BT’s perspectives for NGN and standards

Kevin Foster
Office of the Group CTO
British Telecommunications plc (BT), UK
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.
"Prediction is very difficult, especially if it's about the future." -- Nils Bohr, Nobel laureate in Physics
Outline

- BT’s own NGN (21st Century Network or 21CN)
- Key drivers for 21CN
- Implementation status
- 21CN and Standards
- Key issues
- 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
  - 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 2005
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
21CN - our current UK network

ITU-T / ATIS Workshop "Next Generation Technology and Standardization"
Las Vegas, 19-20 March 2006
21CN - our simplified UK network

- Multi-service access
  - Copper
  - Fibre & Copper
  - DSL
  - Wireless
  - ~5.5k sites

- Converged core
  - IP-MPLS-WDM
  - Class 5 Call Server
  - Content
  - ISP
  - WWW
  - ~100 sites

End User
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 21st 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
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 downstream 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
Key issues

- **Architecture**
  - Top level aligned but need it at all levels
  - Need to include
    - Wireless broadband
    - IPTV

- **Quality of Service**
  - How to achieve end-end, and across different NGNs?

- **Interconnection**
  - Need for new business and technical models in the NGN

- **OSS**
  - Still often the critical path in new service launch
  - Critical for cost savings
  - Link with TMF

- **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
Thanks for your attention!

Kevin Foster

BT
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.

Although BT believes that the expectations reflected in these forward-looking statements are reasonable, it can give no assurance that these expectations will prove to have been correct. Because these statements involve risks and uncertainties, actual results may differ materially from those expressed or implied by these forward-looking statements.

Factors that could cause differences between actual results and those implied by the forward-looking statements include, but are not limited to: material adverse changes in economic and financial markets conditions in the markets served by BT; future regulatory actions and conditions in BT’s operating areas; technological innovations; developments in the convergence of technologies; the anticipated benefits and advantages of new technologies, products and services, including broadband, not being realised; and general financial market conditions affecting BT's performance. BT undertakes no obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise.