



Next Generation Networks and Next Generation Access

Steve Hornung

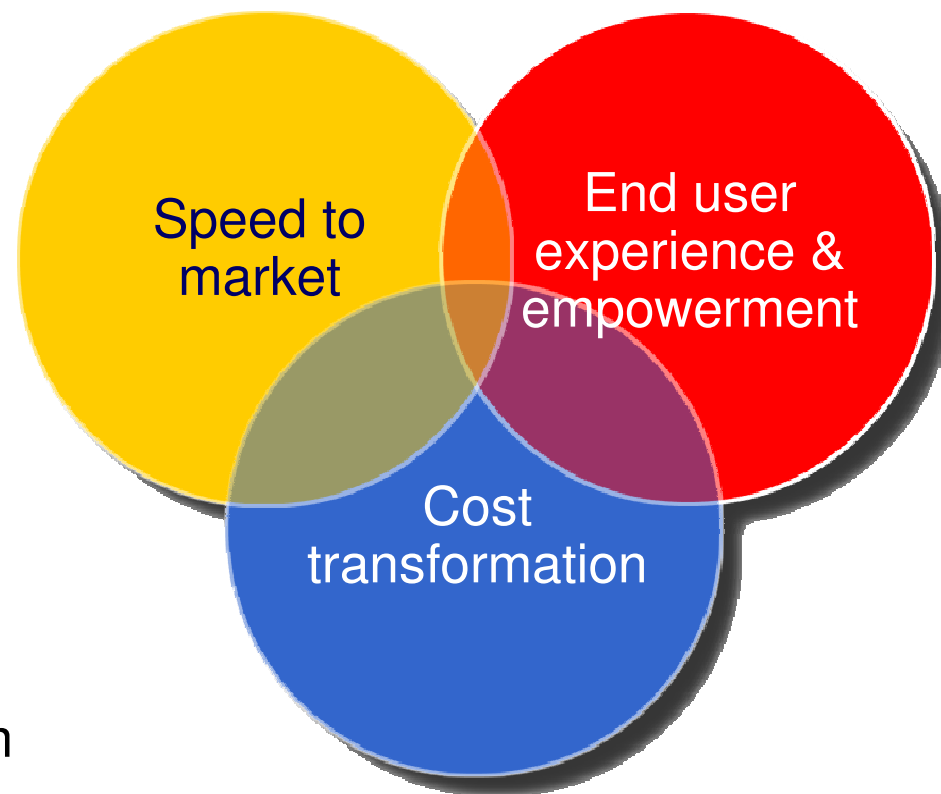


Agenda

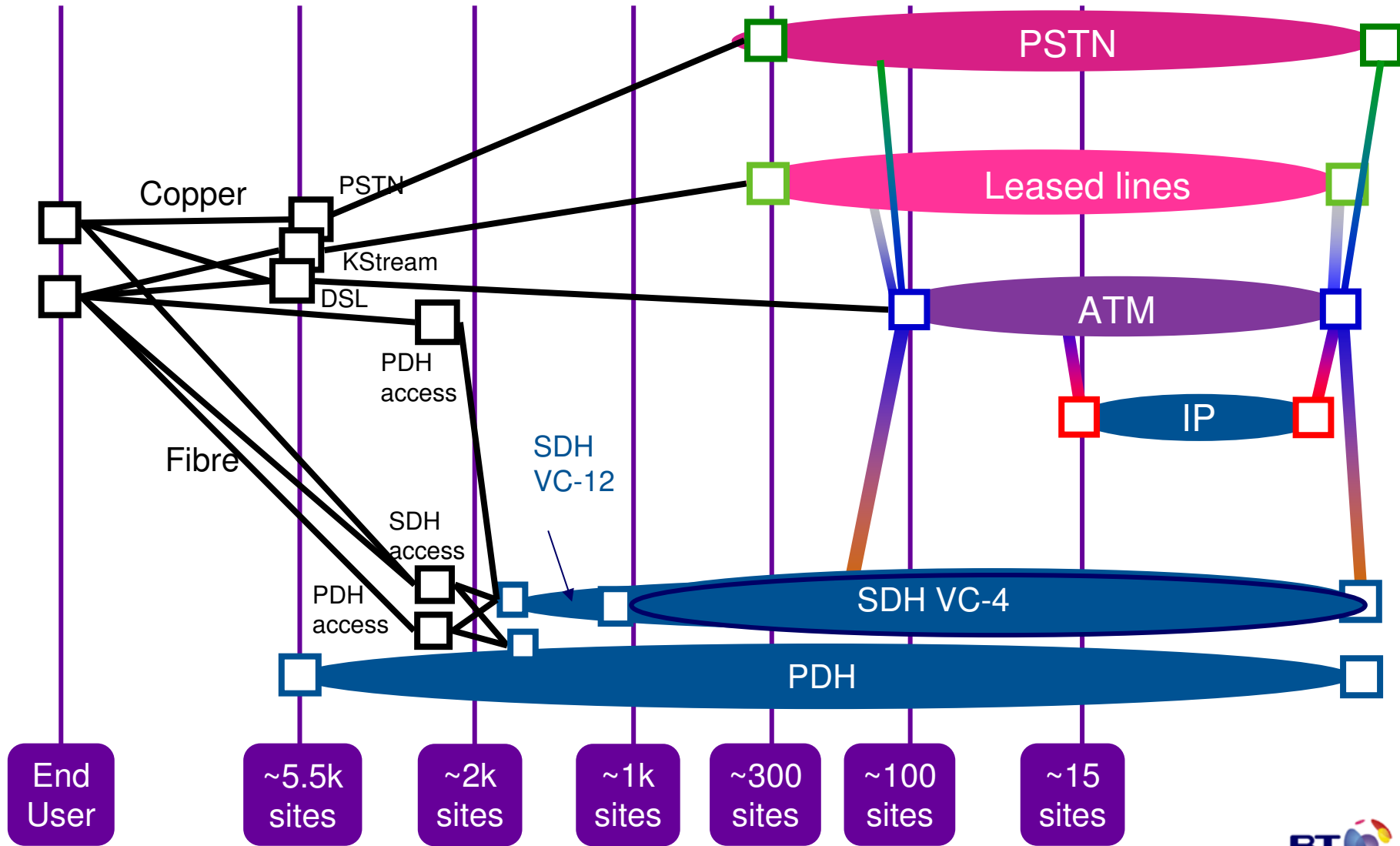
- Overview of BT Next Generation Network (21CN)
- Overview of Next Generation Access (NGA)
- Considerations regarding NGN and NGA and business model
- What is happening now

