

**ITU-T / ATIS Workshop**  
**“Next Generation Technology and Standardization”**

Las Vegas, 19-20 March 2006

**BT’s perspectives for NGN and  
standards**

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## Forward-looking statement

Please note the full forward-looking statement contained at the end of this presentation

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 BT's networks; expected increased efficiencies, cost reductions and growing cash cost savings from 21CN; benefits to customers and industry of the 21CN programme, and convergence; anticipated investment in 21CN; and timescales for implementation of 21CN.



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## An engineer's alternative!

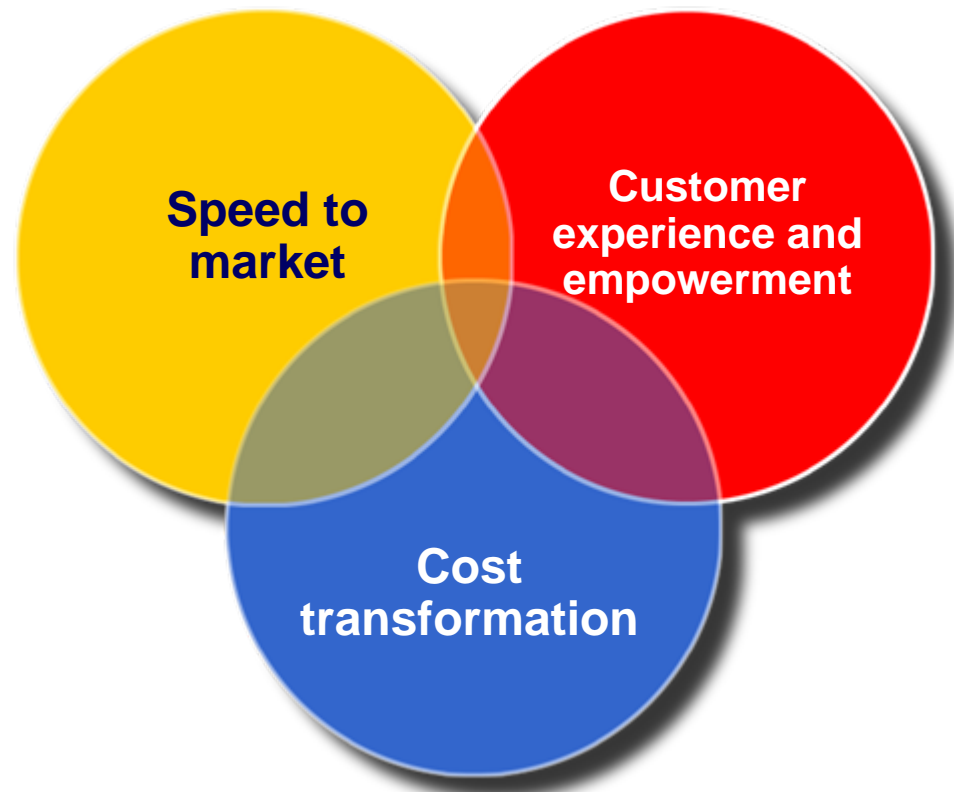
"Prediction is very difficult, especially if it's about the future." -- Nils Bohr, Nobel laureate in Physics

# Outline

- o BT's own NGN (21<sup>st</sup> Century Network or 21CN)
- o Key drivers for 21CN
- o Implementation status
- o 21CN and Standards
- o Key issues
- o BT's future needs

## 21CN - three key objectives

- Empower the customer with control, choice and flexibility like never before including communications from anywhere to any device
- Offer exciting new services for customers faster than before
- Reduce costs - expected to amount to £1 billion (\$1.8bn) per annum by 2008/9



# Drivers for 21CN

- Convergence
  - Fixed / Mobile
  - Service (work, home, business, bundles)
  - Computing / Telecoms
  - Voice / Data
  - Intelligence and OSS
- Pressure on traditional revenues causes Telco's to diversify<sup>2005</sup>
  - ICT
  - Mobile
  - IPTV
- The internet leads to service and pricing expectations in the users mind (online, immediate, anywhere, free)
- Pent up demand for increasing broadband speed
- Aggressive regulation and competition

By **convergence**, we mean the ability to bring together our **capabilities** and capacities in new ways to make life better, simpler and cheaper for customers. For customers of all kinds it means a more joined-up communications experience.

