

**ITU-D Regional Development Forums 2010 on
NGN and Broadband (ARB, EUR & CIS Regions):
“NGN and Broadband, Opportunities and
Challenges”**

Chişinău, Moldova; 4-6 May 2010

Services Scenarios and Migration to NGN

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Abstract

- NGNs will become reality only if we address how to move from the current infrastructure to the new. Some key elements of achieving NGN while retaining the value of existing investment will be addressed. Another perspective on this is the “green field” environment that exists for new features and services and how NGN overlays can be used to provide these capabilities.

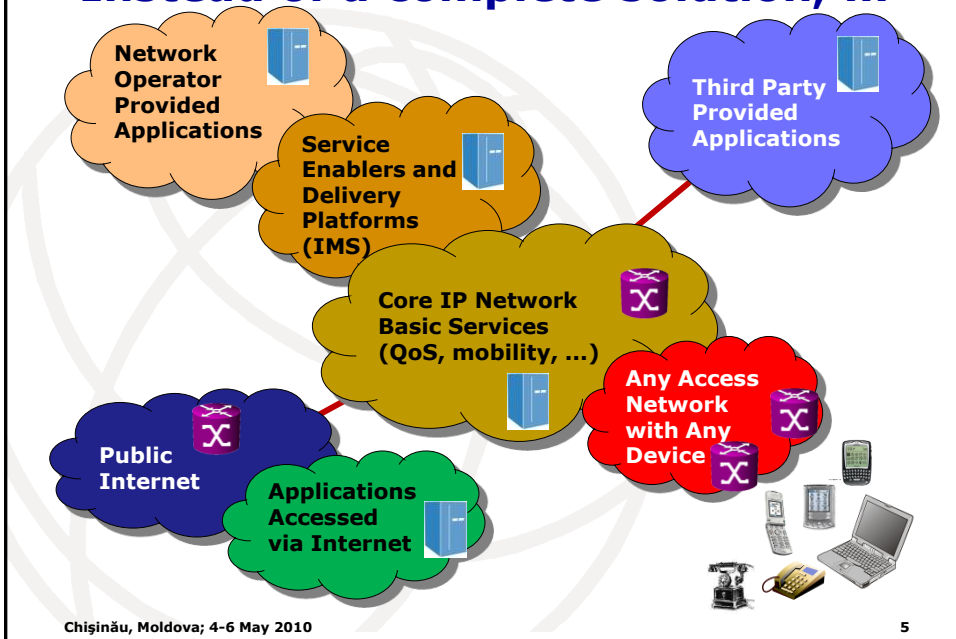
Outline

- Introduction
- ITU-T SG 13 Structure
- Selected Work Items
- Extracts of Draft Recommendations
 - ◆ Multimedia, VPN, USN, IP Networks, Risk Analysis
- Summary

