



**What Rules for IP-Enabled
Next Generation Networks?
International Telecommunication Union
Geneva
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Update on NGN Regulatory Issues*



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Where it all comes together:

* Since EC NGN Regulatory Issues Workshop, Brussels, 22 Jun 2005

Recent developments - overview

- + Enhanced emphasis on IP-enabled NGN infrastructure protection, fraud management, security, and justice assistance needs
 - Authentication and data retention requirements enacted in EU and multiple countries worldwide
 - Real-time network forensics (lawful intercept) requirements for law enforcement instituted and standardized worldwide
 - Requirements developed for protected signalling infrastructure including identity management
- + Enhanced emphasis on competition framework for IP-enabled NGN signalling services
 - Unbundled, level playing field includes resolver, directory, QOS, accounting, and authentication capabilities
- + Control over the pipes
 - Universal service funding
 - “NetNeutrality” resurrected

**NGN Basics
and Regulatory Issues
from the
June 2005 EC Workshop**

Next Generation Networks

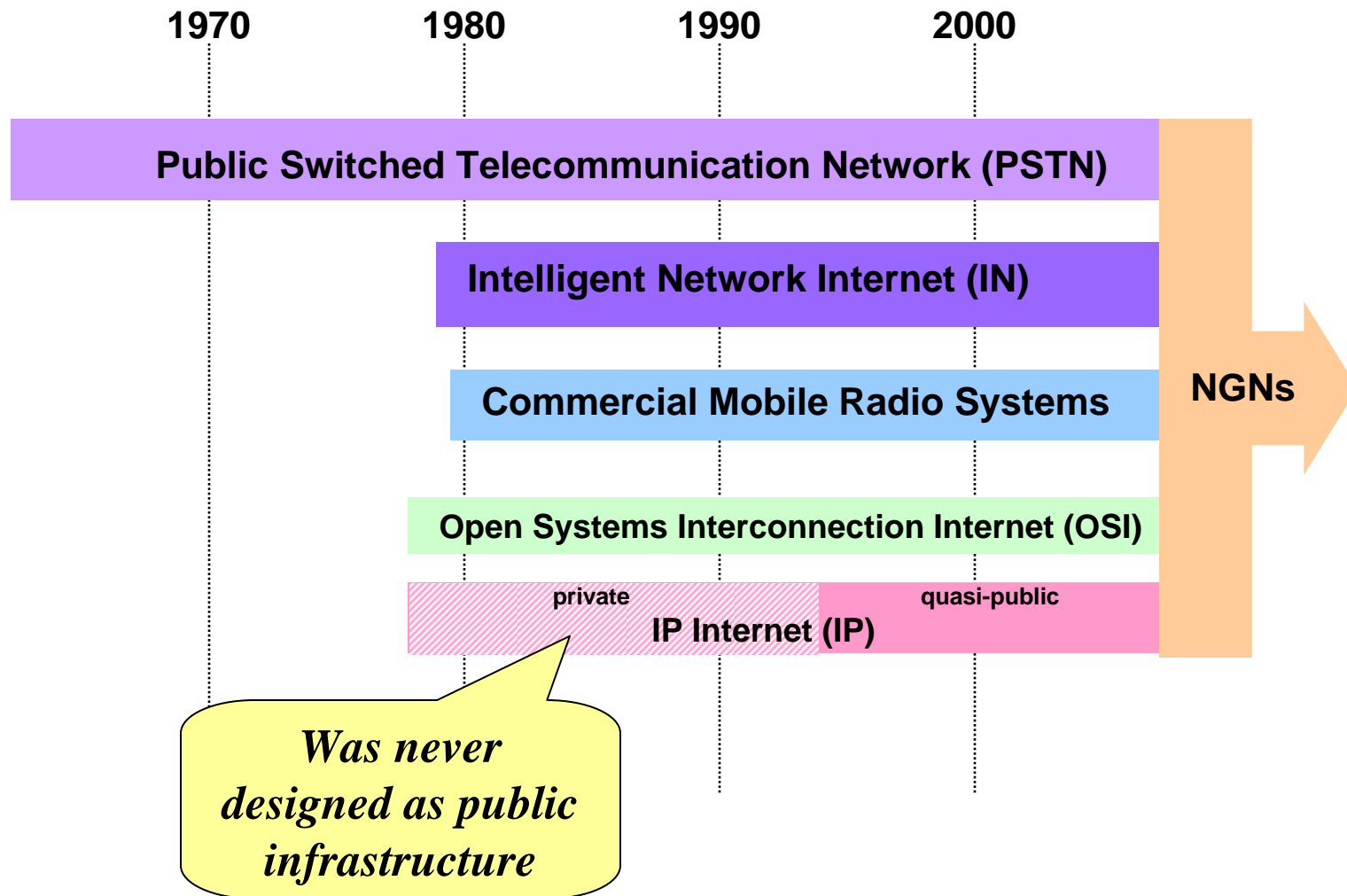


**Nationwide and
Worldwide
Open
IP-enabled
Public Network Infrastructure
for Communications,
Commerce and
Content
for Always-On, Nomadic
People and
Objects**

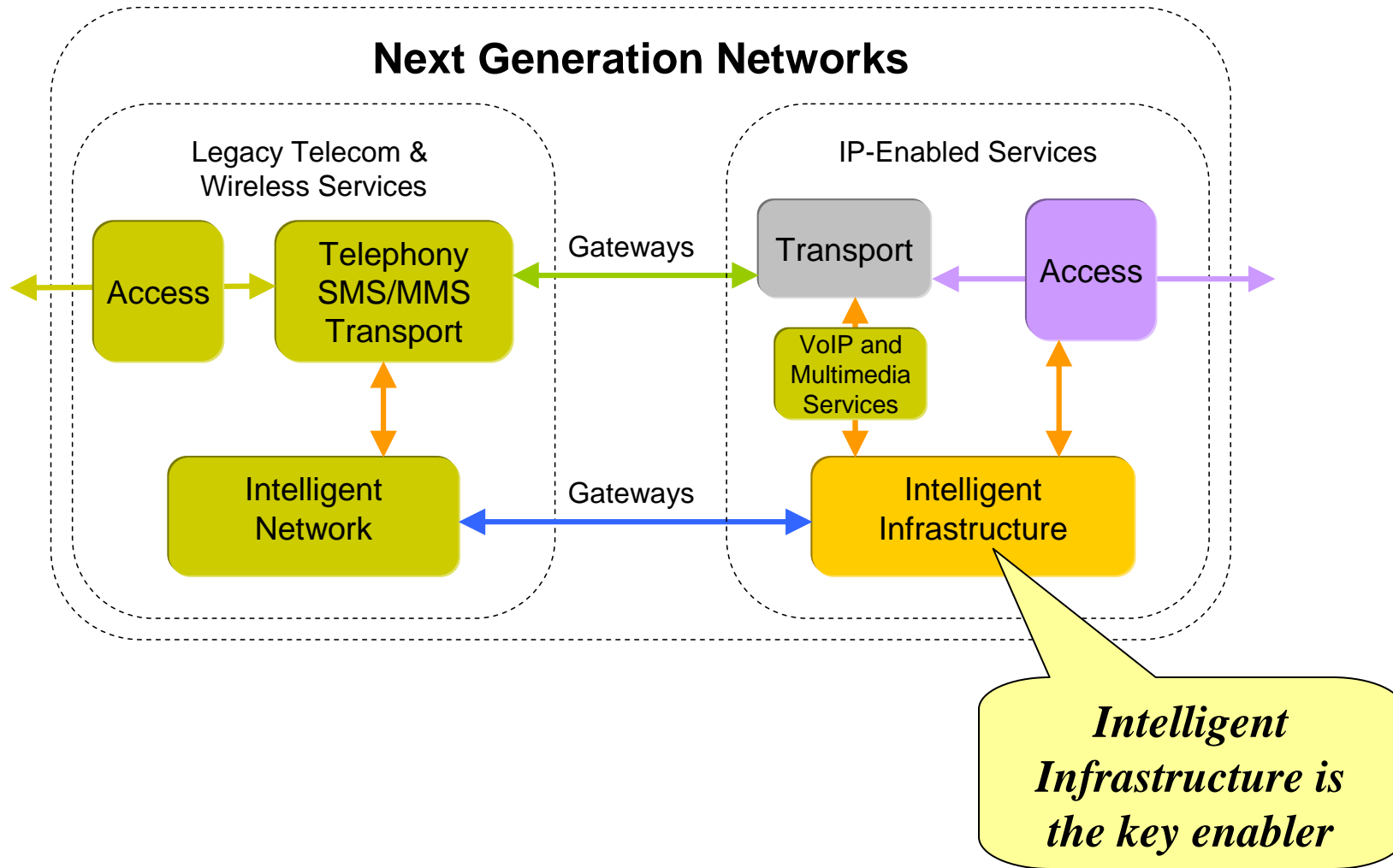
*Each attribute
creates regulatory
challenges*

