Date: Wednesday 23 January 2002

Time: 2.00pm to 4.50pm

Venue: Committee Room 1, National Assembly Building

Cyflwyniad gan Yr Athro Mike Tedd

Cyhoeddir y papur hwn yn yr iaith y'i derbyniwyd gan Gynulliad Cenedlaethol Cymru.

Review of rural information and communications technology

Advanced Telecommunications in Rural Wales

This short note is intended to summarise the position with respect to advanced telecommunications networks in rural Wales, and the actions I believe are necessary.

Introduction

Telecommunications infrastructure is becoming more and more important. Advanced services are needed by more and more businesses (e.g. call centres, information-rich enterprises, distributed working, consultants). Many businesses are starting to rely on the Internet for marketing and sales. Their employees will want modern services at home, for entertainment, education etc. The availability of advanced services will be important for attracting and maintaining investment.

A range of services is needed. Staring with ordinary telephony (POTS), we now need digital telephony (ISDN) and ubiquitous mobile telephony. SMEs will need broadband services such as ADSL and leased lines. Larger organisations will need advanced data services such as ATM, SMDS, Frame Relay, bulk IP and VPNs. In a few years broadband services will become the norm to the home (notably ADSL).

The Current Position

The situation in Wales is much better than one might guess:

- All BT exchanges in Wales are now digital, served by high capacity fibre-optic trunks (this is partly due to the Llwybr.Pathway project, as are the other items below marked with a '*').
- All exchanges can now offer ISDN lines*.
- BT offers advanced services at 'local rates' everywhere in Wales*.
- ADSL is being rolled out in ten rural towns* as well as in much of South Wales.

- There are the first stirrings of competition in Rural Wales; MLL Telecom is using microwave transmission to serve high-demand customers in some areas*.
- All four mobile telephone operators are active throughout Wales
- BT is constrained by OFTEL to charge a standard rate for its services anywhere in the UK. This is very important; it means that the effects of competition are felt in all areas.

There are still many problems though:

- BT has an effective monopoly of infrastructure in most of Wales. This has cost implications for users.
- The quality of telephone lines in some parts of Wales is not very good.
- There is no visible progress with the North Wales 'cable' franchise.
- Mobile telephony is patchy in rural Wales (but improving). The next generation '3G' will be slow to roll out in Wales.
- There were no bidders for the Welsh licences in the recent Broadband Fixed Radio Access auction.
- Some services, notably ISDN and ADSL, have a range limit, perhaps 3 to 5km from the exchange.

The Llwybr.Pathway Project

Strand 6 of this project involved £1.5m ERDF funds and £1.5m from the WDA which catalysed a further £3m investment by BT, to deploy a range of enhancements to the telecommunications infrastructure in the Objective 5b area of Wales.

This included upgrades to 42 rural exchanges, for ISDN etc, Multi-Service Platforms (MSPs) in Aberystwyth, Bangor and Carmarthen, to support advanced high-speed data services, ADSL services for Newtown, Llandudno, Bangor, Carmarthen, Caernarfon, Aberystwyth, Pembroke, Haverfordwest, Denbigh and Holyhead.

Telecommunications in the future

We will need ever more advanced infrastructure as demands grow and develop. In disadvantaged areas like rural Wales, public investment will be needed to ensure the rollout of advance infrastructure.

Note that *infrastructure* should be distinguished from the *services* that run over it:

- There is already real competition in infrastructure provision in areas like South Wales, but the nature of rural Wales (economy, population densities, terrain) makes it inconceivable that widespread competition will develop in telecommunications infrastructure. Indeed public support will be needed to ensure adequate availability of advanced infrastructure in rural Wales; market forces alone cannot be relied upon.

- In contrast, there will be aggressive competition in retail services *everywhere*; if the infrastructure is adequate, services can be offered. It will not be necessary to support the development of services.

In this context, BT's ongoing restructuring could be very helpful. Their infrastructure operations are becoming a separate company (BT Wholesale, or 'NetCo'); OFTEL's regulation will focus on NetCo, and force down its wholesale prices. BT's retail services operations will compete with other service providers on an equal basis, and should not have a special relationship with NetCo.

Some people claim that satellite systems or terrestrial one-to-many radio systems (e.g. BFWA) will solve the problems of rural Wales. These may have a role to play, but I doubt that they can transform the picture. Satellite systems are expensive, and the available bandwidth, although large in absolute terms, has to be shared between all users; so the cost for each user is large. Terrestrial one-to-many systems are getting cheaper, but they are limited in range and the higher frequencies are essentially line of sight; so their applicability in sparsely populated areas with adverse terrain is also limited. I have more hope for using lower frequencies in a one-to-one mode to serve users distant from exchanges.

Note that demand for advanced services will only develop slowly, and it would be irresponsible for anyone – whether private sector or public sector – to make huge investments in new infrastructure to support these services before demand justifies it.

Actions needed

I largely agree with the conclusions of the Analsys report.

The first priority now is to work on *raising levels of awareness* so that demand will develop. Llwybr. Pathway has ensured a degree of provision of advanced services which can support good exemplars within the area. Useful awareness-raising measures include:

- provision of advanced services to schools and other educational establishments,
- increasing availability of public access centres where businesses and individuals can make use of advanced facilities. These can be in many places, not just schools, libraries, local government premises and the like.
- wide availability of courses and advice centres.

The second priority is the supply side; this needs to be addressed as demand develops. We should build partnerships with infrastructure providers, notably BT Wholesale, providing public support for enhanced telecommunications infrastructure (remedying defects in existing networks, as well as deploying advanced new facilities).

Aggregating public demand to encourage supply may be useful, but it is important to avoid contracting all public supply from one vertically-integrated operator; this could reinforce BT's monopoly (if BT is

awarded the contract), or undermine their incentive to invest in rural Wales (if another operator is awarded it).

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Professor Mike Tedd
24 September 2001
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Relevant interests:

Professor, Department of Computer Science, University of Wales, Aberystwyth.
Chairman, Welsh Advisory Committee on Telecommunications (which advises OFTEL).
Vice Chairman, Llwybr.Pathway project.
Member of the Infrastructure Regional Partnership of the West Wales and the Valleys Objective One Programme.
Member of the Competition & Co-operation task group of the Broadband Stakeholder Group set up by the Cabinet Office.