

*Fixed-Mobile Convergence Conference
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FMC Competition Policies and Regulatory Parameters

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Note: The views expressed in this presentation are those of the author and do not necessarily reflect the opinions of the ITU. Christine Sund can be contacted at christine.sund@itu.int

Agenda

- About ITU
- Fixed and Mobile Services
- A Changing Environment
- The Rise of Convergence
- Regulation in a Converging Environment
- What Lies Ahead?
- Conclusion

About ITU

*190 Member States
700 Sector Members
& Associates*

ITU-T

Telecommunication
standardization
- network and service
aspects



ITU-D

Assisting implementation
and operation of
telecommunications in
developing countries

ITU-R

Radiocommunication
standardization and
global radio spectrum
management

Fixed and Mobile Telephone Services

Fixed Telephone Service

- Telephone service characteristics vary from country to country.
- Historically, the national telephone network of one country was connected to the national networks of other countries consistent with Interconnection arrangements prepared by the ITU.
- Subscriber dialing for national and international calls
- Pro-competition and interconnection arrangements
- Recent key developments include: ***the falling cost of fixed network technologies and corresponding increase in investment by users, the increasing number of competing operators and the related declining cost of telephone call costs.***
- The recent emergence of IP technologies will contribute to a continuing decline in call costs and enabling new services.
- Break through for developing countries: Wireless Technologies

Mobile Telephone Service

- Mobile Telephone Services
- Digital Mobile Technologies
- Interconnection Arrangements and Inter-carrier Roaming.
- Appropriate operational and commercial arrangements negotiated between operators, domestic or international to ensure successful operation.
- Mobile overtaking Fixed.
- Fixed Wireless Access (FWA) or Wireless in the Local Loop (WLL). In some cases also, network infrastructure has been enhanced to provide a fixed network telephone number rather than a mobile number and to provide local call rates rather than the normal mobile call charging arrangement.

New Communications Technologies

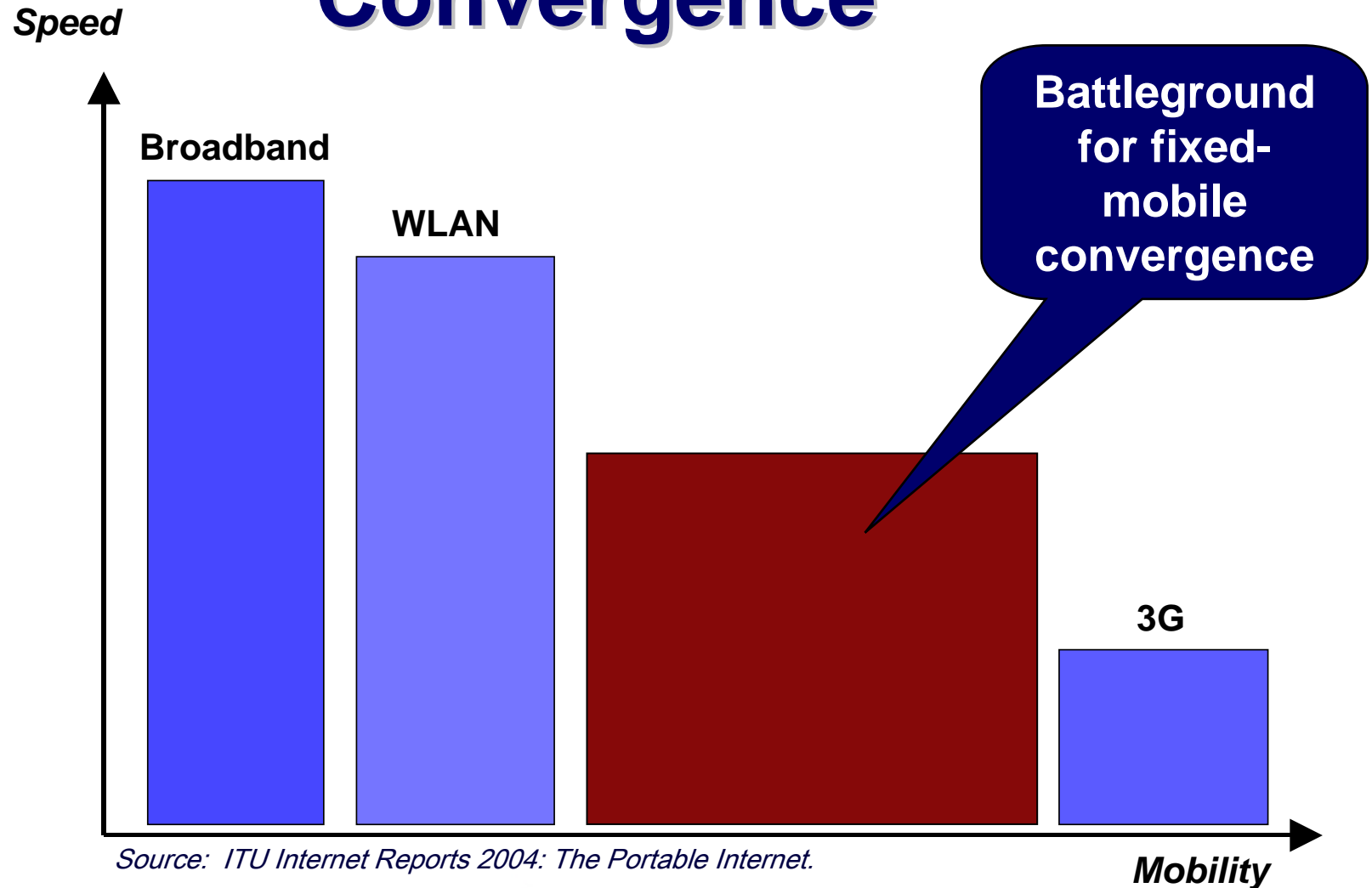
- 1840's: telegraph
- 1870's: telephone
- 1890's: radio telegraphy or "wireless"
- 1920's: radio broadcasting
- 1950's: television broadcasting
- 1960's: geostationary satellite communications
- 1970's: computer communications
- 1980's: optical communications
- 1990's: internet and mobile
- 2000's: IP-enabled NGNs or Next Generation Internet?

