VoIP: Current Trends and Future Evolution

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Agenda

1. Market drivers
2. Defining VoIP → regulatory treatment
3. VoIP market
4. Future Evolution
5. Conclusions

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1. Market drivers:
   - IP as a key enabler → NGN
   - Development of the broadband market
   - Price reductions (operators & consumers)
2. Defining VoIP → regulatory treatment
3. VoIP market
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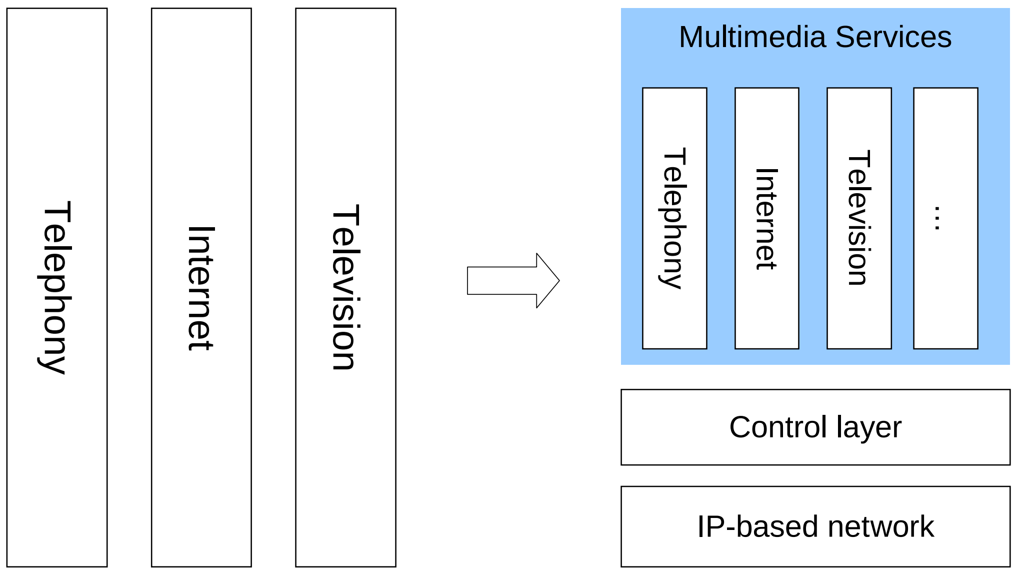
1. Market drivers: IP as a key enabler



Evolution from multiple separate networks (each optimized for one service) to a unified IP-based multi-service network

IP-enabled Next Generation Networks (NGN)

ITU Workshop “What Rules for IP-enabled NGN?” 23-24 March 2006

- Policy and regulatory implications
- Market developments
- Issues surrounding interconnection and universal service

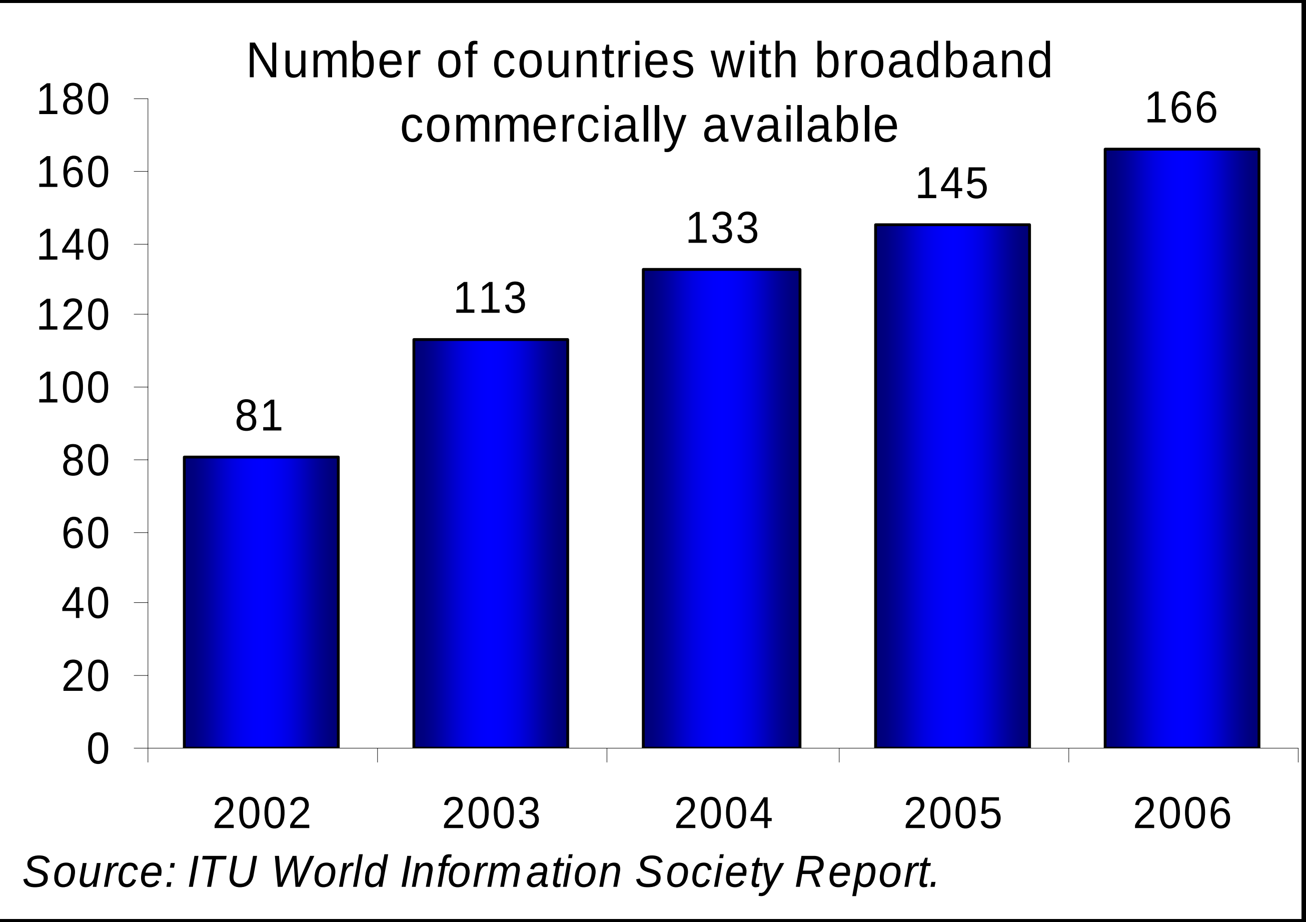
The transition towards NGN

Old World (PSTN telecom)	**New World (IP-based Internet)**
Circuit-switched	Packet-based, based on IP
Interconnection	P2P peering arrangements
Capacity-based – QoS guaranteed	Quality of Service (QoS) class (best effort)
Cost orientation, focus on marginal cost	Bundled offers: marginal costs near zero
Calling Party Pays (CPP)	Unclear… *Bill and Keep*? (Scott Marcus' background paper and WIK Institute's workshop on this subject).
Key issues – asymmetric regulation (numbering, universal & emergency service)	Unlicensed bands, spectrum trading, competition policy, emergency service
Network-centric control & intelligence	Edge-centric - intelligent nodes at edge

Forces driving VoIP (cont'd)