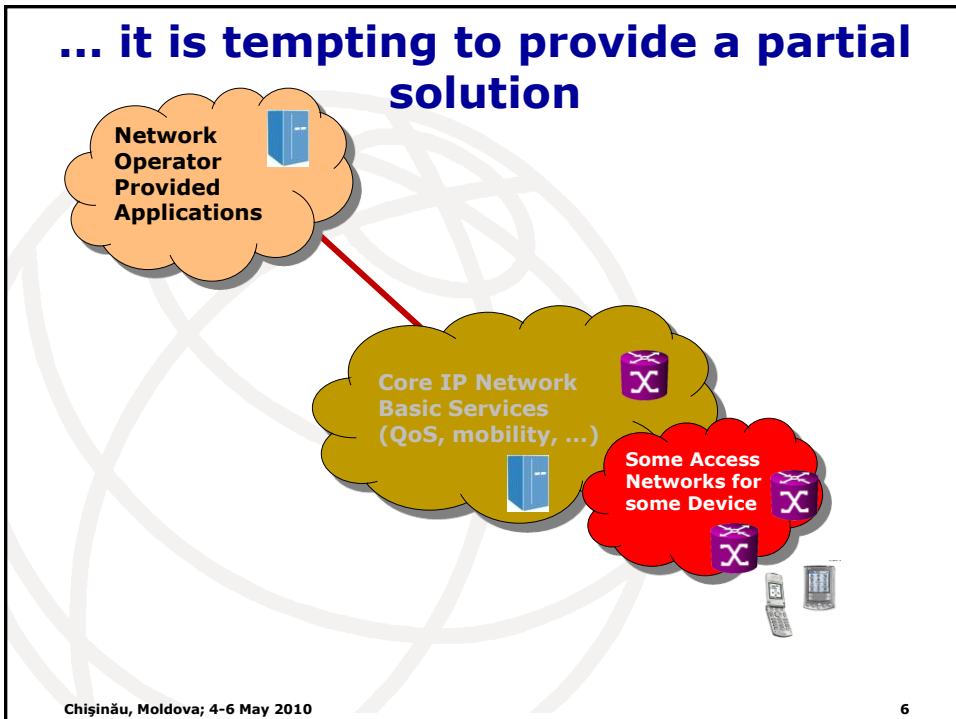
Introduction

- 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 that has the potential to support multiple services
 - ◆ 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
 - ◆ Deploying SS7 in every case turned out to be a positive and forward looking decision

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*

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

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ITU-T SG 13 Structure

- WP 1/13 Coordination, Planning and Global Outreach of NGN including Mobile
- **WP 2/13 Service requirements, scenarios and evolution aspects**
- WP 3/13 Frameworks and Functional Architectures
- WP 4/13 QoS and Security
- WP 5/13 Future Networks

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WP 2/13 Service requirements, scenarios and evolution aspects

Questions (work items) related to this topic:

- **Q.3/13 Requirements and implementation scenarios for emerging services and capabilities in an evolving NGN**
- **Q.12/13 Evolution towards integrated multi-service networks and interworking**
- **Q.13/13 Step-by-step migration to NGN networks**
- **Q.14/13 Service scenarios and deployment models of NGN**
- **Q.18/13 Requirements and framework for enabling COTS components in an open environment**

Status of Material in Following Slides

- **SG 13 is aggressively working a range of topics**
 - ◆ **Work Plan and deliverables: use tool at www.itu.int/ITU-T/workprog/wp_search.aspx?isn_sp=545&isn_sg=552**
- **Following slides represent work in progress, parts just getting underway, some more mature, but none complete**
- **OPPORTUNITY:**
 - ◆ **Get involved, participate and drive the work with your requirements, service scenarios, and use cases (meeting schedule on a later slide)**

Selected Work Items I

■ Q.3/13

- ▶ Y.2216: NGN capability requirements to support multimedia communication centre (MCC) service (approved Mar 2010)
- ▶ Y.2215: Requirements and framework for the support of VPN² services in NGN including mobile environment (approved Jun 2009)
- ▶ Y.2221: Requirements for support of Ubiquitous Sensor Network (USN³) applications and services in the NGN environment (approved Jan 2010)

■ Q.12/13

- ▶ Y.ipev: Best effort IP network evolution to NGN (target Sep 2010)

- 1 MCC = Multimedia Communication Services
- 2 VPN = Virtual Private Network
- 3 USN = Ubiquitous Sensor Network

Selected Work Items II

■ Q.13/13

- ▶ The Handbook of evolving IMT-2000 Systems

■ Q.14/13

- ▶ Y.2214: Service requirements and functional models for Customized Multimedia Ring services
- ▶ Y.2237: Functional model, service scenarios and use cases for QoS enabled mobile VoIP service (approved Jan 2010)
- ▶ Y.hapas: Heterogeneous application profiles adaptation service scenario over NGN
- ▶ Y.iptvbs: Web-based IPTV service brokering scenarios and use cases (target Dec 2010)
- ▶ Y.iras: IT Service Risk analysis service scenario over NGN (target Mar 2011)

Y.2216: NGN capability requirements to support multimedia comm. centre (MCC) service

- Users can access an enterprise's centralized information or customer service using multiple media. Allows efficient management using automated response or agents.
- Calls are distributed in queues to agent groups. Supervisor agent can monitor and manage other agents.

