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VoIP

Ruling Voice over IP

Challenges for Regulators in Latin America

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Voice over IP

- Use of the packet based Internet Protocol for the transmission of voice telephony
- Analogue voice is sampled rapidly (usually at a rate between 16 kbps and 64kbps) and the resulting digital signal is assembled into packets of information for transmission to the called party using the Internet Protocol (IP). A broadband connection to operate at an acceptable quality level.

Some Advantages

- Greater transmission efficiency.
- Reduced cost (for operators and consumers)
- Advanced calling features.

Currently VoIP supply models

Conventional Telephone

- Incumbents increasingly deploying IP in the cores of their networks in order to enhance efficiency and reduce operating costs. In some cases they also offering retail VoIP services.

- Non-incumbent facilities-based providers are offering VoIP services over broadband networks such as cable networks (IP enabled). 3G mobile networks operators are potential providers.

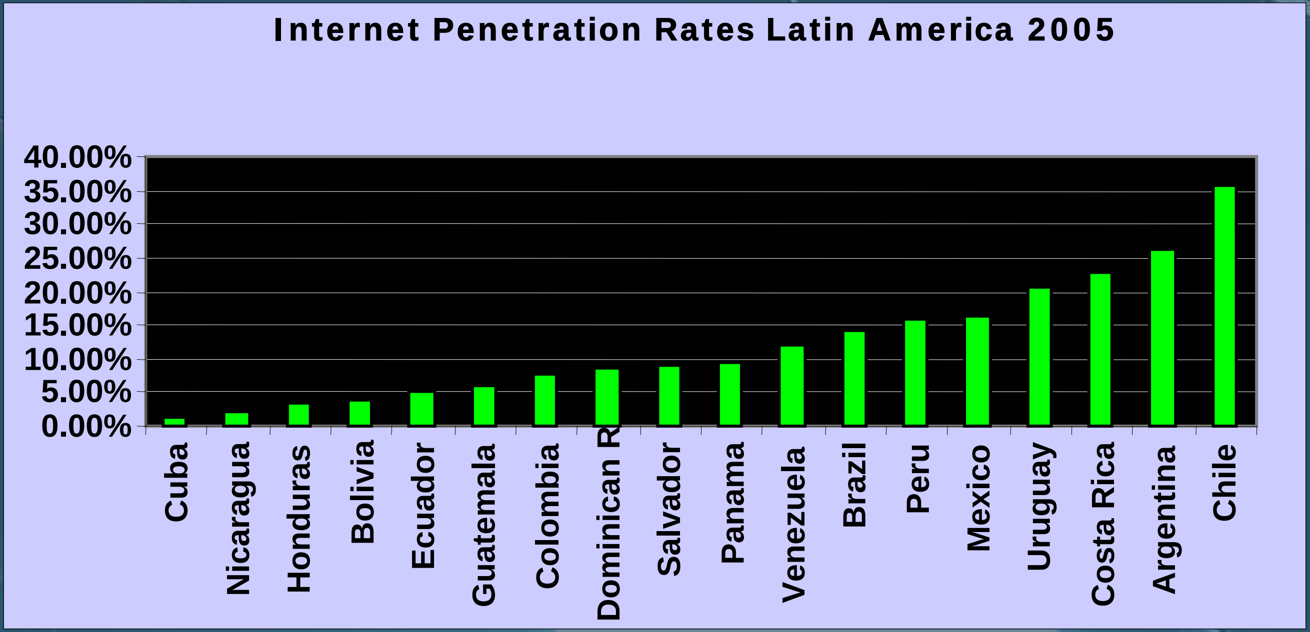
- Service providers with long distance transmission capacity are offering low cost calling to customers who connect to the service via a dial-up connection provided by their local access provider.

PC+ Software

- Non-facilities-based independent service providers also offer local and long distance calling where local access is obtained via the customer's Internet Service provider. (Skype, Google, MSN).

