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VoIP

Ruling Voice over IP
Challenges for Regulators in Latin America

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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.

Legal? Illegal? Or just tolerated...

- **Legality**

	Description	Countries
Express	Regulatory framework specifically designed for VoIP (Definition, market entry, emergency calls, QoS etc)	Not the case in Latin America but Chile is close
Tacit	Although the regulatory framework has not been revised, its technology neutrality principles allow apply to VoIP based services. According level of competition VoIP services could be delivered for all / just licensed / only incumbent operator	Argentina Mexico Colombia Venezuela Peru Dominican R

Regulators state position

- **Illegality**

	Description	Countries
Express	Legal restriction/ administrative disposition from regulator against VoIP	Costa Rica Bolivia Paraguay
~~Tacit~~	Not possible. Would be in opposition to legal system and legality principle	

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 discussion…

The main issues discussed at the regulatory level are:

- Legal Definition: Basic Service, Value Added Service, or new category.
- Market entry regime.
- Legal obligations of VoIP based services providers: Emergency calls, Universal Service contributions.
- VoIP based services offered by incumbents: Tariffs
- Numbering and Portability: Geographic restrictions for numbers?
- Interconnection Regime.
- Security and Privacy

Some regulatory proceedings

Country Cases:

- Argentina
- Brazil
- Chile
- Colombia
- Mexico

Why Licensing is an Issue?

- In the developed world the main VoIP-discussion issues are: Emergency Calls, QoS. Competition is strong and most of the markets are mature.
- In developing countries, the main issue in discussion is the market entry that is due to:
  - 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)

Only Chile and Uruguay have reached UA goals

Case of Colombia who is close to reach UA

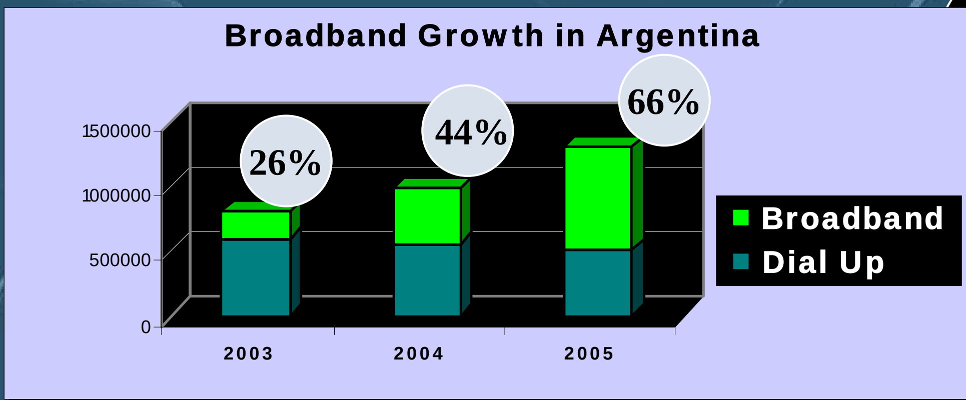
ARGENTINA

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

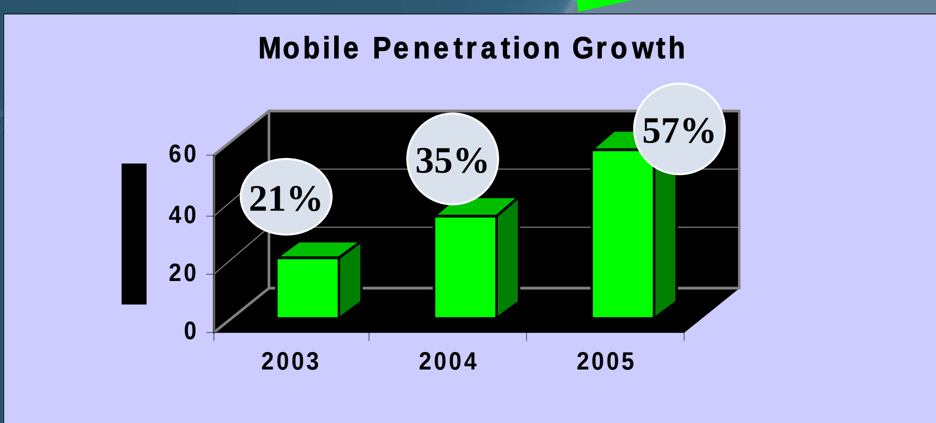


Broadband subscribers grew 380% between 2003-2005.

