



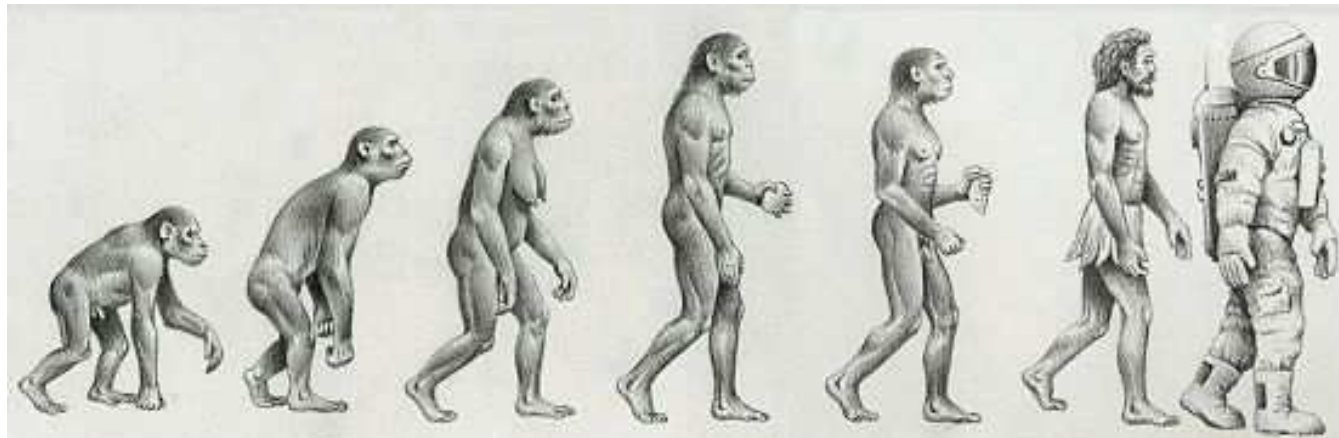
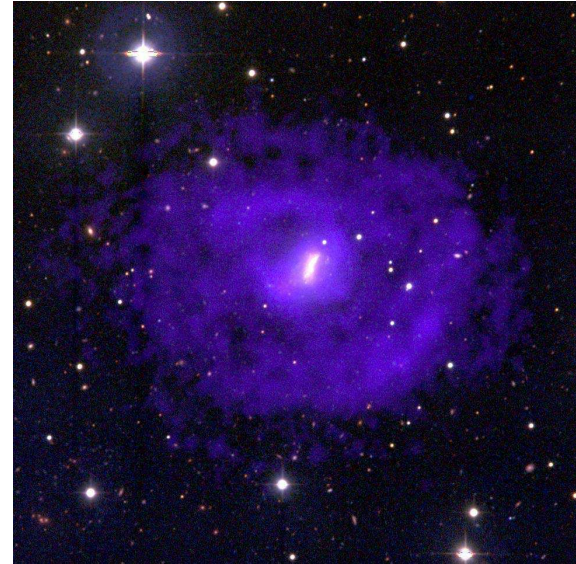
BSG Conference –  
21<sup>st</sup> Century  
Broadband  
9<sup>th</sup> June 2008



**Richard Allan**  
**Director, Global Policy and Government Affairs, Europe**

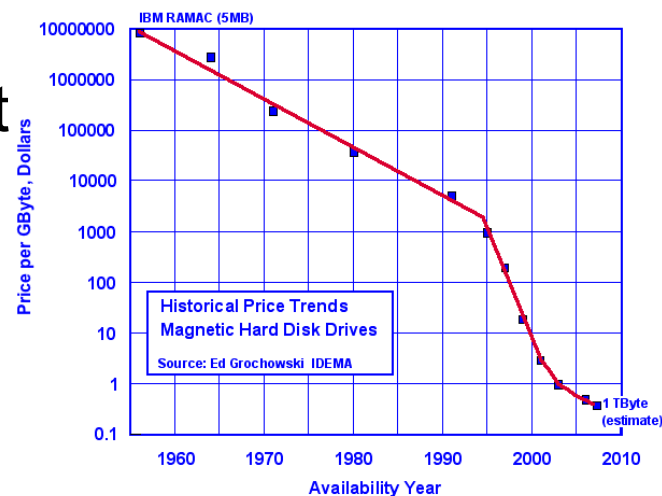
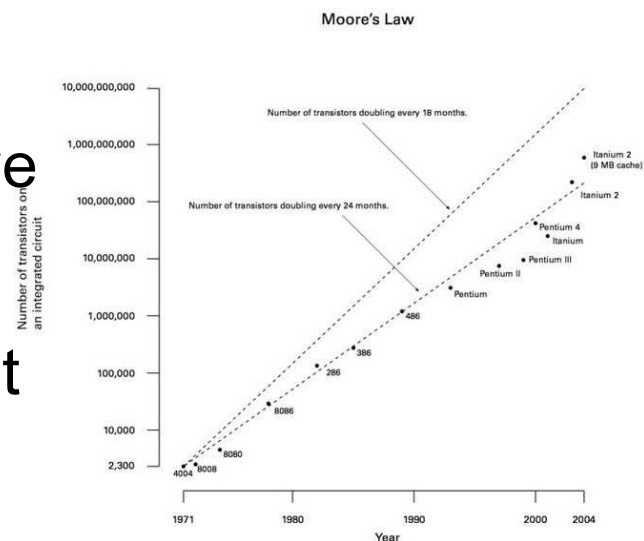
# From Big Bang to Ascent of Broadband

