Migration to NGN

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Contents

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Contents in this presentation mainly taken from previous ITU-T Workshop such as NGN events, ASTAP workshop, Jeju island workshop etc.

ITU-D/ITU-T Seminar on Standardization and Development of NGN for Arab Region

NGN and Evolution

- NGN
  - Using packet infrastructure providing multimedia services
  - Telecom model
- Evolution
  - Continue support of traditional services
  - Smooth migration of network
- Evolution is operator specific
  - Network situations
  - Business considerations
  - Regulatory requirements

Drivers of Network Evolution - 1

New revenue opportunities

- Investing in new broadband deployment
- Geographical expansion
- Providing service innovation (e.g. VPN)
- Decreased time-to-market

Cost reduction

- Evolving legacy networks to packet infrastructure
  - Reducing OPEX
  - Streamline operations
- Centralized management
- Centralized control

Drivers of Network Evolution - 2

Management

- Scalability
- Billing

QoS & security

- Higher reliability
- Higher resiliency
- Secure systems
- Robustness
- Performance
- Application performance
- Authentication, Authorization and Accounting

Drivers of Network Evolution - 3

Ubiquity

- A ubiquitous network enabling user to be connected - always on, anytime, anywhere, anyhow
- Presence awareness

Content

- Digital Rights Management (DRM)
- Conditional access

Network optimization

- Common services infrastructure
- Fewer number of network nodes
- Fewer switching operations
- Simplified service deployment
- Higher capacity

Drivers of Network Evolution - 4

Interoperability

- Interoperable equipments from all vendors

Multitude of access networks

- Fixed, mobile, copper, fibre, wireless…….
- Transparent mobility across wireline & wireless

Shared resources

- Shared voice & data resources

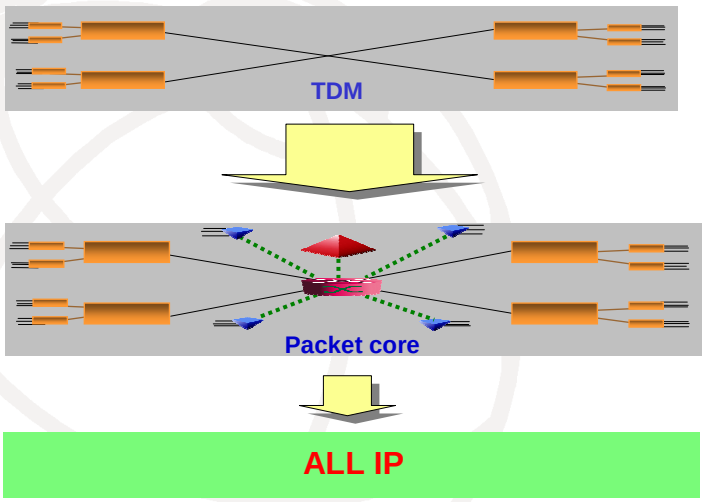
Mixing of traditional and internet service

- Ability to combine traditional circuit switched communication services and IP services

