International Telecommunication Union

Regional Development Forum 2008
"Bridging the Standardization Gap in Developing Countries"
Damascus, Syria, 20-22 July 2008

NGN Standardization

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Counsellor Study Group 11
Damascus, July 2008

WTSA-04 Decisions (October 2004)

o Pre-WTSA-04:

- NGN Focus Group was formed in May 2004

– to end 2005

o Study Group 13 (NGN SG) established by WTSA-04

- Lead SG for NGN studies (coordination of activities across relevant SGs)

o SG13 also became Parent SG of the NGN FG

We were always working on the next generation ...

o We began with human operators handling switching and services for "hard-wired" subscribers

o "Progressed" to analog mechanical circuit switching
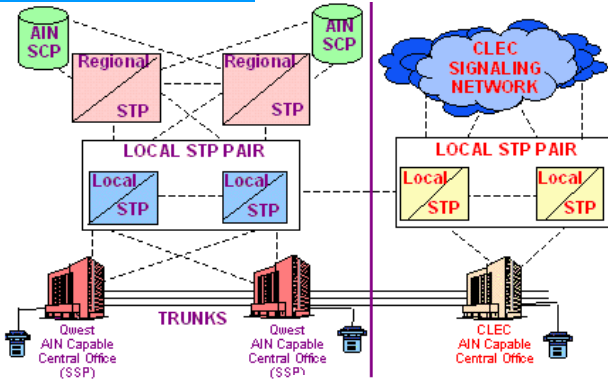
o Refined it with stored program control

…but we were focused on refinements …

o… converted the analog circuits to digital transmission and switching, with replicated islands of intelligence (exchange based service logic and data), …

o… added message based signalling (SS7) and centralized intelligence (IN Intelligent Networks), …

o… then went from exclusively hard wired access by adding mobility with cellular telephony, …
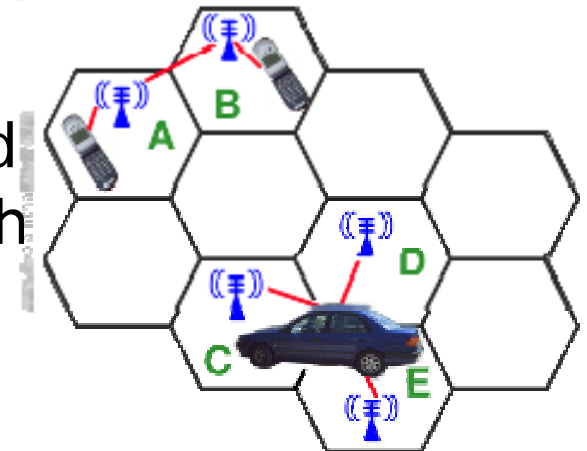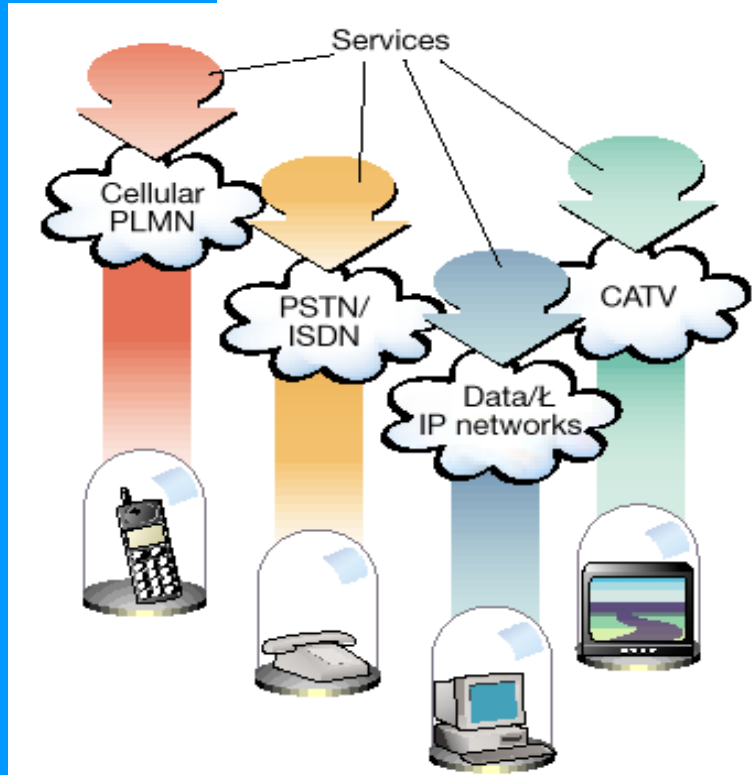
until some key developments ...