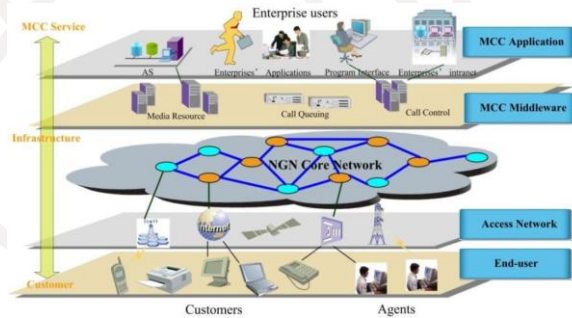


Diagram is from draft version: www.itu.int/md/T09-SG13-090112-TD-WP2-0021
Approved version: www.itu.int/rec/T-REC-Y.2216-201003-P

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Y.2215: Requirements and framework for the support of VPN services in NGN, including the mobile environment

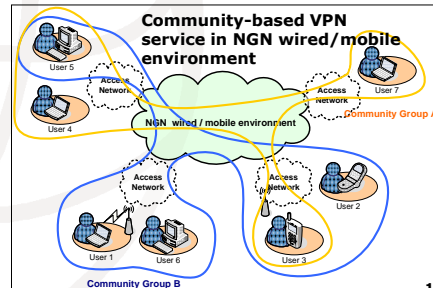
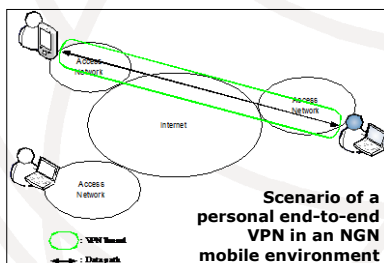
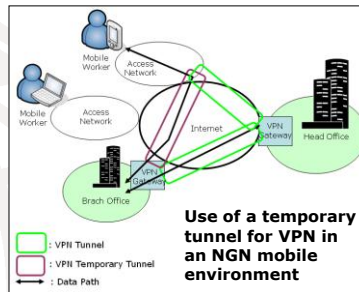
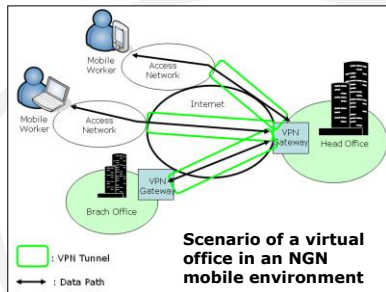
- Identifies NGN capabilities to support VPN applications in NGN mobile environment
- NGN to support:
 - ◆ Service configuration for VPN members
 - ◆ Wired/wireless tunnel coordination for peer-to-peer compatibility among VPN members
 - ◆ QoS/SLA (re-)negotiation for service mobility or upgrades, to ensure seamless VPN service
 - ◆ Provision of multiple security levels, as appropriate in response to VPN users' demands

Draft version: www.itu.int/md/T09-SG13-090112-TD-WP2-0017
Approved version: www.itu.int/rec/T-REC-Y.2215-200906-I

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Y.ngn-vpn Appendix: Scenarios for VPN services in NGN mobile environment



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Y.2221: Requirements for support of Ubiquitous Sensor Network applications and services in NGN