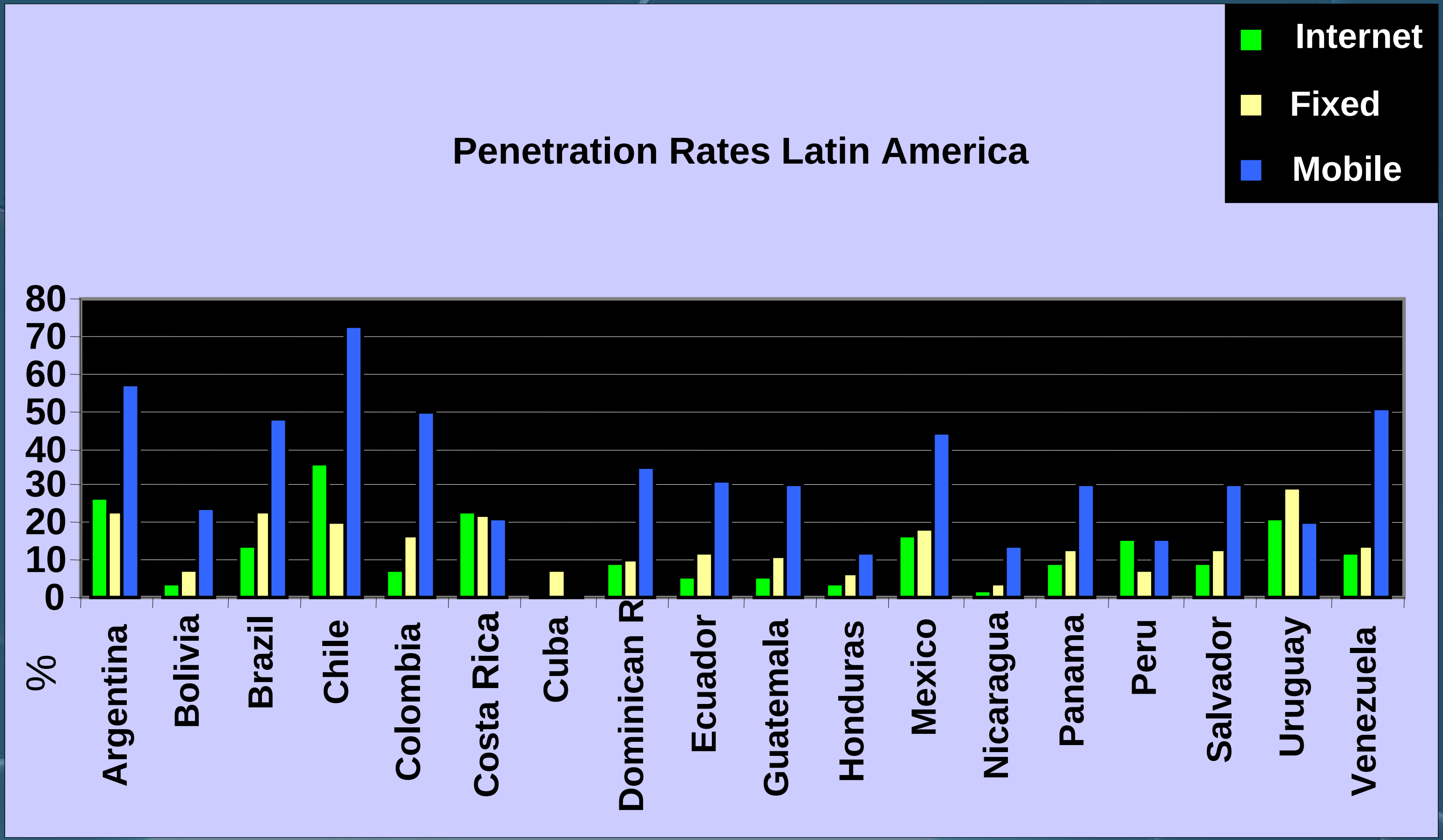
The Internet Penetration

Argentina, Chile, Colombia, Peru, Venezuela 30% of Internet Users are VoIP users as well*



Source: Survey Latin America Internet Use Indicators, Tendencias Digitales.

Status of the region in terms of penetration



A Snapshot of VoIP in the Americas

Liberalized Approach:

- USA: VoIP is an Internet Application / Information Service. No license requirements, but Universal Service contribution.
- Canada :PSTN Interconnected VoIP services are Telecommunications Services. No license requirements (registration) and Universal Service fund contribution.
- Argentina: VoIP is a deregulated Telecommunication Service. USF contribution.

Licensing Restrictions for VoIP

- Mexico, Venezuela, Colombia, Chile, Brazil, Peru, Dominican Republic

VoIP is Illegal:

- Bolivia, Honduras, Guyana, Paraguay, Costa Rica.

Why Licensing is an Issue?

Only Chile and Uruguay have reached UA goals

- Infrastructure needs to be deployed. Universal Access (UA) goals/ Impact of VoIP on Incumbent revenues/ investments.
- In some cases the problem is related with existing licenses (cost/rights)

Case of Colombia who is close to reach UA

Allowing or Banning VoIP: some Skype rates examples

Despite prohibitions, VoIP is available in the whole region. The regulatory approach taken can be reflected in the rates. Providers like Skype are playing a growing role in LA. Although Skype is not licensed to operate in many countries, consumers in those nations can freely download their software, use their services, and will likely not face any government sanction.

