IMPACT OF IP TECHNOLOGY ON REGULATION: THE PERUVIAN CASE

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OVERVIEW

- IP telephony
- The trend is towards VoIP
- Regulatory treatment

  ITU - EU – USA - Latin America
- Telecommunications Market in Peru
- Regulation of IP telephony in Peru
- Conclusions

What is IP telephony?

- There is no consensus on one definition. There are only working definitions
  - ITU
  - EU
  - Others
- Conclusions:
  - VoIP or IP telephony: voice service offered over dedicated IP networks
  - VoInternet: voice service offered fully or partially over the public Internet

VoIP, What is it?

- Voice over IP is a technology that consists in having data packets normalized to the TCP/IP protocol (it can carry all types of information) to deliver voice related data which can have the following uses:
  - VoIP: generic name for all the services including those offered from a PC in a private network
  - IP telephony: generic name, private network that interacts with phone terminals
  - Voice over Internet: PC to PC using the public Internet
  - Telephony over Internet: Telephone to telephone using the public Internet

THE TENDENCY IS TOWARDS IP TELEPHONY

- TRADITIONAL TELEPHONY
  - Use of switched circuit technology
  - Use of a physical circuit between two terminals
  - Voice quality is high but uses the network inefficiently because it even assigns the whole circuit to silence blocks
- IP TELEPHONY
  - Packet switched technology
  - Better use of network resources: it only transmits when there is information to deliver. Saves bandwidth
  - It is the network of the future: multiservices

WHAT IS THE REGULATORY TREATMENT?

- ITU: Opinion A

  Invites members states to review current regulatory frameworks, in order to:

  – Promote investment, innovation and development
  – Attain public policy objectives in a fully convergent environment
  – Consider the possibility of opening IP markets focused in generating competition and in compliance with the principle of technological neutrality for substitutable services.

WHAT IS THE REGULATORY TREATMENT?

- <u>According to the European Union (1):</u>
- Voice over Internet is voice telephony if it fulfills simultaneously the following characteristics:
  - It is offered to the public
  - It is offered commercially
  - It is offered between RPC terminals
  - It provides direct transport and communication in real time

WHAT IS THE REGULATORY TREATMENT?

- <u>According to the European Union (2):</u>
- Following to the principle of TECHNOLOGICAL NEUTRALITY, the use of IP:
  1. Does not affect the current regulatory status of companies.
  2. Do not implies changes on licenses or authorizations to operate.
  3. The regulatory treatment for voice will be the same as the one used for the traditional voice services.

WHAT IS THE REGULATORY TREATMENT?

<u>According to the US: (FCC)</u>

- Voice over Internet could be considered a mixed or hybrid service (information and telecommunications service)
- The modality phone-phone has not yet been decided given the lack of market evidence
- Due to technology neutrality, its strict application could inhibit the development of new technologies and consequently the Internet.

WHAT IS THE REGULATORY TREATMENT?

- <u>According to the US: (FCC)</u>
- VoIP can provide voice, data and video
- The market is able to support both technologies (VoIP and RTPC)
- Allow competition to decide
- It is not necessary to decide now, one of two
- Instead of regulate VoIP, deregulate traditional Telephony.

Susan Ness, FCC, Forum IP, 2001

LATIN AMERICAN SITUATION

- Countries that allow IP telephony in their regulations or that have not yet specified
- Countries that allow voice/fax over Internet or IP networks but not at the same time.
- Countries that prohibit voice over Internet or IP networks

- Costa Rica, Guatemala, Mexico, Dominican Republic, Spain. European Union
- Peru, prohibited in real time, over Internet. Not on IP networks
- Argentine prohibited over Internet, not over IP
- Cuba: no fax over IP networks. Ecuador Nicaragua