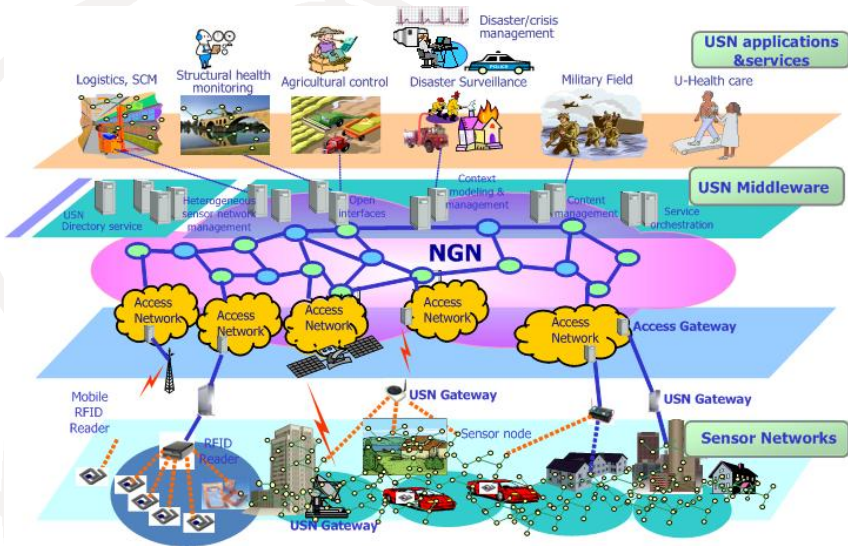
- USN is a concept and infrastructure which delivers sensed information and context to enable knowledge development
- Sensor networks to date monitor physical or environmental conditions, (e.g., temperature, sound, vibration, pressure, motion or pollutants) at various locations but as isolated networks. Networked sensor applications allow the development of intelligent information infrastructures enabling new possibilities for consumers, public organizations, enterprises, government, etc.
- USN applications and services integrate sensor networks into a network infrastructure with applications such as industrial or home automation, agricultural monitoring, healthcare, environment, pollution and disaster surveillance, homeland security, etc.

www.itu.int/md/T09-SG13-090112-TD-WP2-0019

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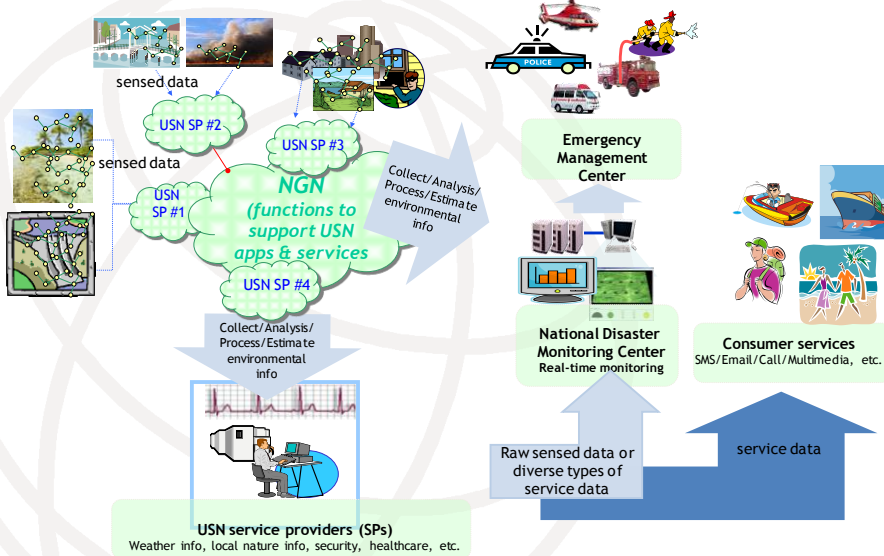
USN Overview