NGN – Long-Term Network Convergence Perspective

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NGN – Near-Term Network Convergence Perspective



NGN Policy-Legal-Regulatory Ecosystem

Common Global Activity

**ITU Convention
Int'l Telecom Regs**

PP2006 [WCIT]

**Cybercrime
Convention
Signatories &
Justice Ministers**

**Other multilateral
and bilateral
agreements**

**Commission of the
European Community**

Parliament Council
Infso JHA

APEC-TEL

NGN WG NGN reg
eSec TG

CITEL

PCC.I
WGSC WGANTS

Germany

BNETZA-T BfV

France

ARCEP Justice

UK

Parliament Home Office
DTI OFCOM

Netherlands

EZ Justice CIOT

USA

FCC NSTAC
NANC DOJ DHS
DOS DOC

Canada

Industry Canada PSECP

Australia

ACA Parliament
ASIO

Many Others

NGN common infrastructure requirements worldwide



- + Availability, Security and Legal
 - High availability
 - analysis of network metrics and outages
 - Network attack mitigation
 - Priority access during emergencies
 - Alerts and notices during emergencies
 - Restoration after emergencies
 - Personal emergency services
 - Preventing unwanted intrusions
 - Filters (DoNotCALL)
 - Aids (CallerID)
 - Law enforcement/judicial/national security assistance
 - Cybercrime mitigation
 - Forensics capability
 - Fraud detection and management
 - Digital rights management
 - Universal access
- + Competition Requirements
 - Unbundling
 - Service interoperability
 - User/subscriber access by service providers
 - Default service and routing options
 - Nomadicity
 - Number portability
 - Roaming
 - Payment method flexibility
- + Operations Requirements
 - Directory access among providers
 - Intercarrier compensation
 - Transaction accounting
- + Other Consumer Requirements
 - Disability assistance
 - Universal Service
 - CPNI protection