o ... then along came the Internet ...

o ... coupled with almost
   unimagined computing
   technology advances in
   super computing, servers
   and personal computing ...
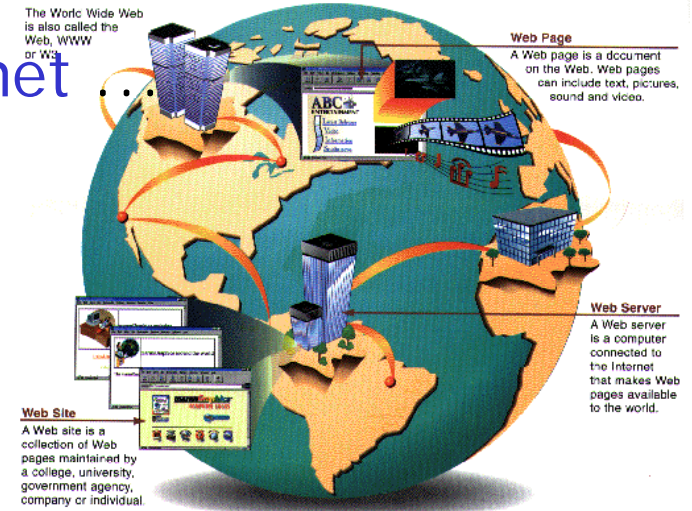
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that *require* a paradigm shift ...

o ... and these technologies now ~~allow~~ ~~enable~~ *require* us to combine what used to be separate ...
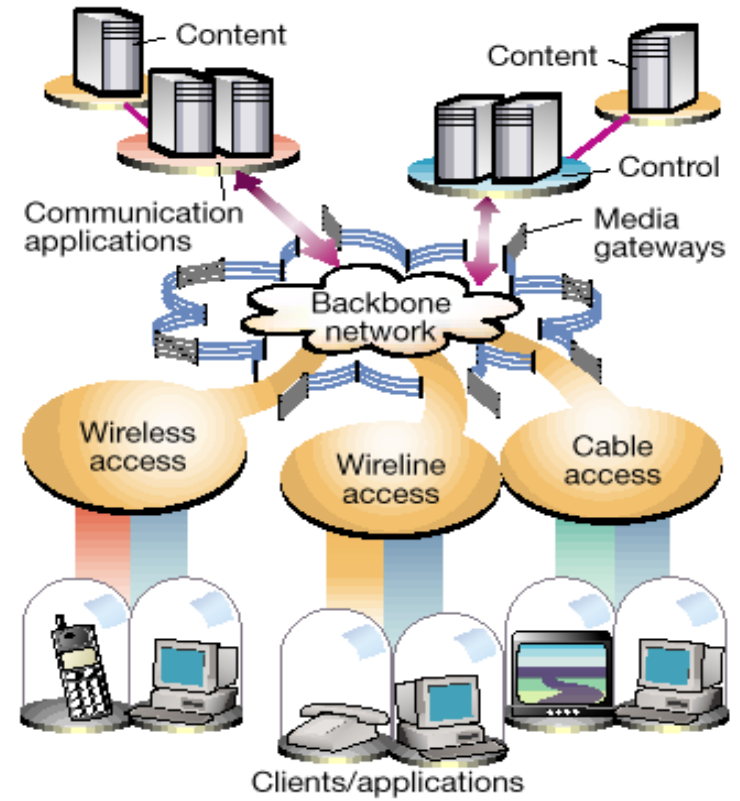
What's New:
Horizontally-integrated Network

