ITU-D Regional Development Forum for the EUR and CIS Region: "NGN and Broadband, Opportunities and Challenges"
Chişinău, Moldova; 24-26 August 2009

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.
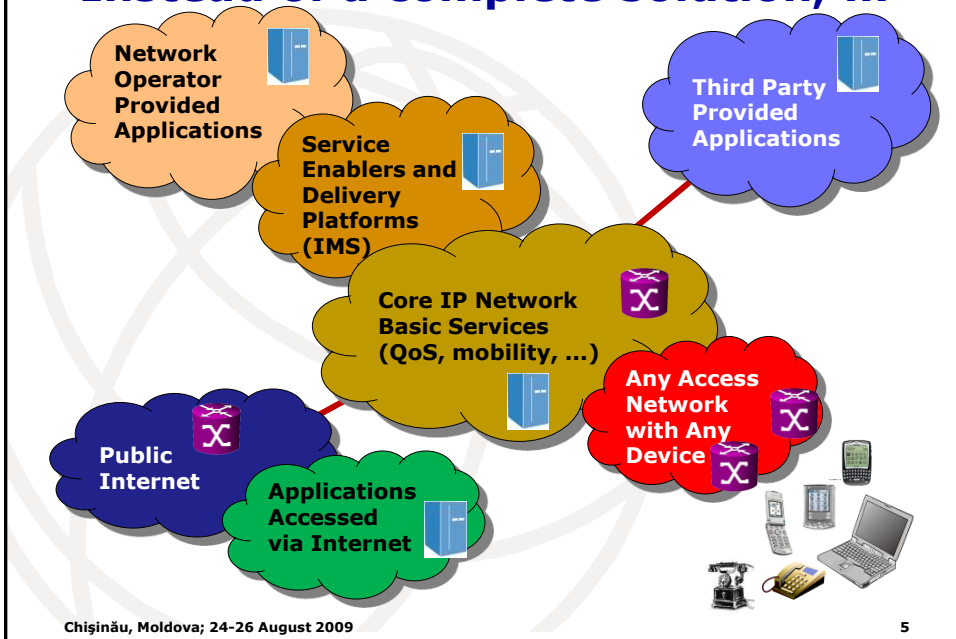
Outline

- Introduction
- Early Deployments
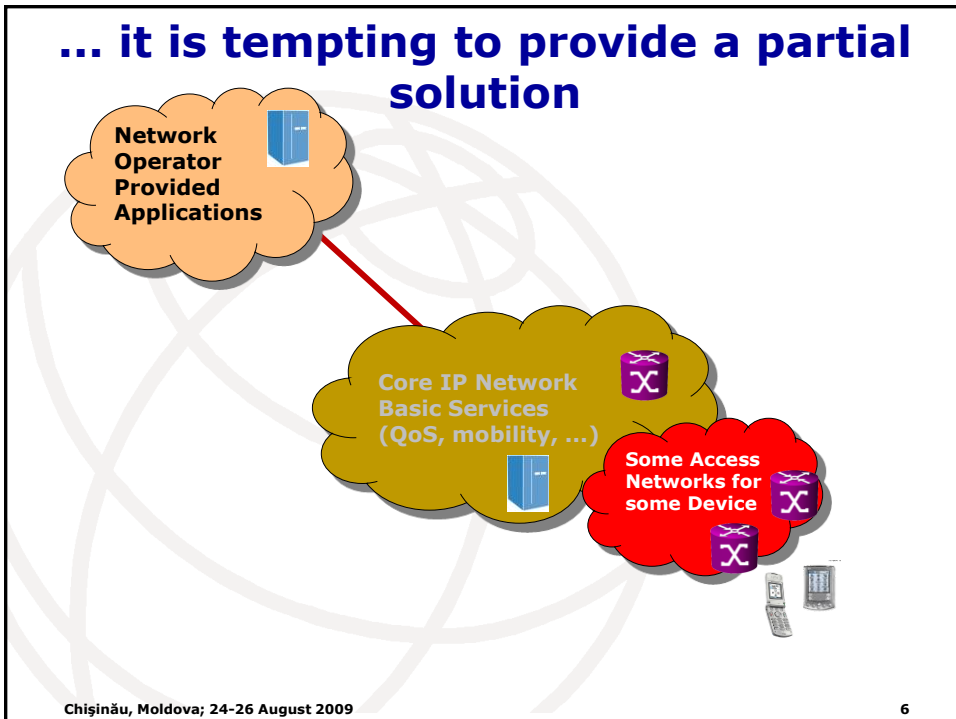- Recent Announcements
- Issues

