

## Does the Superfast Emperor have any clothes? A sceptical look at fibre subsidies<sup>1</sup>

By Robert Kenny

Last year the European Commission set targets that 30 Mbps broadband should be available to all citizens, and 50% should be using more than 100 Mbps by 2020.<sup>2</sup> In pursuit of these goals, state-aid rules have been waived, and many countries are spending government money to subsidise roll-out of superfast broadband. The UK government, as Jeremy Hunt's open letter reminds us, is spending £530m in order that we "have the best superfast broadband network in Europe by 2015"

The Commission's targets and the UK subsidies are founded in a view that superfast (based on fibre) brings great social and economic benefits, and is essential to international competitiveness. This view is widely held – but possibly wrong. In this note we take a sceptical look, and question the case for market interventions (particularly subsidies) to support fibre roll-out.

Some countries are certainly much further down the fibre track than Europe. Korea, for example, is a frequent target of international broadband-envy, and started rolling out of fibre-to-the-home in 2006. However, after five years, only 67% of households are even passed by fibre<sup>3</sup>, and consumers seem less than rapturous about superfast broadband. Penetration of 100 Mbps<sup>4</sup> appears to be saturating at around 30% (there has only been one percentage point growth over the last year), and this despite two leading operators charging *less* for 100 Mbps than 10 Mbps.<sup>5</sup>

UK consumers don't appear to be much more enthusiastic. Virgin has been offering speeds of 50 Mbps or more for over two years. We estimate take-up in their coverage area of around 1.5%<sup>6</sup> (though this is up on half that a year ago). Thus how 50% of European households are to be convinced to take *more* than 100 Mbps is not clear.

However, even if the EC target were achievable, that doesn't mean it's desirable. While it's an article of faith that superfast broadband brings benefits in areas such as electricity, healthcare, education, and teleworking, the evidence for this is thin. The very OECD report that the EC cites<sup>7</sup> to support its target simply gets its facts wrong, claiming for instance that fibre is necessary for 'smart meters' (which can reduce electricity consumption). In fact, the OECD has misread its sources. Smart meters need 2.4 Kbps, not 100 Mbps, and Italy installed 30m of them without a single strand of fibre.

There is good evidence that *basic* broadband can, at least in trials, help remote healthcare. However, for superfast to make a difference, very high resolution, real-time video would need to be essential to the health application in question, and even then would only be relevant if the patient didn't need to go into the doctor's office anyway to have a stethoscope pressed to their chest. Even for such potential applications, realising them would require substantial IT programmes, an area where the

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<sup>1</sup> This note is a summary and update of a longer paper by Robert & Charles Kenny, *Superfast - Is it really worth a subsidy?*, February 2011

<sup>2</sup> European Commission, *European Broadband: investing in digitally driven growth*, October 2010

<sup>3</sup> OECD Broadband Portal, Sep 2010 data

<sup>4</sup> Based on both HFC and FTTH

<sup>5</sup> Operator websites. See also M Turnbull, *Korea's Broadband – An Overview and Implications for Australia*, 23 June 2011

<sup>6</sup> Communications Chambers analysis based on Virgin Media, *First Quarter 2011 results*, 20 April 2011

<sup>7</sup> OECD, *Network Developments In Support Of Innovation and User Needs*, OECD, October 2009

record of the health sector is patchy, as the sorry tale of efforts in many countries to introduce electronic patient records shows.

For education, the question is once again what is it that uniquely requires superfast broadband? Libraries of lectures on YouTube are great, but don't need fibre – you can watch them today on your DSL connection. DCMS seems to have struggled to find good case studies for the educational benefits of superfast. The example they cite in *Britain's Superfast Broadband Future*<sup>8</sup> as “an excellent illustrative example” of the benefits of superfast is an Australian trial of the internet being used for remote schooling. This trial took place in 2002<sup>9</sup> ... and had a bandwidth requirement of 64 Kbps<sup>10</sup>.

Teleworking is supposedly another major benefit of superfast. The latest available EU figures show 7% of Europeans (and 8% of Britons) telework at least of quarter of their time.<sup>11</sup> However, these figures date from 2005, long before the roll-out of superfast networks. Superfast is not necessary for teleworking and nor is it sufficient. Korea has one of the lowest rates of teleworking in the developed world.