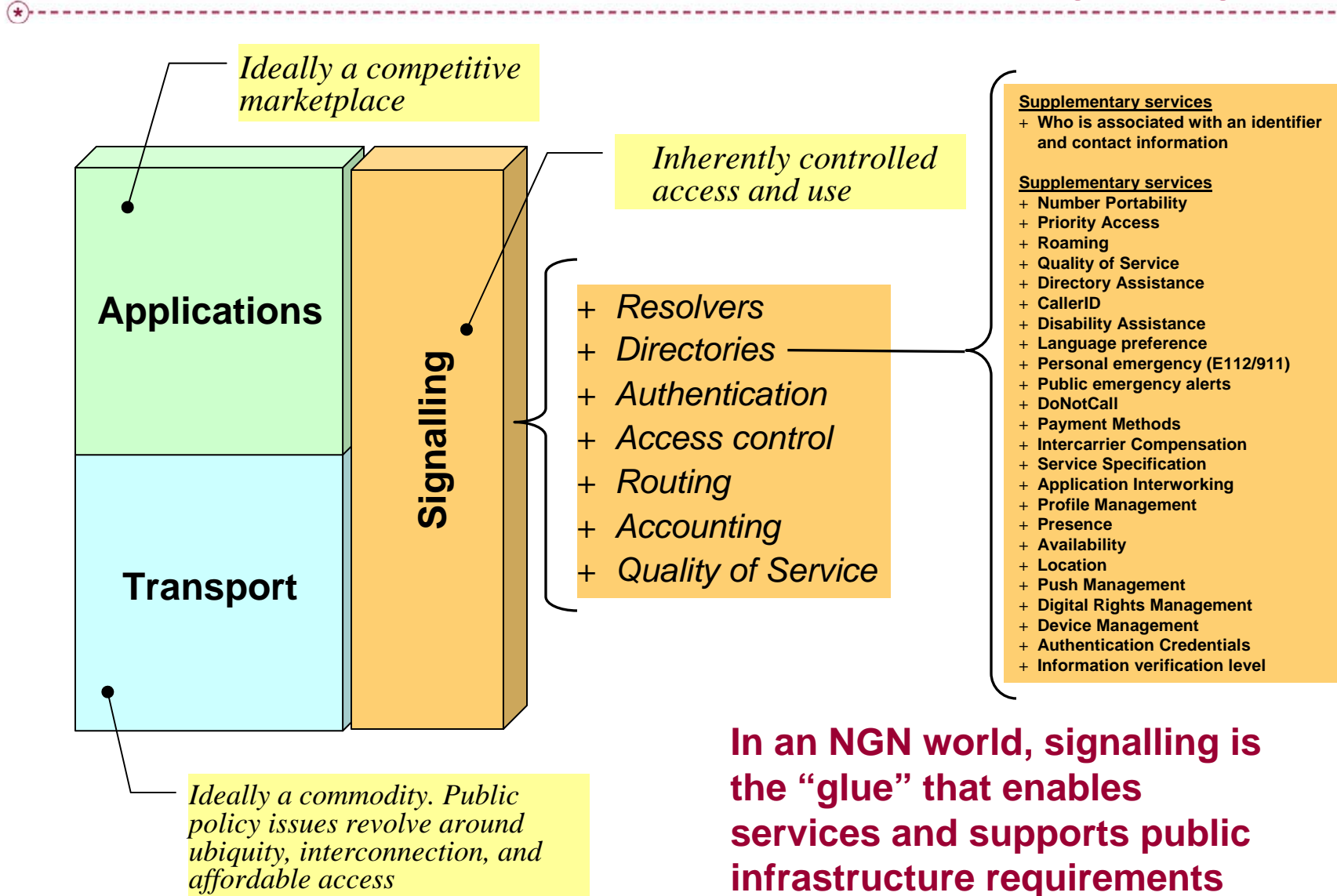
Ongoing regulatory, justice, and homeland security proceedings in countries worldwide

NGN Intelligent Infrastructure Regulatory Models

- + “Architect” for openness and competition
- + A public NGN regulatory model
 - Public internet regulatory models began emerging in the mid-80s with the FCC *Computer III* framework for the Intelligent Networks in the USA and ITR’88 internationally
 - Applied to the first open industry internet infrastructure
 - Elements of the internet regulatory model
 - open interfaces
 - unbundled service elements
 - secure infrastructure
 - CPNI directory access
 - strictures against anticompetitive behavior
 - consumer protection
 - A highly successful model for nearly 20 years
 - NGN today is the equivalent of the Intelligent Network of 20 years ago
- + NGN will necessitate more (not less) regulatory activity
 - A characteristic of all open public infrastructures of nomadic users
 - Government sets the public infrastructure capability requirements that industry implements
 - Common carrier economic regulation generally not needed
 - Detail standards promulgation generally not needed