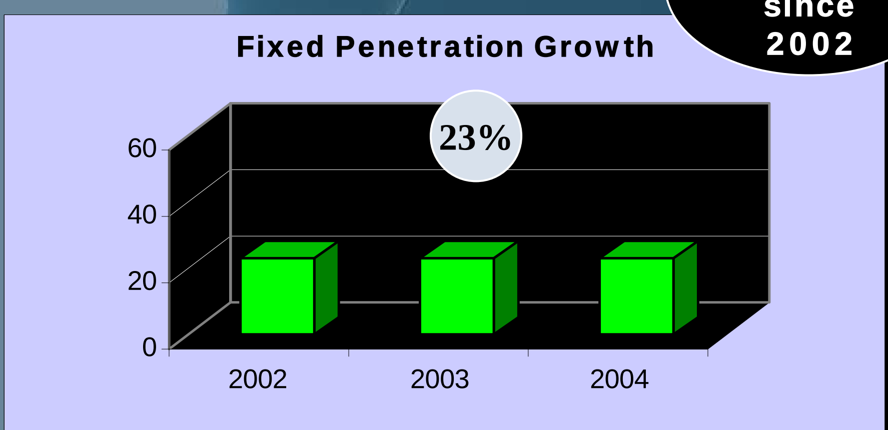
June 2006, represents 66% of residential connections

In 2005 Broadband overtook Dial-Up

April 2006, mobile reached penetration rate of 64%



Remains in 23% since 2002



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.

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.

Voice Market trends...

INCUMBENTS

Telefonica

TELECOM

competition coming from

Telecom Sector

Alternative last mile Infrastructure such as WLL started to be deployed by local operators

Entrant TELMEX Started to migrate from PSTN to NGN network. Currently is trialing triple play

Cable Sector

2 Cable operators are entering in Voice Market with triple play offers. Zarate (Buenos Aires) and SRL-CVC Córdoba)

Electricity Sector

Argentine electric power distributor Edenor is planning in telecom bussiness.

91% access market. Face strong competition in DLD and ILD but still remain dominants. Dominance in Broadband Market as well. Currently both are migrating their networks to IP based. Telecom is planning to launch Triple play by the end of this year.

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.

VoIP regulatory approach

- Current status : Legal.
- Definition: PC to PC VoIP is a technology.
- Market Entry:
  - Multimedia communication services license (SCM) Makes possible offers of capacity of transmission, emission and reception of information multimedia, on private networks Owners of this license can not exclusively give 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.

Voice Market trends

INCUMBENTS

TELEMAR
BRASIL TELECOM
TELEFONICA

EMBRATEL

Facing competition from

Entering in VoIP business

Three incumbents in acces local market dominating market share (93.6%). However, competition is increasing in the domestic and international long-distance were the incumbet is Embratel.

Brasil Telecom : January 2006.
Telefónica: February 2006 through its ISP, Terra.
Telemar : March 2006

Cable Sector

TVA was the first triple player operator in Brazil. It offers cable telephony services in Rio de Janeiro and São Paulo under the brand name Ajato Voz. It has a partnership with Net2Phone and has been offering VoIP services since September 2004 for corporate customers and in May 2005 for residential customers.

Net Servicos, the biggest tv cable company in Brazil launched its triple play strategy on March 2006, the VoIP service “Net Fone” is offered jointly with its controller Embratel. Net has 1,6mil customers for TV services and 451,100 for broadband services, a good base to build upon triple play.

