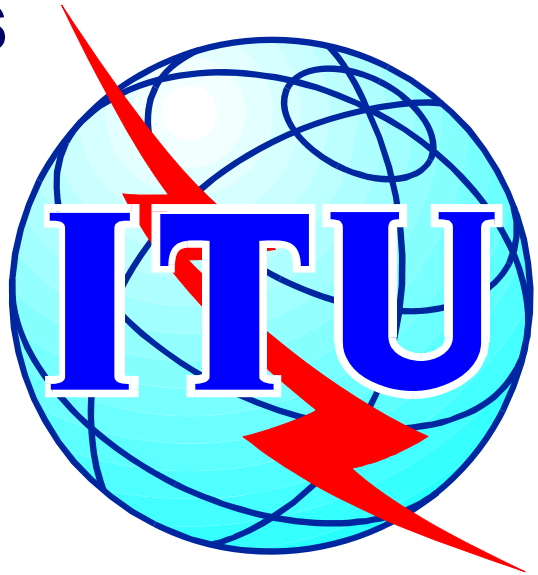
ITU-T Workshop on Multimedia in NGN

Next-Generation Networks (NGN): Market and regulatory trends



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The views expressed are those of the author and do not necessarily reflect those of the ITU or its membership.
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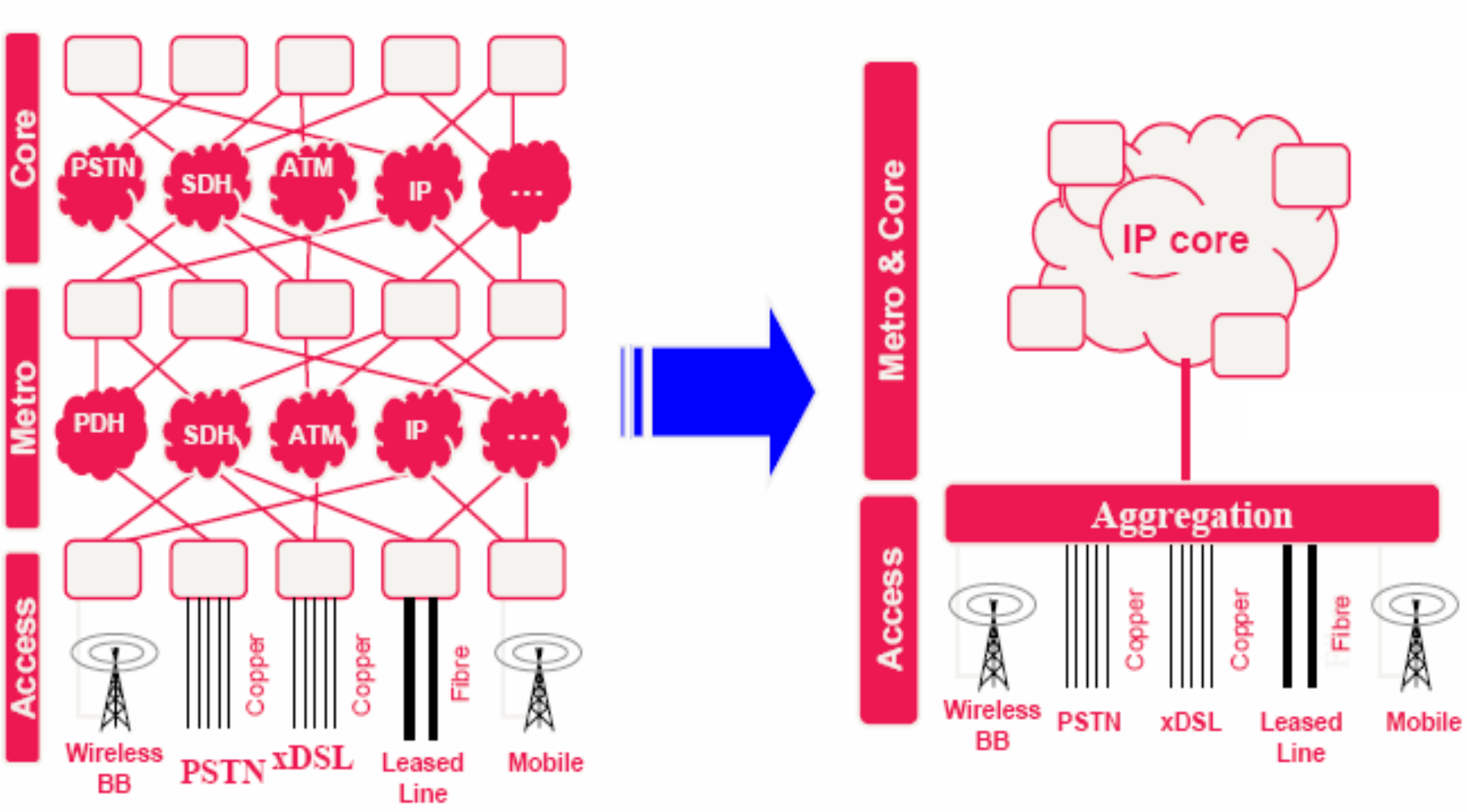
Agenda: NGN: Market and Regulatory Trends