Video Services (TV, movie, etc)

Data Services (WWW, e-mail, etc)

Telephone Services

NGN Services

Point to point, Point to multipoint, Multipoint to multipoint

NGN Transport

Point to point, Point to multipoint, Multipoint to multipoint
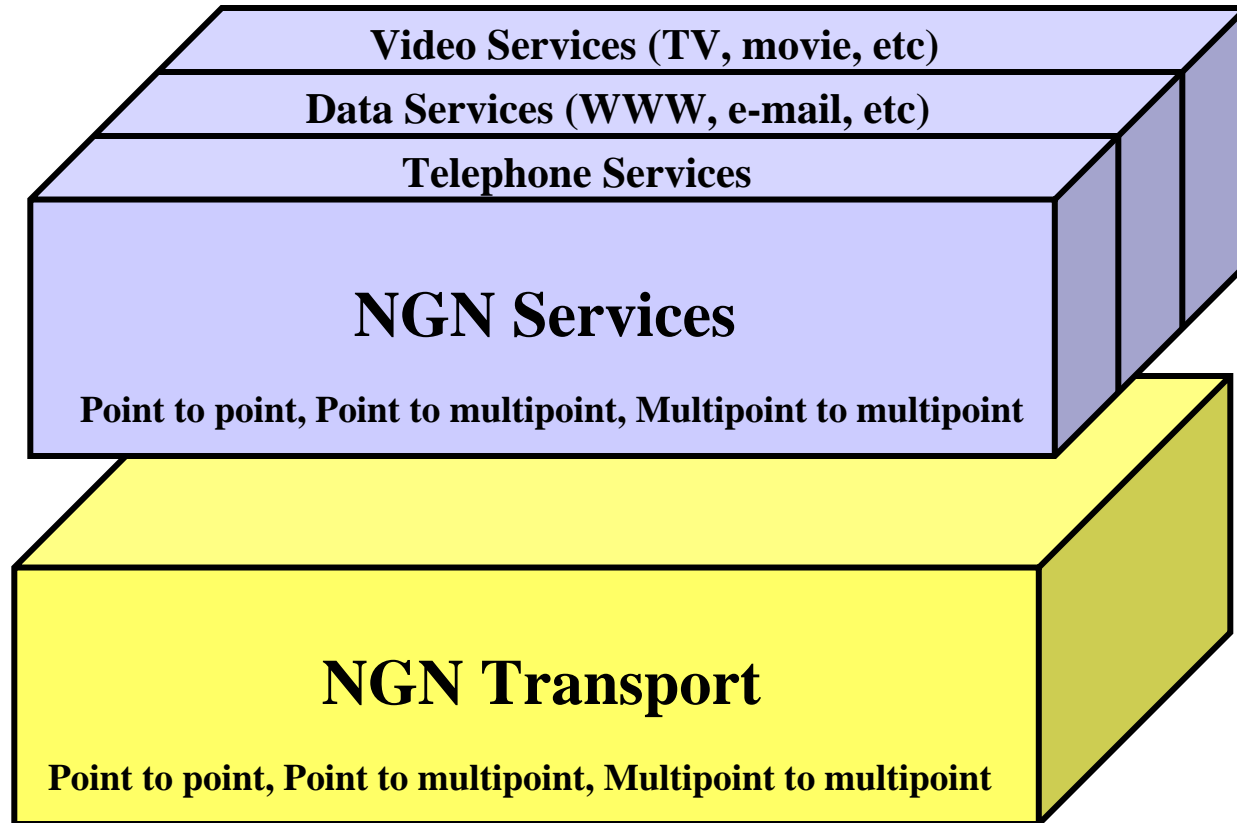
ITU-T Recommendation **Y.2011**