1865: ITU Created

A Changing Industry...

- from static market environments to dynamic fast-paced innovation
- from low-speed to high-speed
- from distinct to converged
- from local to global
- from sometimes-on to always-on
- from fixed to mobile
- from wired to wireless

Challenge: Fixed-Mobile Convergence



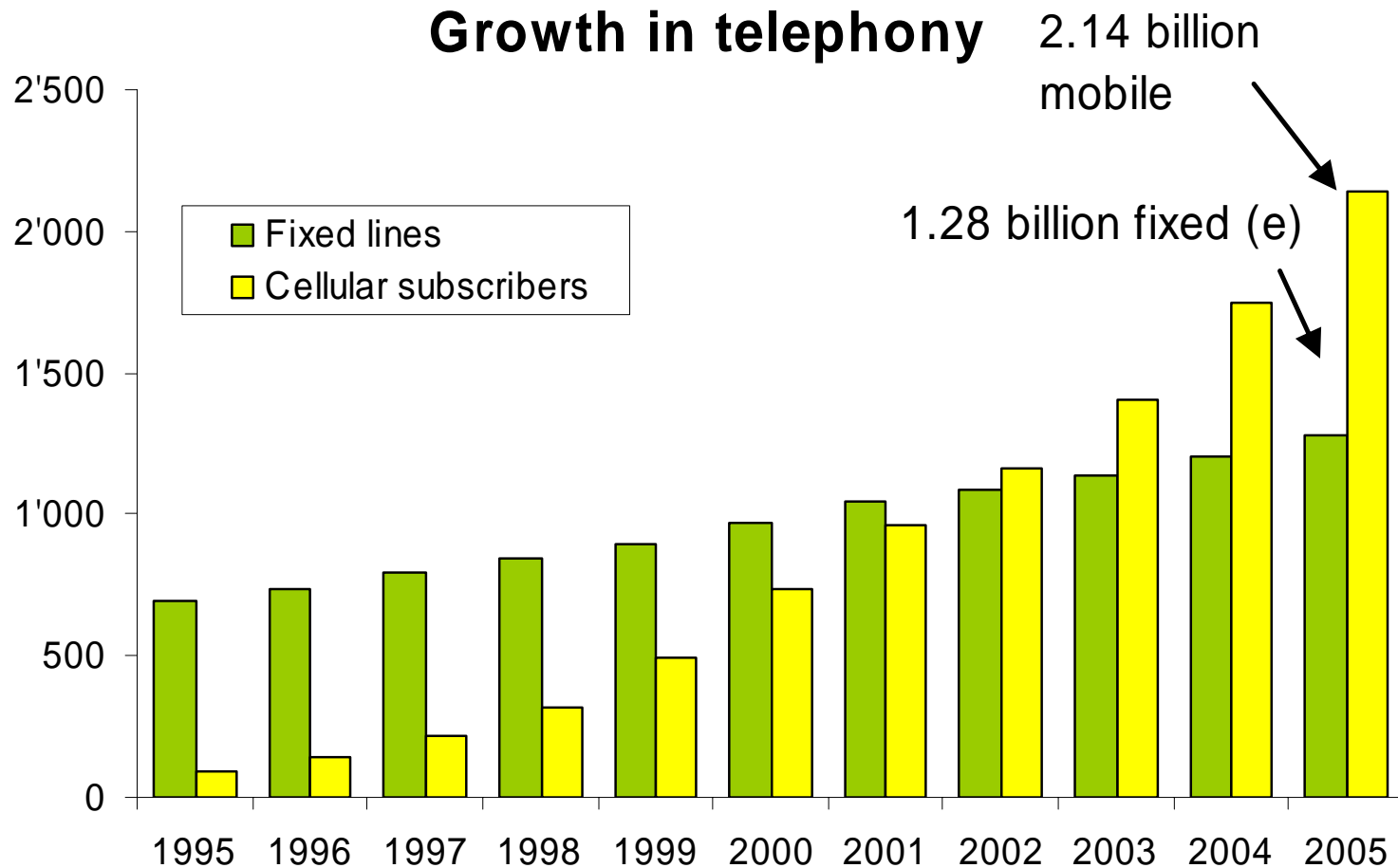
Source: ITU Internet Reports 2004: The Portable Internet.

Fixed-Mobile Convergence

What does Convergence Mean?