- **NGN migration strategies**
  - **Why should we migrate from today's networks to tomorrow's NGN?**
  - **Examples of Telco Strategies (developed and developing)**
- **Market trends**
  - **Telcos still heavily dependent on voice revenues**
  - **But, the trend is towards bundling and flat-rate pricing**
  - **Voice revenues will drive NGN investment**
- **Regulatory challenges include:**
  - **Interconnection, billing and pricing**
  - **Competition policy**
  - **Compensation for stranded assets**
  - **Privacy and security concerns (identity management)**

NGN migration implies network integration and a “portable” user environment



Source: OFCOM.

But, doubts persist over NGN

- NGN represents the convergence of the Telco and IP worlds. But will it be a collision?
- Is the NGN just another a telco attempt to recreate an “Intelligent Network” with centralised intelligence?
- Is the NGN primarily an overlay or a new-build?
- Is it just a clever marketing name?
- Who pays for what, where, when and to whom in an NGN environment?

So, what might be the benefits of a Next Generation Network?

- **For the Operator:**
  - **Lower costs in having a single IP-based network to invest in and maintain, and fewer switching locations**
  - **Single billing contact with the customer (“*internet with billing, security & QoS*”) and 3rd party content providers**
  - **Possibility to offer multiple play (voice, video, data etc) and faster time to market for new service roll-out**
- **For the Customer:**
  - **Possibility to use the same customised environment between different platforms and from different locations**
  - **Possibility of lower prices through bundled service offerings**
  - **Integration of user-generated content (e.g., photos, music and video library, website) with that of service provider**
  - **Creating an “Internet of Things”**

NGN Migration Strategies

Operators will follow different strategies, depending on resource and market factors, write-off of current network assets, the size of the network

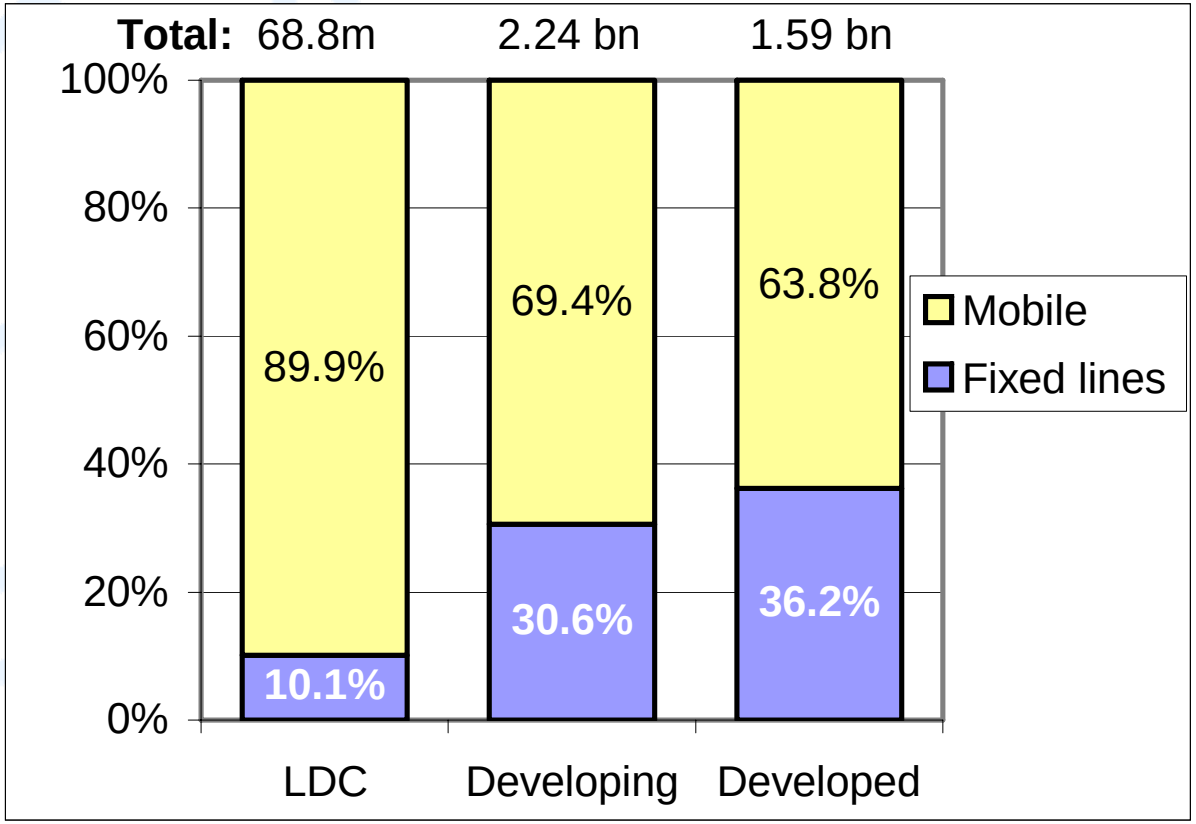
- **Strategy 1: Rapid deployment of core network NGN**
  - **Replace core PSTN network as soon as possible.**
  - **Example: BT expects 50% PSTN migration in 2007.**
- **Strategy 2: Rapid deployment of all-IP network.**
  - **Replace copper access with fibre as soon and as widely as possible.**
  - **Example: KPN**
- **Strategy 3: Overlay.**
  - **Keep NGN and PSTN running side-by-side as long as possible.**
  - **Example: DT plans overlay NGN with PSTN substitution in 2012**