Country	US/ min	Diference with basic tariff	Rate ranking
Chile,USA, Canada, UK and 26	0.021	0%	1
Argentina	0.032	52%	2
Venezuela	0.052	147%	3
*Brazil	0.054	157%	4
Costa Rica	0.064	204%	5
Peru	0.079	276%	6
Dominican Republic	0.087	314%	7
*Colombia	0.095	352%	8
*Mexico	0.099	371%	9
Panama	0.107	409%	10
El Salvador/Uruguay	0.126	500%	11
Bolivia	0.148	604%	12
Paraguay	0.15	614%	13
Guatemala	0.153	628%	14
Ecuador	0.177	742%	15
Nicaragua	0.216	928%	16
Honduras	0.362	1623%	17
Cuba	1.025	4780%	18

VoIP Alowed Compet. Market

VoIP BANNED

STATE Monopoly

The Shades of Grey Market

Grey Market Revenues as a Percentage of Overall International Call Revenues…

- *Brazil 36%***
- *Colombia 50%****
- *Costa Rica 20%*****
- *Africa 20-30%**

* *Source:* Balancing Act
** *Source:* Abrafi x
*** *Source:* V-P Technology, Orbitel
**** *Source:* Incumbent telco ICE
Trends in Telecommunication Reform 2006. ITU 2006

Some regulatory proceedings

Country Cases:

- Argentina
- Brazil
- Chile
- Colombia
- Mexico

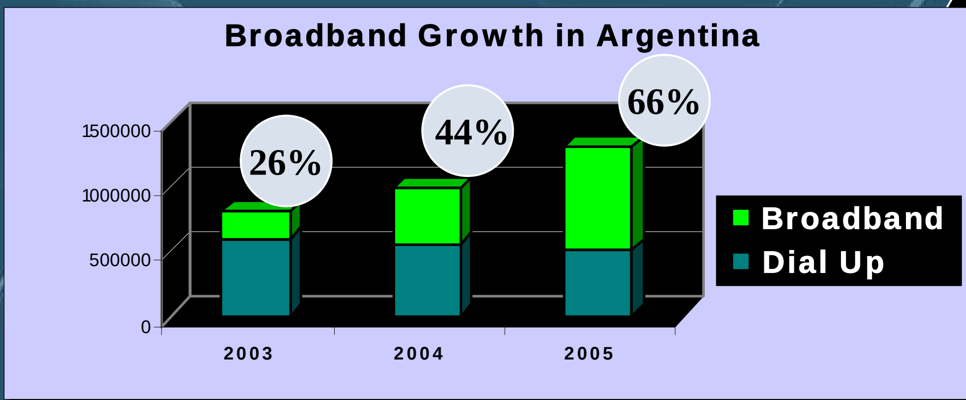
ARGENTINA

FACTS
Population: 39.3 m
Capital: Buenos Aires
Area: 2.8 million sq km
Major language: Spanish
GNI per capita: US $3,580

8TH World, 2nd SA)

One of South America's largest economies rich in resources, and well-educated workforce. This country has successfully recovered worst ever economic crisis (2001). Its debt restructuring strategy has been a success.

Mobile, fixed, and broadband. Penetration rates



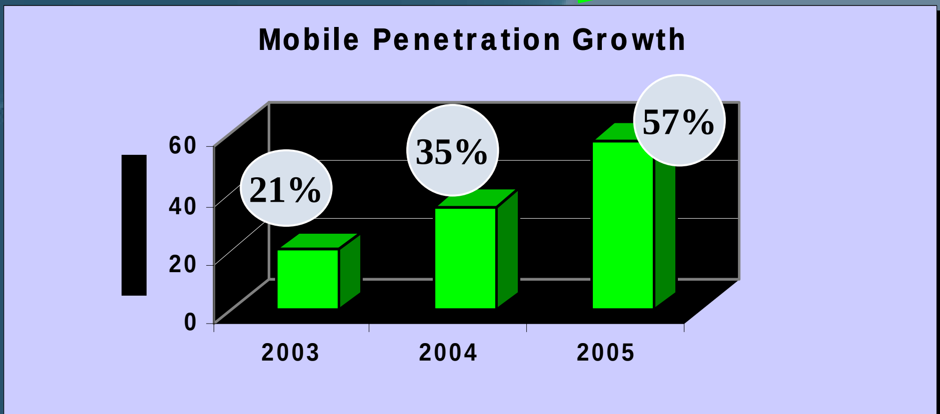
Broadband subscribers grew 380% between 2003-2005.

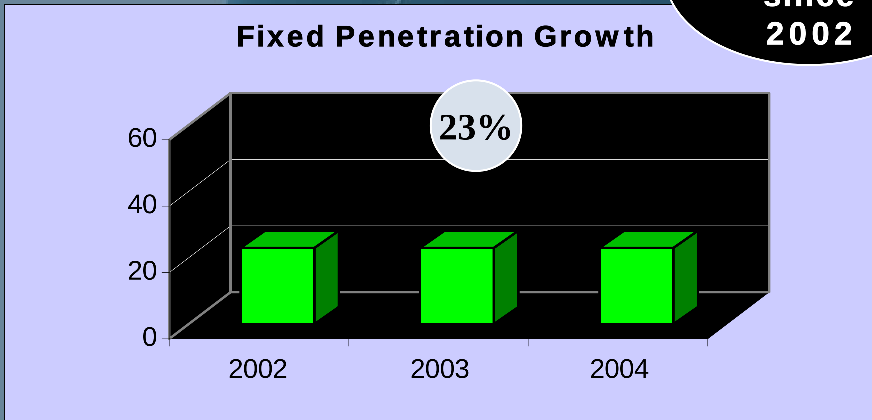
June 2006, represents 66% of residential connections