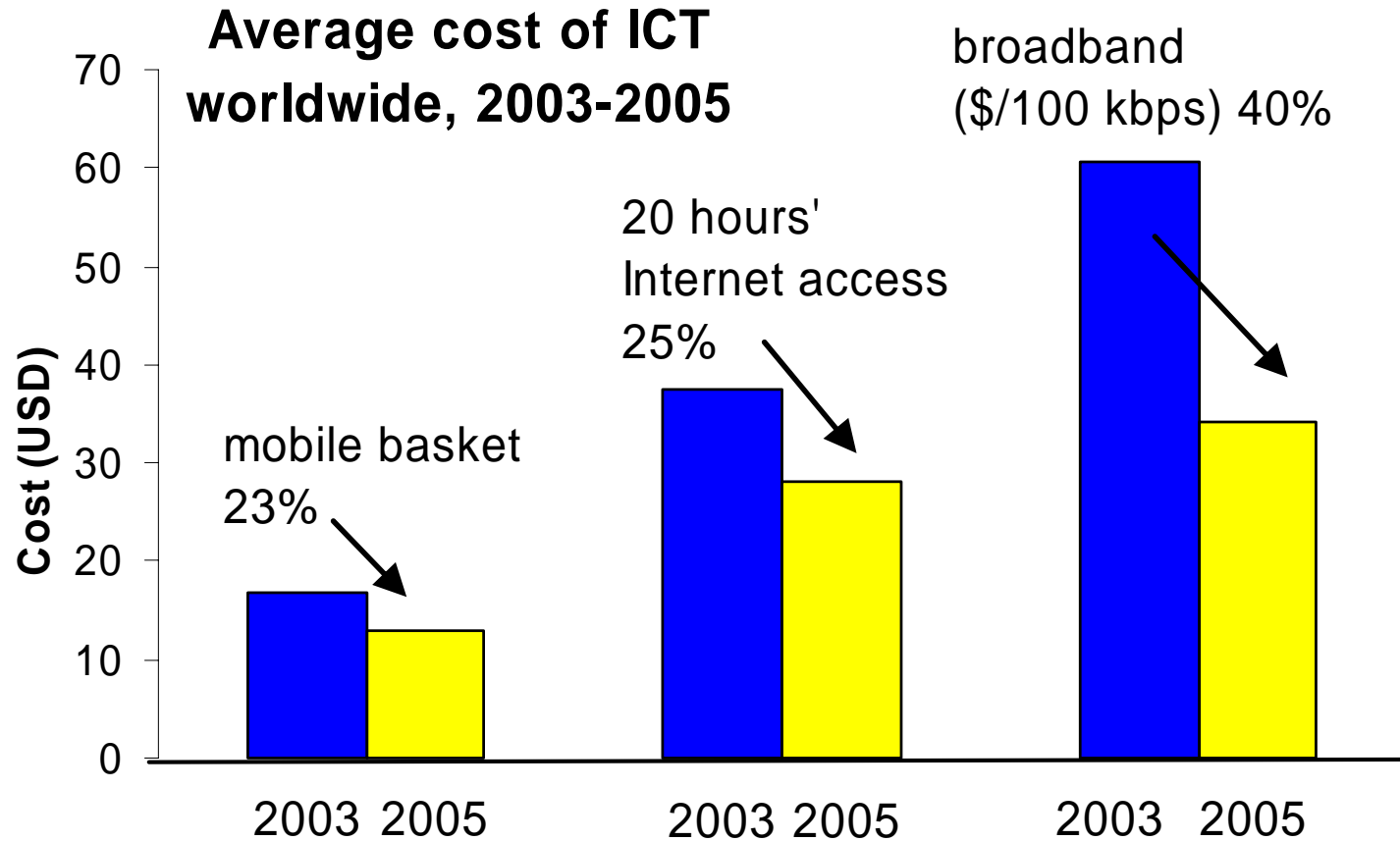
- Technological development.
- Because a full array of digital services and applications are available from multiple network operators and service providers, it is increasingly difficult to distinguish between “voice networks”, “data networks” and “broadcast networks”.
- From the consumer’s point of view, all of these previously different networks are beginning to look increasingly the same, because they can deliver virtually the same services and content.
- The drive to deploy broadband networks and to extend digital services to underserved constituencies - domestically and globally- has helped spur the creation of new telecommunication markets and led to strong growth in services worldwide.

Mobile Overtakes Fixed!



Source: International Telecommunication Union

Declines in Prices, 2003-2005



Source: ITU World Information Society Report

Fixed Mobile Convergence

- One of several iterations of the convergence trend sweeping the industry.
- FMC is just starting to take shape.
- Many areas pointing towards convergence.
- The attraction of FMC lies in **its promise.**
- **FMC threat or opportunity?**



Defining Convergence

- There is no universal definition of the term *convergence* as the process has multiple dimensions!
- Convergence is simultaneously a **technological, market and regulatory trend.**

Different Aspects of Convergence

- Service Provider Convergence
- Terminal Equipment Convergence
- Convergence of Modes of Delivery
- Market-related Convergence

Sources of Convergence

- Technological Drivers:
 - Increased bandwidth capabilities.
 - Advanced software and intelligence embedded in networks and equipment.
 - The increasing use of IP technology.
- Market Drivers
 - Increased competition.
 - New business opportunities.
- Policy Drivers
 - Shared use of a common backbone network for a variety of services.
 - Market entry and competition.
 - Reduced infrastructure costs, etc.

FMC: Means Different Things to Different Parties

- Consumers:
Seamless services no matter what type of network is used.
- Operators (Fixed):
“One stop shop”, one invoice through the bundling of fixed and mobile services.
- Operators (Mobile):
Integrated services, positioning of mobile services as a replacement to fixed.
- Regulators:
Emphasis on fair competition: fixed vs. mobile and mobile vs. value added services.