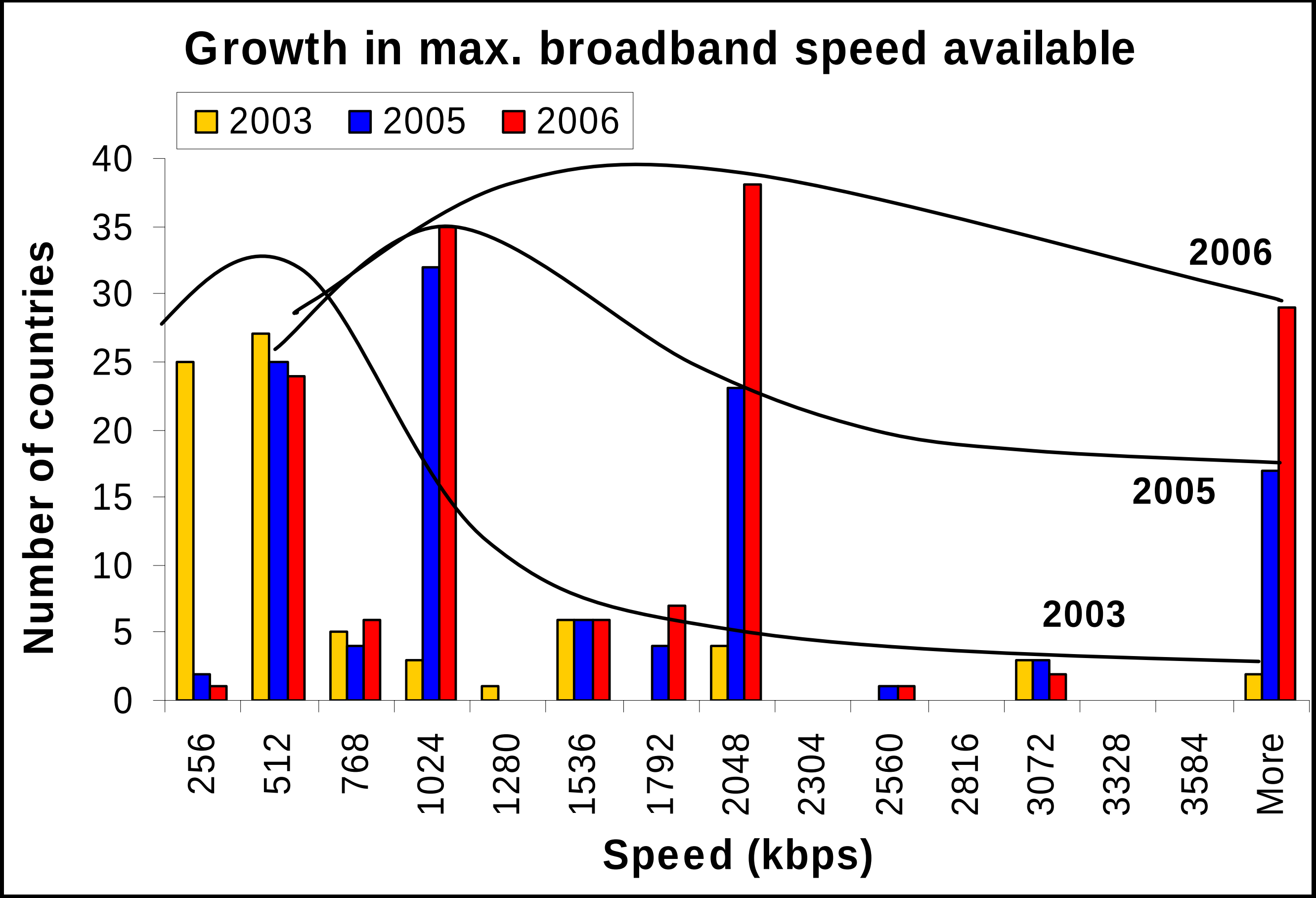
- **Consumers** – cheaper, single provider, simplicity of flat-rate billing.
- **Operators**:
- Reduced costs of new & legacy networks
- Tapping into growth in new markets;
- Alliances with service and content providers, in new, converged business models
- Growth in broadband networks.