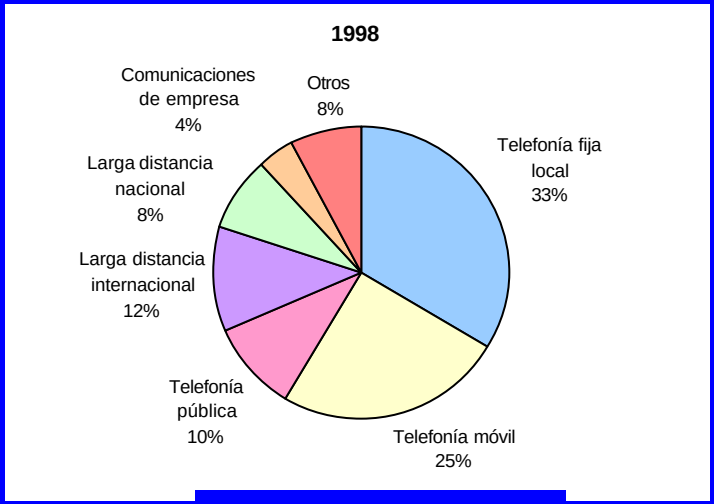
Peruvian Telecom market

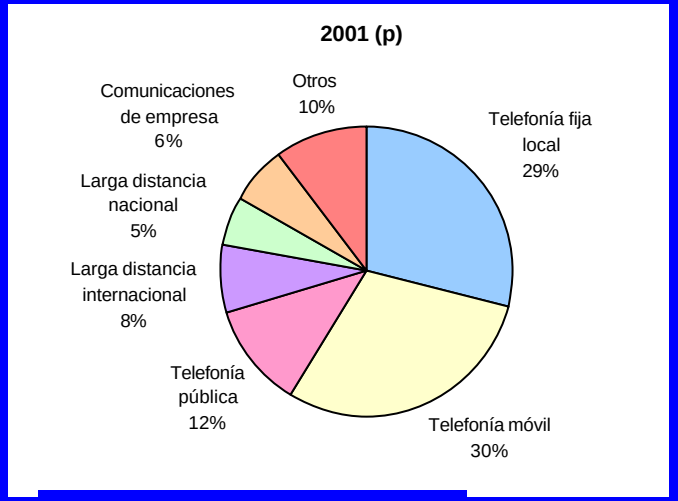
- Almost 100% of telcos are privatized
- Market has been fully opened to competition since Aug. 1998
- Free ILD terminating rate negotiation.
- Maximun Interconnection rate regulated by Osiptel. Same value for call termination into the fixed network, for all types of incoming calls.
- Fixed line Teledensity: 6.6%
- Mobile line Teledensity: 6.7%

PERUVIAN TELECOMMUNICACIONS MARKET

(% of income)