Source: Ovum.

NGN in developing countries

- **More likely to be leveraged off mobile than fixed-line networks**

Percentage of mobile users and fixed-lines, 2006, by type of country

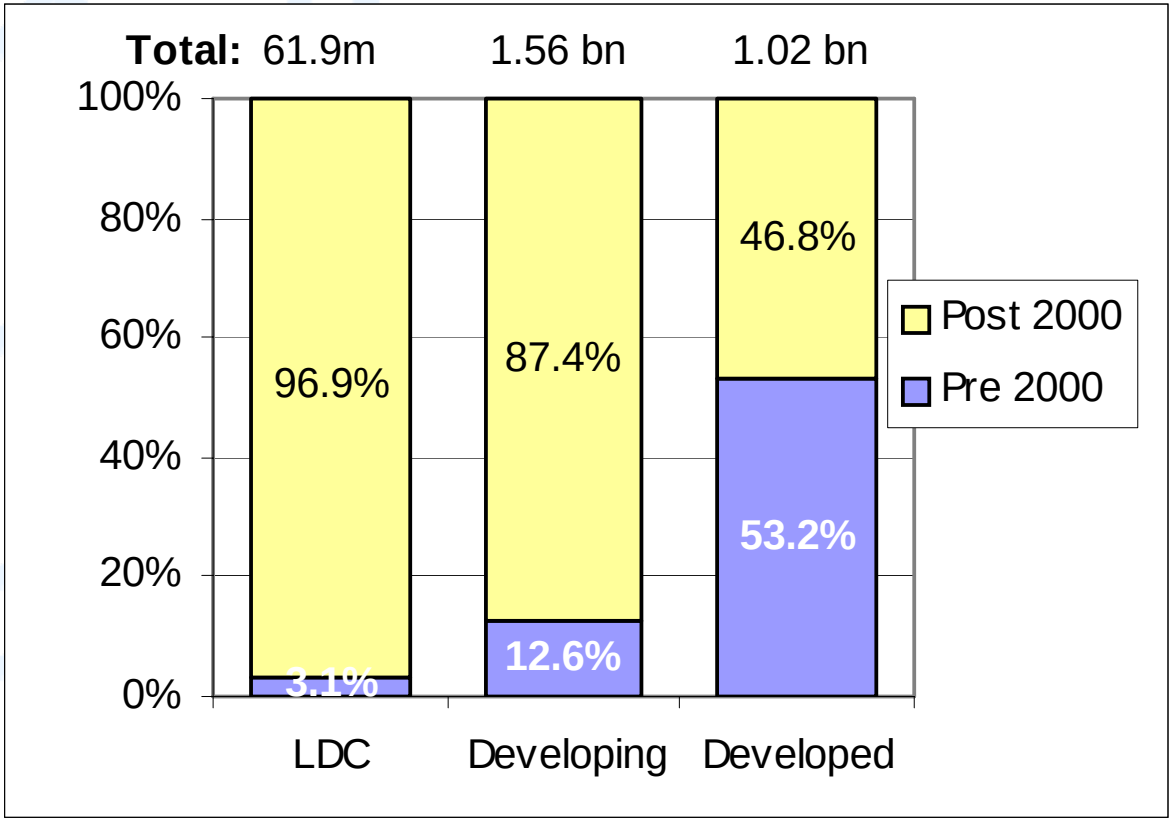


Source: ITU World Telecom Indicators Database.