21CN – Three key objectives

- Empower the end user with control, choice and flexibility like never before including communications from anywhere to any device
- Offer exciting new services for end user faster than before
- Reduce costs and grow cash cost savings - expected to amount to £1 billion per annum by 2008/9



21CN - our current UK network

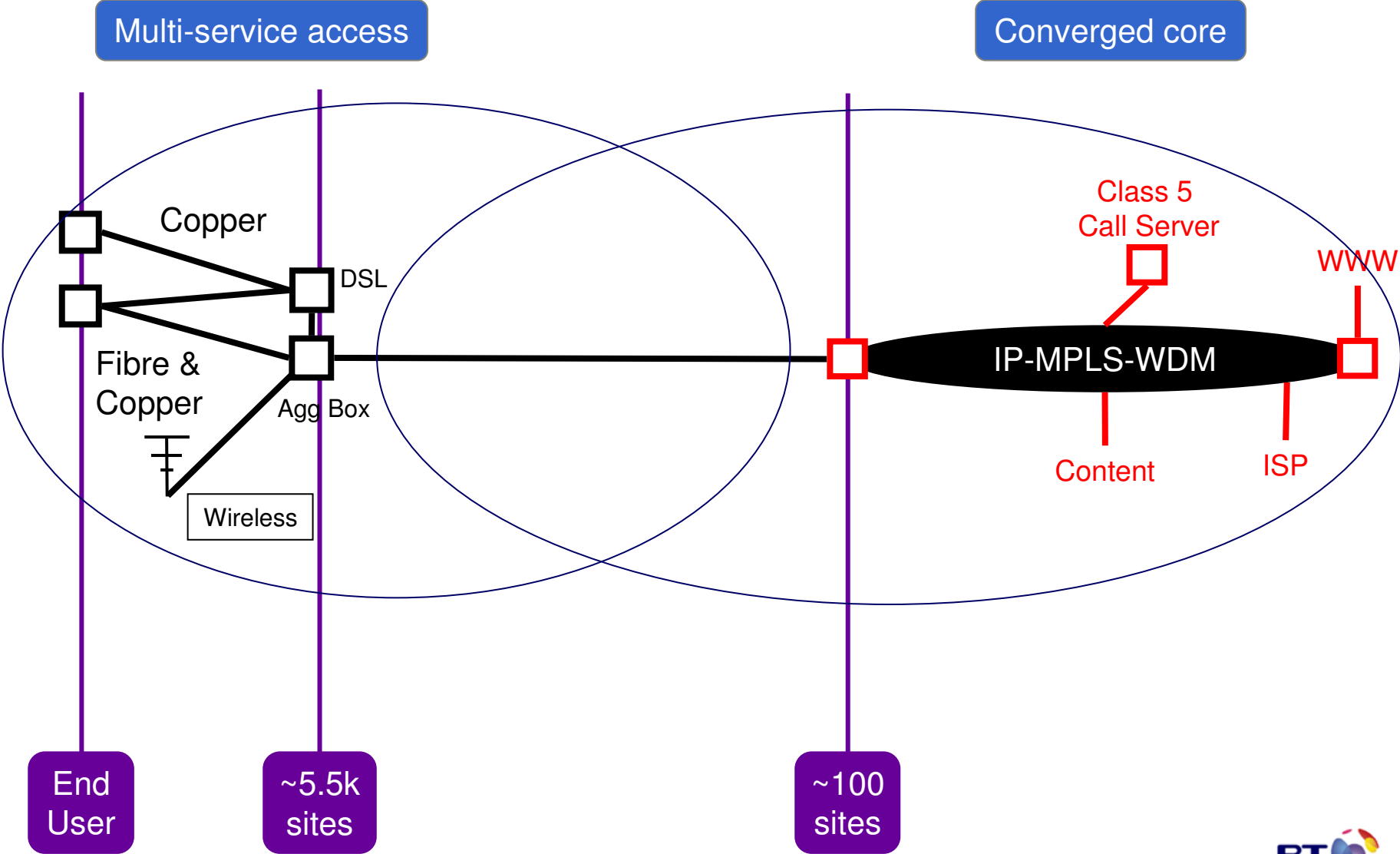


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Current thinking. No implementation assurances.

