Regional Development Forum - Africa: "NGN and Broadband, Opportunities and Challenges"

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Progress on implementing networks

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Abstract

- We are hearing much about NGN, 3G, all-IP networks, etc. What is the current reality? This presentation provides a series of examples of progress in various parts of the world in deploying the new technologies and taking advantage of the cost savings and service opportunities they bring with them.

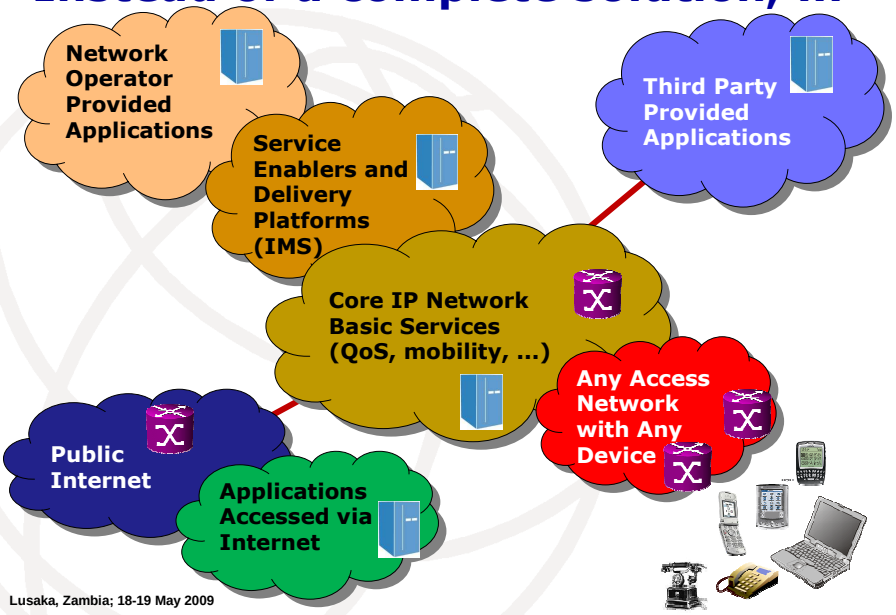
Outline

- Introduction
- Early Deployments
- Recent Announcements
- Issues

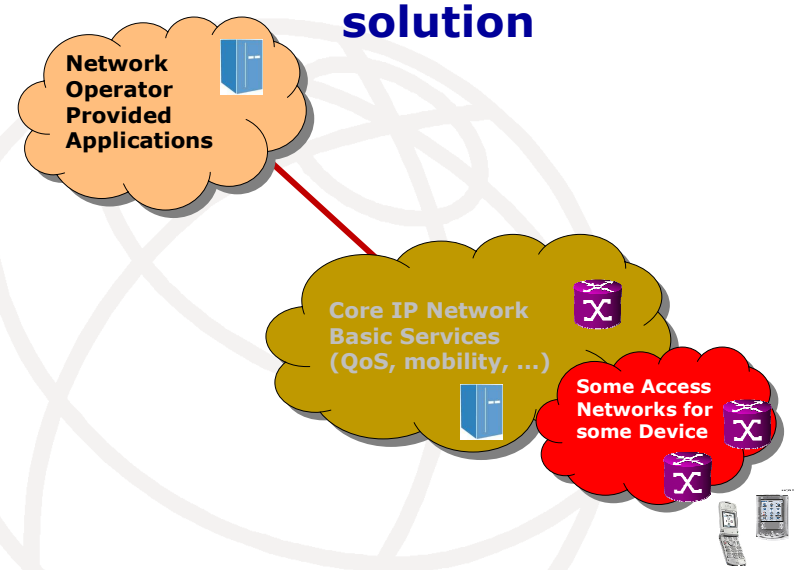
Introduction

- Challenge: business case
  - It is nearly always less costly to deploy a service-specific solution when introducing a new service than to deploy a general purpose solution
  - In the mid-1980s, operators were often reluctant to deploy SS7 because a business case based solely on replacing existing signalling systems wasn't attractive

Instead of a complete solution, …



… it is tempting to provide a partial solution



Need to look forward!