Device Convergence

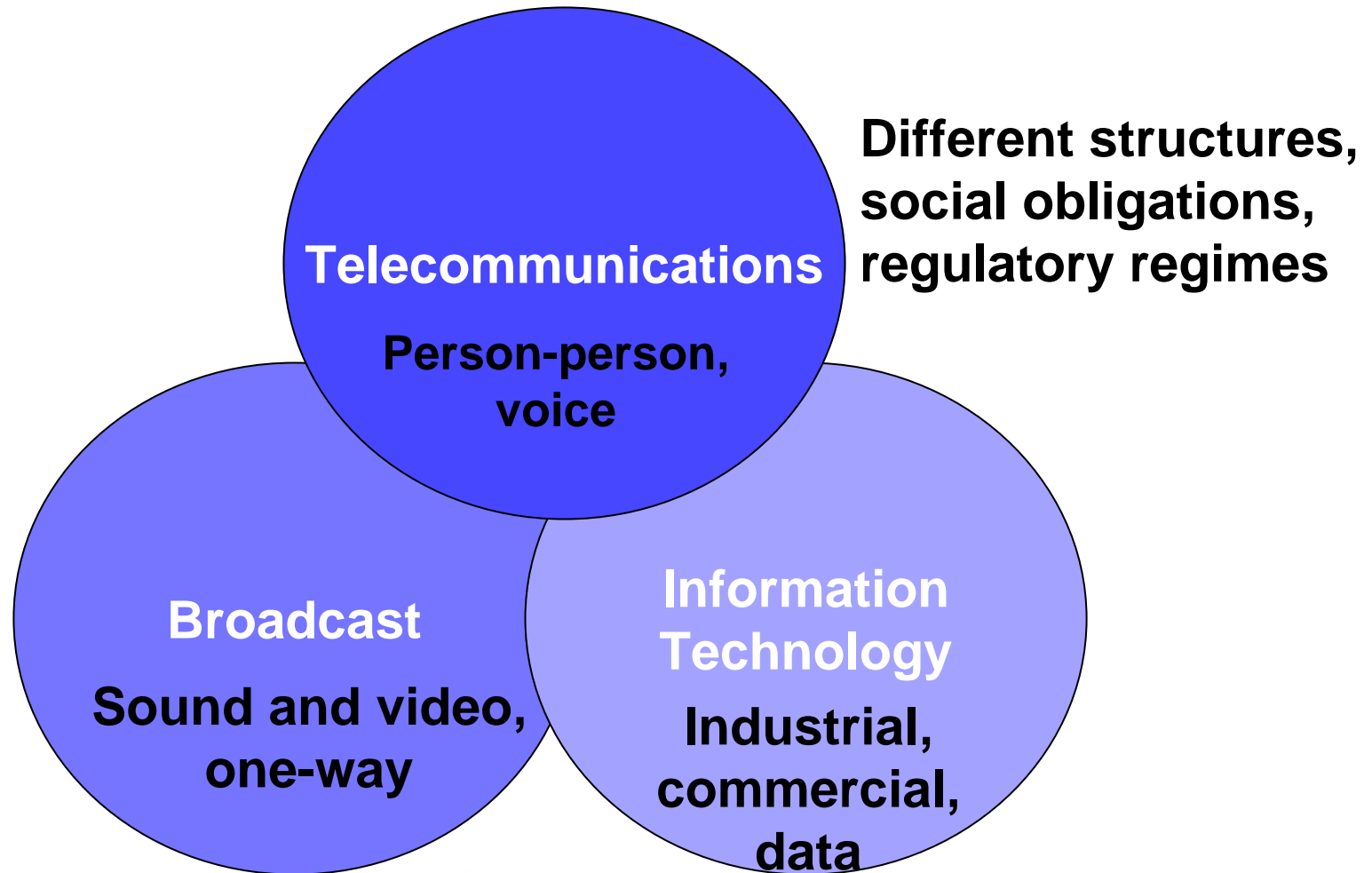
- Devices are becoming available that are capable of multi-mode operation. For example:
 - a mobile phone may operate as a fixed telephone when placed in an appropriate cradle in the home or office;
 - a mobile handset may be designed to connect to both a wireless internet service and a standard mobile telephone service;
 - a PDA may be used both as a mobile telephone and as an internet terminal for a VoIP service.
- The development and marketing of such devices is breaking down the distinction between fixed and mobile services in the minds of users, and presents a challenge to any regulatory regimes that have assumed an ongoing distinction between them.

Customer Convenience

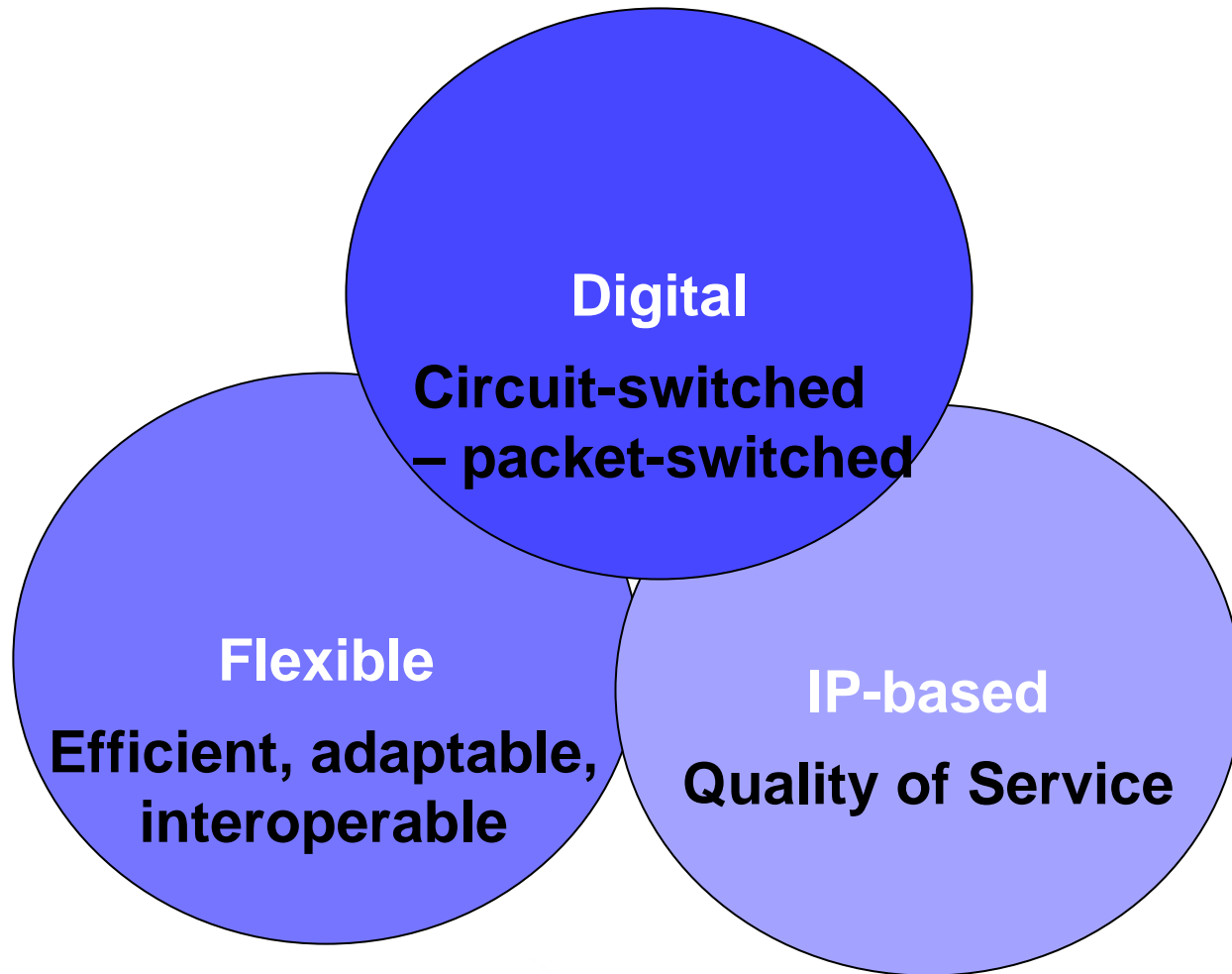
- One phone, useable anywhere!
- Will they be able to make the equivalent of a "local call" when at "home", which in some countries will be an un-timed call?
- Will customers who call them be required to pay high "fixed to mobile" call charges?
- Will the customer be satisfied with having only a mobile telephone number or will they want other people to call them when at "home" using a conventional fixed network number?
- Will customers begin to distinguish premium 'carrier-grade' dual-mode services from more economical options where quality and continuity of service is traded off for a low price?