21CN - our simplified UK network

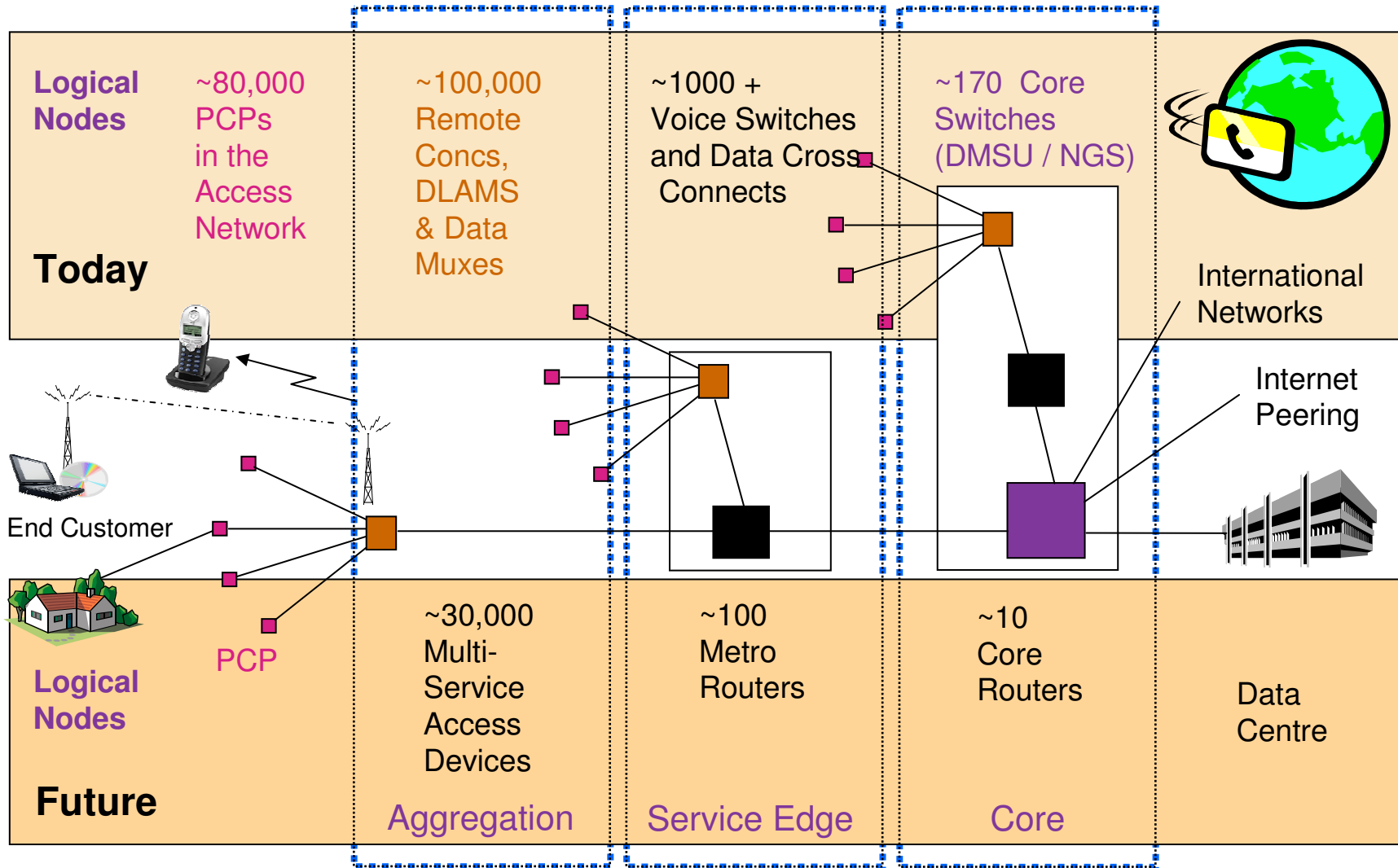


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