

Converged Networks

2.2.1: Shaping the Future: Converged Networks



ITU/ITC Regional Seminar on Network Evolution to Next Generation Networks and Fixed Mobile Convergence for CEE, CIS and Baltic States

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What's Life Like



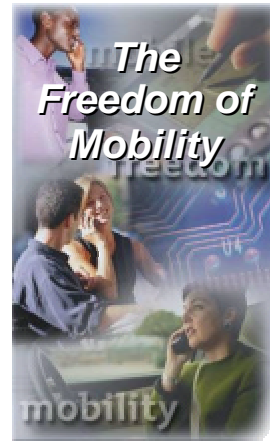
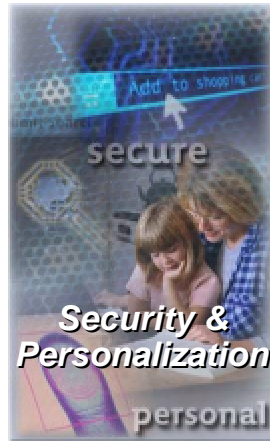
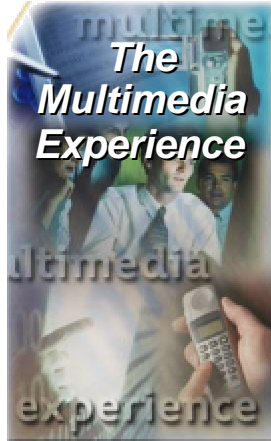
- **Today**
 - Most people can't do without their mobile phones
 - Content is on DVDs or magazines or books or a local hard-disk
 - Contact List by application, device, and individual situation
- **In 2010**
 - Everyone is connected and people can't do without being on-line
 - The first place people go for content is on-line
 - Informal peer groups and sharing is open and legal
- **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 teenager (software downloading, IM addicted, camera phone wielding) is grown up, a key decision maker at home and at work, and your target customer!



End Users Value ...

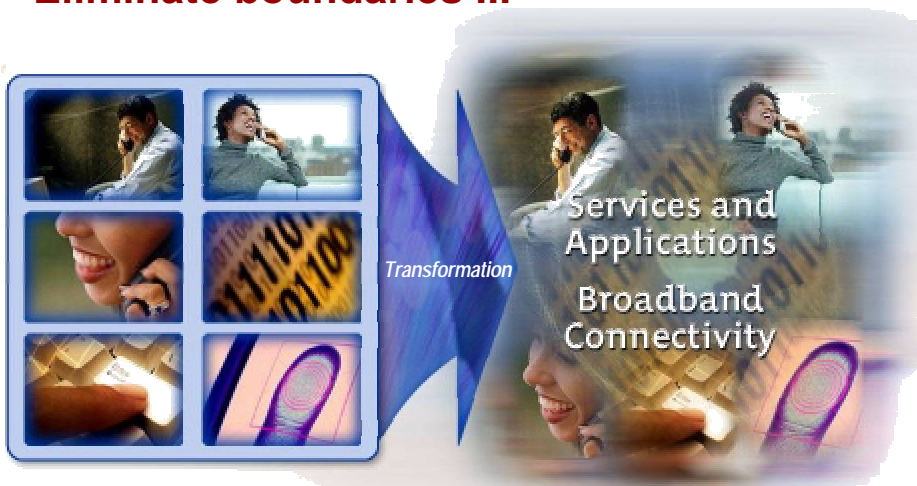


**... for enhanced productivity
and user experience**

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Eliminate boundaries ...



