



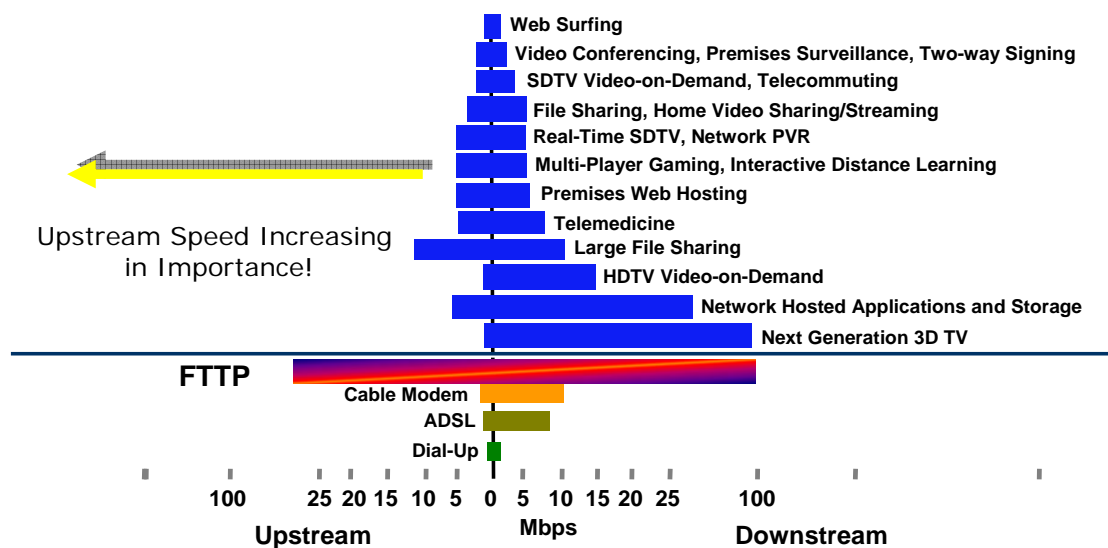
New regulatory approaches to next generation access

Brian Williamson, Director, Indepen. 9 July 2007

The capability of next generation access

Next generation access (NGA) will enhance the capability of broadband to support existing services and offer new services, by offering more consistent speed across users and over time, higher upload and download speeds and a more reliable service.

Consistency may be more important than speed *per se* to the viability of some services. Higher upload speeds will facilitate growth in Web 2.0 applications and online backup, and HDTV – which will become the norm – requires NGA for a real time service. Also, NGA will improve our experience of the things we do now, just as the transition to broadband did. The figure illustrates the bandwidth requirements of different applications.¹



Key points from this are the growing importance of upstream speed, the fact that HDTV video on demand requirements exceed the capability of copper and the demands of network hosted applications and storage which may transform the computer and software sectors.

What the figure does not show is that in practice copper based ADSL delivers variable speeds across customers and time that typically fall well short of headline speeds such as 8Mb/s for ADSL and 24 Mb/s for ADSL2+.² The case for fibre should be evaluated against the realistic, rather than the theoretical, potential of copper.

The value of NGA

The fact that NGA is better does not imply it is worthwhile. For greenfield sites the choice appears clear cut but the capital cost of copper replacement may mean that investment in the near term is not justified. However, as far as possible the objective should be to ensure that NGA investment occurs whenever and wherever it is justified i.e. where the incremental social value exceeds the incremental social cost. This raises two questions. First, is the social value of NGA different from the private value? Second, is value to investors aligned with private value?

¹ Chris Boam . 22 March 2007. "Free Access to Networks." A Hayek Institute program, Vienna, Austria. <http://www.hayek-institut.at/deutsch/1097/termine/article/hayek/1580/>.

² BT Group Industry Analyst Briefing. March 2006. "Broadband access speeds in the fixed network." <http://www.btplc.com/Thegroup/Industryanalysts/Industryanalystspresentations/BBintheixednetwork.pdf>



Is the social value of NGA different to the private value?

For a limited number of services such as public service broadcasting there is a degree of acceptance, and a political consensus, that public value exceeds the private value to consumers. However, it is not obvious that the social value of NGA will exceed the private value from the productivity improvements and direct consumer welfare benefits of NGA. An exception to this conclusion is that near universal NGA would potentially allow the switch-off of broadcast TV and the release of 256 MHz of prime radio spectrum, double the 120 MHz to be released via the analogue switch-off. The value of this spectrum would not be taken into account by a NGA investor since they do not own it. Their customers do not own the spectrum, and even if their customers were paying for the spectrum they would be constrained from handing it back by existing public service broadcasting obligations.

The BSG April 2007 report “Pipe dreams?” proposes broader grounds for divergence between private and public value noting that *“nations that opt for accelerated deployment will gain sustained competitiveness advantage over nations that do not.”* This proposition is not soundly based, however, as the notion that nations compete in the way it implies is discredited. As the economist Paul Krugman observed: *“...countries do not compete with each other the way corporations do... When productivity rises in Japan, the main result is a rise in Japanese real wages; American or European wages are in principle at least as likely to rise as to fall, and in practice seem to be virtually unaffected.”*³

A change in relative productivity levels across nations – what might be thought of as “competitiveness” – does not affect national income, rather it is the absolute level of productivity and productivity growth that determines income. Such competitiveness considerations cannot give a divergence between the social and private value of NGA.