Increasing availability of broadband…



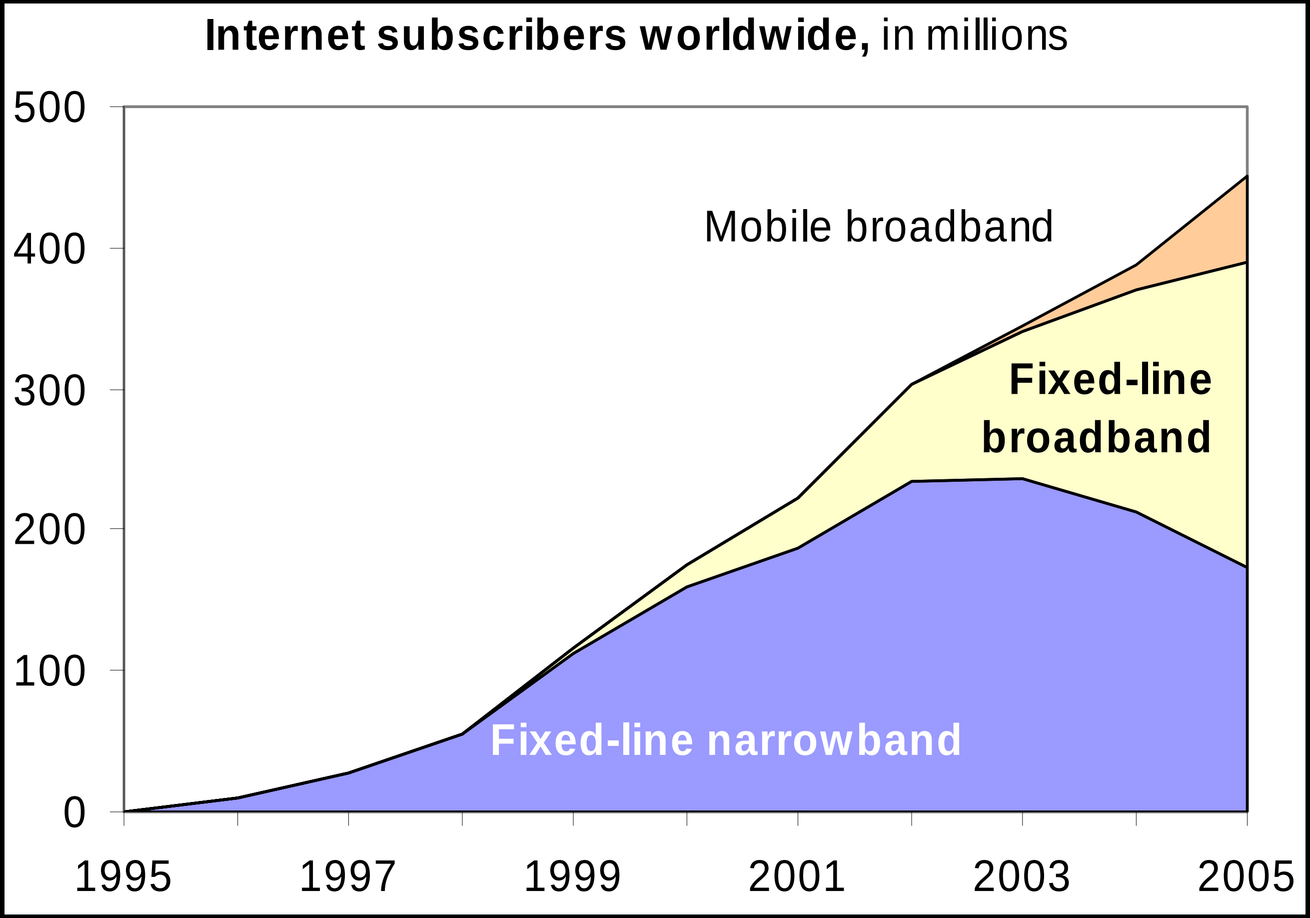
Source: ITU

...At faster speeds



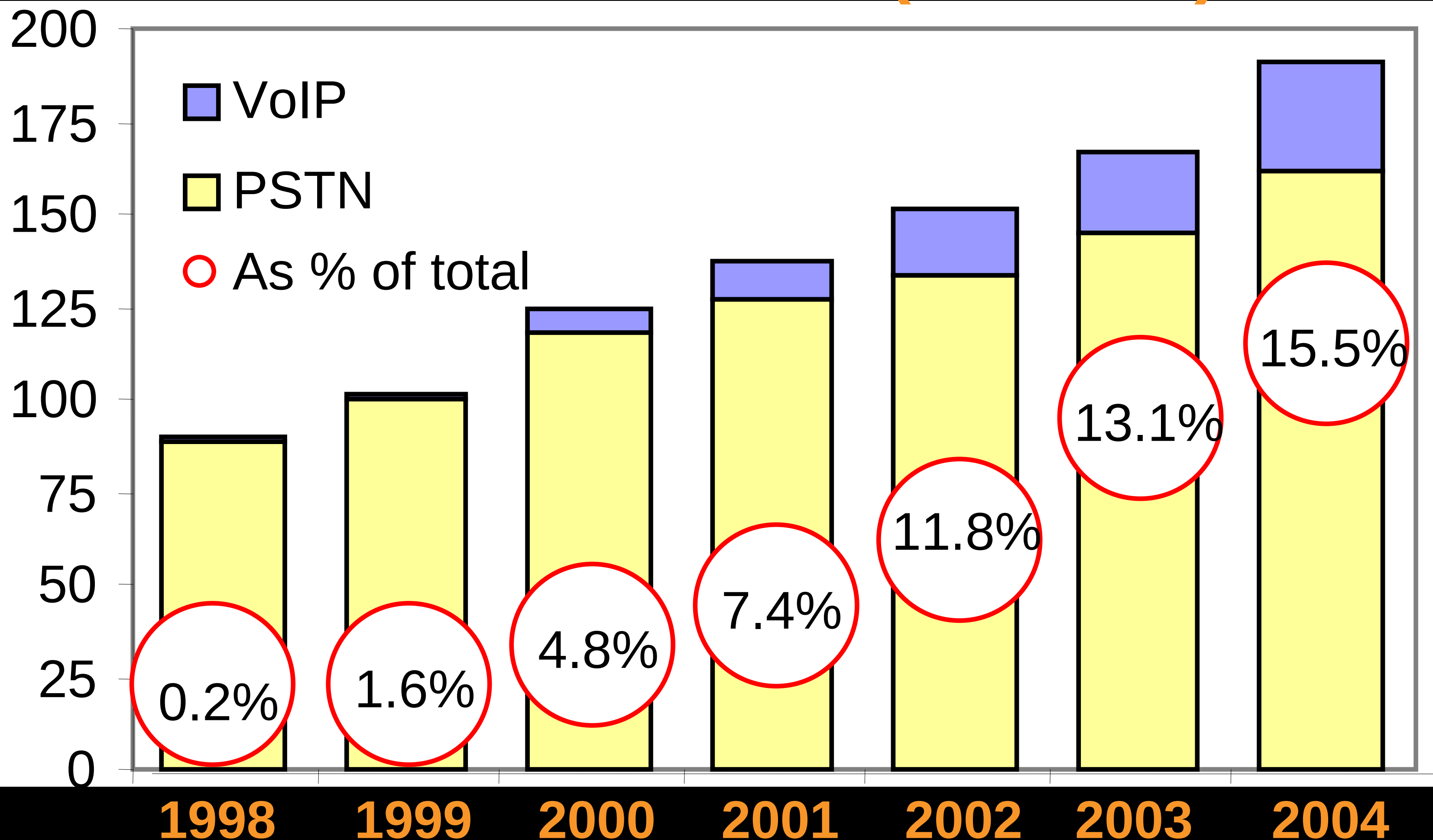
Source: ITU.

Growth in broadband in subscribers & share



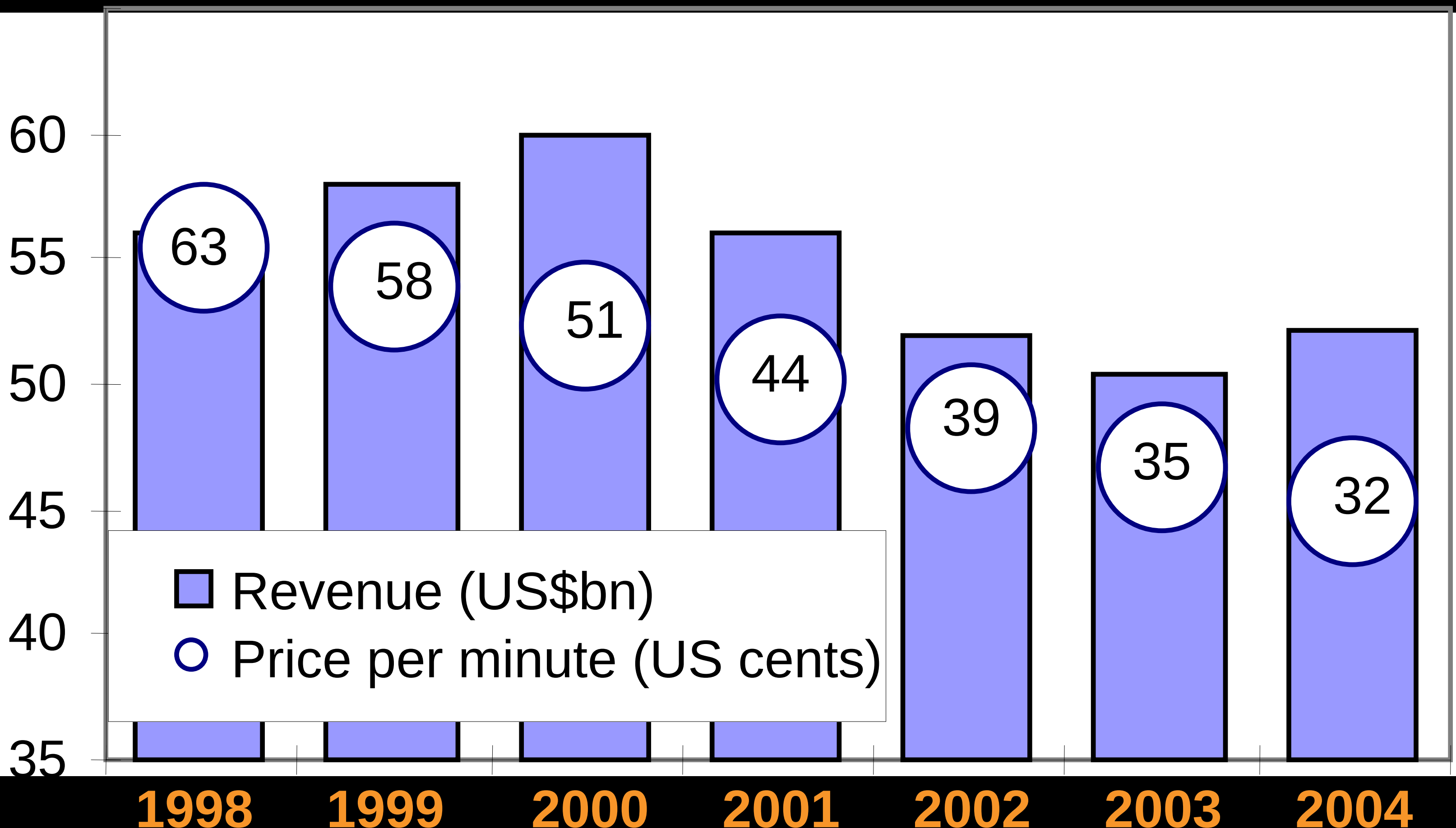
Source: ITU

International voice traffic (bn mins)