VoIP providers

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

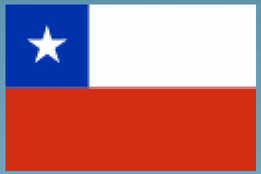
- Brazil is likely to have the highest real number of VoIP users:
  - Large number of companies pushing VoIP
  - High number of Internet users (Latin America's largest).
- Leading local players include Transit Telecom, GVT, Hip Telecom, T mais and Primeira Escolha.
- There is also two important "pure" 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 Transit Telecom's license to offer fixed-line numbers to its VoIP customers through its SkypeIn service. By using Transit Telecom's license, Skype will comply with Brazilian telecoms regulation, which requires all fixed-line operators to have a license in order to provide fixed-line services.

Fixed-Mobile Convergence arrived

- Brasil Telecom (fixed operator) is to launch Fixed-Mobile Convergence (FMC) services in 2006. The first such service will be delivered via Motorola's V3 GSM handset. This Wi-Fi-enabled mobile phone will be bundled with Brasil Telecom's broadband and VoIP services.

- Significance: Brasil Telecom is a start-up mobile operator in a fiercely competitive mobile market, and is likely to provide a wider range of FMC handsets as they arrive on the market.

CHILE



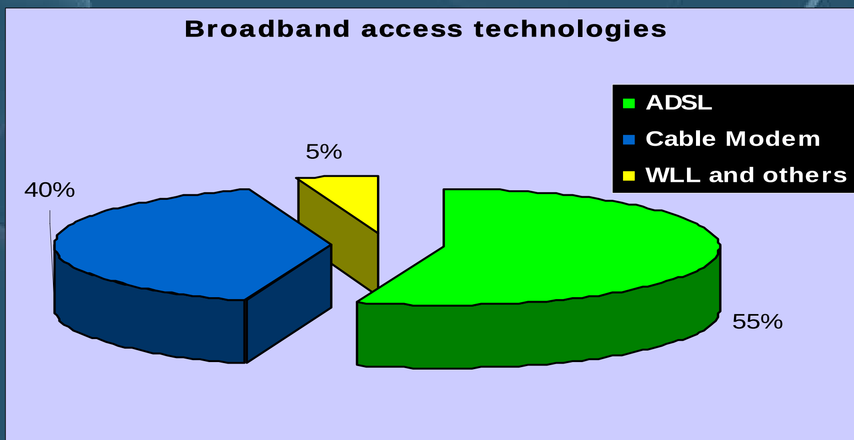
FACTS
Population: 16.3 million
Capital: Santiago
Area: 756,096 sq km
Major language: Spanish
GNI per capita: US$5,220

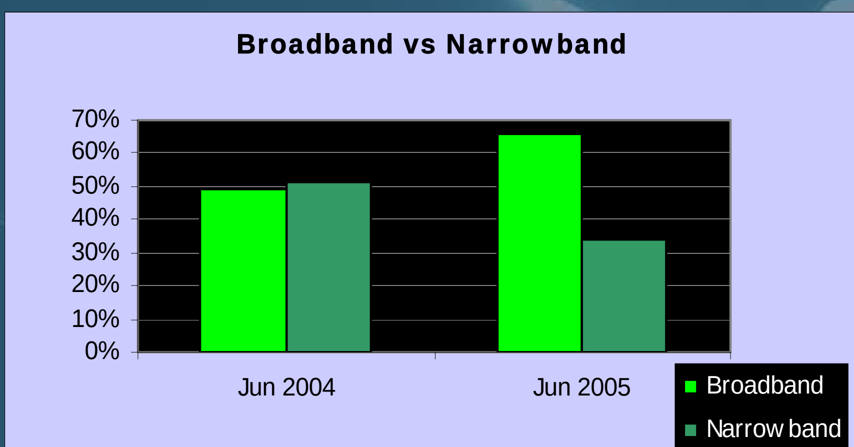
- **The telecom market is further developed. This country plays a leading position in the region with the highest mobile and Internet penetration rates. It seems to be the undisputed ICT leader in the region. It appears in 12 e-indices, ranking first in the region seven times and never appearing lower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