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Functional Architecture: Component View
(Rec. Y.2012(09/2006)/FRA)

Applications

Service Stratum

Application Support Functions and Service Support Functions

S. User Profile Functions

Other NGN Service Components

Service Control Functions

PSTN / ISDN Emulation Service Component

IP Multimedia Service Component

Other Networks

Legacy Terminals

GW

Legacy Terminals

GW

Customer Networks

NGN Terminals

End-User Functions

T. User Profile Functions

Network Attachment Control Functions (NACF)

Resource and Admission Control Functions (RACF)

Access Network Functions

Edge Functions

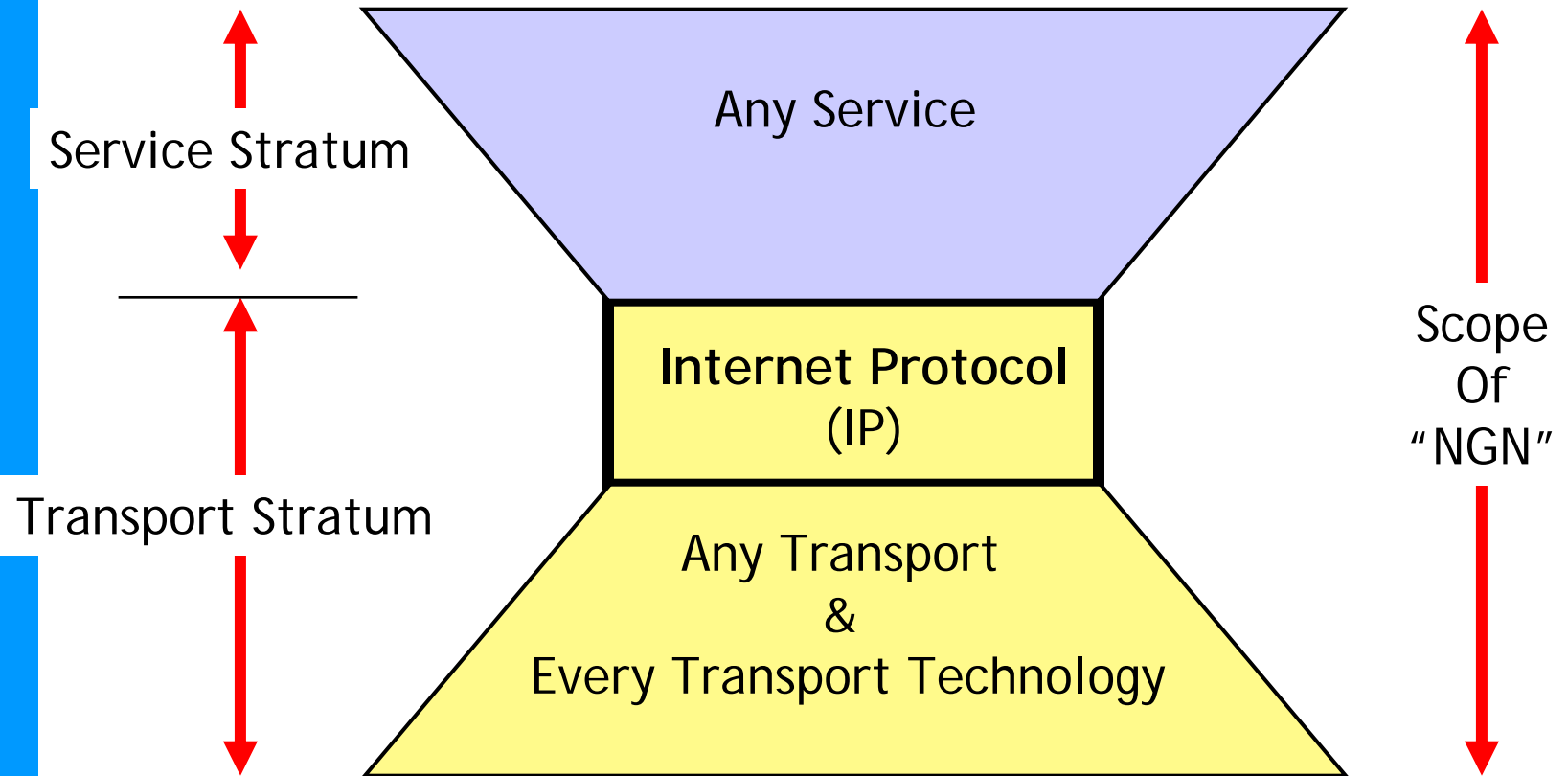Core Transport Functions

Transport Stratum

* Note: Gateway (GW) may exist in either Transport Stratum or End-User Functions.

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Unifying IP convergence layer

Service Stratum

Transport Stratum

Any Service

Internet Protocol
(IP)

Any Transport
&
Every Transport Technology

Scope
Of
"NGN"
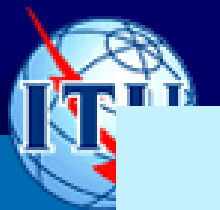
From NGN FG to NGN-GSI

TSB Circular 47, September 2005, announced

"NGN Global Standards Initiative (NGN-GSI)"

to

replace "NGN FG"

<u>Goal:</u> to further strengthen the ITU-T's leading role in NGN standard work

NGN-GSI (2006)

http://www.itu.int/ITU-T/ngn/index.phtml

- Co-located Joint Activity : SG 11 + 13 + 19 and 2 + 12 + 15 + 16 + 17
- Areas
  - Services and Capabilities
  - Functional Architectures and Requirements
  - Mobility and FMC
  - IPv6 application into NGN
  - End-End QoS
  - NGN Signaling with Resource Admission Control
  - Evolution/ Migration to NGN