NGN in developing countries

- More likely to be leveraged off mobile than fixed-line networks
- More likely to be a new build than an overlay

2006 Installed base of mobile users, pre and post 2000



Source: ITU World Telecom Indicators Database.

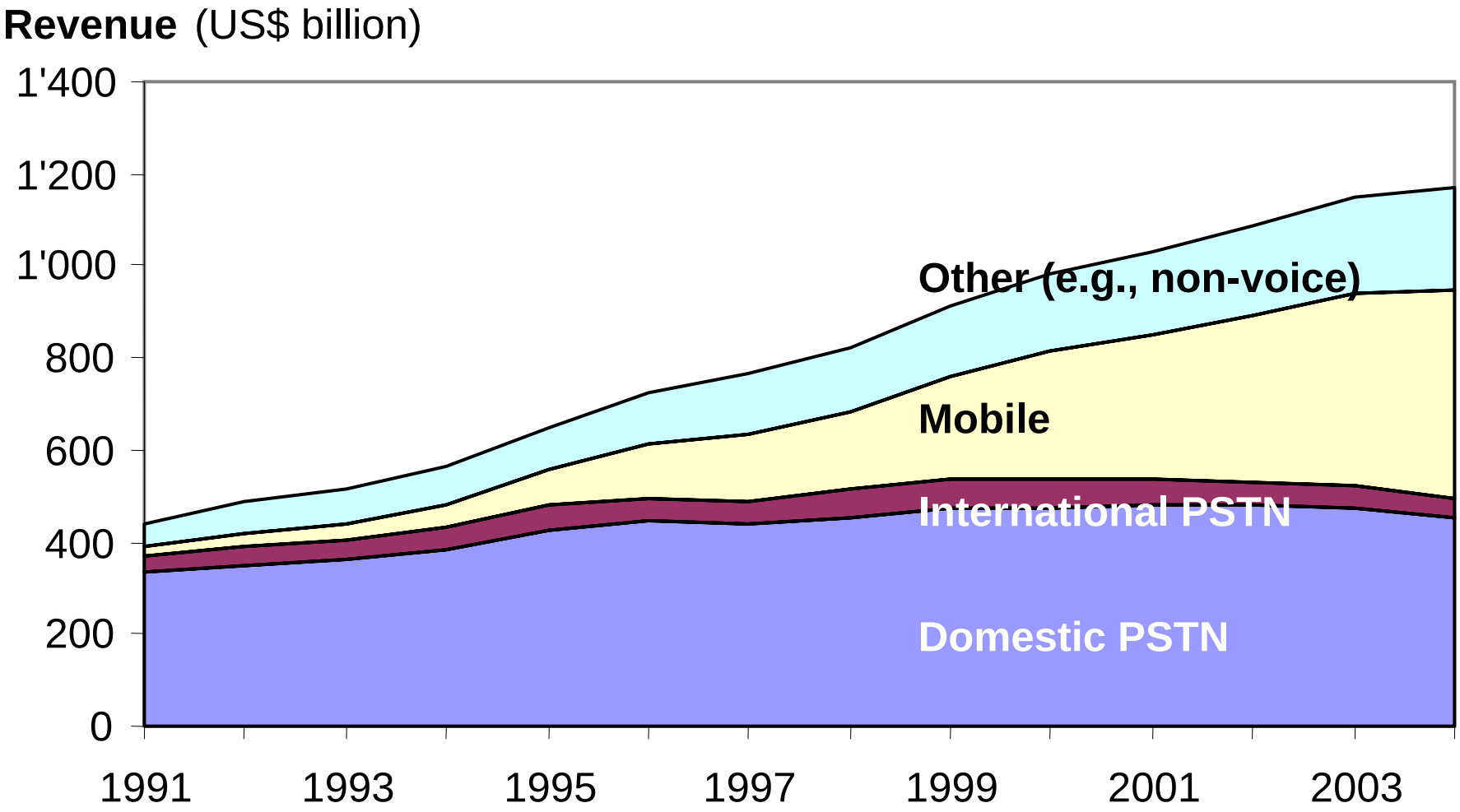
NGN in developing countries

- More likely to be leveraged off mobile than fixed-line networks
- More likely to be a new build than an overlay
- More likely to be driven by cost savings