When pressed on what will truly justify the need for superfast broadband to the home, advocates often talk about simultaneous use of multiple applications. For instance, NBNC Co (Australia's state-owned superfast provider) describe a household concurrently watching three TV streams, using online gaming, two smartphones, having a videoconference, uploading some files and surfing the net, adding up to 34 Mbps.<sup>12</sup> However, the average household size (in Europe and Australia) is about 2.5 people, so this seems like some serious multitasking. Moreover, if this is the kind of household we're rolling out fibre for – homes that are awash in the latest technology – why not ask them to pay their own way? A subsidy for households like this is somewhat regressive, to say the least.

If the societal benefits of fibre are not all they're cracked up to be, what about the economic benefits? Is superfast essential to a digital economy? It is still the case today that most (though by no means all) innovative online services come out of the US. But the US' broadband infrastructure is not that great. It has the 13<sup>th</sup> fastest broadband, and is actually somewhat *below* the average for developed countries.<sup>13</sup> Conversely, how many Korean internet applications can you name?

Does all the above mean we believe there is no commercial case for fibre? That consumers will have no interest in higher speeds? That there will never be societally important applications that depend on superfast? No. However, it does suggest that governments think hard before subsidising fibre *today*. As time passes, commercial players will wire up more households without subsidy; the applications that bring externalities will become clearer (or will be conspicuous by their absence); and the costs will fall.

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<sup>8</sup> BIS/DCMS, *Britain's Superfast Broadband Future*, December 2010

<sup>9</sup> DCITA, *The economic effects of broadband: an Australian perspective*, May 2007

<sup>10</sup> Essential Equity, *An evaluation of the satellite internet access pilot project for School of the Air*, August 2002

<sup>11</sup> Europfound, *Telework in the European Union*, 2010

<sup>12</sup> NBNC Co, *Corporate Plan 2011-2013*, 17 December 2011,

<sup>13</sup> Communications Chambers analysis based on Akamai, *The State of the Internet, Q4 2010*. Note that higher speeds *within* the US are not meaningfully linked with innovation – only one Silicon Valley town (San Mateo) is in the top ten locations with faster broadband, with an average speed of 6.4 Mbps, only moderately above the overall US figure of 5.1 Mbps

In contrast to several other governments, the UK has at least focused its subsidies on the ‘final third’, those households that commercial players are unlikely to wire up with fibre. However, it is not clear what broadband is *already* available to this group. According to Ofcom even rural households, about 20% of the total, have average broadband speeds of 3.8 Mbps<sup>14</sup>, sufficient to watch an HDTV stream. Digital Britain sensibly suggested starting with a minimum of 2Mbps broadband that all households should have access to. Across the UK, only 14% of basic fixed broadband connections operate at less than 2Mbps<sup>15</sup>, and this includes the connections of consumers *choosing* lower speeds. Government support to get higher speeds to those currently unable to receive 2Mbps makes sense. For the rest of the final third (who already enjoy higher speeds) it is not clear what societally essential application the government is seeking to secure by subsidising fibre.

If governments have money to spend on the internet, they could instead support wireless broadband, which both improves the utility of broadband by taking it out of the home (and office), and can be a cost-effective means of serving rural areas. The societal benefits of making broadband ubiquitous are much clearer than the benefits of improving speeds in certain fixed locations. In fact governments often see wireless as a source of funds, in the form of juicy spectrum auction receipts, rather than as an appropriate beneficiary.

However, to get the maximum societal return from the tax-payer pound, it is almost certainly better to focus on adoption, not availability – in other words, helping those who do not use the internet at all to get online (8.7m adults in the UK<sup>16</sup>). Surely the benefits of this are greater than those from subsidies to those households who are already online but who want to simultaneously watch three on-demand internet TV streams?

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<sup>14</sup> Ofcom, *UK fixed broadband speeds, November/December 2010*, 2 March 2011

<sup>15</sup> Ofcom, *Communications Infrastructure Report 2011 - Fixed broadband data*, 6 July 2011

<sup>16</sup> ONS, *Internet Access Quarterly Update*, 18 May 2011