...In addition to many other possible issues...

Convergence: Market Sectors



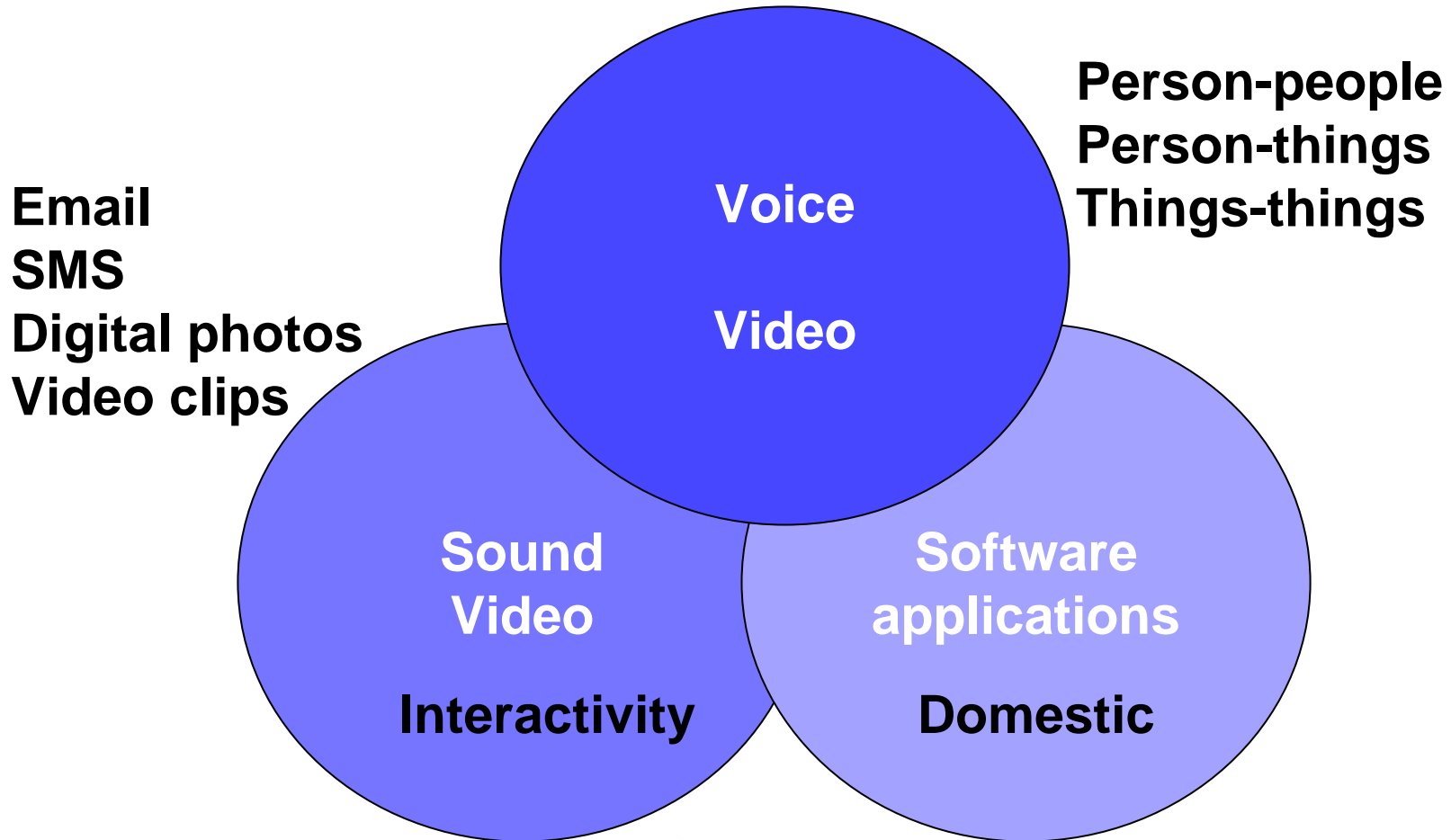
Convergence: Technology



Emerging Technologies

- Wireless (nearing maturity)
- Voice over IP (VoIP)
- Radio Frequency ID (RFID)
- Instant Messaging (IM)
- Peer-to-Peer (P2P)
- MP3 players & other entertainment devices
- Camera phones
- Networkable multi-function devices (MFDs)
- Etc.