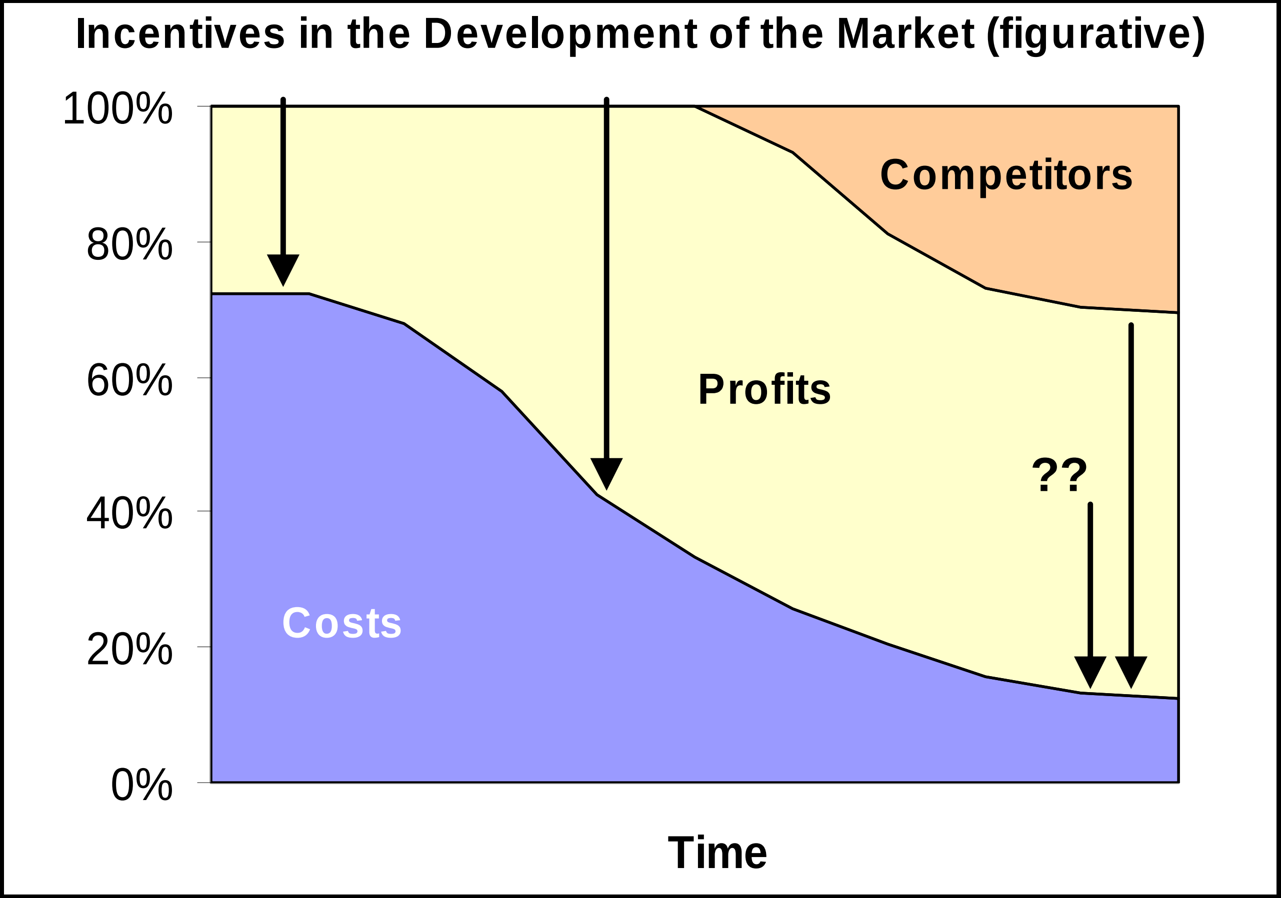
Source: ITU.