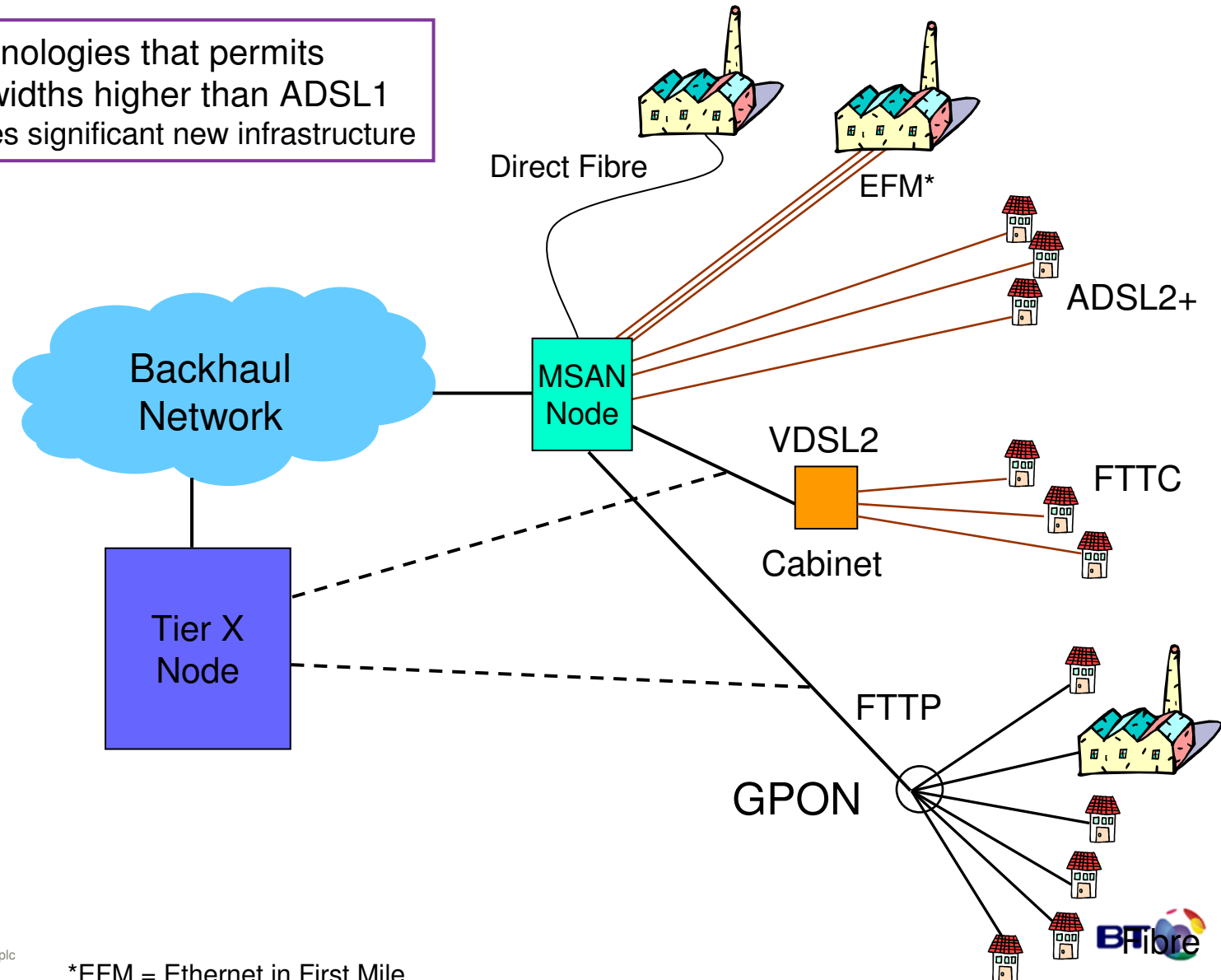
Current thinking. No implementation assurances.