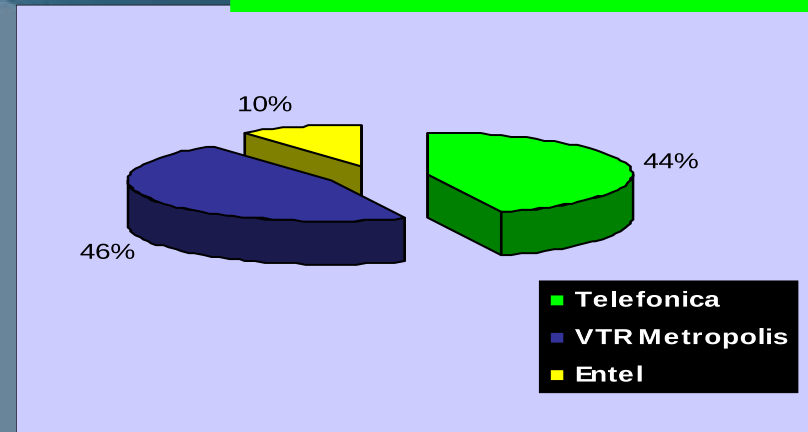
Broadband Market

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 Concesion. Same that provided for Trditional voice services and given by local areas.	Voice Telecommunication Service over Broadband Concesion. Povided National
Numbering	Geographic/Local	National/Nomandic
Interconection	PSTN in the local areas were the consecion is given	PSTN in all Local areas and whith other VoIP Services
QoS	Same obligations for PSTN operators	Responsabity shared with Internet Access Service Providers
Univesal Access	*	