Distribution by type of service





Market size

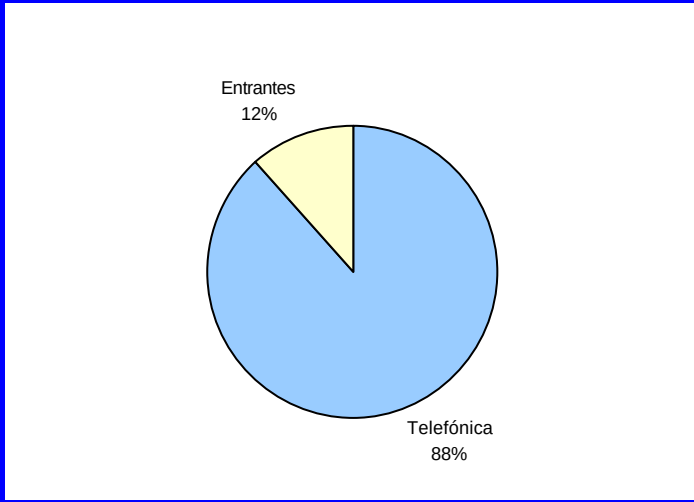
US$1 403 millons

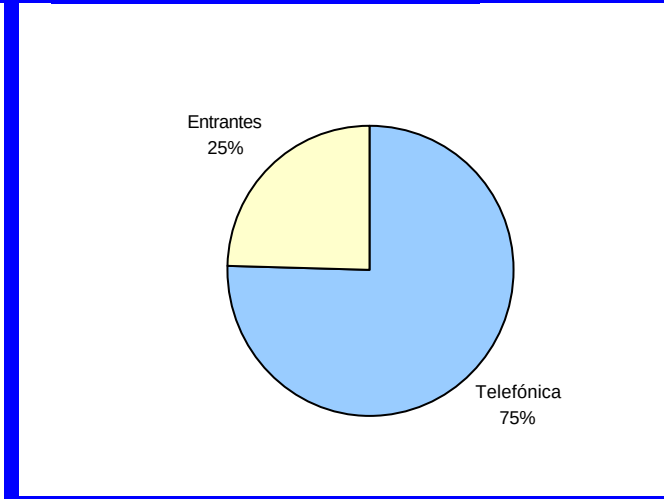
US$1 633 millons

CAGR

4,1%

Market share

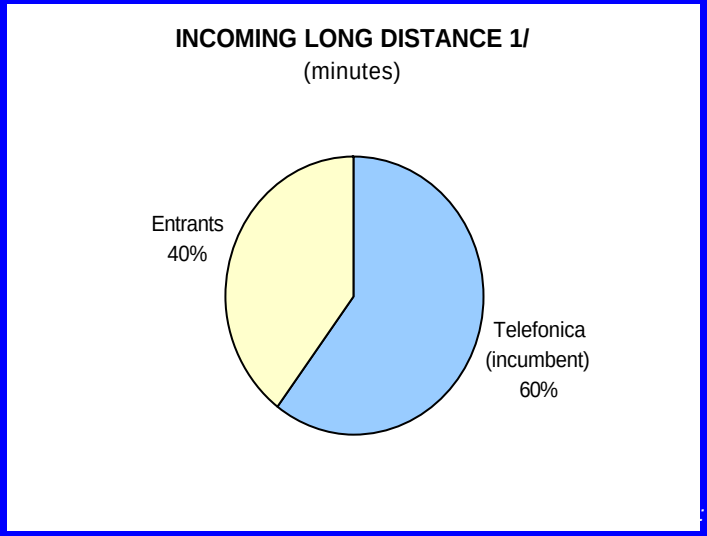




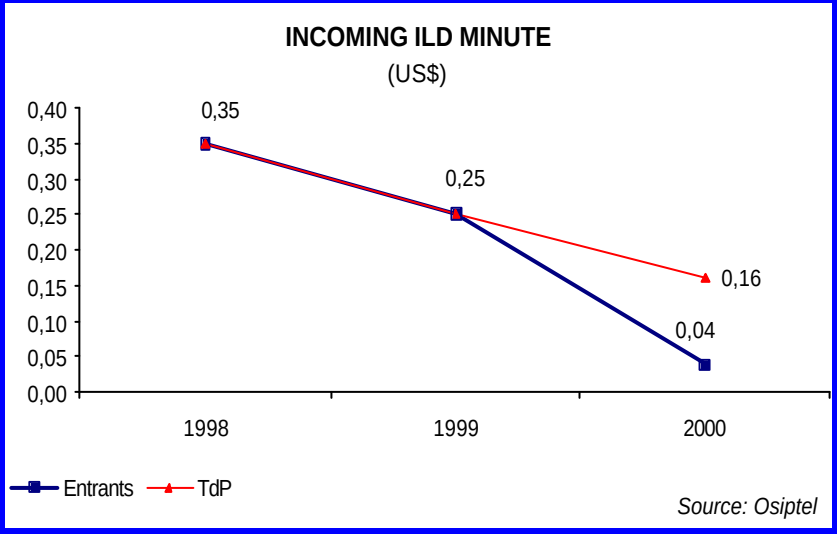
Incoming ILD

Another highly competitive sector is the incoming ILD market.

- **Main reasons why this is a competitive market:**
  - ✓ The market price was completely out of line due to bilateral monopoly agreements.
  - ✓ Quite open concession policy: 50 new entrants
  - ✓ The regulation allowed prices to go down near marginal cost.
  - ✓ Very easy entrance: investment requirements are relatively low.
  - ✓ **Use of IP technology**