21st Century Network structure vision

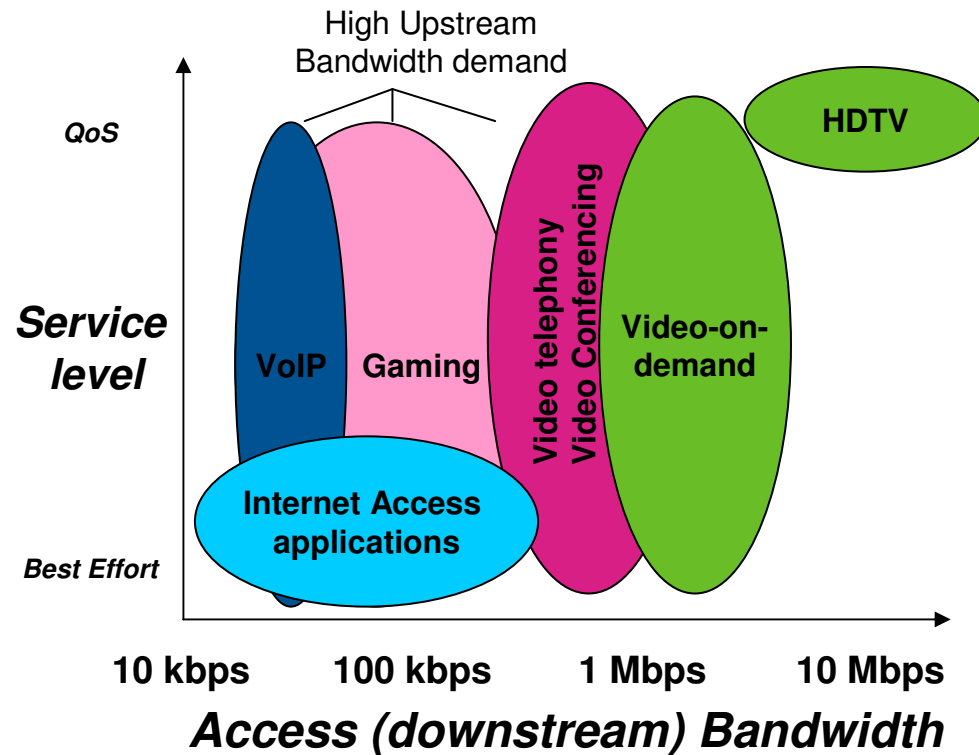


What is Next Generation Access?

A family of technologies that permits end user bandwidths higher than ADSL1
- Normally requires significant new infrastructure



Services that could benefit from NGA



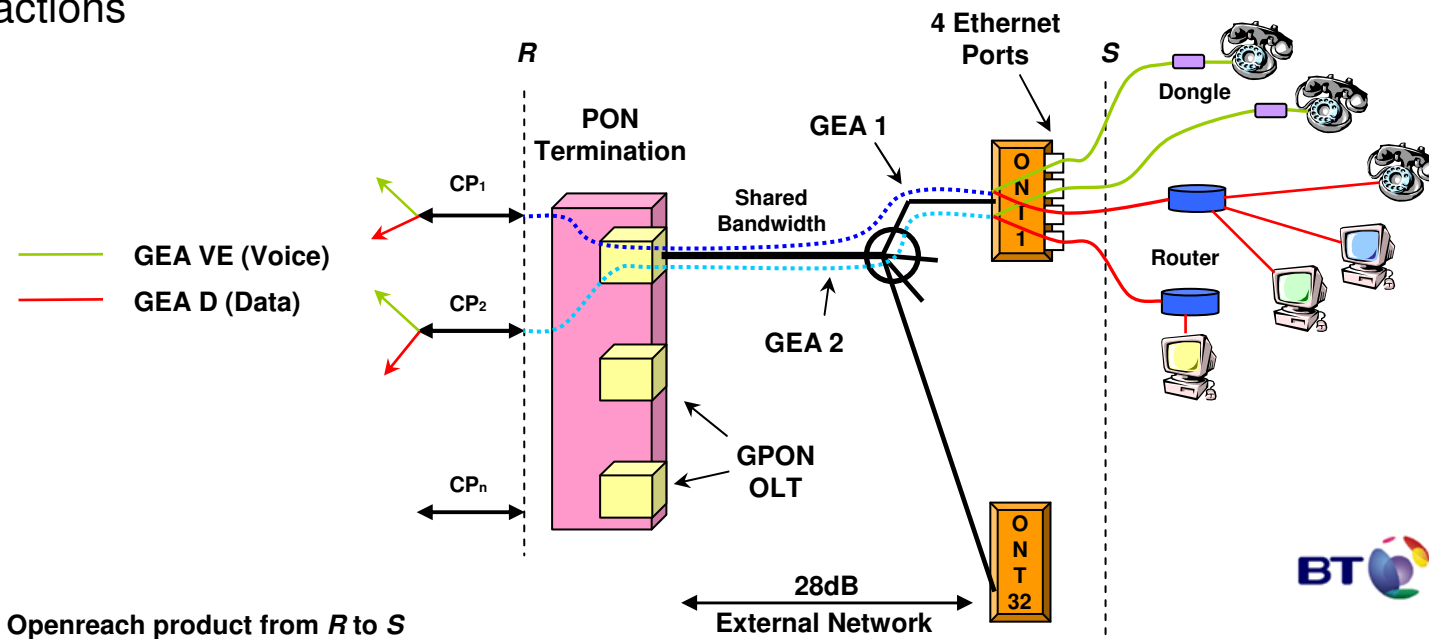
- NGA offers higher bandwidths to customers than currently available
- Applications such as video upload and peer-to-peer file sharing are increasing bandwidth demand
 - Particularly on-demand peak burst-rates
- NGA could provide the ability for these and other applications to become more widely adopted
- New and improved services could increase revenue to service and communications providers
- However, service 'pull' rather than technology 'push' will dictate the direction and speed of NGA deployment

Generic Ethernet Access

- Greenfield FTTP pilot at Ebbsfleet:
 - Generic Ethernet Access (GEA) delivered over GPON (Gigabit Passive Optical Network)
 - Any further deployment dependent on successful pilot, valid business case, regulatory consultations and CP reactions



Courtesy of Land Securities



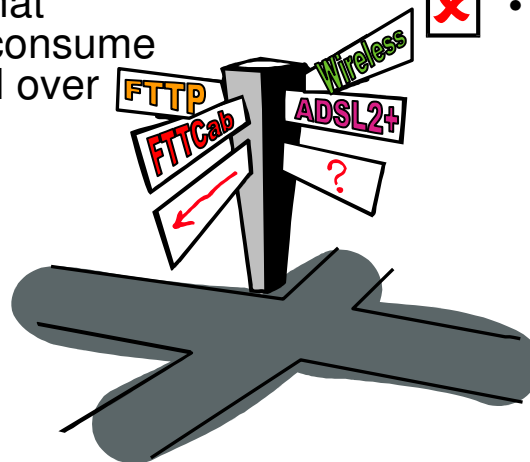
Fibre-based NGA solution comparison

- FTTP deployment

- Significant improvements in
 - Customer experience
 - Operational costs
- Future proof
 - No superior technology over fibre identified
- High investment costs
 - Requires provision of fibre to millions of premises
- Long timescales
 - Fibre/cable provision will take time
- Risk
 - No guarantee that customers will consume services offered over fibre

- VDSL (FTTCab) deployment

- Cheaper to deploy
 - Only need to address thousands of cabinets
 - Each cabinet 'passes' hundreds of customers
- Faster to deploy
 - Existing copper access largely unchanged
- Modest increase in bandwidth delivered
 - Distance-related bandwidth limitations will remain
- Higher operational costs
 - Powered cabinets will require power and maintenance



Equivalence of Input (EoI)

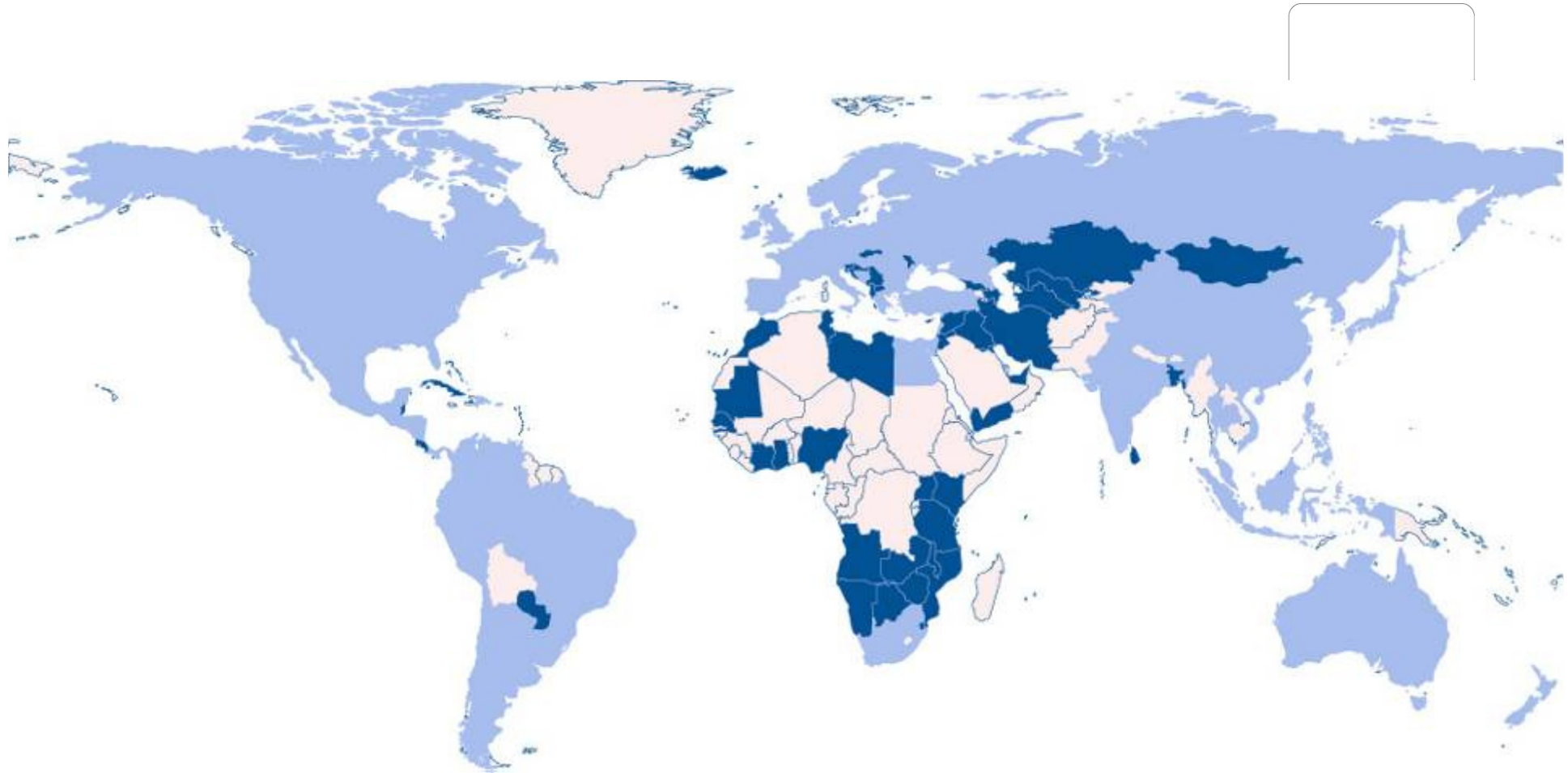
- What is it?
 - “BT provides, in respect of a particular product or service, the same product or service to all Communications Providers (including BT) on the same timescales, terms and conditions (including price and service levels) by means of the same systems and processes, and includes the provision to all Communications Providers (including BT) of the same Commercial Information about such products, services, systems and processes.”
 - “Final statements on the Strategic Review of Telecommunications, and undertakings in lieu of a reference under the Enterprise Act 2002”, Ofcom, Sept 2005
- What does it mean?
 - The products and services that are covered by this definition include, but are not limited to:
 - Wholesale Analogue and ISDN Line Rental
 - Metallic Path Facility (Shared or otherwise)
 - Backhaul and Wholesale Extension Services – Access and Backhaul
 - Wholesale End-to-End Ethernet Service
 - IPStream and/or IP based Bitstream Network Access products that are the successors to IPStream or DataStream