Ben Verwaayen, BT CEO June



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# 21CN – it's big and bold



- Not simply network transformation - but a radical overhaul of products, systems, process ... of BT's business
- Bigger annual investment than is spent on UK's motorways and trunk roads
- A world first for a telecommunications company

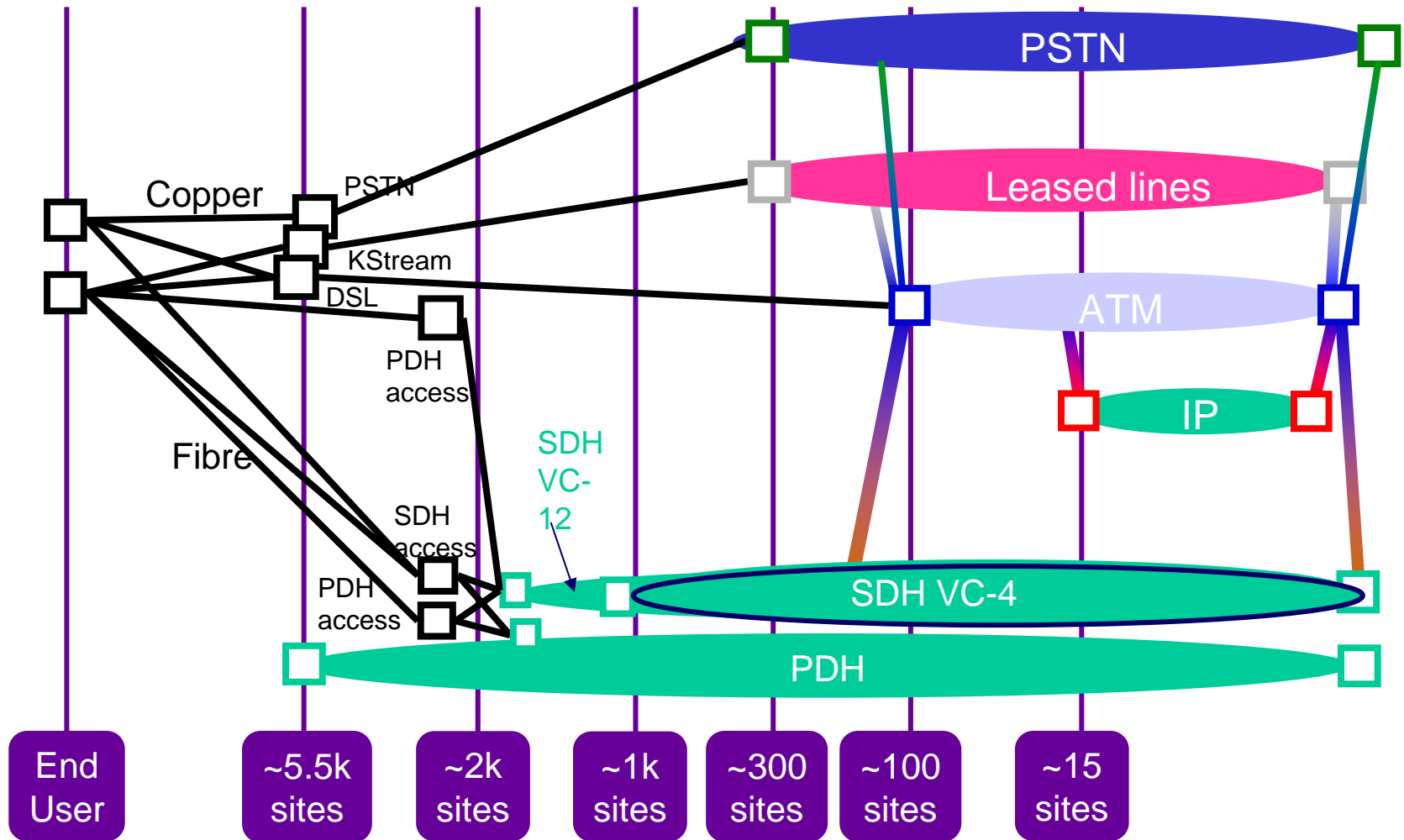


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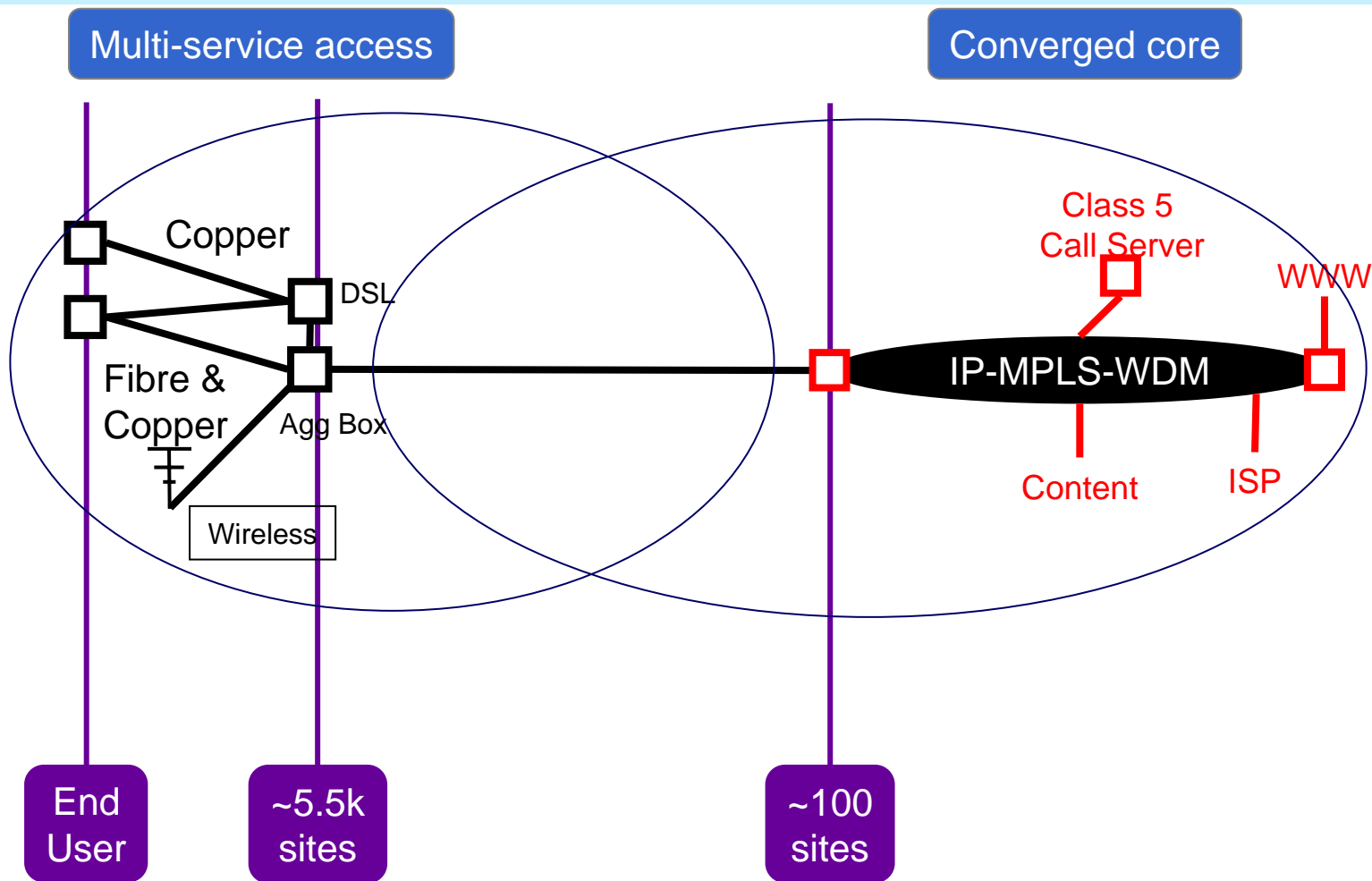


