

# SUMMARY OF RESEARCH ON BROADBAND CONDUCTED BY ANALYSYS CONSULTING LTD FOR THE SCOTTISH EXECUTIVE

## Background

The Scottish Executive commissioned Analysys to undertake a study into the status and expected development of mass-market business broadband in Scotland. The research took place earlier this year and comprised 4 stages:

1. **Reviewing** public sector interventions and private sector market trends.
2. **Forecasting** the impact that these activities would have on broadband availability and take-up by businesses.
3. **Benchmarking** Scotland's broadband market conditions against comparable and competing countries.
4. **Recommending** measures to address the gaps found in Scotland's market as a result of either the forecasting or the benchmarking exercises.

Although the Executive requested a focus on the business sector for the purposes of this work, information on the various measures under scrutiny was sometimes only available in terms of total connections (business and residential) or population figures. Households as well as businesses were therefore covered in many of the exercises, especially the benchmarking.

## Review

During the research for the first stage of the study, the most current figures available for Scotland related mainly to the first quarter of 2003. At that time, over 50% of business sites and 57% of households in Scotland had access to a mass-market broadband solution. Around 25% of business sites and households had a choice of terrestrial technology solution. Satellite services were available almost anywhere, but were more expensive than terrestrial solutions and were not the technology of choice where an alternative affordable terrestrial solution was available. There was currently no commercial Fixed Wireless Access availability in Scotland.

Interviews were conducted with operators as part of the review stage of the research. All stressed the need for further demand encouragement to stimulate take-up. A high-level overview of all public sector interventions that were underway at the time was also provided. These included:

- The Scottish programme under the UK Broadband Fund
- The Telecoms Trading Exchange
- Project ATLAS
- Highlands & Islands Enterprise's 'Speak up for Broadband' campaign
- Mini DSLAM trials
- Wireless Broadband trials
- Satellite broadband subsidies
- eProcurement Scotland
- Pathfinder
- Spark
- NHSnet

## **Forecasting**

Throughout the period during which the research was undertaken, BT lowered trigger levels, announced new exchange trigger levels, and the reach of broadband in enabled exchange areas was extended to approximately 6km line length of the exchange. This illustrates the difficulties of forecasting at this time and it should be borne in mind that forecasts were based on information available from suppliers no later than May 2003.

Without public sector intervention, and given no unexpected changes from the industry, Analysys forecast that mass-market broadband technology would be available to 60% of Scottish businesses by the end of December 2003, increasing to 64% by the end of 2004. In terms of geographical coverage, large areas of Scotland would be unlikely to see terrestrial broadband in the foreseeable future.

Analysys forecast that the Executive's proposed marketing campaign would have an impact on mass-market broadband coverage and take-up. For instance, by the end of December 2003, business DSL coverage was forecast to increase by an extra 9% of the figure forecast without intervention<sup>1</sup>. The figure for overall take-up of ADSL was expected to increase by about a third as a result of intervention<sup>2</sup>. With further measures, such as the subsidy scheme that is now available throughout Scotland, Analysys stated that these figures will rise further. Analysys were unable to calculate actual figures for the impact of these measures, however, as they were still under development by the Executive during the period of the research.

Analysys did not consider that the Pathfinder project is likely to make significant impact on coverage within the timeframe considered for businesses or households, so none of their forecasts based on public sector intervention included any impact from this intervention.

## **Benchmarking**

When benchmarked against a sample of comparable and competing countries (Australia, Canada, France, Germany, Ireland, Italy, Japan, South Korea, Sweden and the UK as a whole), Analysys found three key gaps where Scotland does not compare favourably:

1. Infrastructure competition – in general outside the Central Belt infrastructure competition is limited
2. Broadband coverage – coverage is low compared to other countries and other UK regions (see chart below).
3. Broadband take-up – business take-up is very low compared internationally, and relatively low compared to other UK regions.

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<sup>1</sup> Based on forecast business DSL coverage at end 2003 (56% without intervention and 61% with marketing campaign).

<sup>2</sup> Based on forecast total ADSL connections at end 2003 (82,000 without intervention and 110,000 with marketing campaign).