**... to enable ubiquitous and
seamless solutions**

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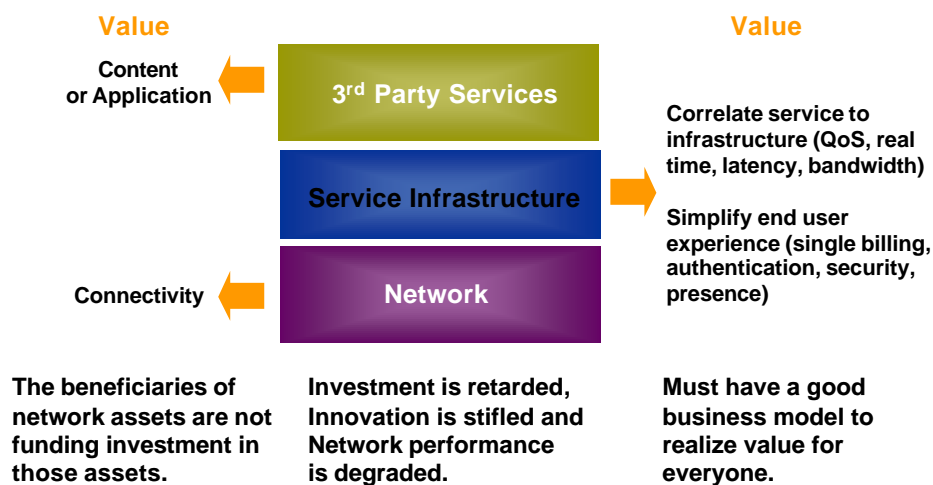
Objective and Outline

- **Objective**
 - Show that network transformation and convergence are essential for enhancing the user experience and driven by user demands
 - Show that mobility must be core to the Next Generation Network
- **Outline**
 - Value: Services / Service Infrastructure / Network
 - Convergence Opportunity - NGNs
 - Mobility is essential
 - Simplifying the user's life
 - Service architecture
 - NGN Standards

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Value: Users and Service Providers



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Internet and Telecoms Convergence

- **PSTN designed for reliable voice**
 - Data added by making it behave like voice (modems, ...)
- **ISDN designed for reliable data and reliable voice**
 - Voice treated as data using CS paradigm (2B+D, ...)
- **Internet designed for “best effort” data transfer**
 - Pretty good, but good enough?
 - Much effort being applied towards QoS, security/fraud/privacy, charging, legacy interworking, ...
- **Major changes in access capabilities**

No approach fully satisfactory by itself

- Can be addressed using a “managed” internet
- “Next Generation Networks” discussions transitioning from theoretical to practical

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The network has value... but the location of the value is shifting

- **Ubiquitous personalized service to the end user**
 - Need an open services architecture for service innovation
 - Mobility across networks
 - Quality voice will remain an essential service, key revenue source
 - Users will drive service innovation and quality of experience
- **The network is a platform for services**
 - A common core network for wireless and wireline
 - The service edge is the anchor point for services
 - Interface to legacy at the service edge
- **Security across the network, services and information**
- **Robust, trusted, always-on (carrier grade)**

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Convergence Opportunity

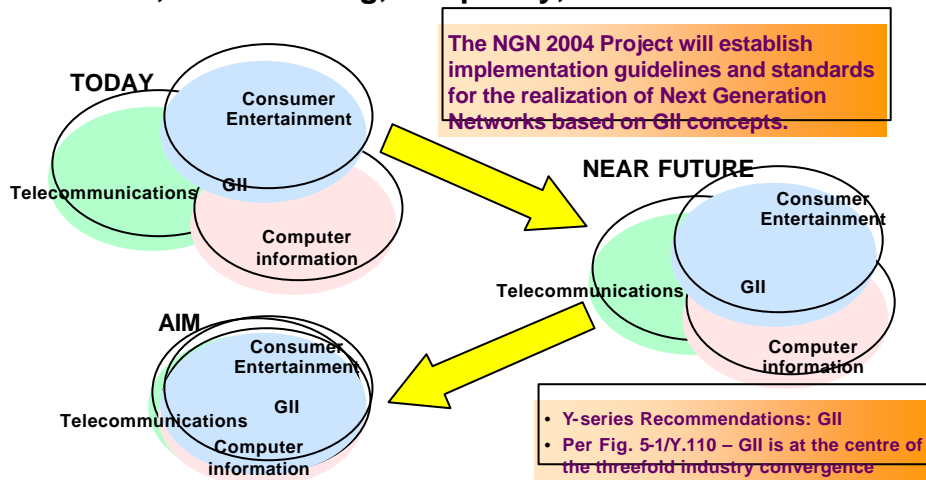
- Emerging industry-aligned vision
- Avoid unnecessary complexity: align requirements for fixed and mobile/wireless
- Motivation: retain customers; utilize infrastructure capacity to better serve customers
- Capital constraints require innovation
- IP technology maturity lags revenue generating service needs
- Need for coherent management across a converging environment

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GII is All About Convergence

Internet, Broadcasting, Telephony, ...