# 21CN - our current UK network





# 21CN - our simplified UK network

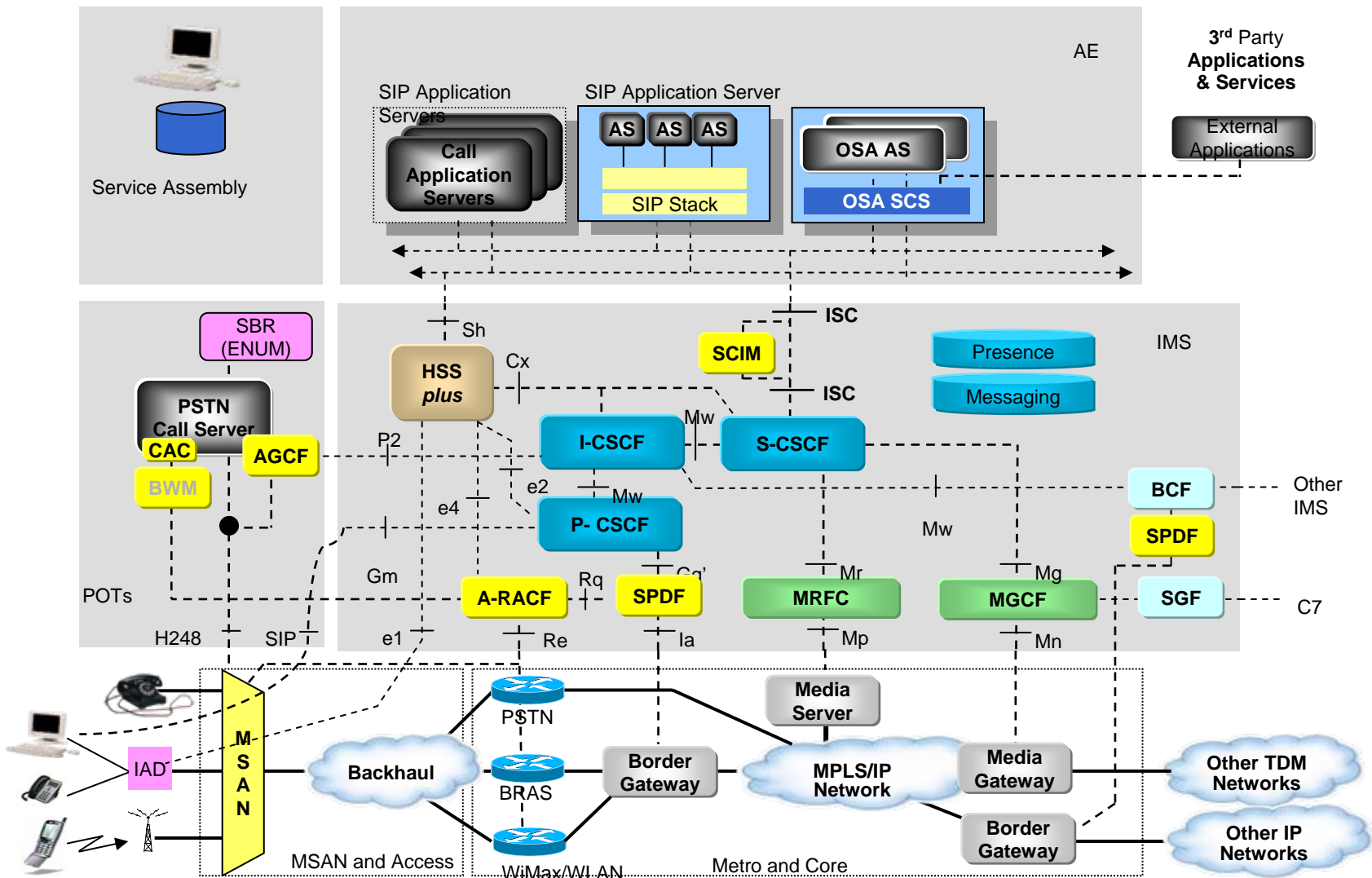