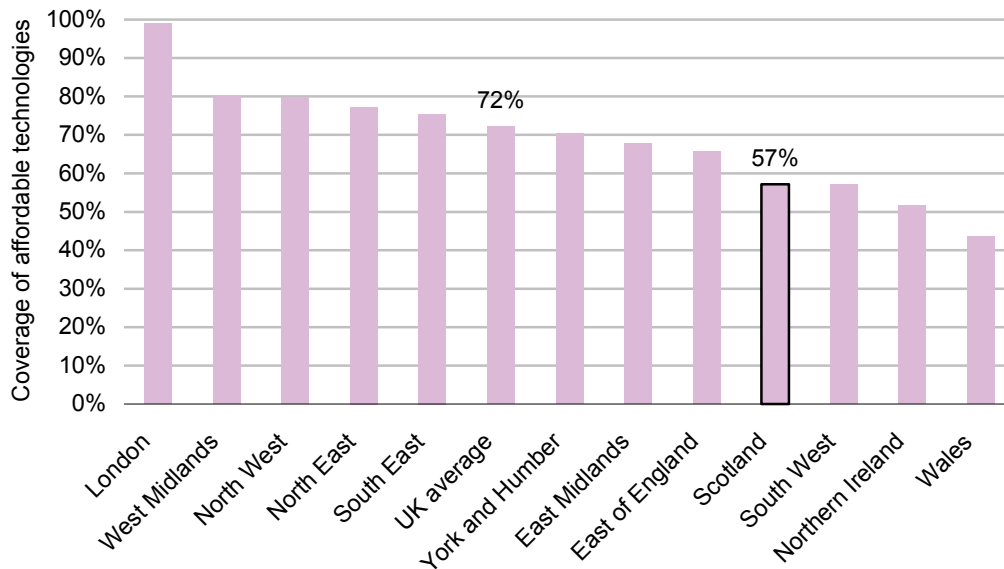


Exhibit 4.1: Affordable broadband coverage end-March 2003 [Source: Analysys]

## Recommendations

Analysys developed recommendations aimed at increasing coverage and take-up to address the short to medium term gaps identified by the benchmarking exercise, and recommendations that will help position Scotland to take advantage of next generation broadband services.

To stimulate take-up in areas where there is already coverage and to extend coverage in areas where there is potential to create a commercial case for a terrestrial service, Analysys recommended the Executive implement a high profile marketing campaign. The success of the Highlands & Islands Enterprise ‘Speak up for Broadband’ campaign during the first quarter of 2003 was cited as an example of how effective this approach can be in terms of stimulating demand.

As a further lever to increase availability and stimulate demand, an assistance scheme was also recommended to subsidise SMEs to procure broadband. This type of subsidy is a state aid, but is allowable under *de minimis* regulations, providing payments are under £60K. To enable communities to procure a network-based solution, such as wireless, local loop unbundling or BT’s Exchange Activate, these subsidies may be pooled into ‘buying clubs’. In the most remote locations, where satellite may be the only short to medium term solution available, subsidies should be available for satellite connections.

It was considered that a more proactive scheme will be required in areas where a strong local buying club does not emerge to drive aggregation. However, the most effective mechanism for achieving this would be through supply-led measures which, Analysys cautioned, will require very careful scrutiny to ensure compliance with State Aids regulations.

Of the less mainstream solutions, Analysys considered that BT’s Exchange Activate might be a possible solution for remote locations where prospective customers are not widely dispersed

from the exchange, but could be too expensive dependent on the number of end-user connections required. Powerline carrier technology was also described as potentially useful for serving rural locations, but it was recognised that regulatory issues need to be clarified and the economic case needs to be proven before this can be considered for wider consumption. Satellite was also seen as useful for the most remote locations, however price was identified as a barrier to more widespread adoption, together with some technical restrictions such as latency (however this is variable by supplier).

To ensure that Scotland is best placed to take advantage of the next generation of broadband technologies, Analysys emphasised that the Executive should not seek to pick a 'winning' technology, but instead focus on requirements common to all technologies. This would involve ensuring that there is a good fibre backbone that extends close to the end user. In urban areas, fibre is generally available but the network may need to be extended to bring fibre closer to the end user. In rural locations, there is little fibre backbone available and there is the additional problem of the lack of fibre connectivity to the islands. In these circumstances, one possibility would be to invest in passive infrastructure, which would be made available on an open basis (reducing the need for multiple suppliers to invest in overlapping networks). A secondary project could be to undertake a series of next generation broadband pilots designed to test different delivery technologies and applications.

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