Falling price (& revenue?) in int’l voice traffic

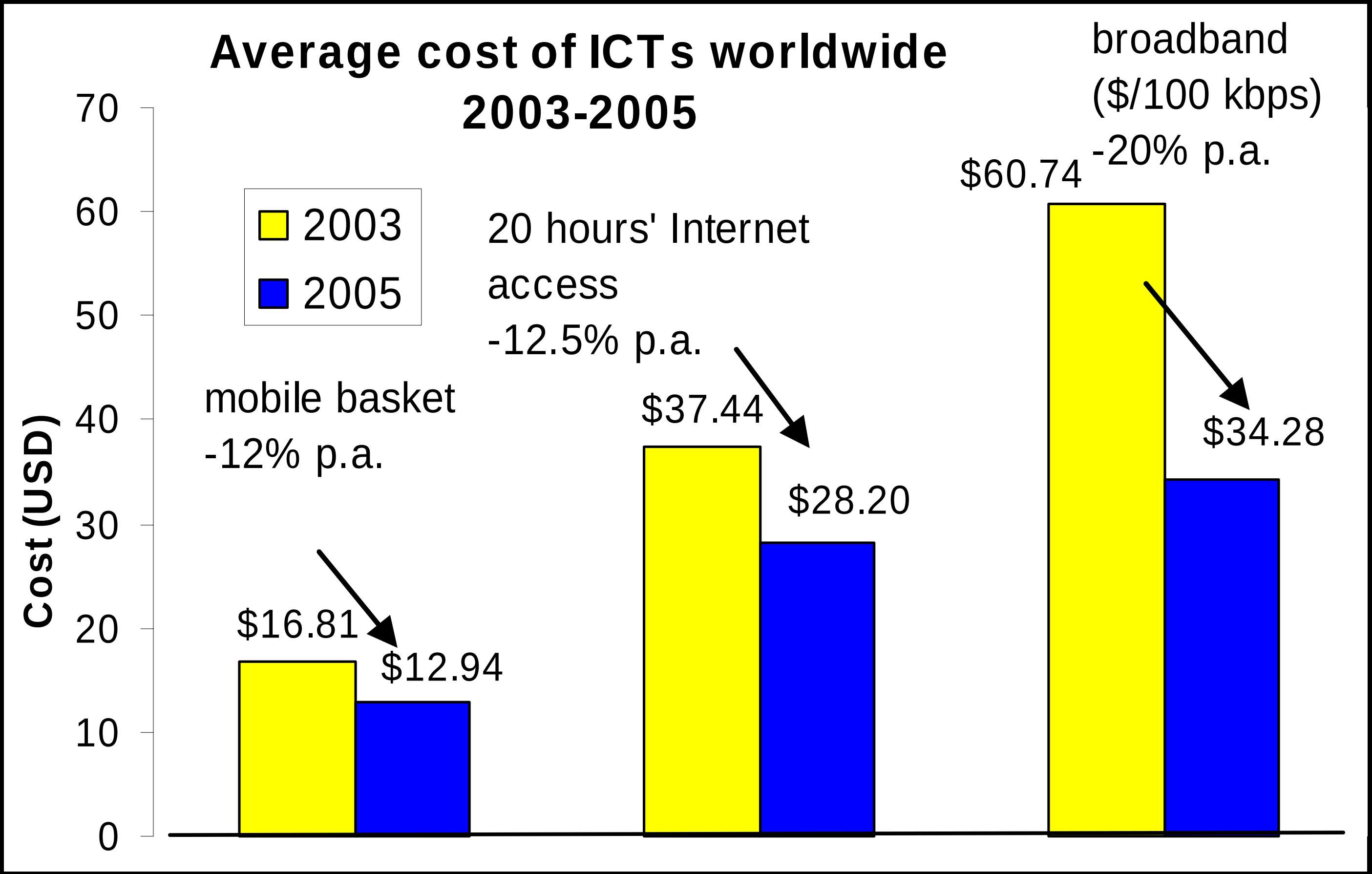


Source: ITU World Telecom. Indicators Database

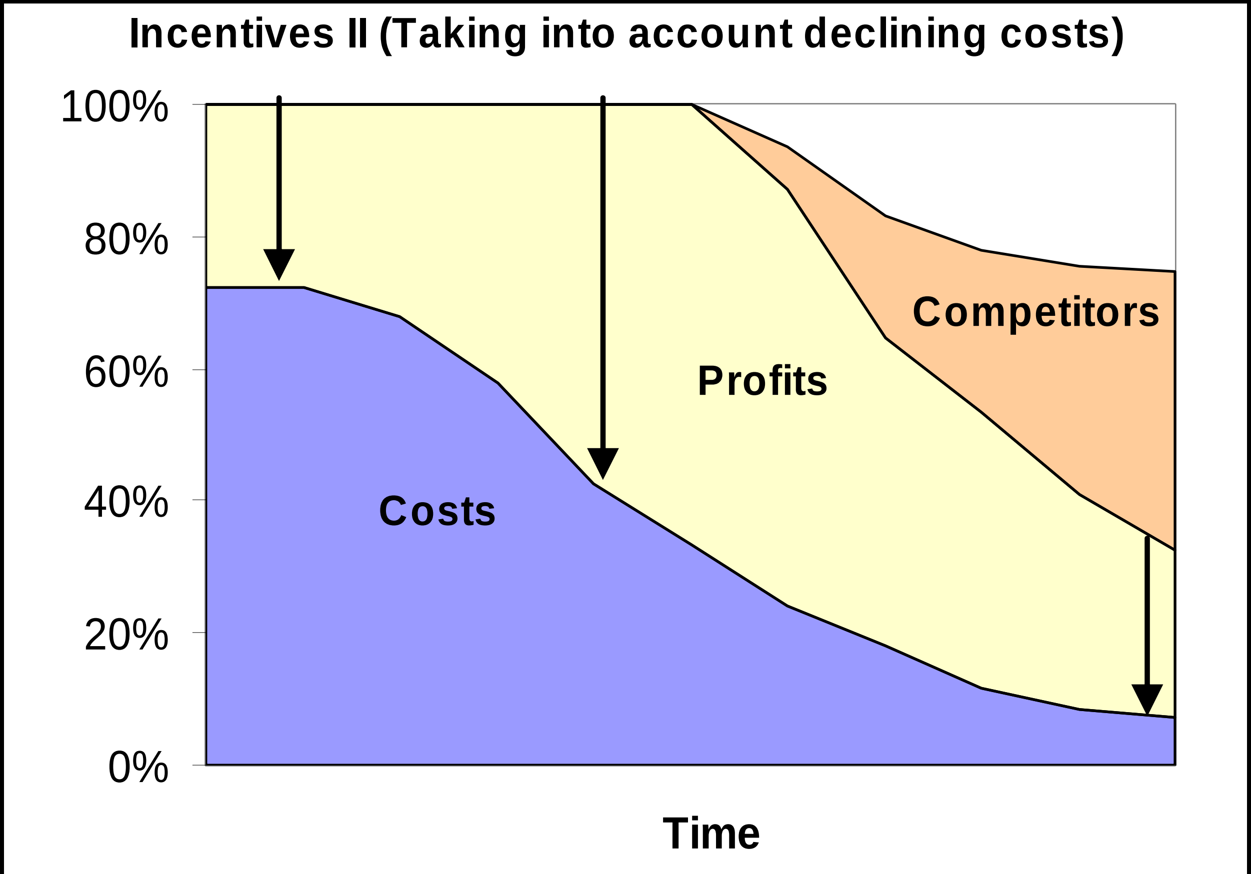
Transition to VoIP: incentives for operators



But beware: price reductions for consumers!



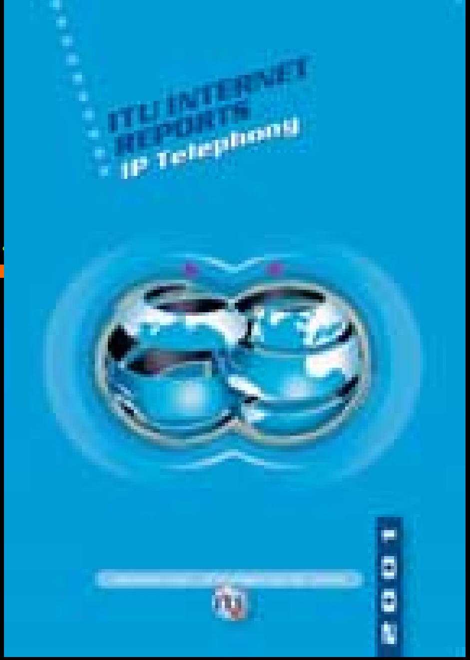
Incentives with price reductions



Agenda

1. Market drivers
2. Defining VoIP
   - ITU work and “working terminology”
   - Country definitions
   - Regulatory treatment
3. VoIP market
4. Future Evolution
5. Conclusions

2. Defining VoIP
ITU Internet Report 2001
IP Telephony



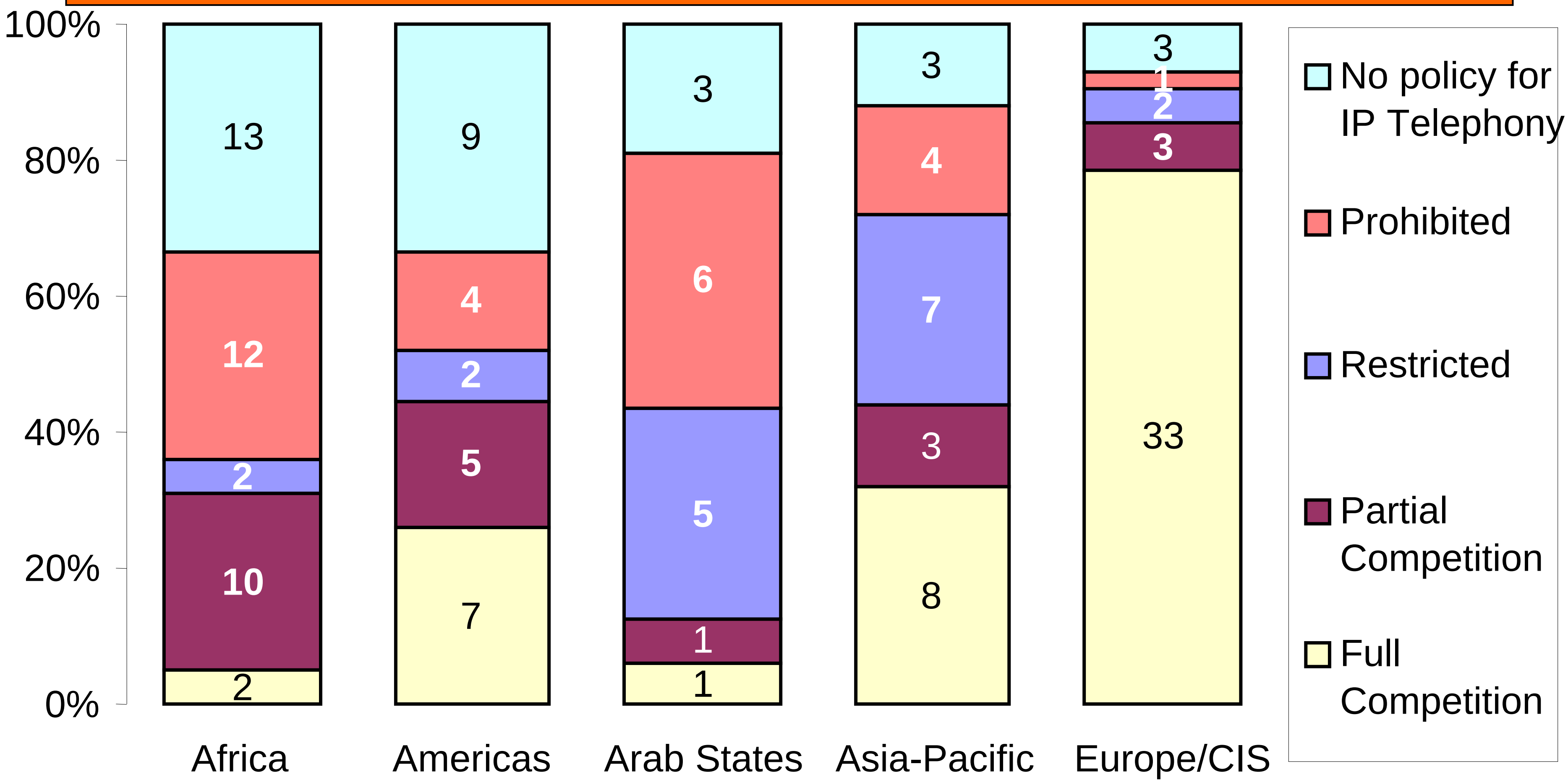
IP Telephony – carriage of voice over IP-based networks *irrespective of ownership*

Voice over Internet Protocol (VoIP) – voice traffic carried wholly or partly using IP over broadband networks *competing with incumbent operators*

2. Defining VoIP: Country definitions

Definition	**Selected countries**
QoS, now replaced by *Functionality*	India, Japan Hong Kong
Numbering system	Japan, Taiwan-China
Netwk. Architecture	Israel, Saudi Arabia
Degree over PSTN & *terminals used*	Israel, Jordan India, Japan, Malaysia, Spain
Service	Egypt, Barbados, Indonesia, Italy, Jordan, UK, United States.
Users	Australia, Chile, Tunisia

Regulatory status of IP Telephony, 2005



Note: Based on responses from 149 economies. "Prohibited" = no service is possible. "Restricted" = only licensed PTOs can offer service. "Partial competition" = non-licensed PTOs may use either IP networks or public Internet. "Full competition" = anyone can use or offer service.