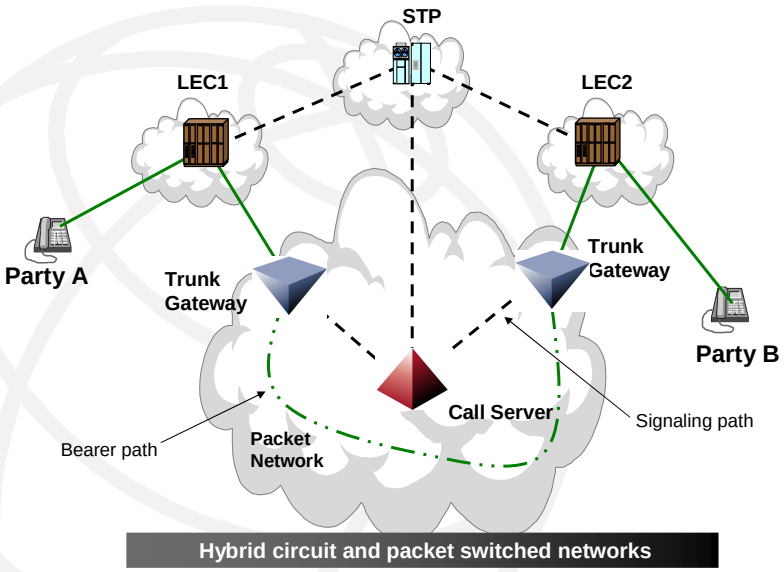
Generic Evolution Procedure

1. Provision of new communication services to broadband users in addition to existing network.
2. A significant portion of users switches to those services. Reduction of true PSTN / ISDN usage visible.
3. Cost of maintaining both systems in parallel becomes a factor. Decision to begin replacement of infrastructure.
4. Replacement of part of the infrastructure (e.g. local switch) by new infrastructure, without forcing all users to migrate.
5. Full change to new infrastructure.
6. Migrate remaining users to NGN.

Network Evolution – PSTN/ISDN Transition Path



Step-wise Evolution



PSTN/ISDN Emulation & Simulation

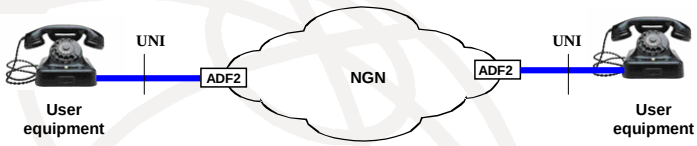
Emulation

- Provision of PSTN/ISDN service capabilities and interfaces using adaptation to an IP infrastructure.

Simulation

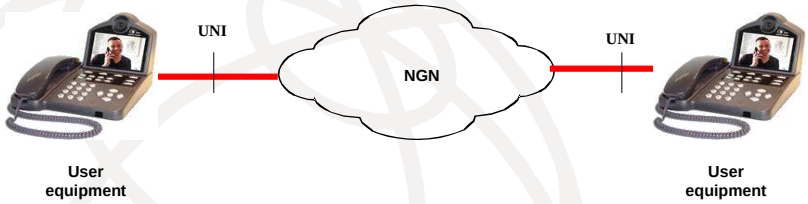
- Provision of PSTN/ISDN-like service capabilities using session control over IP interfaces and infrastructure

Emulation scenario



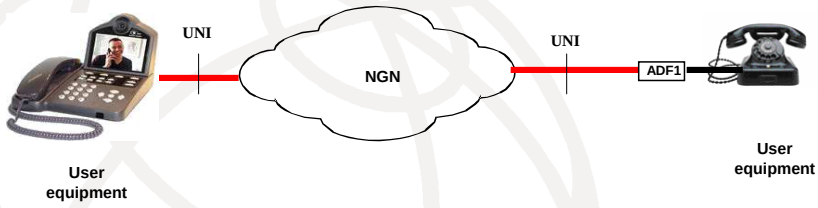
- An encapsulation process
- All services available to PSTN/ISDN users
- User experience not changed by the network transformation