Examples

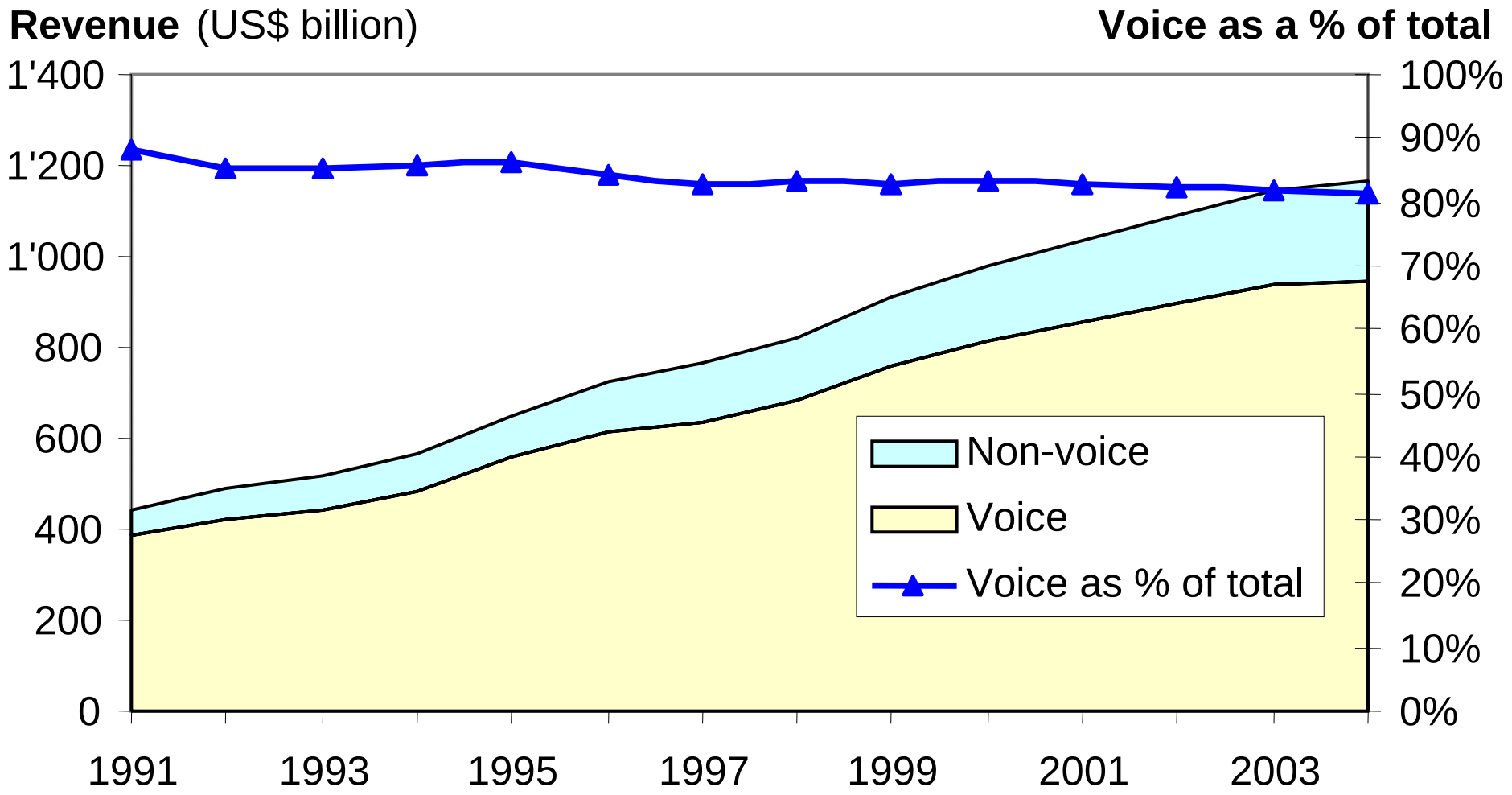
- In Chile, VTR is offering triple play services to 2.2m residential subscribers
- In Sudan, Canar Communications has launched an IP-based NGN network in 2005, including voice and wireless Internet bundles

Long-term telecom revenue trends



Source: ITU Information Society Statistics Database.