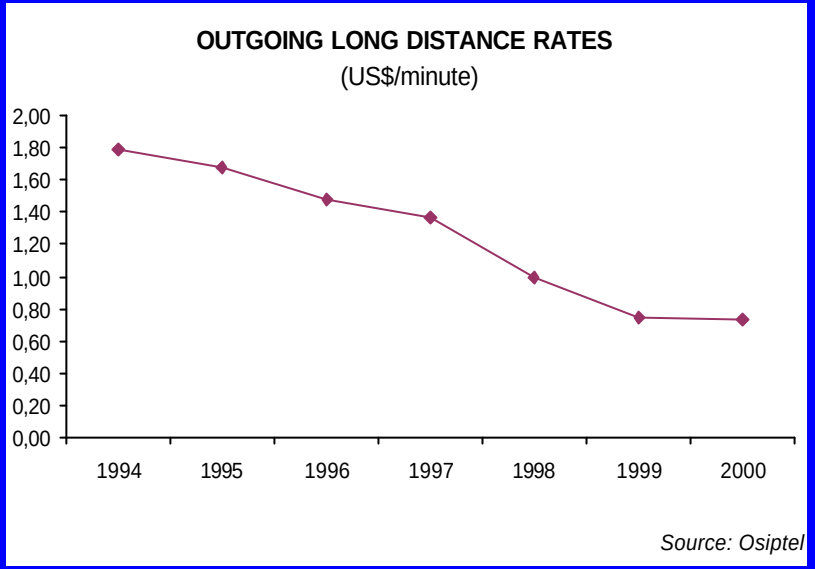


: Osiptel, 2000

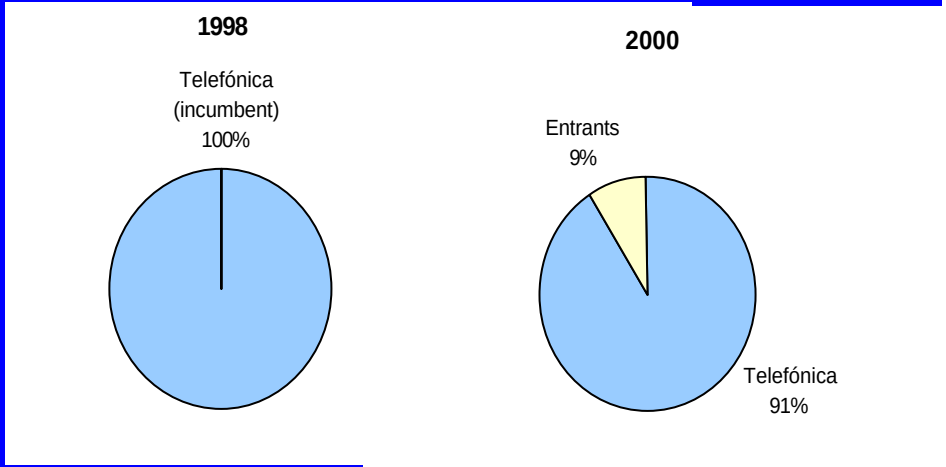


Outgoing International Long Distance

- Delayed start: 15 months after early opening of the market
- Reasons why competition is starting slowly:
  - Build - out requirements
  - Multicarrier design: Call by call after two years.
  - Billing is not yet an essential facility
  - Agreement on who should bear costs of the multicarrier facilities and the concessions' granting process
  - Problems among parties to negotiate interconnection contracts
  - The entrants' own starting delays.
- However, decreasing prices (up to 40% less than Telefónica for corporate customers), increasing service offers (such as prepaid cards and IP networks).