Is the value to investors aligned with private value?

The short answer is – yes, but only if we get regulation and expectations about future regulation right. This means that regulation, where competition is insufficient, must allow revenues to providers to reflect the value of alternative investment and technology propositions to end users, otherwise we will not see timely and efficient investment i.e. investment that properly reflects the value to customers. Cost based approaches to regulation, even if an appropriate risk premium is allowed, do not address this since they do not provide an incentive whereby the value to end users affects investment choices.

Cost based approaches can be envisaged whereby risk is transferred to end users by smearing the cost of NGA across all end users (e.g. through line rental charges), analogous with the approach in the UK water industry whereby all customers pay for capital enhancements. This approach would require the investment programme to be signed off by the regulator, and might prove unacceptable in the telecommunications sector where end users are accustomed to competition and choice.

A possible remedy where competition is insufficient – “anchor product” regulation

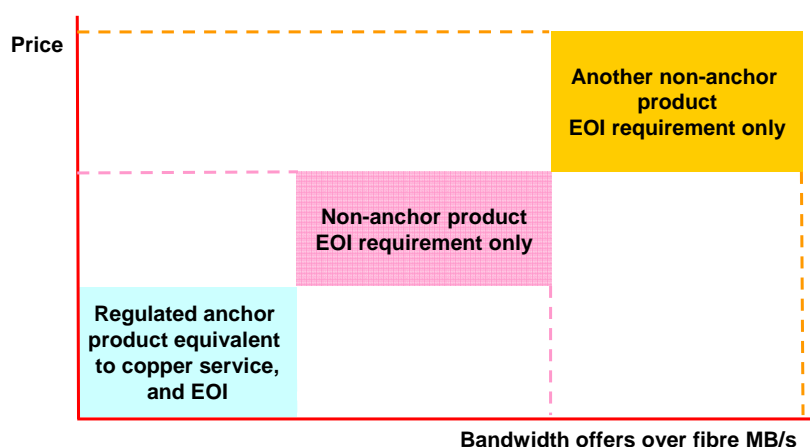
“Anchor product” regulation would allow investment decisions to reflect value, risk and reward while at the same time safeguarding applications based competition in the downstream market and protecting end users from potential monopoly abuse where competition is insufficient.⁴ The following figure illustrates the concept.

³ Krugman. 1994. “Competitiveness – a dangerous obsession.” Foreign Affairs. <http://www.pkarchive.org/global/pop.html>

⁴ Brian Williamson. 27 March 2007. “Risk, reward and efficient investment in access networks.”

Presentation: <http://www.ofcom.org.uk/media/speeches/2007/03/indepen.pdf>

Paper: http://www.indepen.co.uk/panda/docs/risk_reward_and_efficient_investment_in_nga_march-2007.pdf



Under anchor product regulation all products would be subject to equivalence of inputs (EOI) and:

- Investment is at the discretion of the investor, no plan needs to be “agreed” with the regulator.
- Not all prices are regulated with new and/or higher performance service offerings not being subject to price control. In effect only one or two prices in the value chain are fixed directly by regulation.
- The subset of regulated prices ensures that end users face the same price and service that was available over copper, for those services that remain dependent on the new bottleneck.
- Prices are not derived on a cost oriented basis since those prices that are controlled are set on the basis of prices on the previous platform (with a different cost structure).
- Non-anchor product prices would be set by the platform owner.

The anchor product/s provides continuity for end users during the transition to NGA and a discipline on potential abuse of dominance via a chain of substitution with other products. End users are no worse off as a result of investment, since they can continue to purchase products with the same capability and at the same price that they currently pay. Individual service providers might, however, be better or worse off depending on how they adapt to an NGA environment. Further, investments are free to proceed without any need for regulatory scrutiny or cost modelling and investment would only happen if the anticipated incremental value exceeded the incremental cost. Anchor product regulation would also provide strong incentives for operating efficiency and appropriate technology upgrades.

Evolution of anchor product regulation over time

A regulated anchor product would have to replicate the price and performance characteristics of existing broadband over copper, and existing average speeds could provide a basis for specifying the anchor product. However, broadband price-performance over copper will not stand still, with maximum speeds rising as ADSL2+ is rolled out, though actual speeds might decrease for some as cross talk increases with rising broadband penetration. The anchor could be modified periodically to reflect such developments.

Competition for the provision of many of the services provided over NGA such as voice and HDTV already exists and is likely to intensify in future and the flexibility of anchor product regulation might facilitate the development of long term contracts between investors and service providers, which could aggregate demand and share risk. If competition, private contracts and anchor products provided insufficient restraint on potential abuse of dominance in future, then other regulatory options could be considered. There may be merit in considering the circumstances in which review or revision might arise in future and setting them out in advance to enhance the legitimacy of anchor product regulation and give investors confidence.