Not apply, because of the chilean Fund System

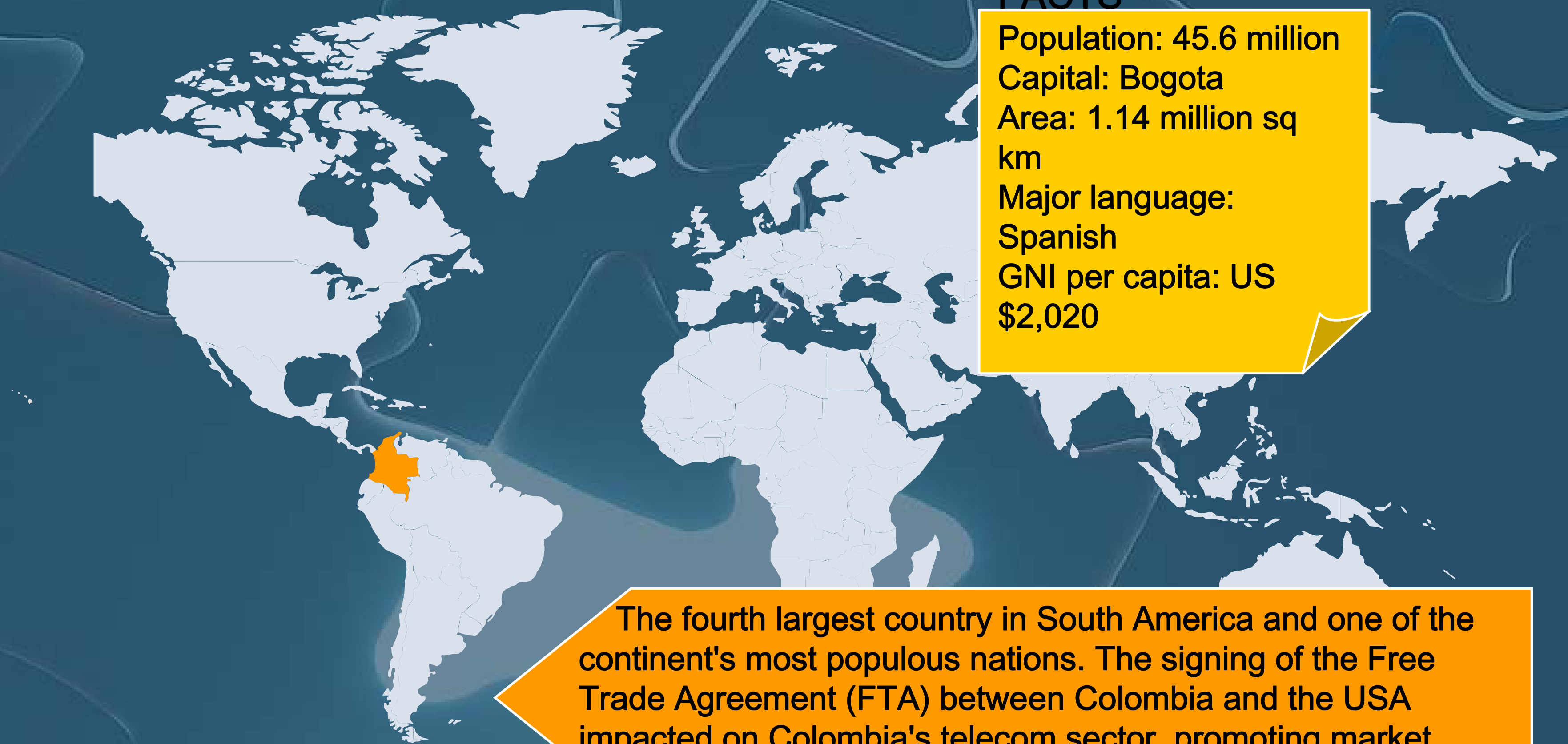
After the public consultation

- 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.

- Incumbent (as in other countries) is refocusing its activity on alternative revenue streams. driving cost out of their voice businesses

	2005	1T06	2006E	
Telefonía Fija	27	5,5	34	FIXED TELEPHONY
B. Ancha y TV	44	11,3	103	BROANDBAND AND TV
Móviles	-	0	-	
Datos	32	7,4	30	DATA
Larga Distancia	1	0,2	2	LONG DISTANCE
Otros	45	11,1	31	
TOTAL	149	35,4	200	

COLOMBIA

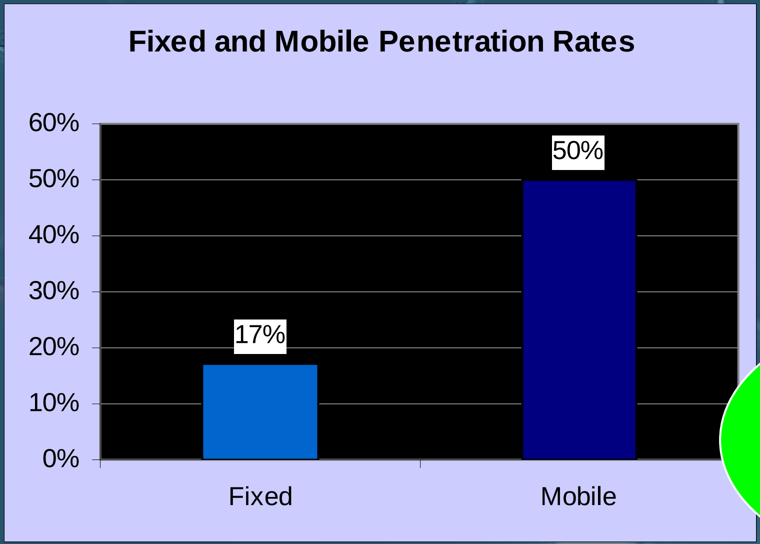


FACTS

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

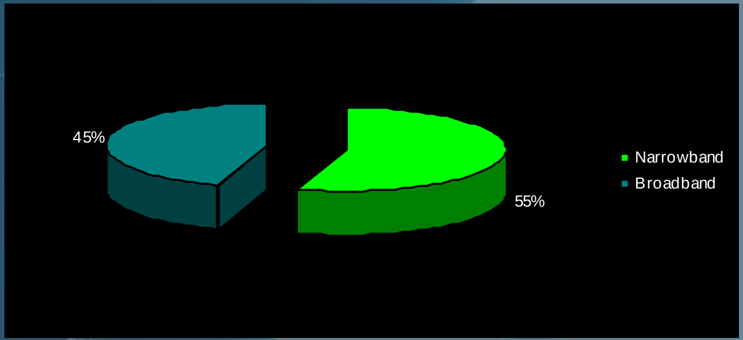
The fourth largest country in South America and one of the continent's most populous nations. The signing of the Free Trade Agreement (FTA) between Colombia and the USA impacted on Colombia's telecom sector, promoting market liberalization and privatization.