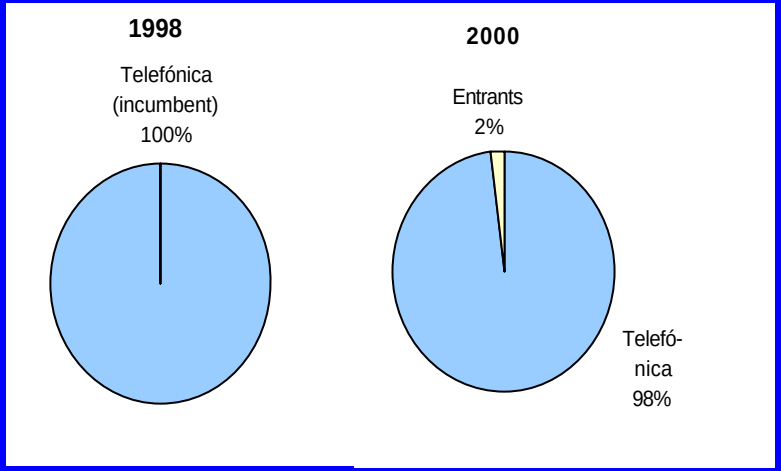
OUTGOING ILD MARKET



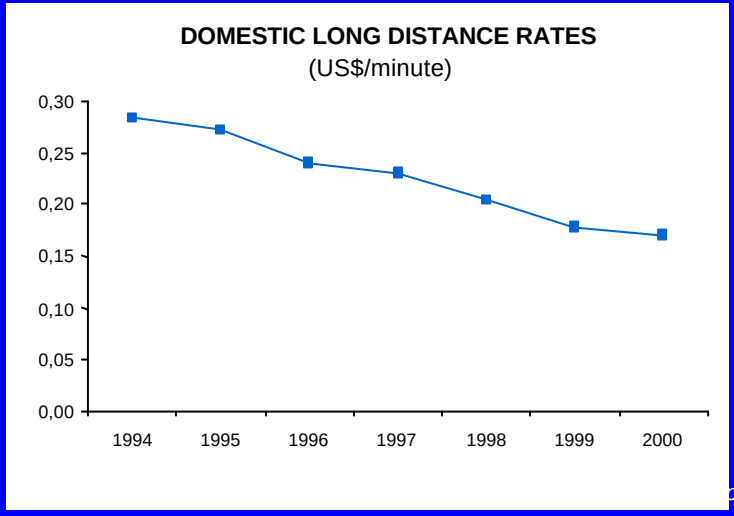
Domestic Long Distance

- Competition in this segment is just beginning: only three operators besides Telefónica (AT&T, BellSouth, and Perusat).
- Alternative offers are concentrated mainly in Lima. Outside the capital city, the only service provider is Telefónica.
- Provinces are not attractive to entrants due to **low income level, small market size, and expensive DLD leased circuits and DLD interconnection**.
- The provision of services of all entrants is focused on the same regions.

DLD MARKET IN PERU



US$130 million **US$93 million**

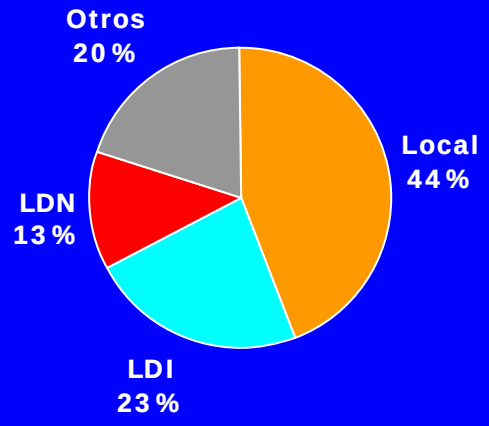


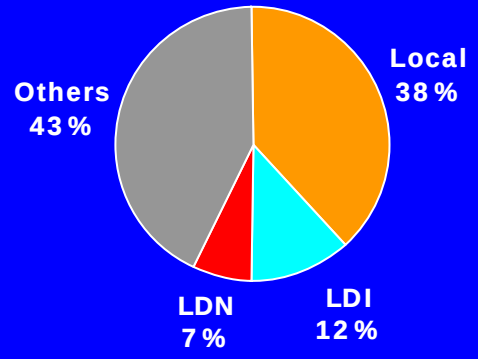
TdP Income per Segment (Main Operator)

Type of service	1995	1996	1997	1998	1999*
Local	44.20%	41.92%	37.80%	38.36%	37.79%
LDI	22.71%	19.06%	16.21%	13.31%	11.75%
LDN	12.60%	11.83%	10.37%	9.14%	7.03%
Others	20.49%	27.19%	35.62%	93.19%	43.43%
	100.00%	**100.00%**	**100.00%**	**100.00%**	**100.00%**

Information until el 3° Trimestre [[]]