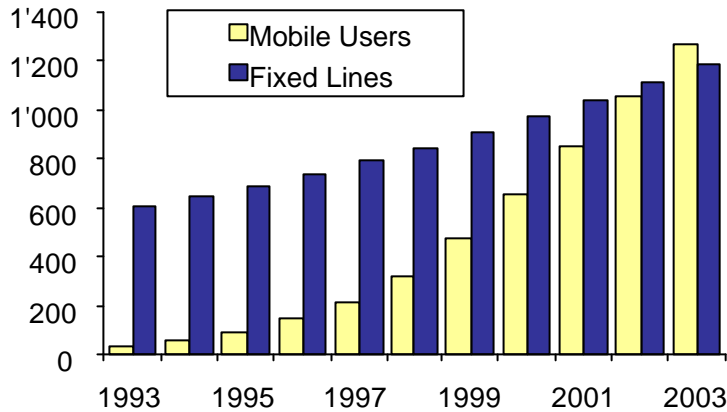


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Mobile Revolution is Underway

Fixed Lines vs. Mobile Users, worldwide, millions

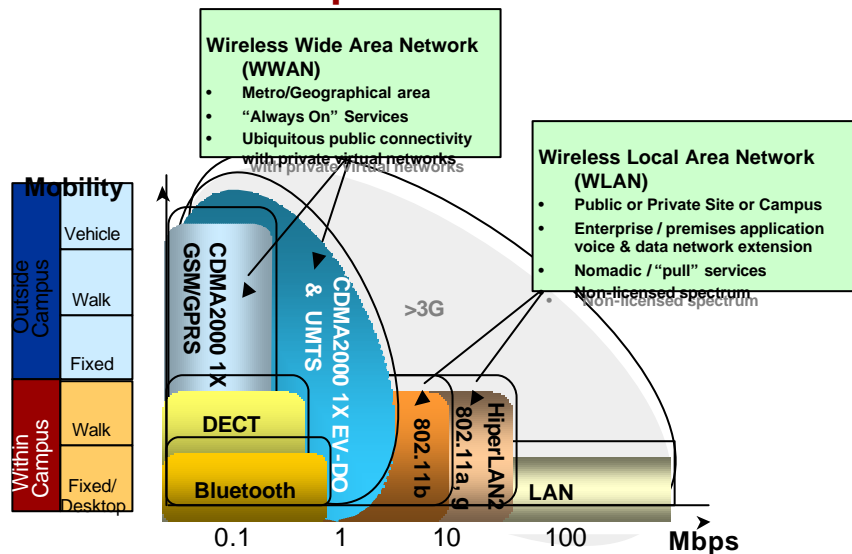


Source: ITU World Telecommunication Indicators Database.

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Wireless Landscape



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Enhancing End User Experience: Blending User Devices