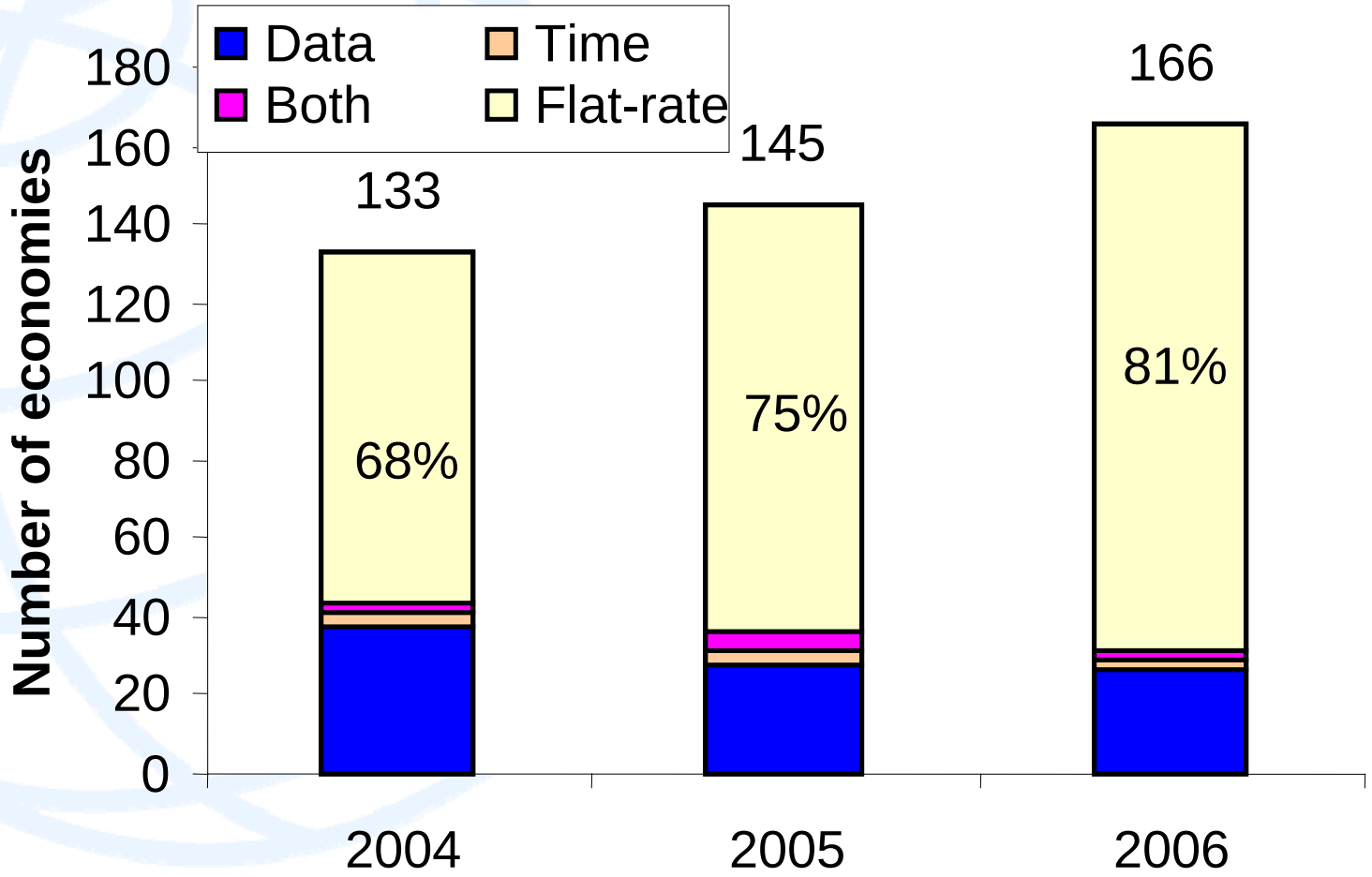
Revenues from voice-oriented networks are relatively stable as % of total telco revenue



Source: ITU Information Society Statistics Database.