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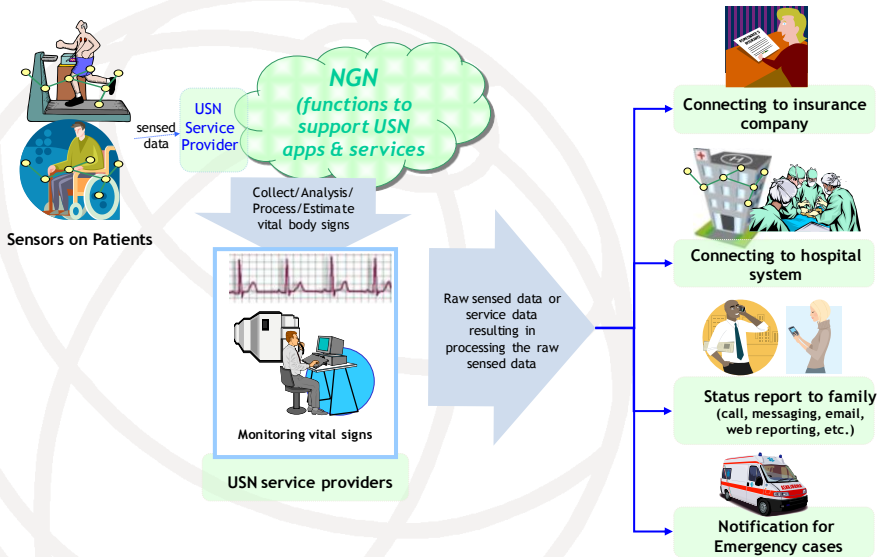
Use Case: USN Weather Information Service



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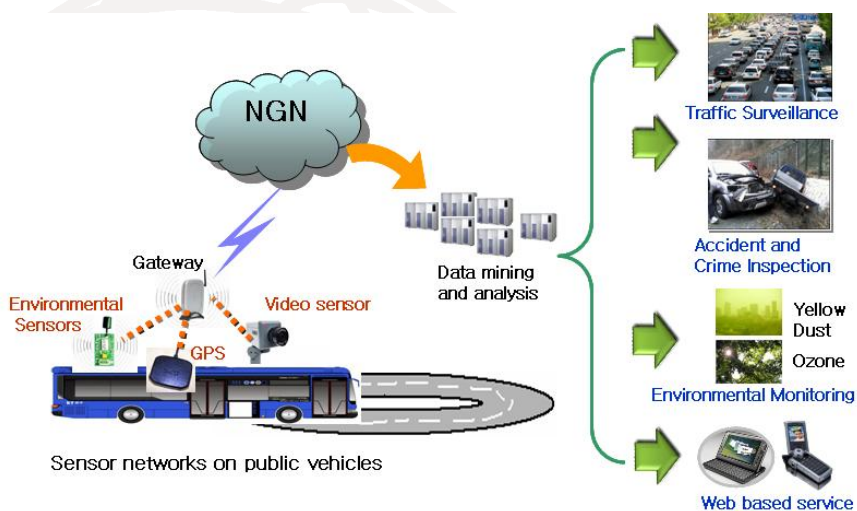
Use Case: USN Healthcare Service



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Mobile USN service to monitor environmental information



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Y.ipev: Best Effort IP Network Evolution to NGN