- 20/20 Hindsight
  - Today, it is widely recognized that SS7 was a transforming technology that enables many high revenue network wide services, plus it is the nervous system on which mobile systems depend
  - "Prediction is very difficult, especially about the future."
    - Niels Bohr, Danish physicist, won the Nobel Prize in Physics in 1922*

* Aage Niels Bohr, son of Niels Bohr, also won a Nobel Prize in Physics in 1975

Early Deployments I

- AT&T brings first 'IMS service' to U.S.A. 2006 (ref.)
  - K. Williams, Exec. Director Technology, AT&T Wireless Unit: "... because IMS is an enabler it is difficult to extrapolate a business case based on one service like video share." "... IMS will prove its worth by enabling multiple services."
- Video share service one of the earliest 'IMS services' to come to market.

AT&T Video Share Service

- Enables users to add live video feed while talking on mobile phone
  - Uses circuit switched UMTS network for voice, IP/IMS for video
  - Handset's IMS client uses SIP over IP to communicate with CSCF and HSS servers in core IMS network with no need for an application server
  - Uses IMS to manage the video sessions over the operator's IP network

Early Deployments II

- China Netcom's Beijing Branch (Beijing Netcom) - April 2007 (ref.)
  - First commercial IMS network in China
  - Includes IP-Centrex solution
  - IMS multimedia telephony system provides value-added services with the main focus on IP-Centrex targeting enterprise customers

Beijing Netcom: IP Centrex

- Beijing Netcom:
  - To provide telecom-quality cost-efficient IP multimedia services addressing the needs of high-end enterprise users in Beijing area now and in the future.
  - Supports introduction of new multimedia services (voice, data, audio, video) to enhance user experience in Beijing area, including visitors and participants in the 2008 Olympic Games

Deployments I

- Telefónica SA, Spain (ref.)
  - "Mobile Attendant" service provides personalised, reliable, easy-to-use advanced communications experience across wireless and wireline networks
  - Integrates voice, video, text and data into one seamless communications environment, part of Telefónica's vision linking fixed and mobile networks together to deliver a converged communications experience

Telefónica SA, Spain

- PC software manages calls running on GSM or 3G phones via a simple graphical interface to handle, e.g., simultaneous calls, transfers, multi-party conferencing
- Can simultaneously run multimedia sessions from PC including presence and reachability messaging updates
- Future: add a Personal Assistant with capabilities to enhance productivity for field-based and highly mobile personnel

Deployments II

- KPN - Netherlands, Sep 2006 (ref.)
  - Started IMS-based voice services over BB in early 2007, part of €1bn+ spend on all-IP network, to complete by 2010
  - NGN will consist of a BB VDSL/FTTH-based network and IP-based platforms to bring IP-based BB services to customers; switch off legacy networks
  - Will save KPN €100M+/year in reduced OPEX costs; will need 1/3 of staff vs. legacy networks

KPN, Netherlands

- IMS is central to plans: once in place, will deploy fixed and mobile IP-based services, starting with simple voice services and moving to VoIP-based IP Centrex, wireless virtual PBX and messaging services
- Issues: regulatory confusion
  - How are VoIP calls classified and charged for? Is it voice, or is it data?
  - Net neutrality and IP interconnect: who gets paid for what when an incumbent shares its network with 3rd party service providers?

Deployments III

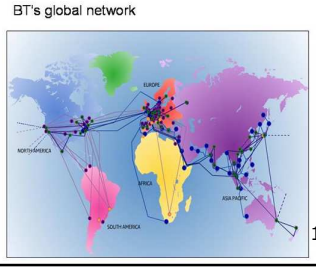
- Bahrain Telecom (Batelco)
  - NGN project enables BB services across the kingdom; investing US$57M
  - Project start Sep 07; completed Jan 09
  - Significant simplification of network
  - Bahrain is the first country in the world with complete country wide broadband
  - Provides NGN services: triple play (voice, data, video) on 1 line which traditionally only carried voice telephony