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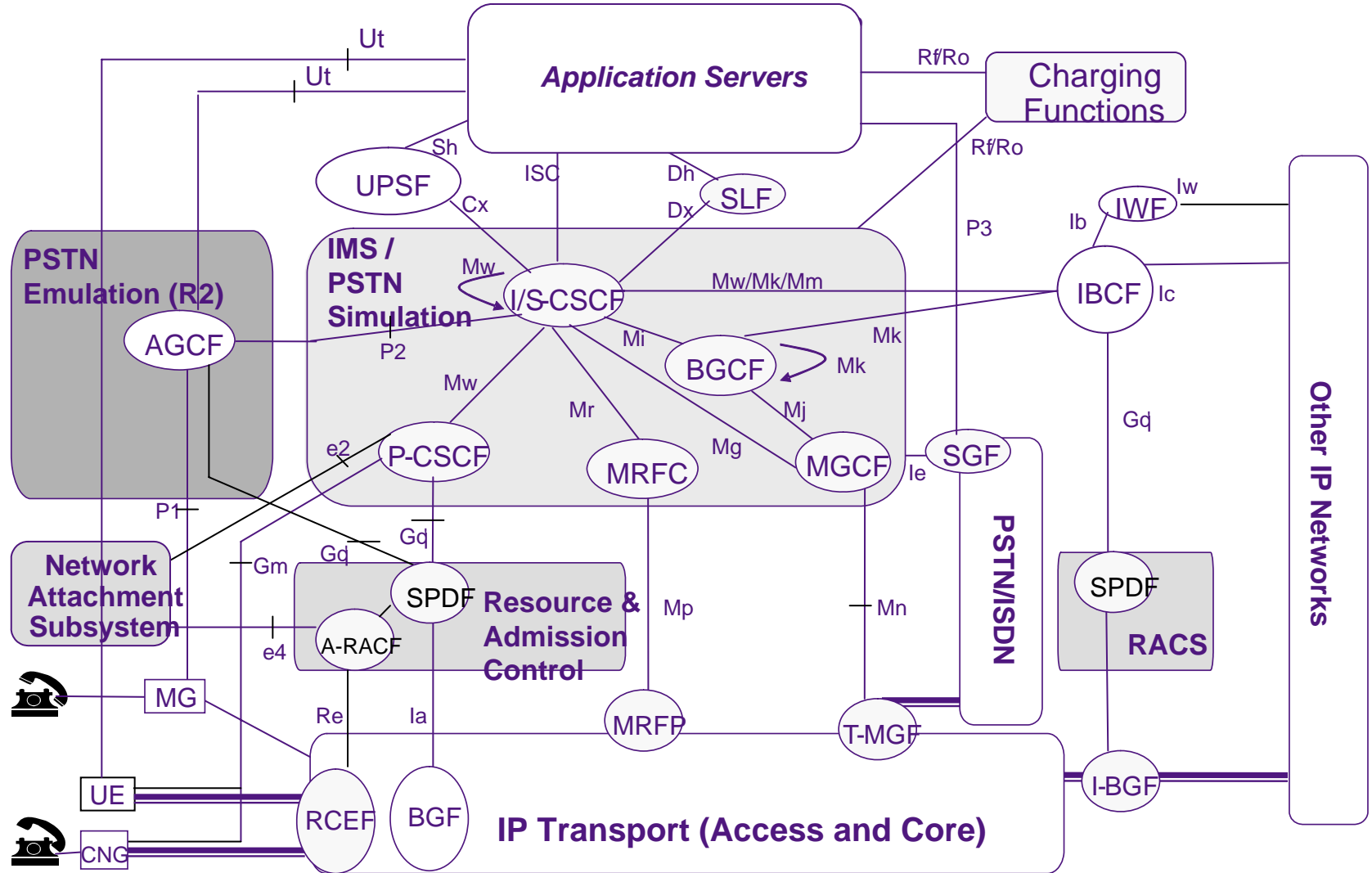