In 2005 Broadband overtook Dial-Up

April 2006, mobile reached penetration rate of 64%

Remains in 23% since 2002





Regulatory Environment

- Telecommunications market was deregulated in 2000, all services were open to competition.
- Telephony, Value Added, and Telecommunications Services concepts were merged in one: Telecommunications Services.
- Multiple licenses regime disappeared: Unique license to provide telecom services.
- Broadcasting was not touched by this provisions. No convergence framework. In March 2006 started the discussion.

VoIP regulatory approach

- Current status : Legal (Tacit legality)
- Definition: Telecommunication Service (All VoIP forms)
- Market Entry: No legal barriers.
- Universal Service Fund Contributions: Yes, once the fund is created.
- Local loop unbundling: Mandatory for operators with Significant Market Power.
- No geographical restrictions for numbers.

VoIP Adoption

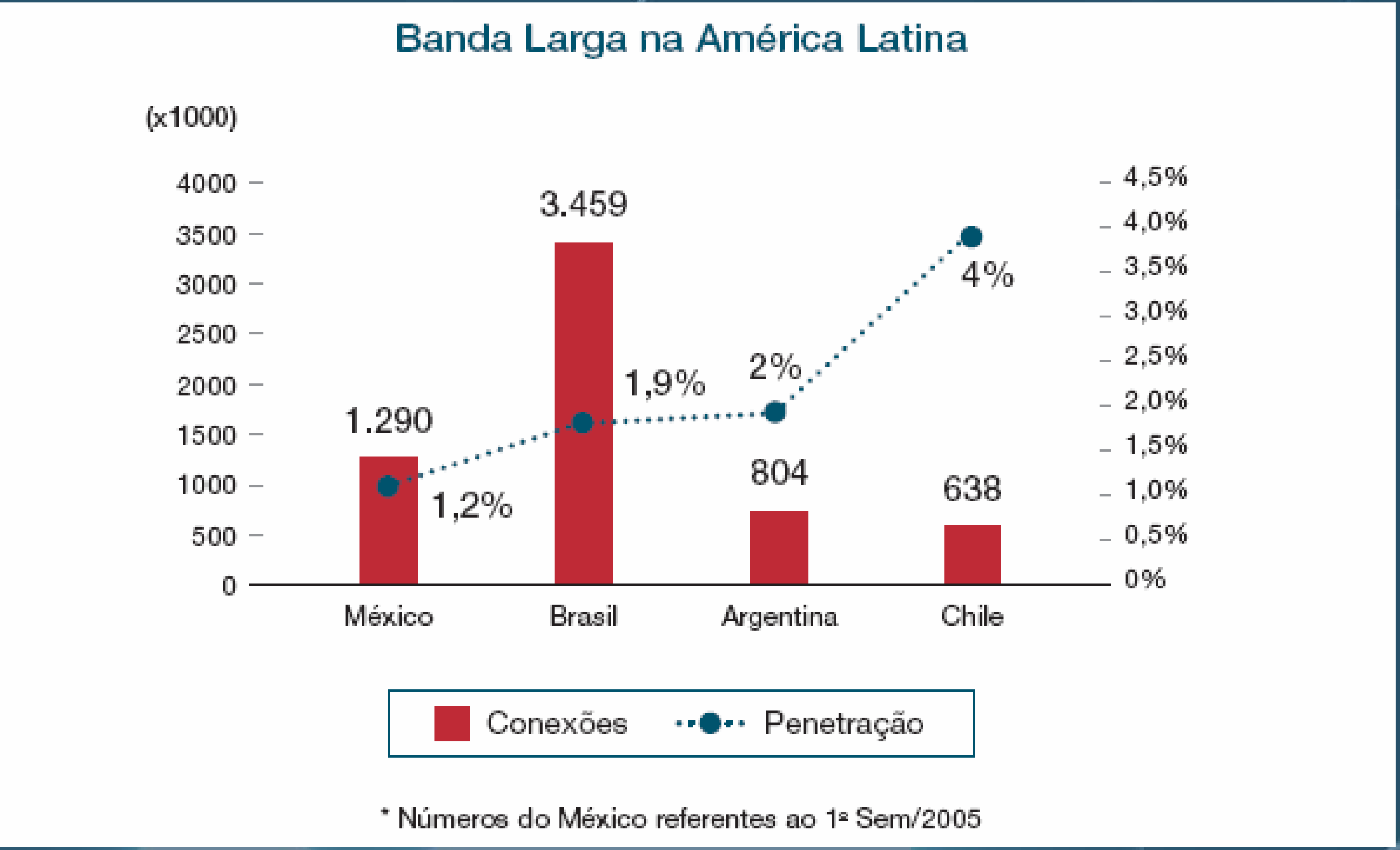
- In March 2006 31% of the Argentinean companies have migrated to IP Telephony.
- In the residential sector VoIP providers are rapidly increasing their customers base.
- There is one big VoIP provider with own infrastructure: IPLAN. It was one of the first 100% IP telecom operator in Latin America. By the end of this year expect to have 50.000 residential users.
- Around 21 pure providers are based in this country.