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 (break even or marginally positive)

Instead of a complete solution, ...

Network Operator Provided Applications

Third Party Provided Applications

Service Enablers and Delivery Platforms (IMS)

Core IP Network Basic Services (QoS, mobility, ...)

Any Access Network with Any Device

Public Internet

Applications Accessed via Internet

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... it is tempting to provide a partial solution

Network Operator Provided Applications

Core IP Network Basic Services (QoS, mobility, ...)

Some Access Networks for some Device

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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

- 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

Telefónica

- ➡ 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

- ■ 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

Batelco

- ▪ 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

Batelco بتلكو

- 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

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Deployments IV

BT

- "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 global network
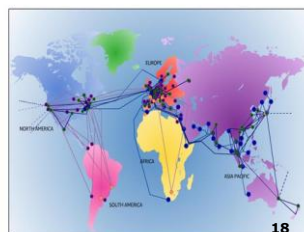
BT's 21CN

- 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
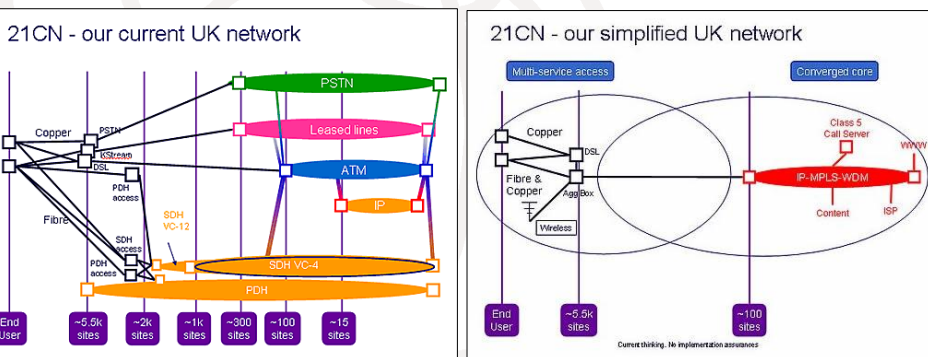 - Also: SDH, Virtual LAN, WDM

BT's 21CN

- Significant simplification of network
  - Reduced OPEX plus increased reliability

Deployments V

- **Limited infrastructure in developing 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

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NGN, IMS and the EUR and CIS Region

- **Good news:**
  - Broadband access is moving ahead
    - e.g., DSL, fibre optics, WiMAX being deployed or planned in Moldova
  - Multiple softswitch installations in EUR and CIS region making networks more data oriented
    - add capacity, flexibility, new services
  - Upgrading infrastructure is fundamental to economic development
    - need to be able to handle many types of traffic
    - include support for internet 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
  - e.g., http://blogs.zdnet.com/BTL/?p=14051

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 <u>your</u> reality

Verne Troyer (0.81m) and Yao Ming (2.29m)
in Apple TV ad
www.youtube.com/watch?v=Xvbuwfawqcc

Summary

- This presentation has highlighted deployments in a range of markets from highly advanced to developing
  - Clear indication of viability of NGNs and IMS
- But one solution will not fit everyone
  - Each market needs to tailor its approach to its own situation
- The technology is changing: need "Next Generation Regulation" for Next Generation Networks

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