  - Interworking & Interoperability
  - NGN Security
  - IPTV-FG from April 2006, (-> IPTV-GSI Jan-2008)
  - Home Networking (JCA-HN from March 2005)
  - Networked aspects of Identification services (JCA-NID from July 2006; FG IdM Id-Managt from Feb 2007)
  - ….others

International Cooperation

➢ **International SDOs: ISO, IEC, WSC; ISO/IEC JTC1**

➢ **Regional SDOs: TIA, ATIS** (US carrier requirements)**, TSACC, TTA, TTC, ARIB, CCSA, ETSI(TISPAN,3GPP), ACIF, GSC**

➢ **For internet: IETF/ISOC** (IPv6, SIP extensions, MPLS, etc)**, ICANN, ccTLDs, etc.**

➢ **Many Forums/SDOs: such as IEEE** (802.11x – Wi-Fi hotspots)**, 3GPPs**(IMS)**, ATM/MPLS/FR, MEF, TMF**(Standardised OSS components)**, DSL forum, OMA** (Mobile) Applications**, ...**

➢ **Regional Telecom organizations: APT, ATU, CITEL, RCC, CEPT, ETNO, ...**

➢ **etc...**

(SDO = Standards Development Organization)

NGN-GSI

o Four Events per year:

- Co-located Meeting of SGs 11, 13 & 19
- Co-located Rapporteur groups of SGs 12, 16 and 17 and SGs 11, 13 and 19

o NGN-JCA (Joint Coordination Activity)

(JCA: management teams of SGs 11, 13 and 19)

Other ITU-T initiatives in relation with NGN

- NGNMFG
- IPTV
  - IPTV Focus Group established in April 2006
  - IPTV GSI established in Dec 2007
o Network aspects of Identification systems
  - Joint Coordination Activity (JCA NID) established in July 2006
  - Extended in 2007 to include sensor networking
o Identity Management (IdM)
  - IdM Focus Group established in Dec 2006
  - GSI on IdM established in Dec 2007
o Home Networking
  - JCA HN established in March 2005NGNMFG

What's Life Like ....