BRAZIL

FACTS
Population: 182.8 million
Capital: Brasilia
Area: 8.55 million sq km
Major language: Portuguese
GNI per capita: US $3,000

Brazil is South America's largest country. It represents world's biggest democracies. Its development has been hampered by high inflation and foreign debt. Economic reforms in the 1990s brought some stability to the country's finances, the changes included privatizations and the opening up of its markets.

Broadband in Brazil



VoIP regulatory approach

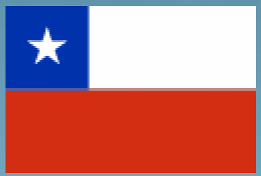
- Current status : Legal.
- Definition: PC to PC VoIP is a technology.
- Market Entry:
  - Multimedia communication services license (SCM) multimedia information on private networks Owners of this license can not exclusively deliver voice service.
  - Public switched fixed telephony license (STFC) allows initiate and terminate calls outside of a private network.
- Local loop unbundling: Established in 2003 for voice, data, and video services.
- Universal Service Contribution: Public switched fixed telephony operators.
- No geographical restrictions for numbers: Virtual numbers are freely provided.

VoIP providers

Brazil is one of the top five countries in the world communicating through Skype

- Brazil is likely to have the highest real number of VoIP users:
  - Large number of companies pushing VoIP
  - High number of Internet users (Latin America's largest).
- Leading local players include Transit Telecom, GVT, Hip Telecom, T mais and Primeira Escolha.
- There is also two important "pure" VoIP providers:
  - The brazilian Vono wich has about to 150,000 VoIP customers.
  - **The giant Skype** that plays a key role. Recently it has partnered with Transit Telecom to use its license to offer fixed-line numbers to its VoIP customers through its SkypeIn service. By doing this, Skype fulfill brazilian telecoms regulation, which requires all fixed-line operators to have a license in order to provide fixed-line services.

CHILE

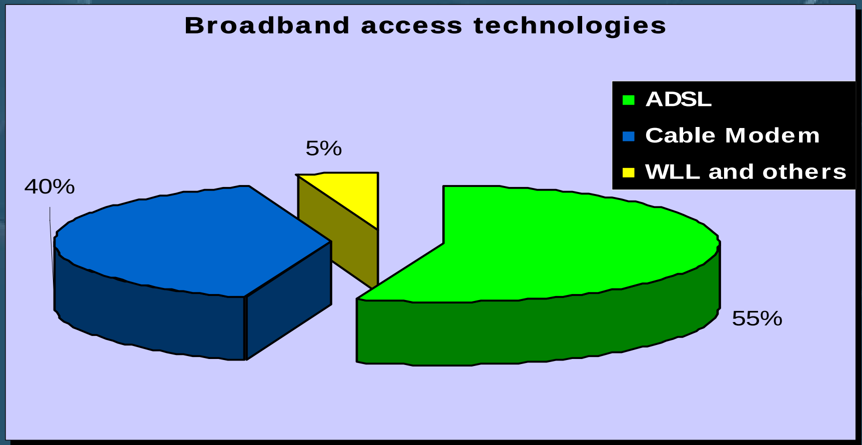


FACTS
Population: 16.3 million
Capital: Santiago
Area: 756,096 sq km
Major language: Spanish
GNI per capita: US$5,220

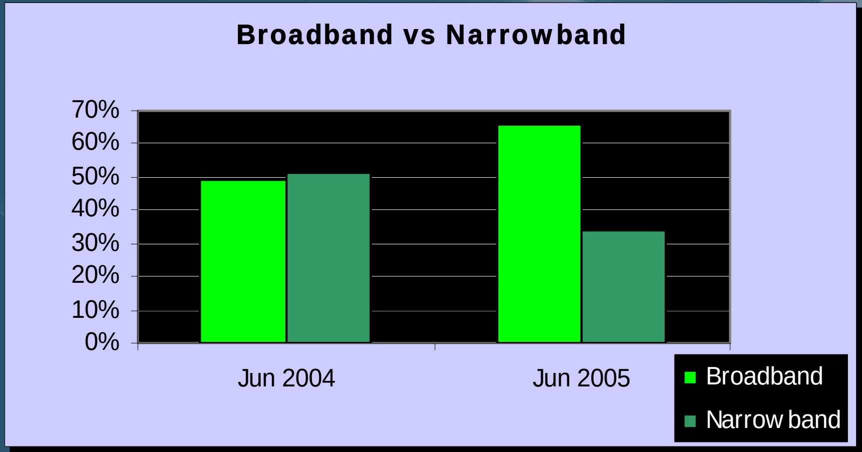
- **The telecom market is further developed. This country plays a leading position in the region with the highest mobile and Internet penetration rates. It seems to be the undisputed ICT leader in the region. It appears in 12 e-indices, ranking first in the region seven times and never appearing lower than fourth. Policy and business environment related factors help it rank high**