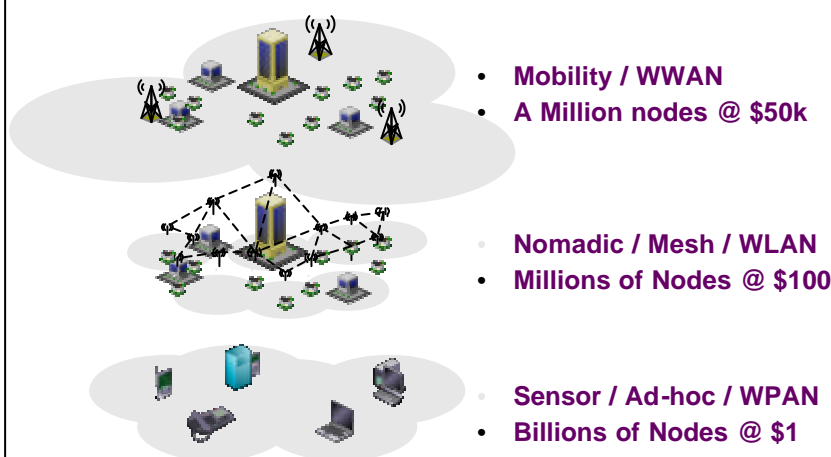


- PC, phone(s) and PDA: different user interfaces to the same network-based application
- Common, network-based directory for:
 - Phone numbers
 - Buddies & presence
 - Email address book
 - All applications
- Just one address to reach the user
- Unified, network-based, user profile applying to all terminals
 - E.g., set presence location, call routing preferences, etc., on any terminal and it applies to all



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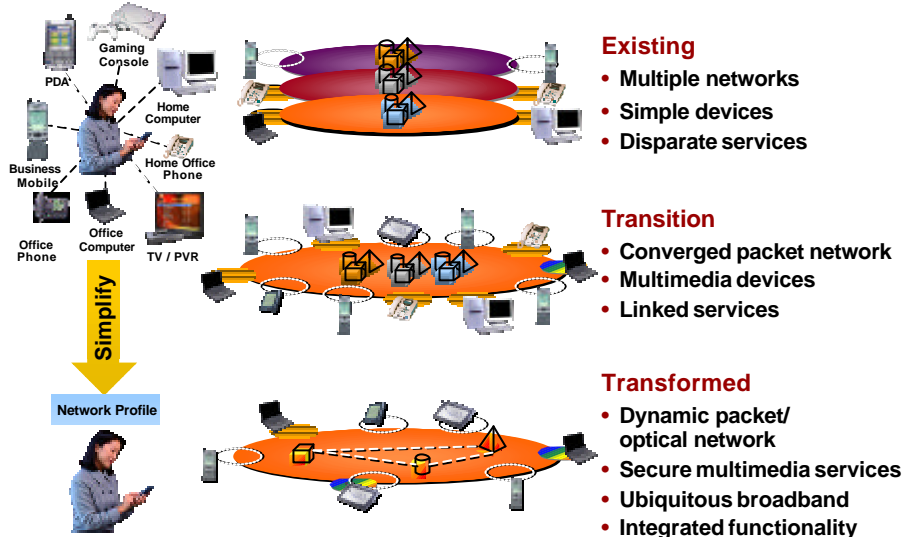
The Un-Wiring of the Future