Considerations and The Business Model

- Return on Investment
 - The deployment of fibre challenges the existing copper-centric business models
 - In terms of bandwidths, distances, number of served customers, services, symmetry
 - Deployment of technology and infrastructure must offer a reasonable return
 - With the parts of the network provider spending money being able to recover the investment from that aspect of the network
 - BT does not have an unlimited capital budget
 - Therefore, each and every potential deployment will be subject to business–benefit scrutiny
 - NGA deployment is not without risks
 - Wireless and cable and satellite TV infrastructure could impact on the potential revenues from and NGA architecture
- Business customers
 - Fibre already serves a large number of businesses in the UK
 - The adoption of products and services over NGA infrastructure by existing and new business customers could be significant as they could be early adopters of the technology
- Technology
 - BT is technology agnostic – the number, type and characteristics of services will dictate the preferred technology in any given scenario
 - Need to take into consideration anticipated improvements in technology to avoid stranded assets, or ‘stovepipe’ platforms
- Existing network implications
 - NGA should not undermine Next Generation Network (NGN) programmes
 - As NGN rationalises core platforms whereas NGA improves access speeds
 - The timescales for NGN and NGA programmes need to be monitored so as to ensure maximum benefit from each programme is realised
- Ofcom and industry consultation
 - Needs to take place at all stages
 - Consult21 reflects BT’s seriousness in this respect
 - As well as the regulator, CP perspectives are equally valid to Openreach
 - As CPs are customers of Openreach’s products and services