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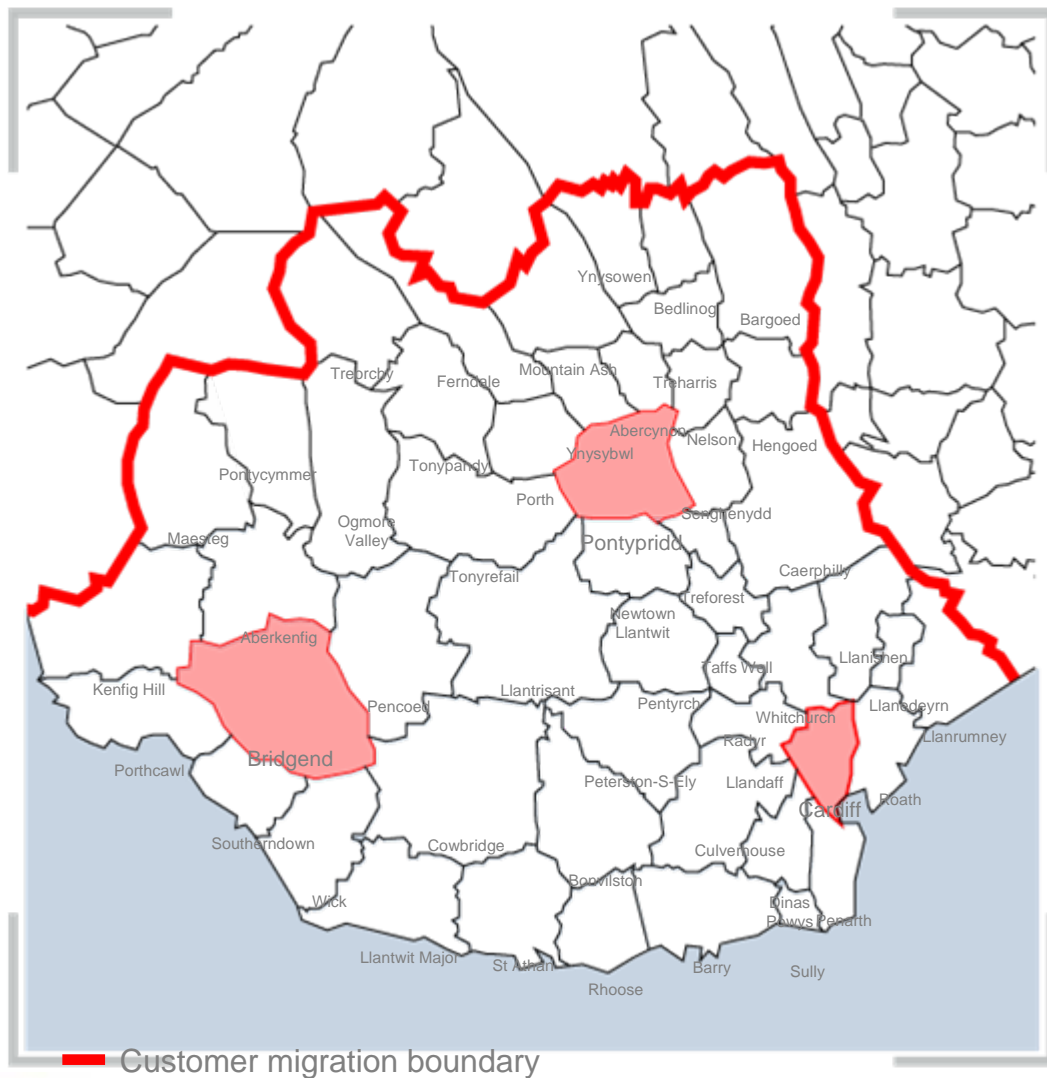
# BT's 21CN architecture