- Broadband deployment is not an event but a process.
- There was a tendency to think of it as a 'big bang' during the initial rollout phase
- The call was 'we don't have broadband, we want it'
- But this has really been a story of constant and ongoing evolution

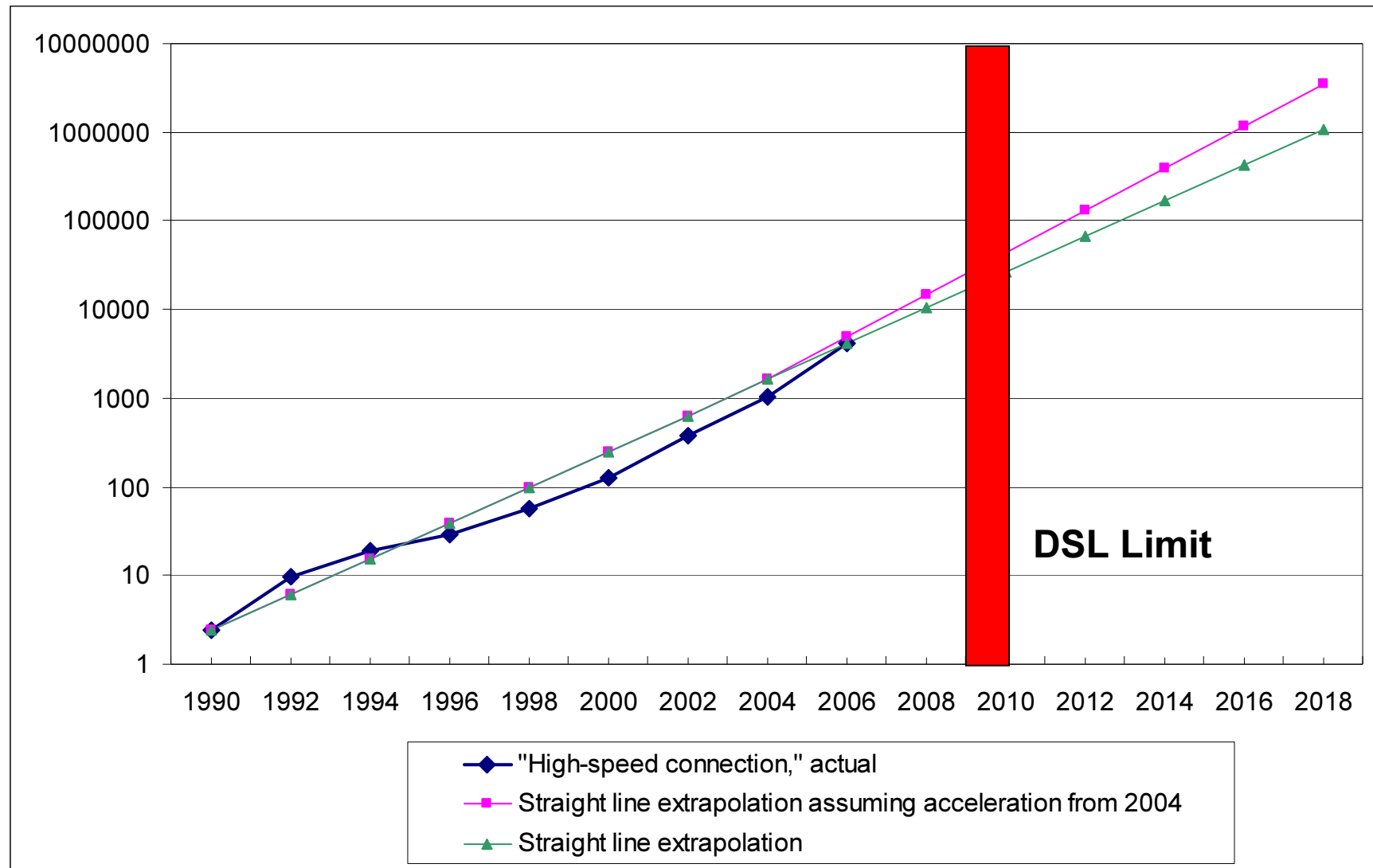


# ICT Evolution

- The story of ICT is a story of generally rapid evolution as successive technologies take off often complementing one another
- The famous Moore's law has brought us to typical processor speeds for home PCs of 3GHz or more
- And we are undergoing a revolution in storage capacity and price that has seen prices drop off a cliff over the last couple of years
- But what may not have been as obvious is the fact that we have seen typical network connection speeds evolve in the same way