Source: ITU World Telecommunication Regulatory Database (2005 questionnaire).

The spectrum of regulatory treatment of VoIP, 2006

Explicitly banned (at least 23 countries)

Yet to be made legal- “Twilight Zone of regulatory ambiguity”

“If in doubt, hold a Public Consultation” (22 countries +)

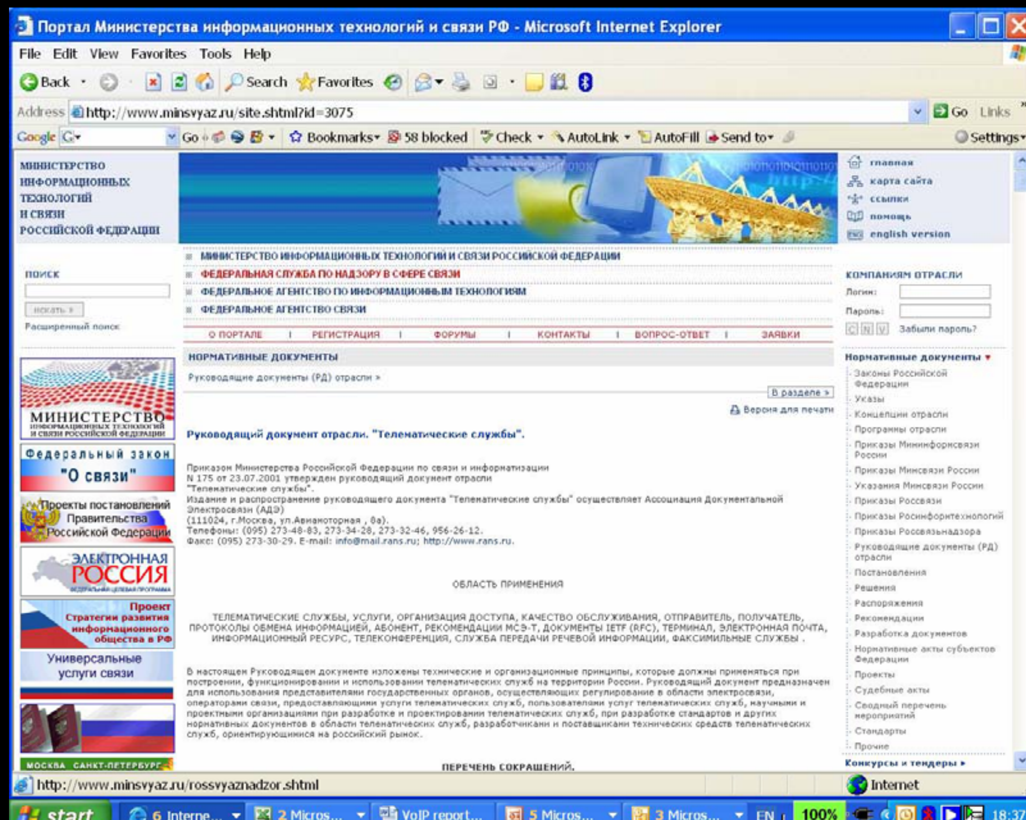
“Under consideration” by gov’t/regulator (30+).

License required (26 countries+)

Explicitly deregulated and/or light regulatory touch (19 countries+)

Explicitly legal (57 countries +)

& Russia? “Directive on Telematic Service”



Source: http://www.minsvyaz.ru/site.shtml?id=3075

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1. Market drivers
2. Defining VoIP → regulatory treatment
3. VoIP market
   - Subscribers & distribution
   - The problem of the missing millions
   - Revenues
4. Future Evolution
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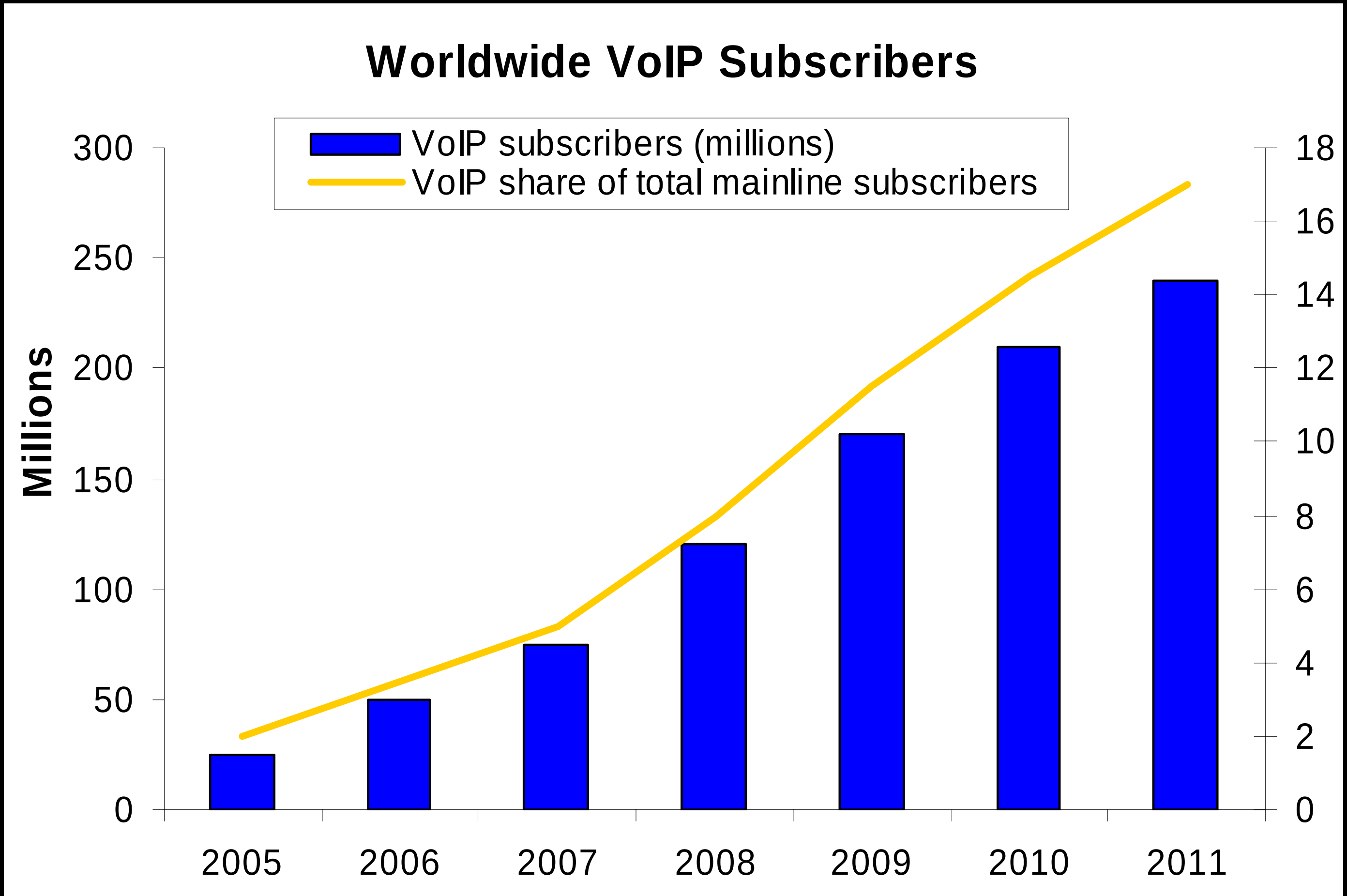
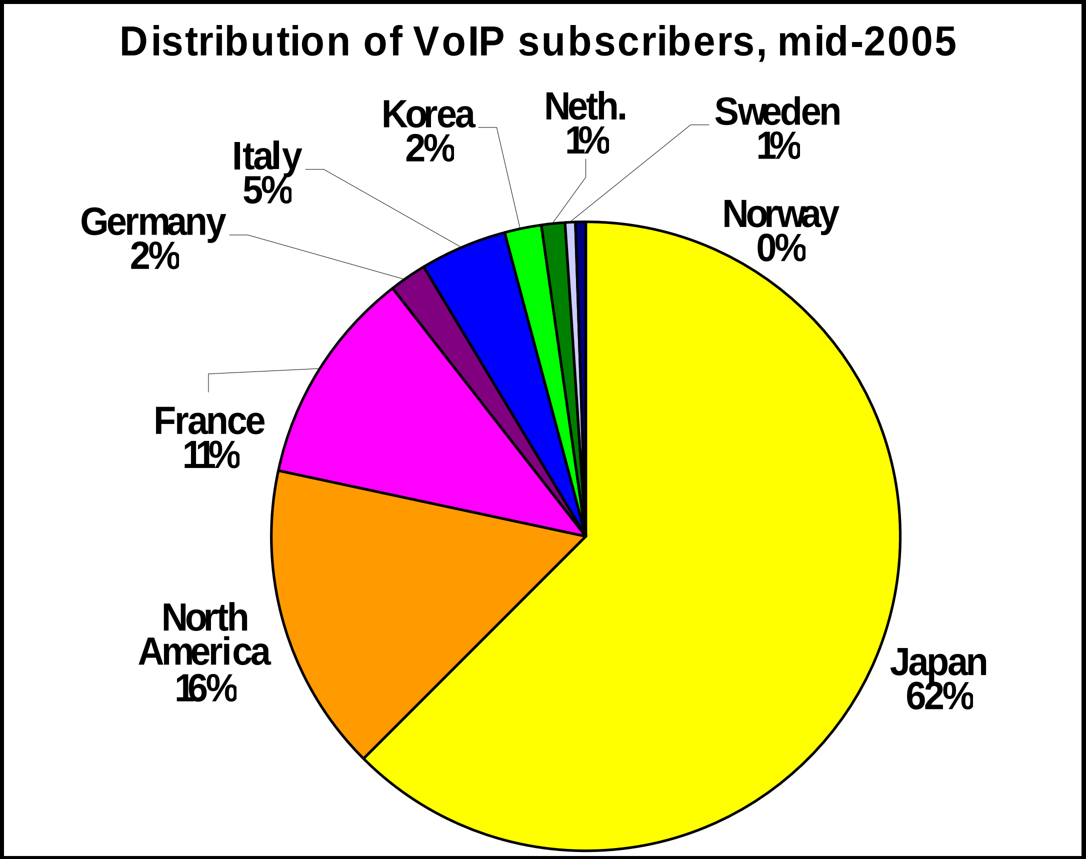
3. VoIP market - strong growth