# ETSI TISPAN NGN Release 1 (PSTN emulation in Release 2)



# Early migration to 21CN planned for South Wales



- Migration of 350,000 customer lines expected to begin later in 2006
- Removal of 9 digital local exchanges
- Installation of 21CN equipment and capabilities
- Region chosen because of local and industry demographics
- Mass migration in UK will require 150,000 lines per week over 4 years to enable 30M lines



## Early migration to NGN

- Huge logistic and technical challenges
- Full 21CN capability set not possible on day 1
- Timely down streaming of key standards is a critical issue, requiring
  - Alignment with strategic suppliers
  - Working with other Telcos
  - Key inputs to ITU-T, ETSI and ATIS standards

# The ITU/ATIS Definition of NGN

- Packet-based transfer
- Separation of control functions among bearer capabilities, call/session, and application/ service
- Decoupling of service provision from network, and provision of **open interfaces**
- Support for a wide range of services, applications and mechanisms based on service building blocks (including real time/ streaming/ non-real time services and multi-media)
- Broadband capabilities with **end-to-end QoS** (Quality of Service)
- Interworking with legacy networks via open interfaces
- **Generalized mobility**
- Access to different service providers, independent of any access or transport technology.
- A variety of identification schemes
- Unified service characteristics for the same service as perceived by the user
- Converged services between **Fixed/Mobile**
- Independence of service-related functions from underlying transport technologies
- Support of **multiple last mile technologies**
- Compliant with all Regulatory requirements, for example concerning emergency communications, security, privacy, and etc.

# BT's 21<sup>st</sup> Century Network (21CN)

- Aims to reduce cost, speed time to market for new services and give the customer more control.
- Radical plan to close down legacy networks (PSTN, Private circuit, PDH, ATM FR etc).
- MPLS core over meshed optical
- Ethernet backhaul over CWDM
- 3GPP IMS intelligence
- Multi-service access nodes (MSAN) for service access
- Provides old and new services (e.g. PSTN replacement)
- Current interconnect discussions around legacy PSTN and PSTN over IP show complexity of the new interconnect issues.

Closely aligned to the ITU and ATIS definitions



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## 21CN and Standards

- 21CN is predicated on standards for
  - Network operators
  - Equipment providers
  - Service providers
- Global standards are vital for 21CN
  - Enhanced customer choice & experience
  - Uniting the telecoms and IT industry
  - Network Interoperability
  - Economies of scale



## Progress towards NGN standards...

- ITU-T Focus Group on NGN complete and down streaming begun in SG13
- ATIS Focus Group on NGN
- ETSI TISPAN working with 3GPP on intelligence and control (IMS)
- TeleManagement Forum (TMF) focusing future OSS standards
- Widespread agreement on the key principles
  - IP services
  - IMS intelligence / fixed-mobile convergence
  - MPLS core
  - Need for multiple access technologies

High level of agreement globally



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# Key issues

- o Architecture
  - Top level aligned but need it at all levels
  - Need to include
    - Wireless broadband
    - IPTV
- o Quality of Service
  - How to achieve end-end, and across different NGNs?
- o Interconnection
  - Need for new business and technical models in the NGN
- o OSS
  - Still often the critical path in new service launch
  - Critical for cost savings
  - Link with TMF
- o Applications
  - Will drive demand and capability

# What BT needs from ATIS and ITU-T

- Uphold a common definition of NGN
  - Release strategy
  - Consistent architecture
- Co-ordinate
  - ATIS leads for North America
  - Remove duplication
  - Identify and fill any gaps
- ATIS
  - Take the Focus Group work forward into Working Groups
- ITU-T
  - Global set of Recommendations
  - Built around ETSI TISPAN and ATIS standards
  - Meet the needs of all regions
- Timely delivery of quality standards that BT can procure against

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**Thanks for your attention!**

**Kevin Foster**

**BT**



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