# Trend for Access Bitrates: Exponential Growth



Source: Heavy Reading report "FTTH Worldwide Market & Technology Forecast, 2006-2011"

# Beyond Speed

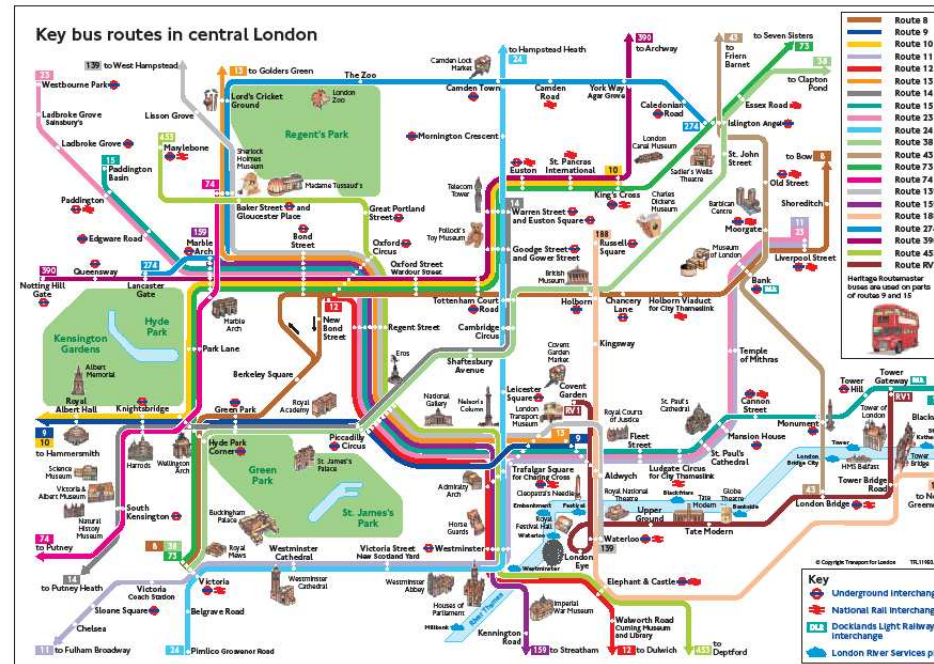
- With Next Gen Broadband we need to consider moving beyond speed as the sole or even main determinant of consumer value in a connection



The screenshot shows a BBC News article from September 21, 2007. The main headline is "Broadband speeds under scrutiny". The sub-headline reads: "Broadband speeds in the UK are much slower than advertised by internet service providers, a study by Computeractive magazine has found." The article text states: "Some 3,000 readers took part in speed tests and 62% found they routinely got less than half of the top speed advertised by their provider." A speedometer image is visible, showing a needle pointing to approximately 30 on a scale up to 130. The article also mentions that the figures were gathered from more than 100,000 speed tests and that the regulator Ofcom is investigating the issue.

- The industry has recognised the need for transparency in terms of the products it offers today and we saw just last week the announcement of a new code of conduct from ISPs working with Ofcom
- But it may be that this focus on headline download speeds is of limited duration as interest moves onto other characteristics that affect service quality on a particular connection.

# Network as a Platform



- In the physical world different transport modes have different qualities that are understood by the user
- As the network becomes a platform for the delivery of more services, its characteristics will also evolve
- Many services will use best efforts traffic but others will depend on specific characteristics that the network can offer

# New Services, New Demands



- Cisco's TelePresence is an example of a new service, currently deployed in a business environment but this technology could move to home setting before long
- Headline bandwidth requirements are not excessive but needs symmetry and low latency which NGA can offer

# Broadband for Services



- The typical consumer measures the quality of their broadband connection by whether it can deliver the services they typically use, e.g. YouTube and iPlayer
- NGA will have value for the user if it provides a better platform for delivery of evolving innovative services like these



# Delivering High Quality Video

**The IPTV challenge – to deliver Mean Time Between Artefacts (MTBA) of 2hrs+, i.e. no more than one perceivable error during a two hour movie.**

- High Definition video does provide particular challenges in terms of volume and quality of traffic
- This is again not all about raw bandwidth but about networks that can deliver the required end-to-end quality

# 21<sup>st</sup> Century Broadband

As Well As the Width, Feel the Quality



- The solutions that create value in the market are ones which deliver quality services to consumers willing to pay for these
- These value-generating solutions will come about through innovation in many aspects of the network including access
- Wireless may surprise us, content delivery systems may perform wonders, and smart differentiated service packages may improve service delivery over existing infrastructure
- What is true is that we now have momentum in broadband to realise many of the dreams that were there in the dot com bubble but could not be delivered at that time