Seems like the most stable and prosperous nations in South America . This country is characterized by its fairly regulatory environment and strong policies regarding of foreign investment. Chile Telecom sector has a direct contribution to GDP of 3.2. (2003). It was the first developing country in the world in privatizing the state owned Telecommunications Company in 1990.

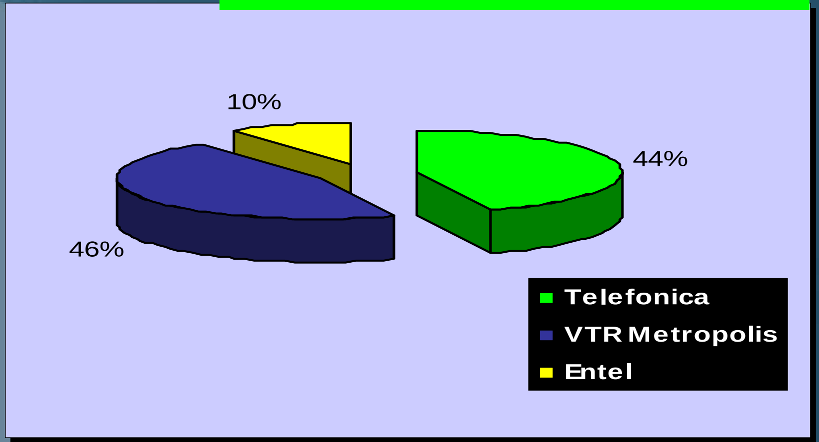
Broadband Market



Incumbent Telefonica and VTR both are dominants in the Broadband market and accordingly are obligated to sell capacity in wholesale regime to retailers



Broadband Market Share



Regulatory Environment

- Telecommunication policy is being rethought and important changes has been announced in chilean telecommunications regulatory framework.
- Licensing regime will be modified: Licenses for provision of individual services will be replaced for a convergent license. The administrative procedures will be simplified as well.
- In 2004 the Subsecretaría de Telecommunications launched a public consultation regarding VoIP, the project has not been approved.

The SUBTEL Proposition

Service	VoIP- Public Telephonic Service (IP)	Public Voice Telecommunication Service over Broadband
Accces Infraestructure to Service	IP enabled network (No Internet)	Broadband Internet
Qualifying Title	Public Telephony Service Concession. Same that provided for Trditional voice services and given by local areas.	Voice Telecommunication Service over Broadband Concesion. Provided National
Numbering	Geographic/Local	National/Nomandic
Interconection	PSTN in the local areas were the concession is given	PSTN in all Local areas and whith other VoIP Services
QoS	Same obligations for PSTN operators	Responsability shared with Internet Access Service Providers
Univesal Access	*	

Not apply, because of the chilean Fund System

After the public consultation

- Currently the procedure is stopped:
  - Antitrust Chilean Tribunal will decide the Future of VoIP in Chile.
  - Redvoiss case: Incumbent Telefonica de Chile accused of illegal contractual restrictions to ISP’s, and unfair blocking ports practice.
- SUBTEL is waiting for the decision to regulate VoIP.

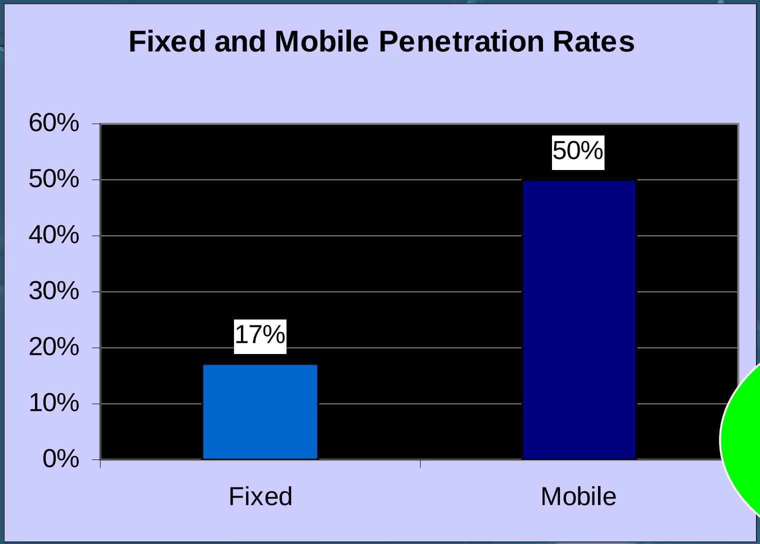
COLOMBIA

FACTS

Population: 45.6 million
Capital: Bogota
Area: 1.14 million sq km
Major language: Spanish
GNI per capita: US $2,020