Batelco - Bahrain

- 176,000 lines migrated to NGN
- Anticipated would require >5 years to implement but went considerably faster
- Migration didn't disrupt normal service
- Now customers can connect to Batelco BB internet same day vs. one week
- NGN delivers on promise to bring affordable BB access to all households making Bahrain among the best connected in the world

Deployments IV

- "Delivering the future - BT's 21st Century Network" (ref.)
  - Software driven network with new, simpler portfolio of next gen. services
  - Platform for innovation to put flexibility and choice in the hands of customers
  - Being deployed in UK
  - BT serves markets in 172 countries: maximum consistency globally

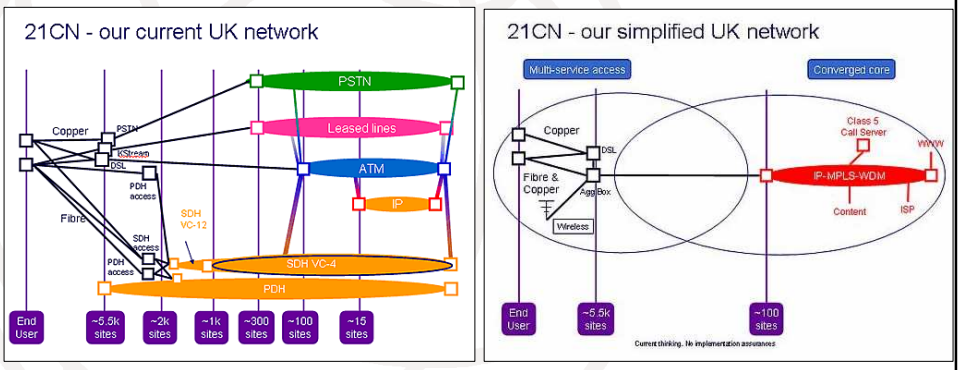


BT's 21CN

- Advanced network based on intelligent systems using key technologies:
  - IP is key as common transport protocol for all types of communication and applications
  - SIP allows service provider to control the communications activity to meet a customer's requirements
  - MPLS enables the efficient designation and routing of BB IP traffic flows
  - IP Multi-media Sub-system (IMS) to support innovative services
  - Also: SDH, Virtual LAN, WDM

BT's 21CN

- Significant simplification of network
  - Reduced OPEX plus increased reliability



Deployments V

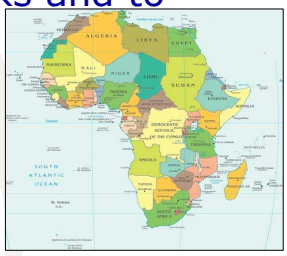
- Limited infrastructure in many African countries poses a challenge
  - Good news: many initiatives: BB, rolling out IP networks, new fibre optic links
  - But still large unsatisfied demand for basic voice: VoIP a primary application
  - Steady improvement in Internet bandwidth, regulatory environment, growing number of VoIP service providers entering the market

NGN, IMS and Africa

- Good news:
  - BB access moving ahead: e.g., WiMAX being deployed in some 20 countries
  - E.g., Uganda to install softswitches to upgrade its network to be more data oriented, add capacity, flexibility, new services (Nov. 2008)
  - E.g., Ethiopia recognized need to upgrade its infrastructure as fundamental to economic development: core network able to handle many types of traffic including a layer of the backbone dedicated to internet with satellite access for remote areas

NGN and Basic Voice

- Technologies used for NGN (IP, SIP, etc., - see BT 21CN charts) apply to both modernizing existing networks and to installing new networks:
  - Lower costs to install
  - Reduced OPEX
  - Services flexibility
  - Scalability



- Plus additional alphabets and languages coming on stream enable internet services with local, and locally developed content

One Size Does Not Fit All

- "One size fits all" sounds great but is rarely the case
- Who knows your operator and market situation best? You do!
  - Apply what you learn from the experience of others ...
  - ... but adjust it to fit your reality

Summary

- Highlighted deployments in a range of markets from highly advanced to less advanced
  - Clear indication of viability of NGNs and IMS
- One solution will not fit everyone
  - Each market needs to tailor its approach to its own situation
- Need next generation regulation for Next Generation Networks