Simulation scenarios - 1



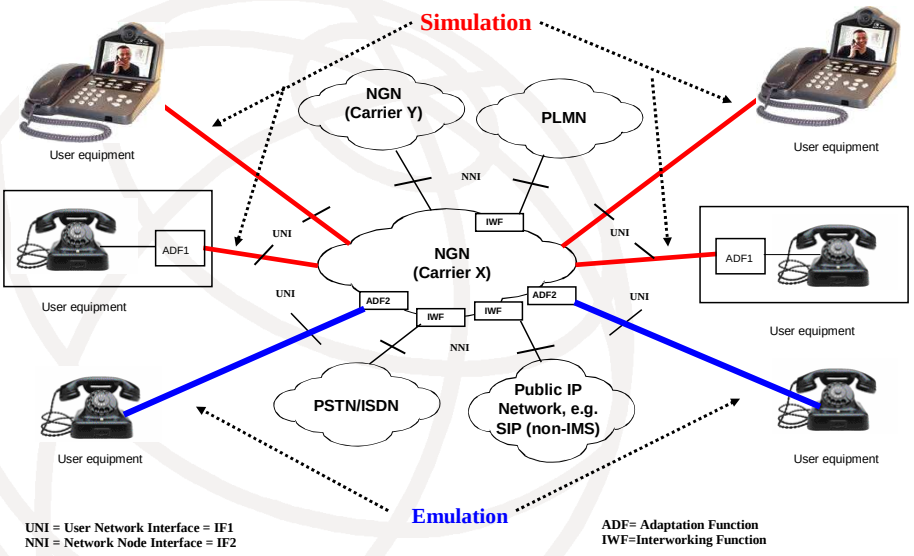
- PSTN/ISDN-like services available
- Availability of possible new services
- User experience is changed by the network transformation

Simulation scenarios - 2



- Only PSTN/ISDN-like services available
- New experience for legacy terminal users

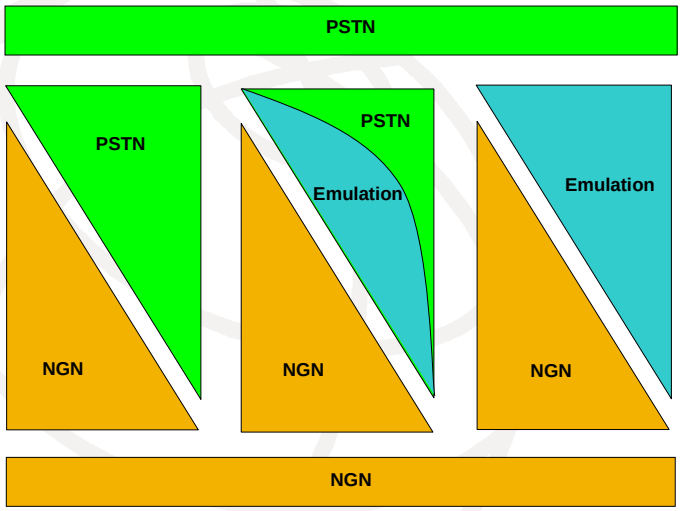
General architecture



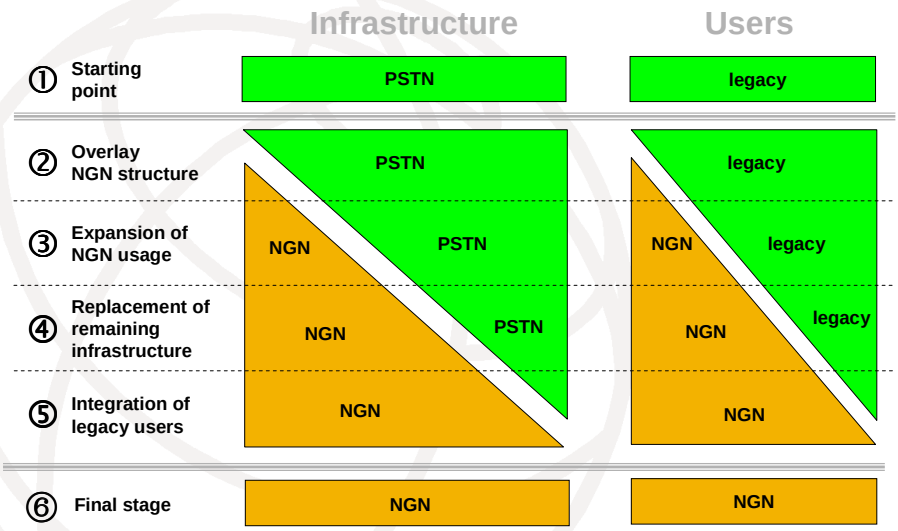
UNI = User Network Interface = IF1
NNI = Network Node Interface = IF2