Convergence: Services



Fixed & Mobile Service Definitions

- Prepared 25+ years ago - to clearly fit the applications foreseen at that time:
 - Fixed: point-to-point, radio-relay, line-of-sight (LOS)
 - Mobile: central station, mobile units
 - Eased the complexity of spectrum management
- Fixed Service:
 - a radiocommunication service between specified fixed points
- Mobile Service:
 - a radiocommunication service between a base station and a no. of mobile stations, or between mobile stations, intended to be used while in motion or during halts at unspecified points

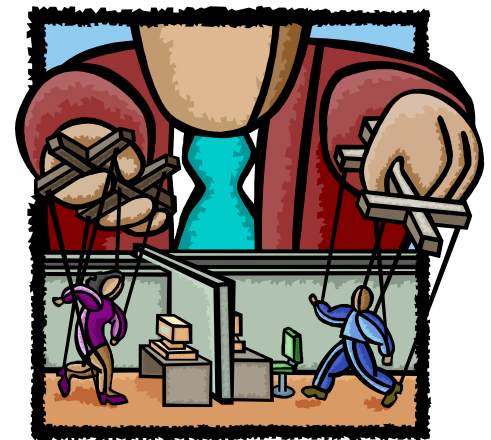
Fixed-Mobile Convergence and Regulation

Regulatory Trends

- Clearly stated telecom policies remove uncertainty and regulatory risk for service providers and their investors.
- Regulation is an art, not a mathematical science, and it is neither possible nor desirable to attempt to prescribe detailed policies for all situations that may arise. Telecommunications markets and technologies are too dynamic to permit that.
- An ideal telecommunications policy should establish the main objectives and approaches of government policy and deal with major issues of national concern to service providers and investors.
- However, the more detailed provisions are better left to subsidiary legislation or regulatory rules which can be amended to meet evolving market conditions.

How can Regulators Respond to the Phenomena of Mobile Growth?

- Respond with increased regulation?
 - Impose traditional fixed regulation on mobile markets?
- Develop new regulatory policies?
- Respond with decreased regulation?
 - Withdraw from regulation?



Example: EU Approach Towards Liberalization and Re-regulation

- Since 1998 basically unrestricted market entry (restrictions only if due to scarcity of resources).
- Liberalization was flanked by a new regulatory approach and the establishment of an independent Regulatory Authority.
- The mobile market was opened to competition earlier.
- Liberalization and re-regulation were strongly driven by the European Commission.
- Market Dominance/ Significant Market Power (SMP) concept:
 - An SMP determination triggers specific obligations on operators (ex-ante regulation)
 - Reference Interconnection Offer (RIO)
 - Reference Unbundling Offer (RUO)
 - Cost based, non-discriminatory interconnection tariffs
 - Pricing Regulation
 - Billing requirements (itemized billing free of charge etc.)

Ex-post regulation

Investigations into potential abuse of market power

- Margin Squeeze Discrimination
- Excessive pricing etc.

Other regulation

Dispute Resolution procedures

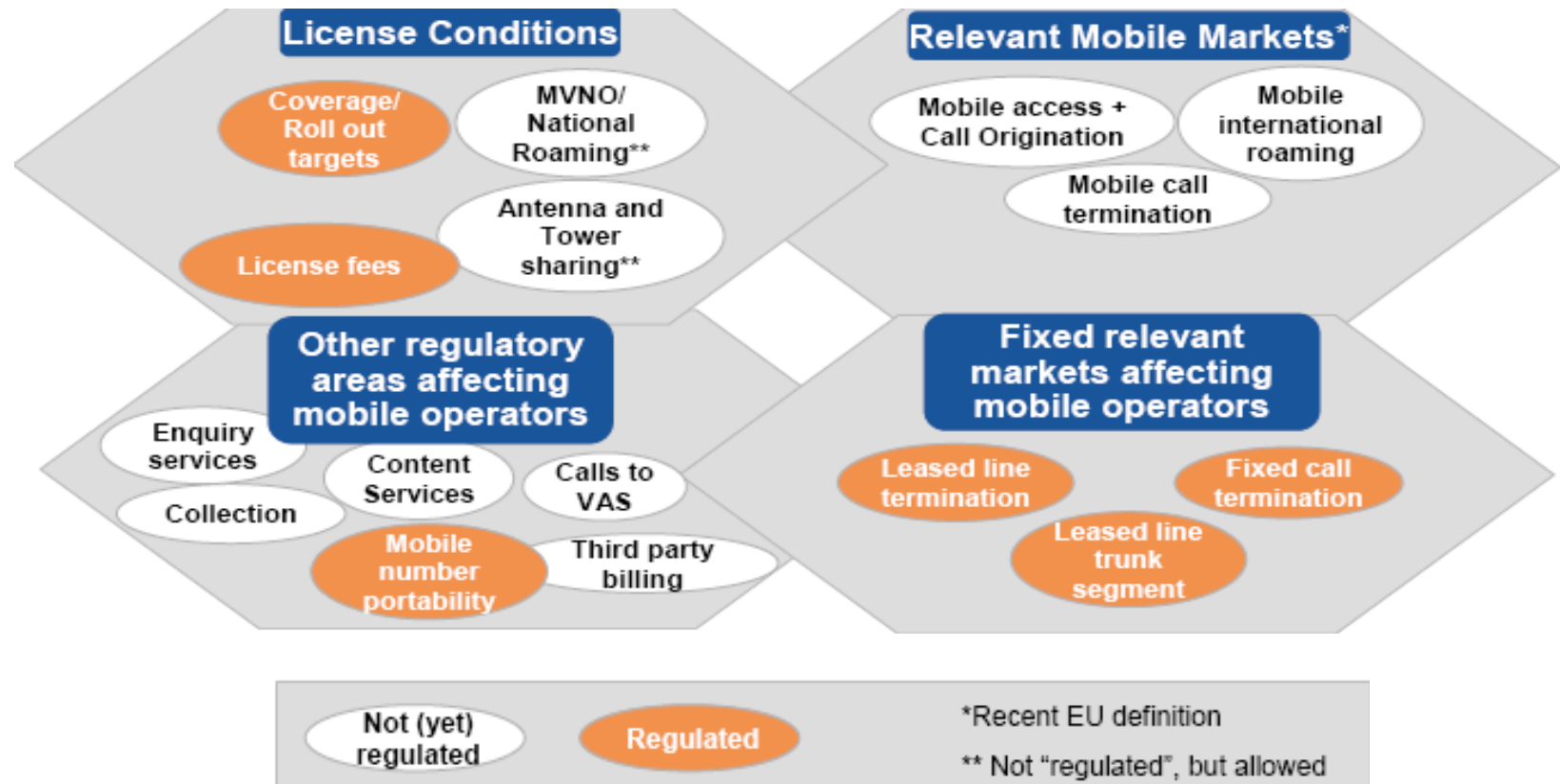
...between operators and consumers

...between operators

Technical Regulation

- Frequency allocation
- Standards, numbering

The EU Approach of Regulation in Converged Markets



Source: Detecon International presentation at ITU/ITC event in 2004

A Flexible Regulatory Environment for FMC?