... connected through the Wireless Packet Network

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Network Transformation

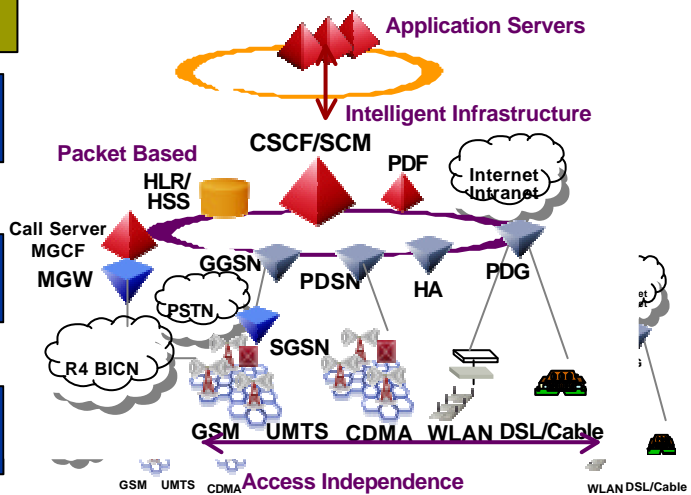


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Convergence

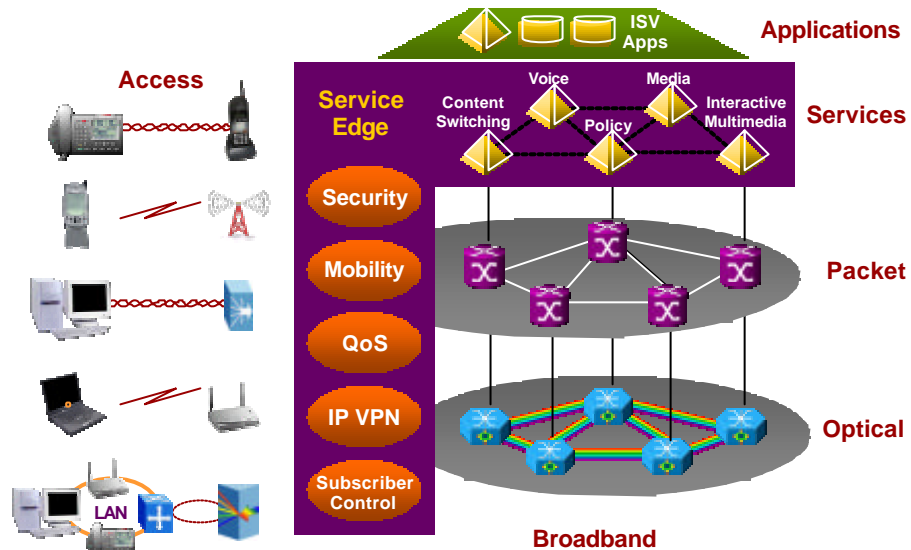
This animated chart is provided as three discrete charts at the end of this package.

- Infrastructure
- Services
- Architectural



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Transformed Network Architecture



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Requirements of a Service Architecture

- **For Users:**
 - Services available everywhere
 - Choice of services from multiple sources
 - Performance guarantees / one number to call for support
 - Immediate activation / one bill to pay
- **For Service Providers:**
 - Open service creation on one service infrastructure
 - “Stickiness” with Users
 - Performance against SLAs
- **For Service Developers:**
 - A convenient level of abstraction
- **For Service Transporters:**
 - A slice of revenue: no free lunch!
- **For everyone:**
 - Security from malicious attack

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Key Attributes of a Service Architecture

- Supports dynamic and static services
- Enables access-independent service delivery
- Provides seamless service execution across enterprise and carrier domains
- Enables a dynamic communications services value chain
- Ensures services are billable
 - revenue essential for the bottom line!
- Supports digital rights management
- Simplifies the end-to-end user experience

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NGN Standards

- Many organizations working on NGNs, future generation technologies, etc.
 - Leverage ITU global perspectives for an overall framework
 - Leverage near term detailed and well-focussed technical work of relevant bodies into this consistent global framework
 - Example: ITU-T addressing forward looking global NGN framework, 3GPPs working IMS, ETSI TISPAN being based on 3GPP IMS Rel. 6, OMA working application areas



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The Transformed Network



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Thank you!



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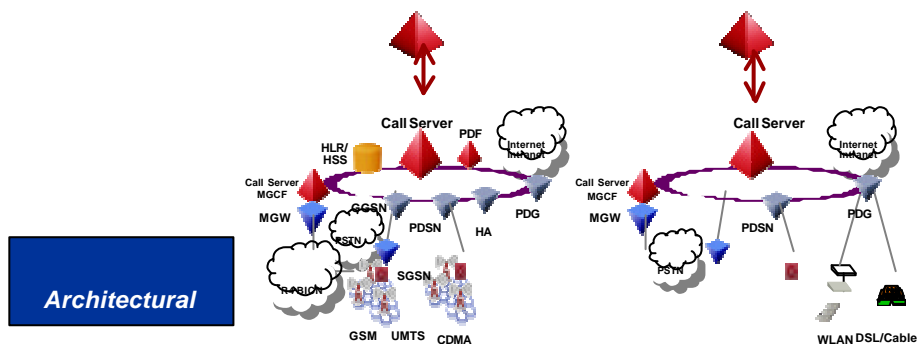
Selected Acronyms