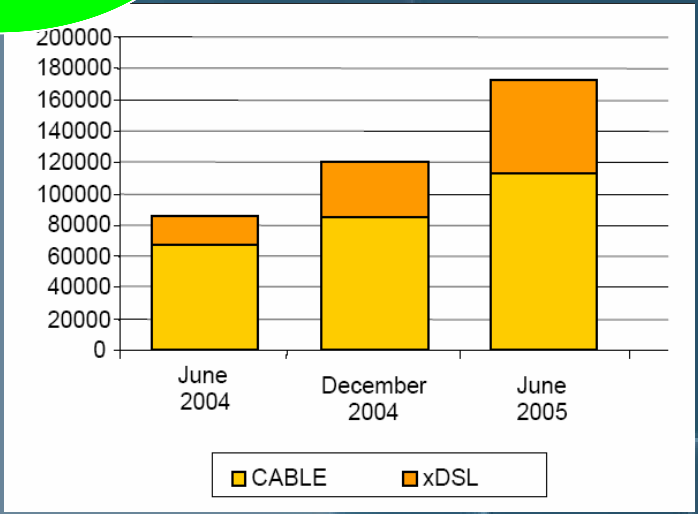
Penetration Rates



Cable Modem is the dominant Broadband access technology

Narrowband still predominates

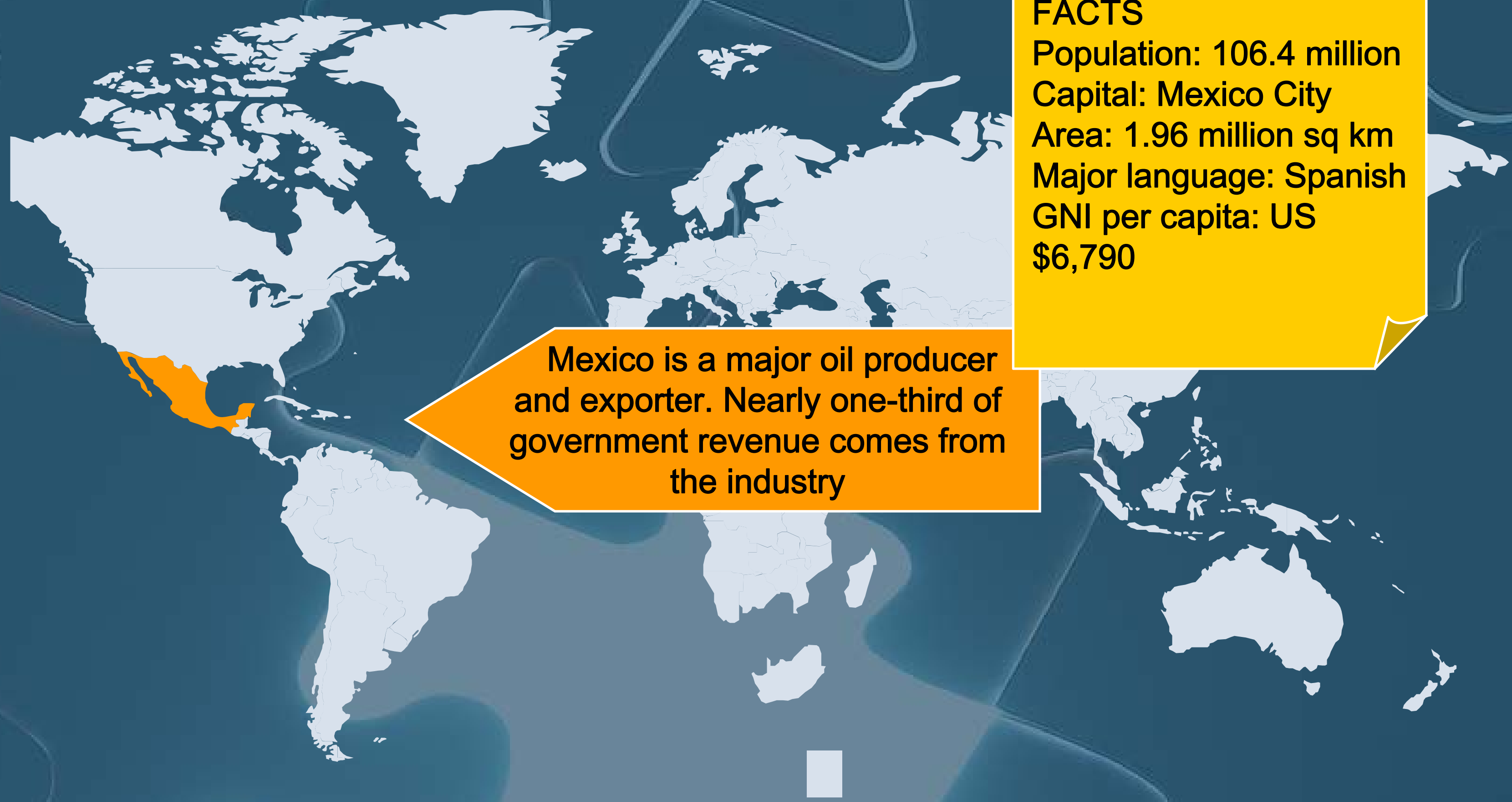




VoIP regulatory approach

- Recently the CRT clarified that only licensed operators may offer PC to phone or phone to phone VoIP calls.
- In light of this only Orbitel, Telecom and Empresa de Telecomunicaciones de Bogotá (ETB), are the 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

Mexico is a major oil producer and exporter. Nearly one-third of government revenue comes from the industry

Regulatory Environment

- Liberalization 1995 Telecommunications Law opened every telecoms service up to competition.

- Telephony services in its different modalities - local, domestic, long distance international only can be delivered for licensed operators . Accordingly, any other company that commercializes services of voice without services without the qualifying title, including protocol IP as it is the case of the ISP is violating, among other orderings, the Federal Law of Telecommunications.

- 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. This situation prevents incumbent Telmex from introducing video-over-DSL solutions and requires cable companies to engage in alliances with CLECs in order to offer VoIP solutions.

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. VoIP providers have the same licensing requirements and contributions to universal service funds as any other voice (local or long distance) carrier.
- Universal Service Fund Contributions: Yes
- 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)

TRENDS: Where is the Market going

No national licenses for cable. Maket fragmented, triple play appears fragmented as well