FMC and Market Regulation

- Markets often controlled by limited number of dominant operators.
- Abuse of market power by discrimination and unfair practices is very likely to eliminate or limit competition.
- The regulator's goal is to foster competition, for the ultimate benefit of consumers.



What is the Regulator's Role in FMC?

- Protect consumers' interests?
- Abolish artificial and historical barriers to competition?
- Reduce entry barriers to new entrants, especially for innovative new players?
- Others?



What Should Policy Aim to Achieve?

- Maximize the efficiency of networks;
- Enable economic growth and innovation;
- Provide better services to consumers;
- Encourage competition and market-driven innovation;
- Allow consumers freedom of choice;
- Others...

Authorization for Telecom Service Provision

- **Traditionally**, a license was issued to authorize a person to provide telecom services or to operate telecom facilities.
- **Today**, the practice of issuing detailed individual licenses to specific telecommunications service providers is gradually being replaced by more general authorization approaches.
- With increased liberalization, some regulators are removing all authorization requirements for some telecom services.
- There are significant differences in the authorization practices in force in different countries.

Licensing in the New Era of Convergence

- Licensing as a tool to accommodate a new era of liberalization and convergence.
 - Regulatory obligations and flexibility.
 - Two main trends:
 - An expansion in the number of services that are subject to only minimal or even no licensing
 - The development of converged licensing frameworks
- **Market forces are prompting a trend toward converged licensing structures**

Towards a Unified Regulatory Framework

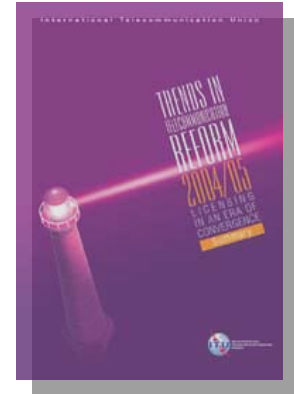
Convergence and Competition

- Flexible licensing conditions to easy market entry.
- Single license regimes are given new life, however, this time they are not exclusive.
- The converged license is a tool to foster a competitive environment, in which multiple operators offer a variety of services...

Competition Issues

- Competitive services were promoted in part by restricting certain operators to fixed or mobile operations according to market dominance.
- May need to consider establishing safeguards or other pro-competitive measures in response to the new market power, which may arise when fixed and mobile operators jointly provide FMC service.
- As services evolve, operators and regulators will need to continue to pay attention to any security challenges that may arise from mobile and multi-mode devices.

Case Study: India



- India's traditional approach.
- India has issued a variety of service-specific licenses over the past few years, for a variety of geographic service areas.
- In the existing, service-specific licensing regime, nonrecurring license fees or entry fees have depended on what type of service and service area the license covers.

Case Study: India (cont'd)

- Converged licensing regime for all telecommunication services.
- Goal: to encourage the growth of new applications and services, taking advantage of technological developments in the ICT sector.
- Other underlying objectives:
 - ensure ease of market entry
 - simplify licensing procedures
 - ensure flexibility and efficient utilization of resources
 - encourage efficient small operators to cover niche areas foster a level competitive playing field

Case Study: India (cont'd)

- India's approach to a unified access licensing framework:
 - **Stage 1:** unified access regime for basic fixed and mobile services
 - **Stage 2:** setting guidelines for a comprehensive, fully Unified Licensing Regime (ULR) for all services.
- India's existing unified access license does foster fixed-mobile convergence, however, the proposed unified license would go even further!

A Need for Flexibility!

- Evolution of licensing processes.
- Governments around the world seek to grow networks and expand services, not impose barriers to such growth and expansion.
- Flexible authorization regime.
- Re-examination of classifications is currently taking place in many countries.



Case Study: Hong Kong, People's Republic of China



- The Office of the Telecommunications Authority of Hong Kong (OFTA) responding to the changing environment.
- Mobile and fixed access technologies.
- Licenses deployed to be restricted to fixed telecommunication services initially, but expanded to include full mobility services after 1 January 2008.
- Fixed telecommunication service will include the conventional wireless local loop services, plus “limited mobility” offerings, which will not be able to hand off calls between cell sites until after 1 January 2008.
- OFTA has said it will issue unified carrier licenses in order to accommodate the trend toward fixed-mobile convergence.
- For further information, see <http://www.ofta.gov.hk/en/report-paper-guide/paper/consultation/20050831.pdf>

Principles for a Converged Environment

The regulatory framework should be balanced, clear, consistent, predictable, comprehensive and transparent.

It should ensure consistent regulatory treatment of essentially similar services.

It should be technology- and platform-neutral (non-discriminatory).