ADF= Adaptation Function
IWF=Interworking Function

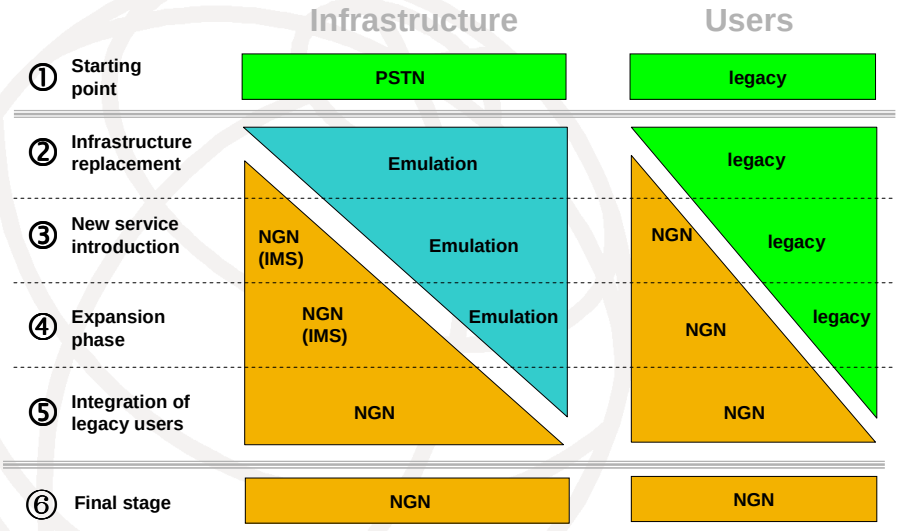
General Evolution Scenarios



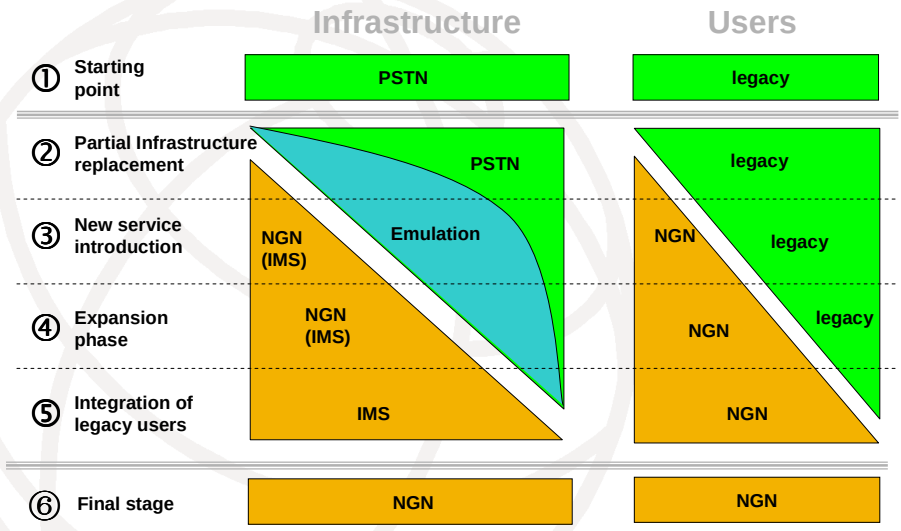
General Evolution Scenarios – Overlay Network