The trend towards flat-rate pricing

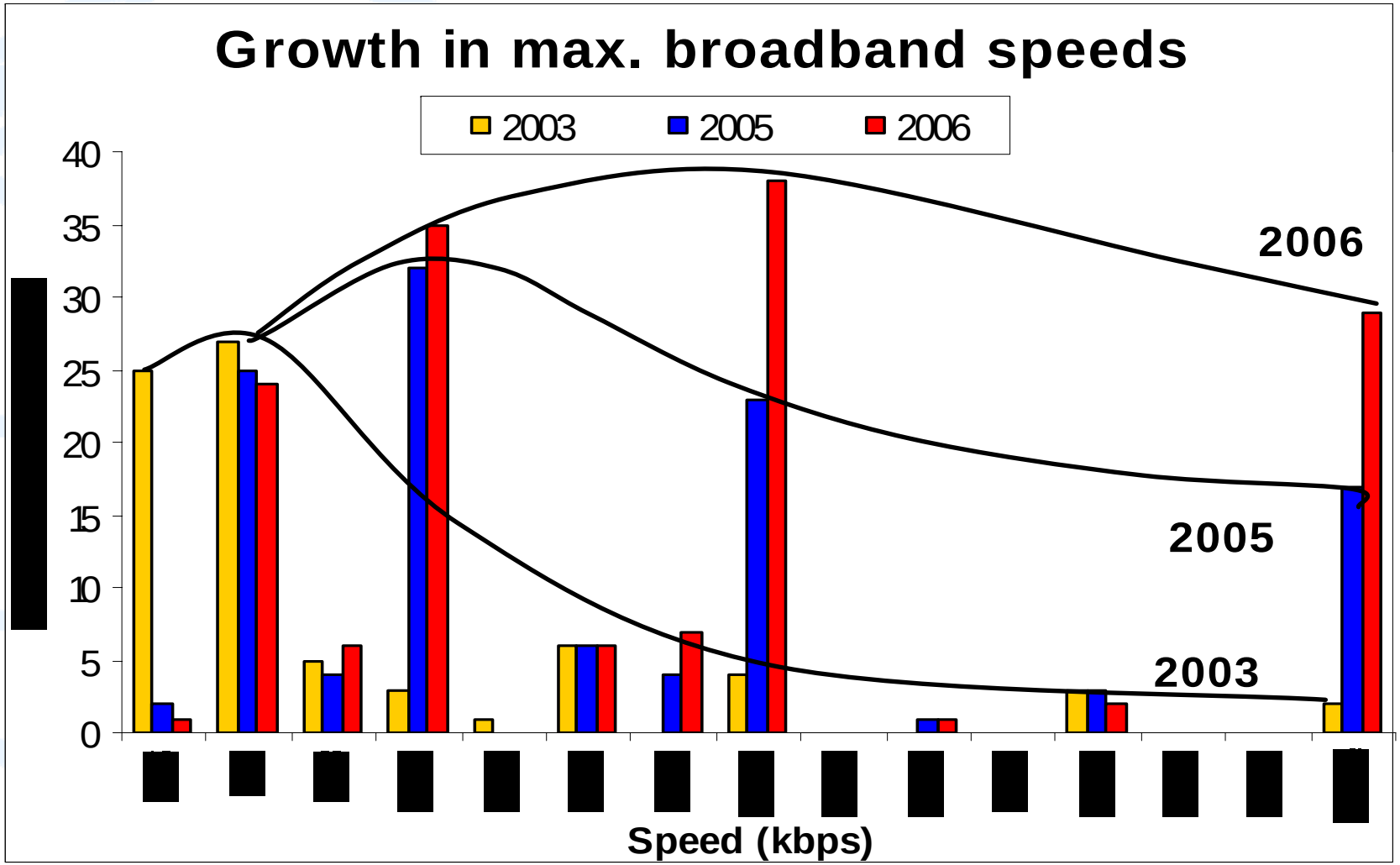
Global trends in broadband pricing schemes



Note: Data" refers to price packages with bit caps. "Time" refers to time-metering . "Both" refers to packages with both data and time caps. "Flat rate" implies unlimited monthly use.

Source: ITU World Information Society Report 2007 (www.itu.int/wisr).

Growth in broadband speeds



Source: ITU World Information Society Report 2007 (www.itu.int/wisr).