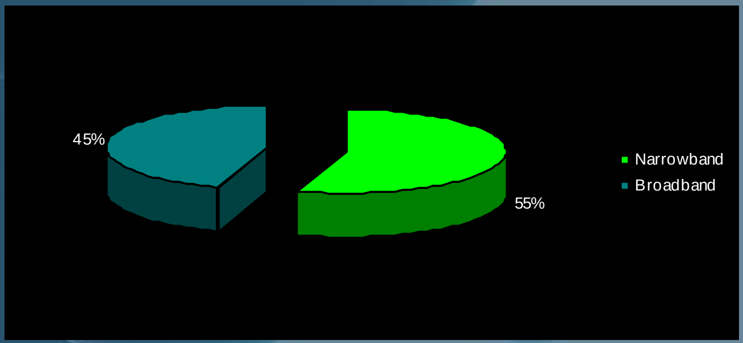
The fourth largest country in South America and one of the continent's most populous nations. The signing of the Free Trade Agreement (FTA) between Colombia and the USA impacted on Colombia's telecom sector, promoting market liberalization and privatization.

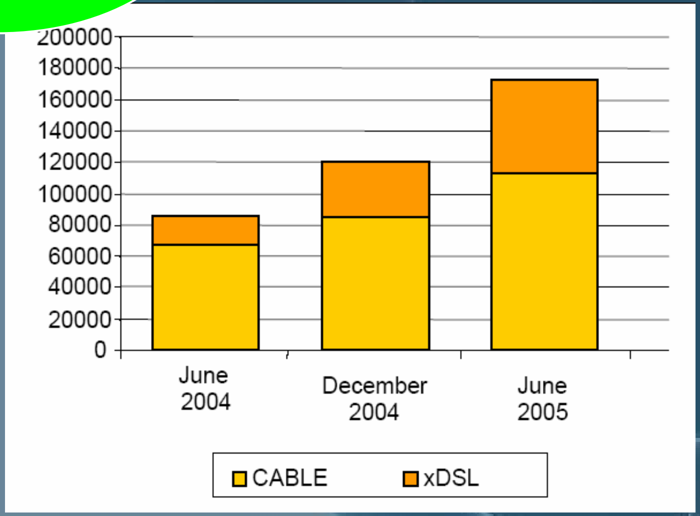
Penetration Rates



Cable Modem is the dominant Broadband access technology

Narrowband still predominates

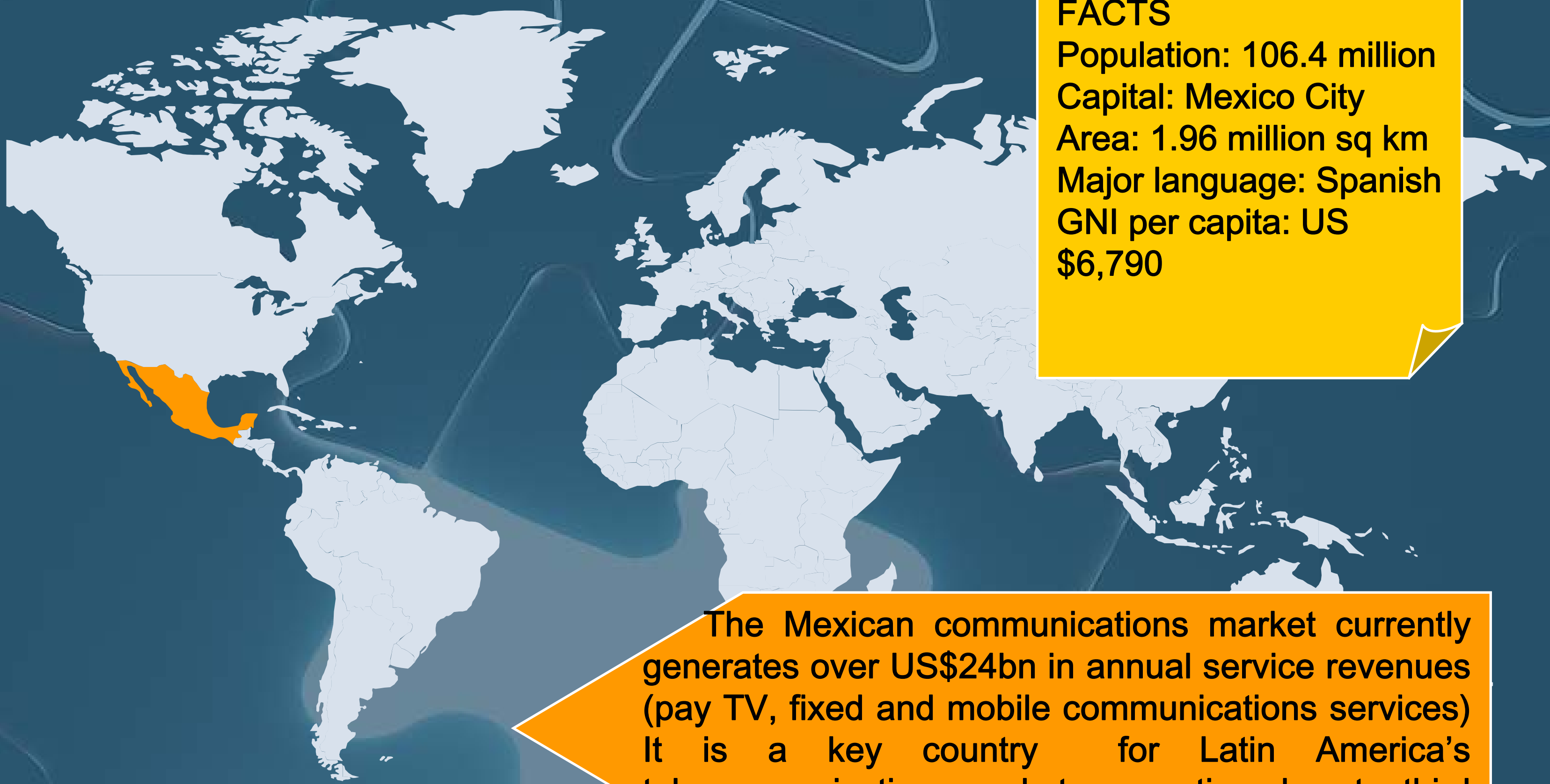




VoIP regulatory approach

- Only licensed operators may offer PC to phone or phone to phone VoIP calls.
- Orbitel, Telecom and Empresa de Telecomunicaciones de Bogotá (ETB), are the only three operators, able to sell long distance services to Colombian customers.
- Probably, the restriction will end in 2007 when Colombia pretend to liberalizate long distance market.

MEXICO



FACTS
Population: 106.4 million
Capital: Mexico City
Area: 1.96 million sq km
Major language: Spanish
GNI per capita: US $6,790

The Mexican communications market currently generates over US$24bn in annual service revenues (pay TV, fixed and mobile communications services) It is a key country for Latin America's telecommunications market, generating almost a third of all revenues in the region.

Regulatory Environment

- Market Liberalization 1995
- Telephony services in its different modalities - local, domestic, long distance international only can be delivered for licensed operators.
- In April 2006 COFETEL launched a Public consultation regarding Triple play offers “ The convergence project” Regulatory changes would have an important impact on the direction of the market. Right now, players must have licenses to provide specific services, regardless of the platform on which these are delivered.

VoIP Regulatory Approach

- Current status : Legal
- Definition: Telecommunication Service
- Market Entry: For PSTN Interconnected service a license for public telephony is required. COFETEL considers VoIP providers to be voice telephony providers without distinction from traditional long distance or local service providers.