- o Today ...
  - Most people can't do without their mobile phones
  - Content is on DVDs or magazines or books or a local hard-disk
  - Contact Lists are by application, device, and individual situation
- o In ... 2010 ...
  - Everyone connected and can't do without being on-line
  - The first place people go for content is on-line
  - Informal peer groups and sharing is open and legal
- o In ... 2015 ...
  - Everyone and everything is connected all the time, everywhere
  - The only place people go for content is on-line
  - Dynamic communities of interest without any boundaries

**Today's technology savvy young person is grown up,
a key decision maker at home and at work, and your target customer!**

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NGN

o A full (carrier class and business class) service network

- Telephony and other Legacy (including Internet access) services
- Data, including High speed access to Internet and its applications
- Video (VOD, Streaming)
- Digital TV Broadcast, Multimedia (combining all of the above)
- Mobility and Nomadism. Interworking with Legacy services for Human and Machine users (including RFIDs machines)

o Network features and technical characteristics

- Packet-based (IP, MPLS, ATM, Ethernet) transport
- IP and service intelligence, in an IP-managed network
- Distributed, transport-resource-session-service independent control using IP-friendly (well defined profile) protocols

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The Transformed Network

- **Always on**
- **Anytime, anywhere and in any form**
- **Voice and multimedia**
- **Self service**
- **Simple for the end user**
- **Secure, trusted and reliable**

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SG 13, January 2008 results

ITU-T

Y.2006	Description of capability set 1 of NGN release 1
Y.2012 C1	Functional requirements and architecture of the NGN, Corrigendum 1
Y.2012 A1	Functional requirements and architecture of the NGN, New Appendix III, Instantiation of NGN reference points
Y.2014	Network attachment control functions in Next Generation Networks
Y.2051	General overview of IPv6-based NGN
Y.2052	Framework of multi-homing in IPv6-based NGN
Y.2053	Functional requirements for IPv6 migration in NGN
Y.2054	Framework to support signalling for IPv6-based NGN
Y.2091	Terms and definitions for Next Generation Networks

Y.2200–Y.2249 – Service aspects: Service capabilities and service architecture

Y.2205	Next Generation Networks – Emergency telecommunications – Technical considerations
Y.2212	Requirements of managed delivery services

Y.2700–Y.2799 – Security

Y.2702	NGN authentication and authorization requirements

Y.2800–Y.2899 – Generalized mobility

Q.1707/ Y.2804	Generic framework of mobility management for Next Generation Networks

Supplement 3 to Y-series Recs – ITU-T Y.2000-series, Supplement on service scenarios for convergence services in a multiple network and application service provider environment

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SG 13, May 2008 results

Y.1900-Y.1999 – IPTV

Y.1910	IPTV architecture

Y.2100–Y.2199 – Quality of Service and performance

Y.2173	Management of performance measurement for NGN
Y.2174	Distributed RACF Architecture for MPLS Networks

Y.2200–Y.2249 – Service aspects: Service capabilities and service architecture

Y.2213	NGN service requirements and capabilities for network aspects of applications and services using tag-based identification
Y.2234	Open service environment capabilities for NGN applications

Y.2900–Y.2999 –

Y.2902 A1	Y,2902, Carrier grade open environment components, Annex A - The diameter client CGOE component
Y.2902 A2	Y.2902, Carrier grade open environment components, Annex B - The diameter server CGOE component

Supplement 5 to Y-series Recommendations – ITU-T Y.1900-series, Supplement on IPTV service use cases

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For more information, please visit our web site http://www.itu.int

1. SG 13 web page

   http://www.itu.int/ITU-T/studygroups/com13/index.asp

2. NGN GSI web page

   http://www.itu.int/ITU-T/ngn/

3. NGN Project management tool web page

   http://www.itu.int/ngnproject/

4. NGNMFG web page

   http://www.itu.int/ITU-T/studygroups/com04/ngn-mfg/index.html

5. SG11 (Signalling & Control Protocols)

   http://www.itu.int/ITU-T/studygroups/com11/index.asp

Thank you for your attention!

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