General Evolution Scenarios – Infrastructure Replacement

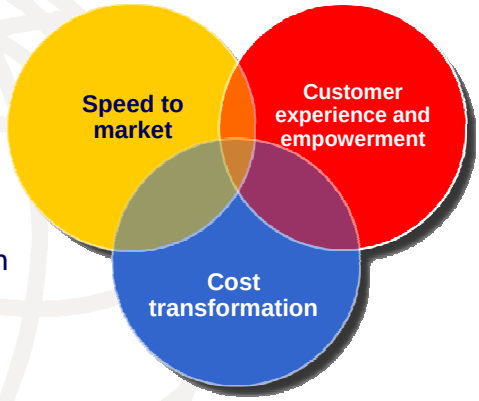


General Evolution Scenarios – Mixed



21CN - three key objectives

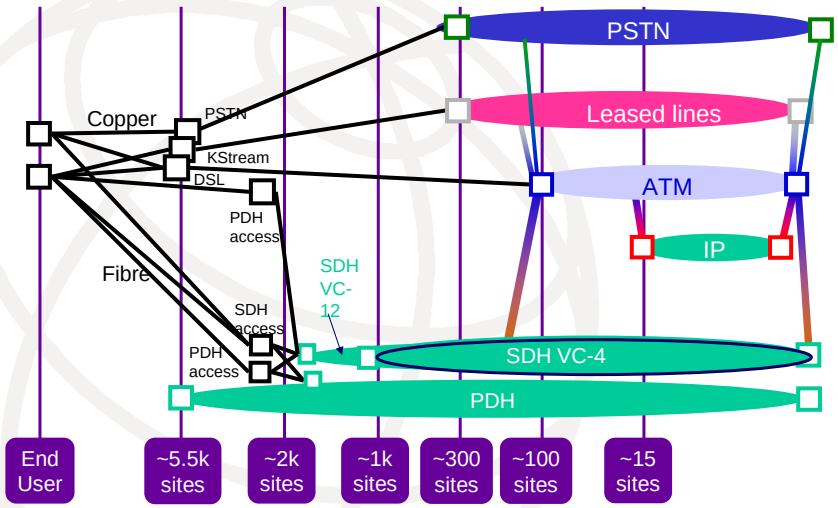
- Empower the customer with control, choice and flexibility like never before including communications from anywhere to any device
- Offer exciting new services for customers faster than before
- Reduce costs - expected to amount to £1 billion ($1.8bn) per annum by 2008/9



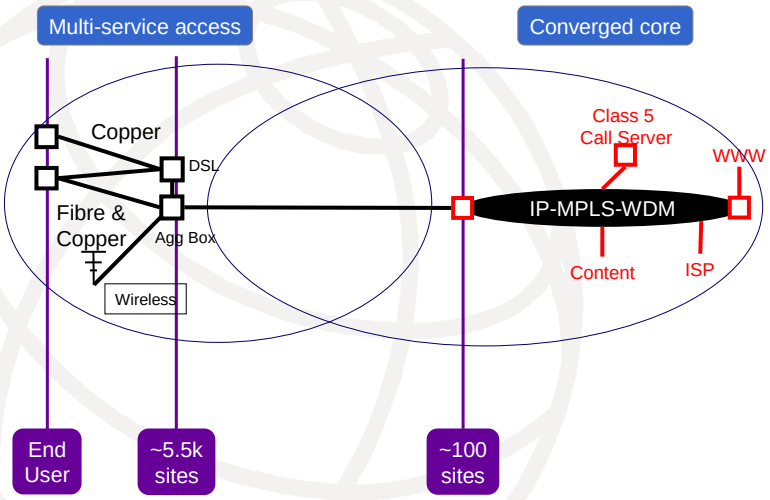
Drivers for 21CN

- Convergence
  - Fixed / Mobile
  - Service (work, home, business, bundles)
  - Computing / Telecoms
  - Voice / Data
  - Intelligence and OSS
- Pressure on traditional revenues causes Telco's to diversify
  - ICT
  - Mobile
  - IPTV
- The internet leads to service and pricing expectations in the users mind (online, immediate, anywhere, free)
- Pent up demand for increasing broadband speed
- Aggressive regulation and competition

21CN - Current UK network



21CN - Simplified UK network



Early migration to NGN

- Huge logistic and technical challenges
- Full 21CN capability set not possible on day 1
- Timely downstreaming of key standards is a critical issue, requiring
  - Alignment with strategic suppliers
  - Working with other Telcos
  - Key inputs to ITU-T, ETSI and ATIS standards

Thank you for your listening !!!