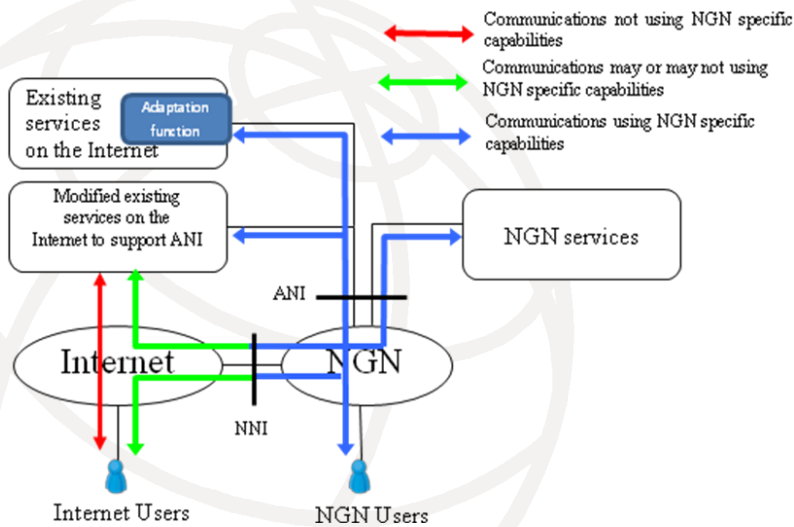
- Widely deployed Best Effort IP (BE IP) networks provide generally low-bandwidth legacy transport technologies and high access network aggregation ratios to provide internet connectivity to as many customers as possible
- High demand for new multimedia services (IP broadcasting, VoD, multimedia communication, etc.) means more capable networks are required
- Changeover (“flash cut”) of BE IP networks to NGN is impossible, so need:
 - ◆ Ways to evolve a BE IP network to NGN
 - ◆ General BE IP network evolution architecture
 - ◆ Interworking functions and interfaces between a BE IP network and an NGN
 - ◆ Security considerations

www.itu.int/md/T09-SG13-090902-TD-WP2-0068

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NGN and Internet interworking model



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Y.iras: IT Service Risk Analysis Service Scenario over NGN

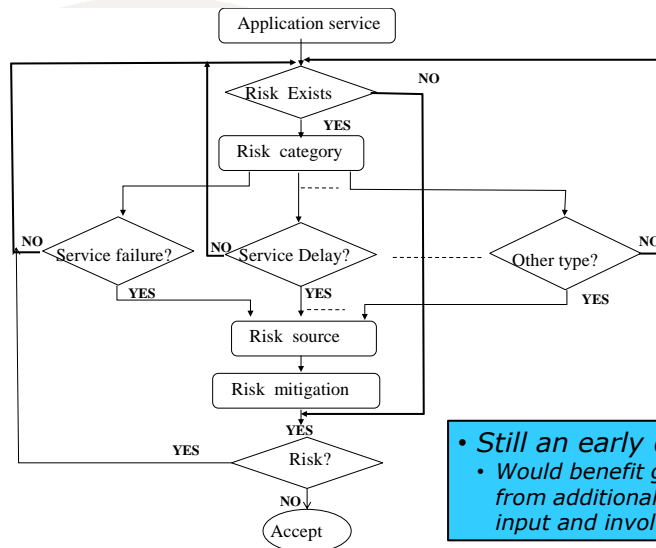
- Looks at availability, compliance, security, and application performance.
- Service failure risk: hardware failure, software errors, network outages, data centre failure, poor change management, network outages, network congestion, inadequate capacity, etc.
- Result: failure to deliver service transactions and operations, or slow or inefficient operation leading to abandoned transactions, lost sales, reduced customer, partner, and user confidence
- Need a systematic service scenario and assessment analysis to mitigate risks

www.itu.int/md/T09-NGN.GSI-090511-TD-GEN-0189

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Service Risk Analysis Scenario Flow



• Still an early draft
• Would benefit greatly from additional operator input and involvement

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NGN-GSI Meeting Schedule: *Opportunity to get involved!*

- Geneva, Switzerland unless otherwise indicated:
 - 19-30 April 2010
 - 13-24 September 2010
 - 17-28 January 2011
 - 9-20 May 2011
 - 10-21 October 2011
 - 6-17 February 2012
 - 4-15 June 2012
- *Dates beyond 2010 subject to change*
 - *Hosting opportunity: need 1 year lead time*
 - *contact ITU TSB for details*

Summary

- Migration of services and networks to NGN presents challenges
 - ◆ Need to develop scenarios and strategies to move forward
- SG 13, the lead SG on NGN, has a WP addressing these areas
- Presentation has highlighted current work
- Opportunity to get involved:
 - participate and drive the work with your requirements, service scenarios, and use cases



Thank you!

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