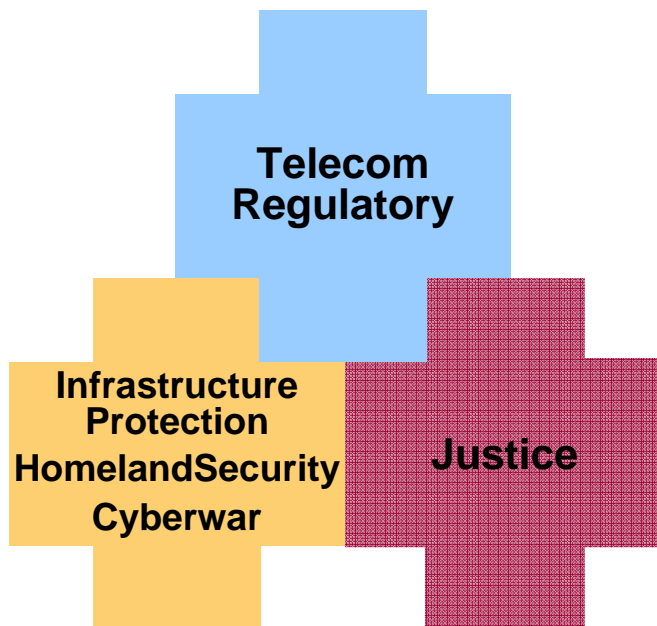
Recent Developments

IP-enabled NGN framework: importance of signalling



In an NGN world, signalling is the “glue” that enables services and supports public infrastructure requirements

Unification of communities and requirements



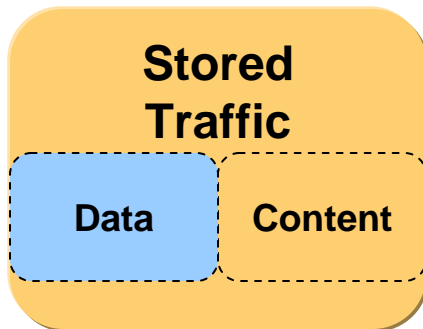
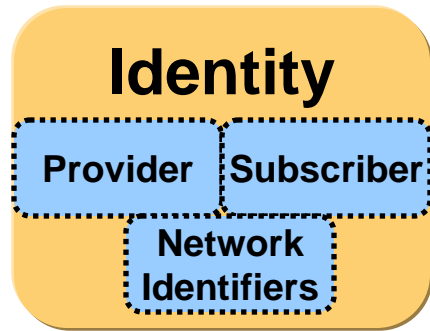
+ Legal

- Worldwide, NGN statutory requirements are being set by multiple sets of instruments
 - ITU and Cybercrime Treaties form basis of international cooperation
 - FCC rules under CALEA, Title I, and Prevent Cyberstalking authority

+ Institutional

- Worldwide, NGN regulatory requirements are being managed by three sets of agencies, e.g.,
 - EC Joint IS – JHA joint staff group formed
 - FCC Homeland Security Bureau formed last Friday
 - New DHS policy chief appointed
 - New NSC Cybersecurity Director appointed
 - DOD cyberwarfare command scales work

Most profound example: EU Data Retention Directive



- + Harmonizes identify management, data retention, and access across Europe and beyond
- + Similar requirements being adopted in many countries globally
- + Applies to
 - Fixed network telephony
 - Mobile telephony
 - Internet access, messaging and telephony
- + Provides data necessary to
 - trace and identify the source of a communication
 - trace and identify the destination of a communication
 - identify the date, time and duration of a communication
 - identify the type of communication
 - identify the communication device or purported device
 - identify the location of mobile communication equipment
- + Does not include content
- + Includes privacy enhancement features
- + Adopted by European Parliament on 14 Dec 2005
- + Likely to be the subject of considerable IP-enabled NGN implementation activities in 2006-2007

Most important NGN regulatory needs

- + Competitive requirements
 - Unbundled signalling network elements
 - NetNeutrality for signalling more important than for transport
 - Standard/open signalling interfaces
 - Secure reciprocal access to network elements
 - Separation between carrier transport and signalling offerings
 - Time to re-invent *Computer III* for IP-enabled NGN
- + Public infrastructure protection requirements
 - Controlled access to network resources
 - protected global “out-of-band” signalling infrastructure
 - Ability through trusted mechanisms to obtain authoritative
 - provider information
 - user/subscriber information and bindings to their communication identifiers
 - supplementary information to support public infrastructure needs
- + Simple numbers-based universal service contributory mechanisms