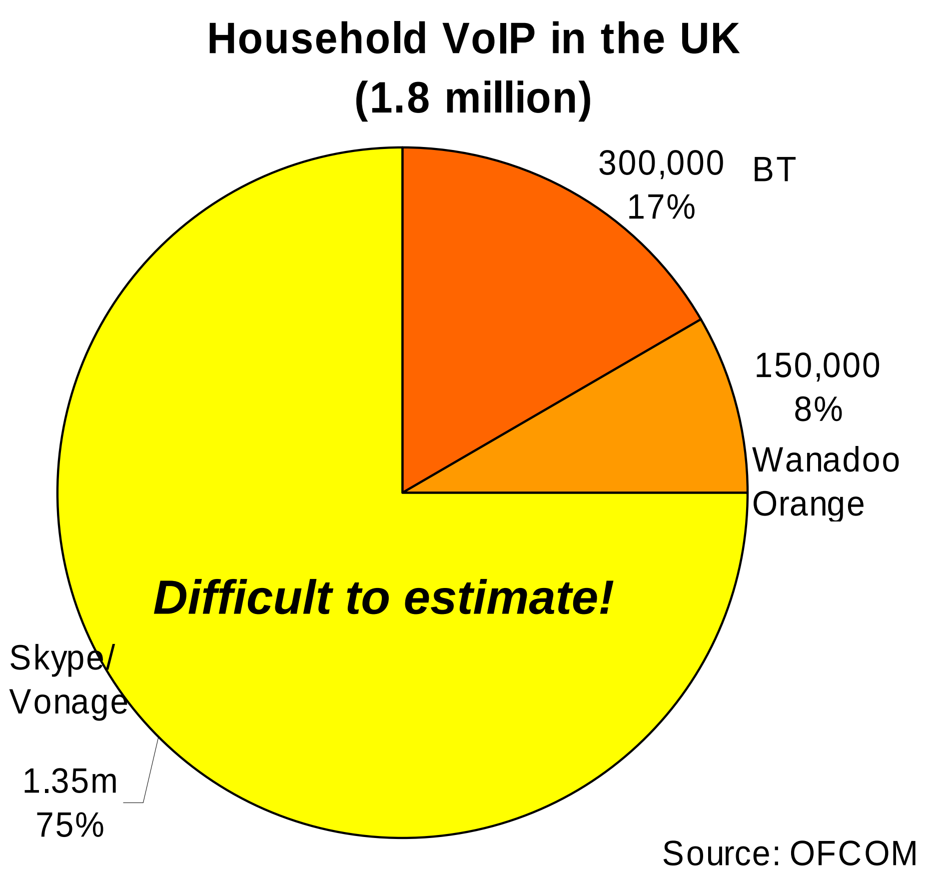
Source: IDATE.

Distribution of VoIP subscribers



Source: Point Topic.

But – how to measure the missing millions?