Sector	Leading Players	Triple Play Services
Telecom	Telmex Axtel Avantel Maxcom Alestra (AT&T)	In average prices for triple play are 30%-40% below Telmex (94% of landlines, and more than half of the internet market) is currently offering double play services. Other 2 Axtel and Maxcom have made partnerships with cable companies and also has announced Triple play offers, while Alestra, would be looking for a cable partner to launch its 3-play.
Cable	Megacable	In June 2006 has launched a new triple play service in partnership with telco Bestphone. The first has a presence in 12 states with over 700,000 subscribers for its TV services and 250,000 for internet. The second has the second largest fiber optic network in Mexico and is present in 30 cities. Megacable already provides cable services for a triple play package offered by t Maxco.
	Cablevision	Cablevisión, a unit of Televisa, is finalizing an alliance with a telephone operator to provide telephony services as a carrier-of-carriers by the end of the year
	Hi	Plans to launch operations as a triple play provider by end of the year

Merging with telecom

Highlights

Partnerships

- Investment didn't stop because of the regulation delays. Around 600 cable companies, as well as incumbent Telmex have upgraded their networks to offer telephony and television services in anticipation of the government's approval. Investments in network modernization across services are enabling operators to offer services beyond their traditional areas of operation.

- Meanwhile through alliances with CLECS, cable companies in Mexico began to compete with a bundled offer, including voice services. 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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