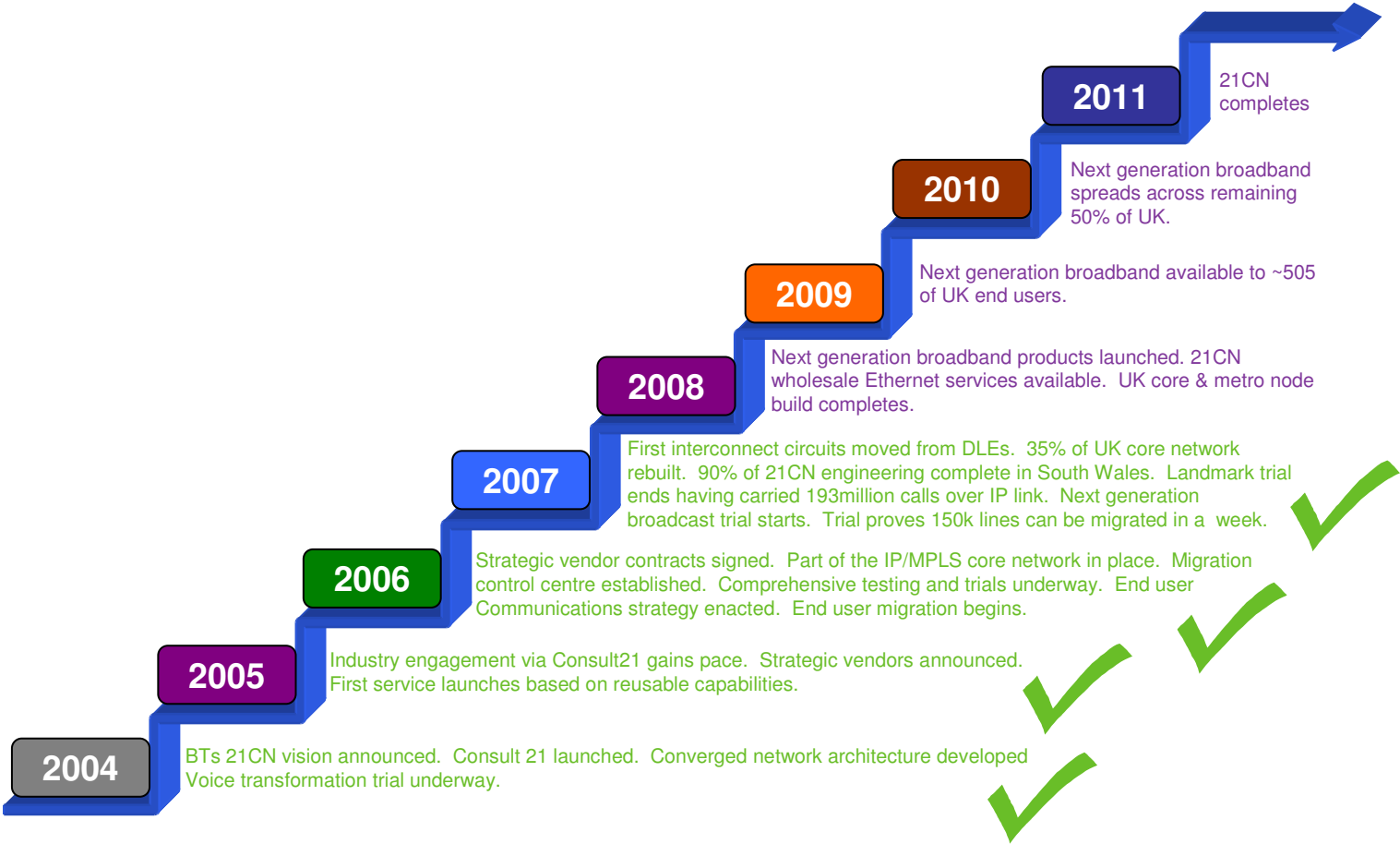
Current activities and progress with regards 21CN and NGA

BT's existing global network



IP network in 128 countries, delivering service into more than 170

21CN Key milestones



21CN Progress

- A comprehensive trial and testing programme is underway, for example.
 - More than 193 million calls have been successfully carried over an IP trunk network link between central London, Woolwich and Cambridge
 - More than 600 trialists tested end to end calls between MSANs
 - Voice quality testing is demonstrating perceptual equivalence with 20CN
 - BT expects the vast majority of customer equipment to work in the same way with 21CN. A comprehensive testing programme of CPE is underway.
 - Already we have proved that 150,000 customer lines can be migrated in one week, providing confidence in BT's customer migration processes
- BT continues to enhance its 21CN testing capabilities with the installation of world class testing facilities at Adastral Park and in Swansea

What's Currently Happening on NGA within BT?

- ADSL2+ on 21CN for all customers rollout starting 2008
- Extensive industry consultation since April 2007
- FTTP/ GPON trial Ipswich due April 2008
- FTTP / GPON greenfield pilot Ebbsfleet Aug 08
- Review and further consultation thereafter
- BT is putting significant effort into driving NGA technology standards

Conclusion

- BT has a rare regulatory situation with respect to how products and services are provided under NGN and NGA
- BT's NGN programme – 21CN – remains the world's largest NGN programme in terms of scope and scale
- In respect to access, Next Generation Access is a key project both within BT and around the world
- The objectives of NGN and NGA are complimentary
 - Platform rationalisation with enhanced customer experience



Backup and informational slides

Forward-looking statements

– Caution advised

Certain statements in this presentation are forward-looking and are made in reliance on the safe harbour provisions of the US Private Securities Litigation Reform Act of 1995. These statements include, without limitation, those concerning: transformation of and investment in BT's networks; increased efficiencies, cost reductions and growing cash cost savings from 21CN; benefits of the 21CN programme and convergence; key milestones and timescales for roll out of 21CN and end user migration; introduction of next generation services; and next generation broadband availability.

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21CN - Activity across the globe

- **Harmonising networks –**
 - network change-out in the UK and network evolution overseas
- **Same architectural principles –**
 - gain synergy benefits by minimising variation to where fundamental differences exist
- **Former incumbent v altnet –**
 - in the UK BT has regulatory responsibilities but overseas we are an 'attacking' operator
- **Delivering converged services –**
 - opening the door to a compelling new communications world where customers will enjoy more joined up, more logical and more intuitive services
- **BT 21C Global Venture launched –**
 - seeking to help other operators around the world implement and accelerate their own next generation network plans

Industry Consultation for BT's NGN (21CN) programme

- Why Consult?
 - **Reason 1** – to minimise implementation risks
 - **Reason 2** – to maximise the benefit of 21CN: To deliver a great network with profitable products and very satisfied customers
- Consult21 Objectives:
 - Ensure industry is aware of the 21CN vision and BT's progress towards it
 - Achieve a shared understanding with industry on 21CN
 - Ensure industry has an opportunity to input to 21CN development