Triple-play bundles: The example of Free.fr (Iliad)

- Freebox: 29.99 Euros per month (US$40)
- ADSL2+ Internet up to 28 Mbit/s (down) 1Mbit/s (up)
- Unlimited VoIP calling to 49 countries worldwide (+domestic calls and line rental in France)
- 100 video channels (+ 150 options)
- But … only available in France

Some regulatory challenges of NGNs

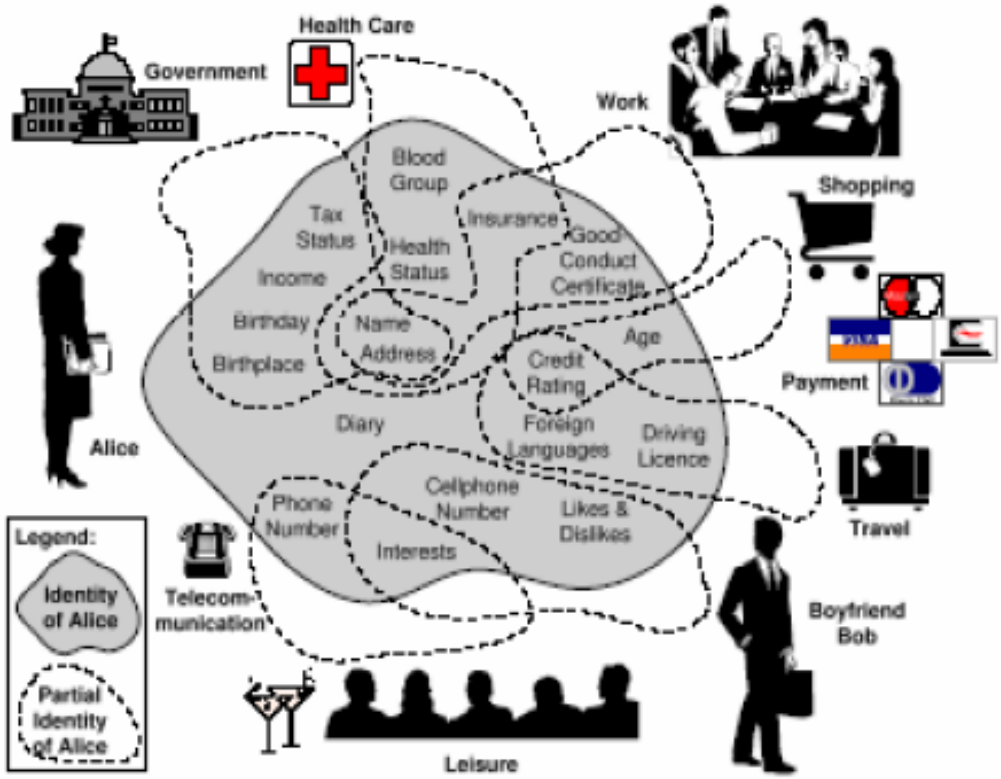
- **Pricing: Will NGN offer prices that are significantly lower than those available today?**
- **Bundling and billing: How to distinguish the real price of services when they are bundled?**
- **Interconnection: Will current interconnection models (based on per-minute settlement) work in an NGN?**
- **Security: If much greater capacity is available at the edges of the network, how to guarantee security?**
- **Investment: Will unbundling discourage new infrastructural investment? Infrastructure sharing?**
- **Traffic prioritisation: Is the Net really "neutral"?**
- **Emergency services: What level of universal service obligation to impose?**
- **Competition policy: Significant market power will not disappear in an NGN environment**
- **Consultation: compensation for stranded assets?**
- **Identity management and privacy: What rules for data retention?**

NGN interconnection options

- **Either, towards complexity**
  - **Differentiate between different traffic streams with different QoS**
  - **Differentiate between different user terminal devices (e.g., fixed, wireless, portable)**
  - **Provide interconnection options based on per-minute, per-volume, per-service type and per-content type**
- **Or, towards simplicity**
  - **Sender keeps all (bill and keep)**
  - **Arrangements based on interconnection capacity**

Identity management and privacy

- NGN services can be combined with identity authentication (e.g. with RFID)
- Can be also be combined with location-based services (e.g., with GPS)
- This may require a federated approach to identity management
- But it raises questions over data retention, legal interception etc
- ITU-T has established a Focus Group on identity management



The many partial identities of Alice

Source: Clauss & Klöntopp (2001), cited in ITU Internet Reports 2006: Digital.life

www.itu.int/digitallife

Conclusions

- NGN business case looks promising, but voice revenues continue to drive investment
- NGN in developing countries are more likely to be leveraged from mobile and new-build networks, and driven by cost savings
- Trends toward bundling and flat-rate pricing in retail market will be mirrored by capacity-based pricing in wholesale market
- Identity management and privacy concerns pose new challenges for NGN standards development

Thank you.

For more information, see:

- **ITU New Initiatives Workshop "What rules for IP-enabled NGNs?" (March 2006) at: http://www.itu.int/spu/ngn**

- **Trends in Telecom Reform: The road to NGN (2007) at: http://www.itu.int/ITU-D/treg/**