- Contributions: Yes, as any other voice (local or long distance) carrier.
- Geographic restrictions for numbers
- Local loop unbundling: Mexico has yet to pass LLU legislation.

VoIP Market

- VoIP has gained huge popularity in Mexico, specially with small and medium sized businesses. Several companies offer VoIP services, although providers have the same licensing requirements as other voice carriers.
- Pure VoiP providers mainly settled in US are offering their residential solutions in the market. This has been pushing local operators to offer these services as well .The leading provider is VoxIP, which uses Telmex broadband lines. Telmex has been acused of cutting bandwidth to clients that use VoxIP and there's actually a legal battle between them.
- Other key VoIP providers include Avantel, Alestra and Maxcom. Skype is strong as well. Mexico is a heavy VoIP user (long distance prices of Telmex end up + high population migration are influent factors)

Highlights

Partnerships

- Convergence framework but investment: Around 600 cable companies, as well as incumbent Telmex have upgraded their networks to offer data, telephony, and television services in anticipation of the government's approval.

- Through alliances with CLECS, cable companies in Mexico began to compete with a bundled offer, including voice services, then VoIP. Telecom operators started to do the same through cablecos.

- The new regulations prohibit telcos from entering areas where cable services are not yet available for a period of two years, which essentially gives existing cable companies a huge head start. In the other hand, cable players have less infrastructure adjustments to make to their networks than telecom operators since they already are offering internet and data services, and introducing packages of voice and data is therefore not a problem.

THANK YOU!!

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