spatial digital divide is associated with a market in broadband rollout where the customer base or spending power of customers in certain locations is insufficient to attract private investment. Inability to access broadband seriously affects the competitiveness of firms in regional locations. Evidence from the Benchmarking Study shows a serious spatial divide based on access to broadband. Figure 10 illustrates clearly that rural coverage from DSL, the dominant technology platform currently in use to deliver broadband in Ireland, is second lowest in the EU-15 at just 38% of the population. Even though DSL has inherent distance limitations, much more sparsely populated countries such as Sweden and Finland have levels of coverage that are twice as high.

Even where DSL is available, business customers in particular experience difficulties with the quality of service such as the absence of service level agreements, lack of support for voice over internet (VoIP), asymmetric services, and general unreliability. There is also a concern as to whether DSL technology can deliver sufficient capacity over the longer term. Thus, the WDC believes it is important that there is investment in various technology platforms (fibre, wireless, cable, satellite, etc) both to maximize competition, and to avoid over-dependence on any one technology platform.

The gap in DSL provision in smaller centres and in rural areas is not made up by the greater availability of broadband based on other technology platforms. Various government sponsored broadband initiatives, such as those funded under Clár and the CGBS are based almost entirely on wireless or satellite technology. Experiences with such schemes to date have thrown up a set of difficulties. These include

- access to backhaul;
- lack of competition results in high backhaul charges which are distance-dependent, or based on minimum prices and quantities rather than linked to the numbers of customers carried, thus putting more remote areas at a cost disadvantage;
- technical issues with delivery e.g. siting of masts, line of sight for wireless systems, high contention ratios, etc;
- the long term reliability of some providers;
- difficulty of linking directly with the schools broadband programme;
- leadership and technical competence in communities;
- the cost of technical surveys.

Resolving these difficulties requires a concerted approach that addresses their causes which are rooted variously in the market, the technical limitations of wireless and satellite technology platforms, and the assumption that a basic utility as technically complex as broadband telecommunications can be delivered on a partly community/voluntary basis.

The WDC believes that given the limited progress to date, the only realistic way of addressing the spatial divide is to make a strategic commitment to 100% broadband coverage (as in Northern Ireland) and then proceed to put in place the technical means to deliver it through private and public investment. This would mean, in effect, working outwards from the larger centres, utilising the MANs and, where possible, state-owned infrastructure to address the backhaul problem. It may mean the construction of additional backbone links to ensure complete connectivity. However, if it is accepted that broadband is a basic utility, the amount of public monies involved can be seen in comparative terms as quite modest. The cost in terms of loss of regional competitiveness, the effect on location decisions of firms and on the productivity of existing firms, and the consequent negative impact on regional development could potentially be immeasurably greater.

Increasing Competition in the Market Place

How can Ireland accelerate the effective implementation of local loop unbundling to provide competition in the DSL market?

How can Ireland optimise infrastructure in state ownership to increase availability and choice of broadband services?

It is clear from the experience in other countries, that increased competition in the market place is one of the keys to accelerating broadband provision. The WDC accepts that local loop unbundling can certainly stimulate more competitive prices and services, and has advocated the need for this. How this is achieved is essentially a regulatory matter. Success in LLU in other European countries has varied considerably, as shown in Figure 11. The WDC would therefore be concerned at undue emphasis on it as a solution to the competition problem. Moreover, it is associated with DSL and copper-based technology, which may ultimately be overtaken by other technology platforms (e.g. fibre, WiMax) as a means of delivering much higher capacity broadband.

The WDC also agrees with the need to optimise the use of infrastructure in state ownership, particularly as a means of providing competitively priced backhaul for MANs and wireless networks in rural areas. We consider that this should be one of the key objectives of the national strategy outlined above.

Creating Awareness to Increase Demand

How can Ireland best use experiences/initiatives in leading countries to create awareness and drive demand?

Are there local initiatives that have been successful in some regions in Ireland that can be used as a template for other parts of the country?

Clearly, demand for services will drive private sector investment in broadband technologies and services. The Broadband Benchmarking Study points to the need to stimulate awareness among SMEs and residential users. The WDC believes that demand stimulation should therefore be part of any broadband delivery strategy². We also are aware of considerable pent-up demand in the Western Region in areas that currently do not have access.

A fundamental factor in stimulating demand is the provision of lucid and up to date information – such as maps and impartial technical and market information for businesses and home users. This could be provided by the DCMNR as suggested in their recent Broadband Demand Report.

Demand for broadband is related to knowledge of and interest in applications of ICT, so demonstrations of applications are important in stimulating interest. It is important that demand initiatives be directed at, and tailored to, particular market segments.

Locally based ICT initiatives which combine demonstrations, training and use of IT equipment at local level will encourage adoption of ICT and demand for broadband by local firms and rural businesses, and enable them to benefit from productivity gains from e-business and e-commerce.

To maximise their versatility and penetration into rural areas, such initiatives could be based on a well-equipped ‘mobile facility’ which could efficiently deliver demonstrations and skill training and then move to another location³. Since all primary schools in Ireland are scheduled to have broadband technology by March 2006, synergies with this programme should be possible until adoption rates in businesses and homes mean that this is no longer required. Complementarities with other programmes supported by the EU Structural Funds and i2010 should also be possible.

A study of the uptake of information technology in Dublin⁴ showed that there are significant ‘neighbourhood effects’ in regard to e-exclusion but also potentially positive impacts from concentration of effort in specific communities by creating networks and communities of knowledge of digital technologies. Dublin Institute of Technology (DIT)

² The factors which drive demand for broadband were addressed in some detail in the ISC publication *Ireland’s Broadband Future* with case study illustrations.

³ One example of this would be the Computer Club House project sponsored by the Intel Corporation. Another example is the BT Broadband Studio see www.btireland.ie/broadband

⁴ See Haase, T and J Pratschke *Digital Divide: An Analysis of the Uptake of Information Technology in the Dublin Region*, Dublin Employment Pact 2003.

is pioneering digital outreach initiatives to deprived communities in Dublin in partnership with the private sector. The model involved could be applied more widely.⁵

The Broadband Initiative for Schools and other initiatives from the private sector suggest that there might be scope for the introduction of projects which stimulate demand for broadband and which might attract significant private sector sponsorship. Serious consideration should also be given to providing laptops to schoolchildren (see New Zealand case study in *Ireland's Broadband Future*).

Greater attention is needed to the role that on-line service delivery in the public sector could play in improving PC literacy and driving demand. This role acquires a new significance in the context of the Government's decentralisation proposals. Public sector procurement practices – including within the key health and education sectors – should also be part of the national strategy for broadband provision.

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⁵ For more information see http://www.dit.ie/DIT/communitylinks/digital_community/