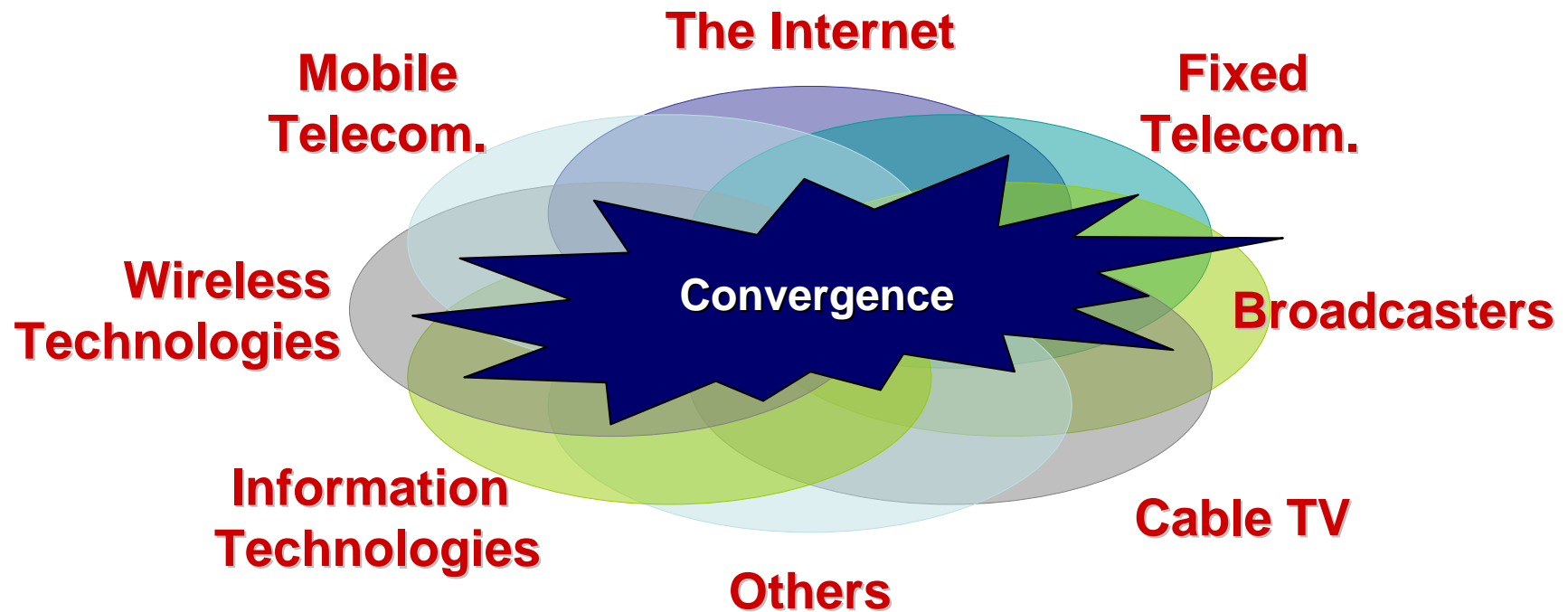
It should be pro-competitive.

It should be flexible enough to adapt to new developments (in technologies and services) and to reflect the different perspectives of both providers and consumers.

(Source: ITU Trends in Telecommunication Reform 1999: Convergence and Regulation)

What Lies Ahead?

Convergence!



Identified Areas of Development

- The rise of low cost broadband infrastructure including broadband wireless access and fiber networks, making universal access to ICTs more likely, given an enabling regulatory environment.
- The evolution away from networks available only at one fixed location to networks that provide users with mobility and (in the long term) ubiquity.
- The evolution toward Next Generation Networks (NGN).
- The rise of end-to-end IP infrastructure.
- Convergence between two or more of the four different branches of the info-communications sector – information technology, telecommunications, broadcasting and other media.

ITU-T Definition of NGN (Y.2001)

- *“Next Generation Network (NGN): a packet-based network able to provide telecommunication services and able to make use of multiple broadband, QoS-enabled transport technologies and in which service-related functions are independent from underlying transport-related technologies.”*
- It enables unfettered access for users to networks and to competing service providers and/or services of their choice.
- It supports generalized mobility which will allow consistent and ubiquitous provision of services to users.

IP-enabled NGNs

Contrasts between today's PSTN network and tomorrow's NGN

Today's PSTN network	Next Generation Networks
Circuit-switched	Packet-based, based on Internet Protocol (IP)
Limited mobility of end-user services.	Broad-based 'generalized mobility'
Vertical integration of application and call control layers, with dedicated networks.	Horizontally-integrated control layers, with simultaneous delivery of applications. Service-related functions independent of transport-related technologies.

Source: ITU Internet of Things Report, 2005

Concluding Remarks

Convergence: Forcing Realignment of Industry and Government Policies

- Blurred boundaries between different wire-line and wireless transmission technologies.
- Convergence is shaping the future of communications.
- Converged licensing and regulatory frameworks for facilitating growth.
- Convergence is at the same time **a technological, market and regulatory trend.**

Conclusions

- FMC will bring **significant changes** for the regulatory framework.
- The changes will be implemented rather in a way of **natural evolution** than drastic revolution.
- **Competition** is key to FMC
 - New entrance opportunities for operating companies as well as newcomers
 - The creation of new markets and will reinforce the position of some market players
- New balance between ex-ante regulations and ex-post remedies.

Conclusions

- Challenges related to the effectiveness of self correcting forces in a competitive marketplace.
- Regulatory proceeding determine **incentives** for all players in the market.
- Regulatory policy should take into account the **dynamic efficiencies** to be achieved in the ICT sector.
- The **balance** between facility based competition and service based competition should be preserved.
- Regulatory harmonization and pro-active participation in the debate on the future regulatory paradigm is crucial...

Useful Links

- Main ITU website:
<http://www.itu.int/>
- ITU Strategy and Policy Unit (SPU):
<http://www.itu.int/spu/>
- ITU Strategy and Policy Unit (SPU) newslog:
<http://www.itu.int/newslog/>
- ITU NGN regulatory resources website:
<http://www.itu.int/osg/spu/ngn/>
- ITU-D Regulatory Reform Unit:
<http://www.itu.int/ITU-D/treg/index.phtml>
- ITU & World Bank collaboration:
<http://www.ictregulationtoolkit.org>

Thank you for your attention!

International Telecommunication Union

Building the Information Society

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