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   - Market projections
   - Voice in bundles
   - The transition to flat-rate pricing
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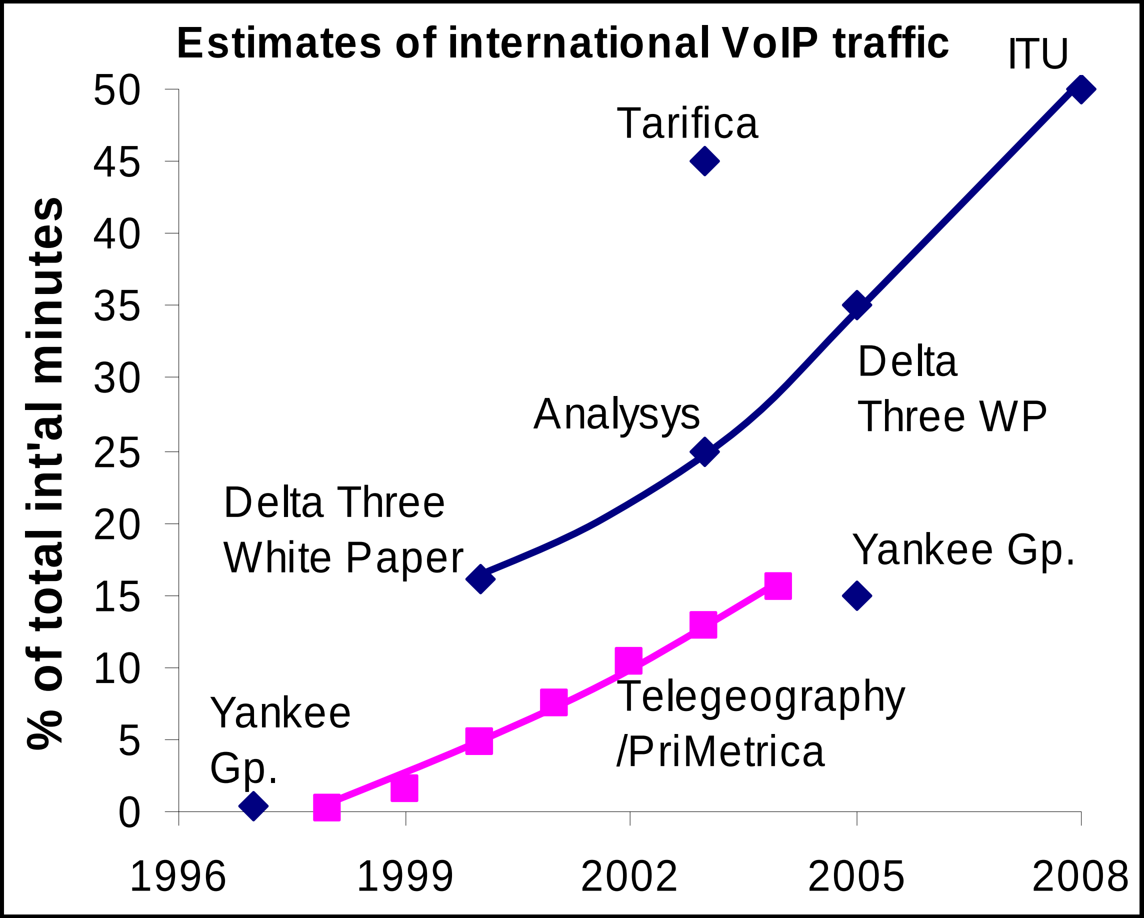
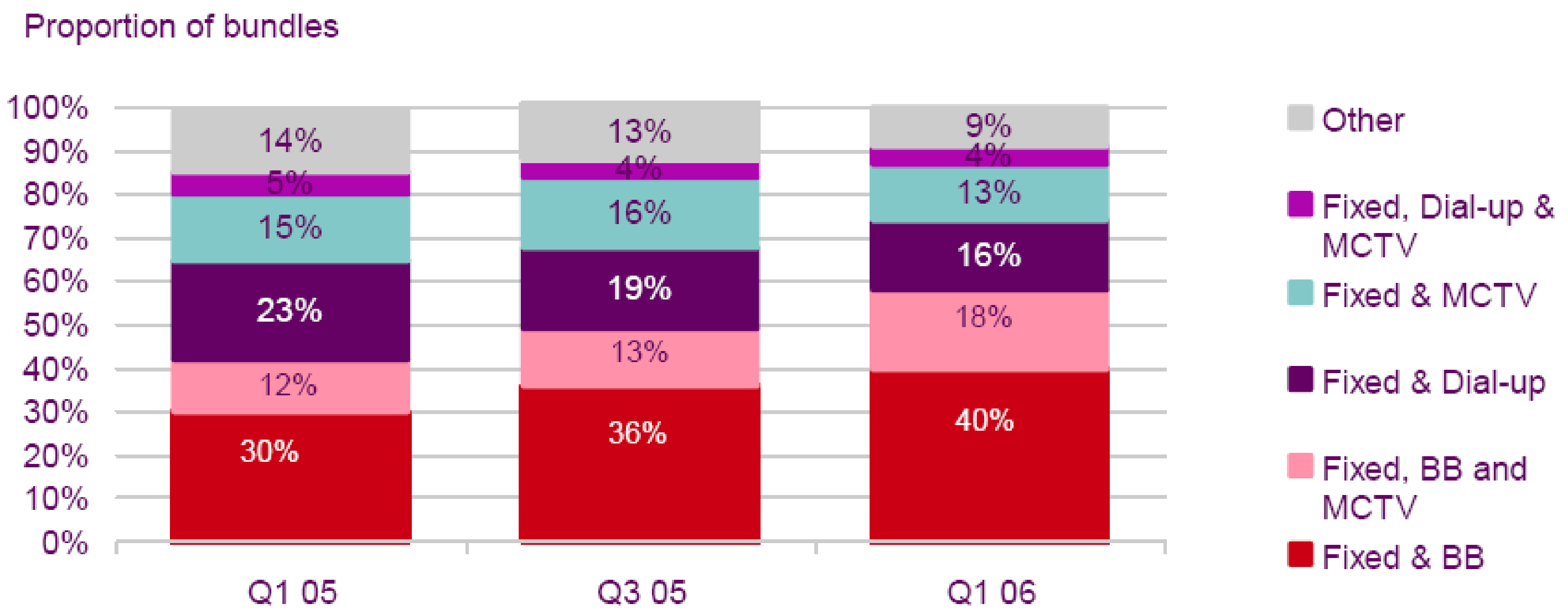
4. Future Evolution: Market projections



Source: ITU et al. (ITU estimate refers to IP Telephony)

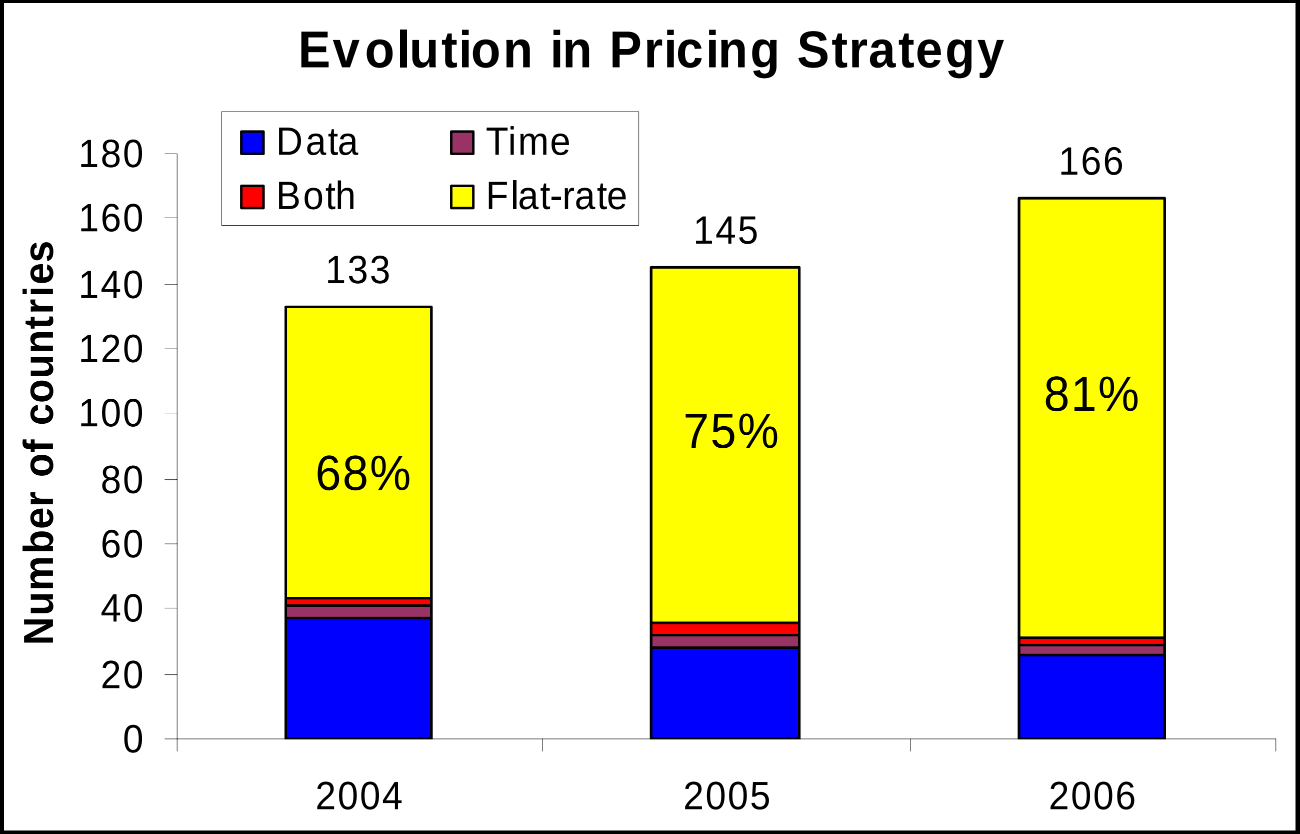
Pink line Telegeograhy

Voice included in bundles (UK)



Source: Ofcom research

Shift towards flat-rate pricing



Source: ITU

Data: billed by data downloaded or time spent online or combination “both”.

5. Conclusions

- **VoIP is a growing reality – for operators, consumers and regulators, with strong growth by all metrics.**
- ***Opportunity or threat?***
- ***A bit of both!***
- **Despite regulatory uncertainty in many countries, it may still be best to engage:**
  Operators – early mover advantage;
  Consumers – benefits in cost reductions;
  Governments – help shape/develop a stable market, instead of holding it back.

Thank you very much

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