3G	Third Generation	MGCF	Media Gateway Control Function
3GPP(2)	Third Generation Partnership Project (2)	MGW	Media Gateway
BICN	Bearer Independent Core Network	NGN	Next Generation Network
CDMA	Code Division multiple Access	PC	Personal Computer
CSCF	Call State Control Function	PDA	Personal Digital Assistant
DECT	?? Digital Electronic Cordless Telephony	PDF	Packet Data Function
FA	Foreign Agent	PDG	Packet Data Gateway
GGSN	Gateway GPRS Support Node	PDSN	Packet Data Serving Node
GII	Global Information Infrastructure	POTS	Plain Old Telephone Service
GPRS	General Packet Radio Service	PSTN	Public Switched Telephone Network
GSM	Global System for Mobility	QoS	Quality of Service
HA	Home Agent	SCM	Session Control Manager
HLR	Home Location Register	SGSN	Serving GPRS Support Node
HSS	Home Subscriber Server	SIP	Session Initiation Protocol
IMS	IP Multimedia Subsystem	SLA	Service Level Agreement
IP	Internet Protocol	UMTS	Universal Mobile Terrestrial Access
ISDN	Integrated Services Digital Network	WLAN	Wireless Local Area Network
LAN	Local Area Network	WWAN	Wireless Wide Area Network

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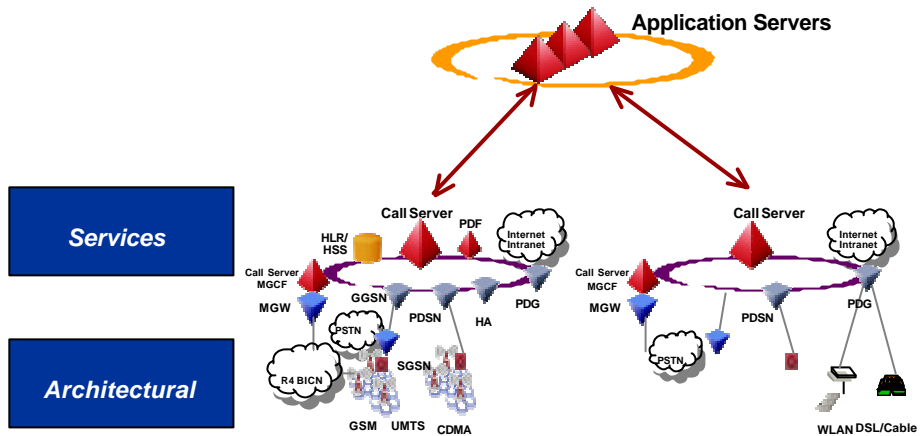
Convergence - Non-animated - Step 1



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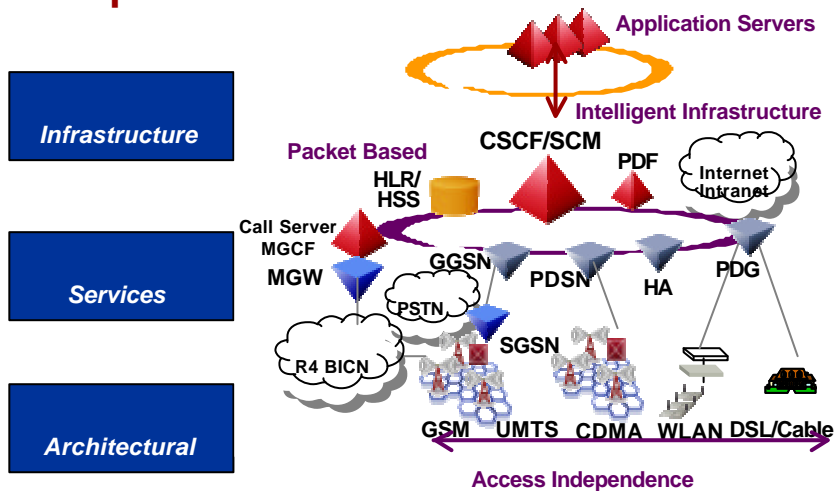
Convergence - Non-animated - Step 2



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Convergence - Non-animated - Step 3



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