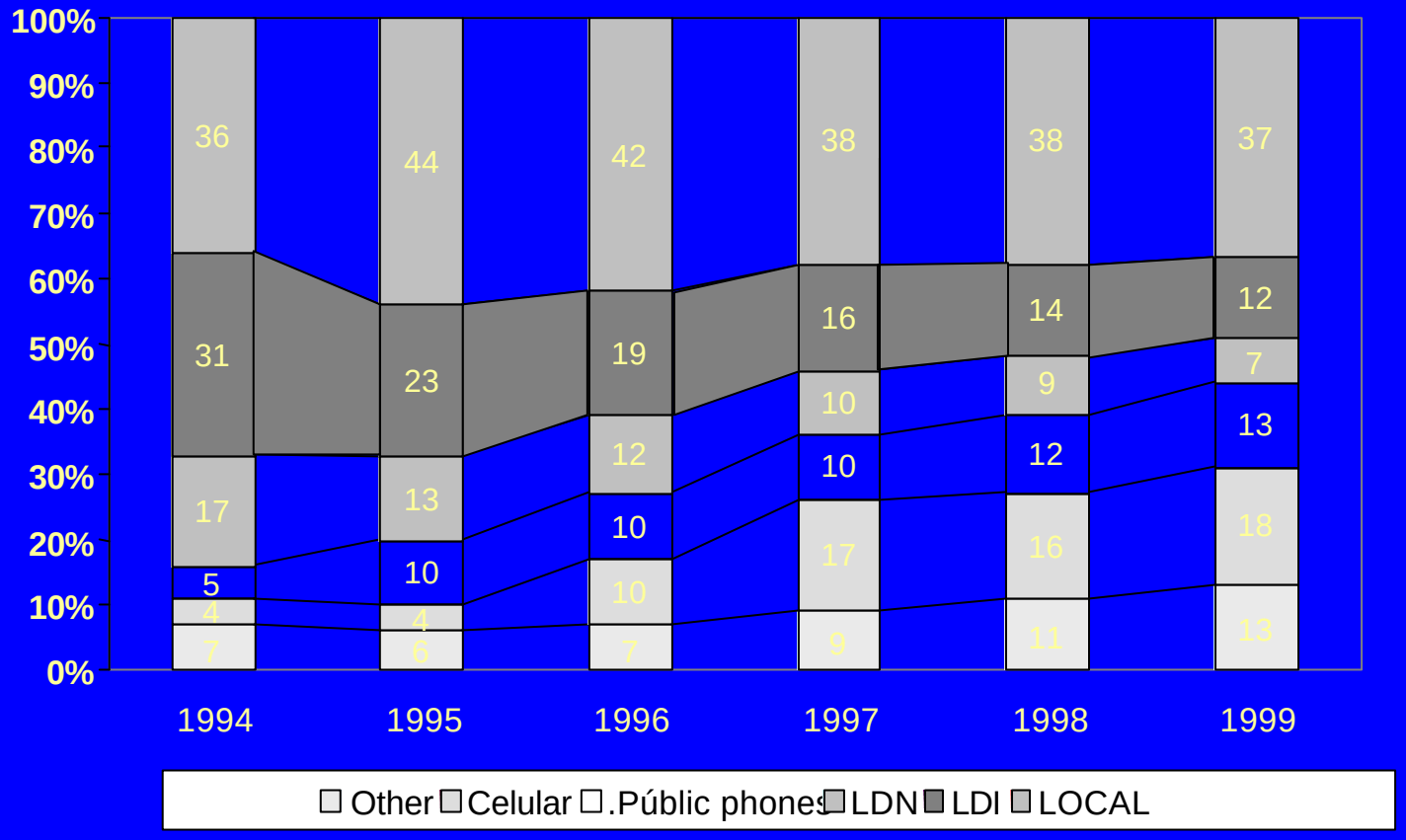
1995





1999

Long Distance Participation is Decreasing

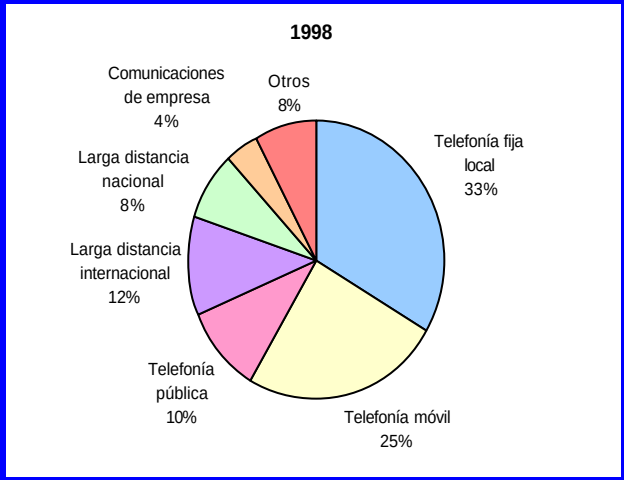


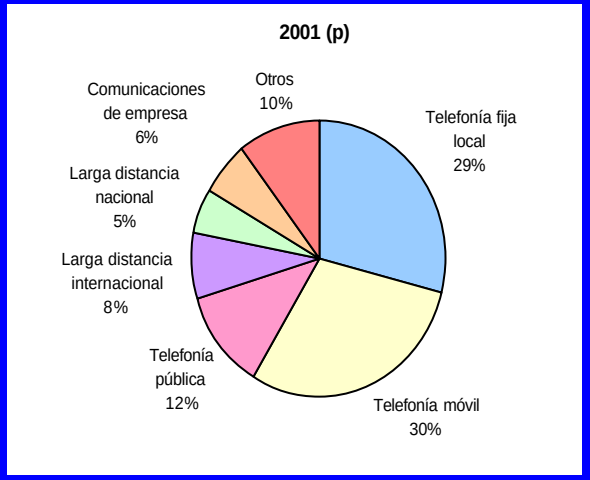
Fuente:Telefónica del Perú

PERUVIAN TELECOMMUNICACIONS MARKET

(% de los ingresos)

Distribution by type of service





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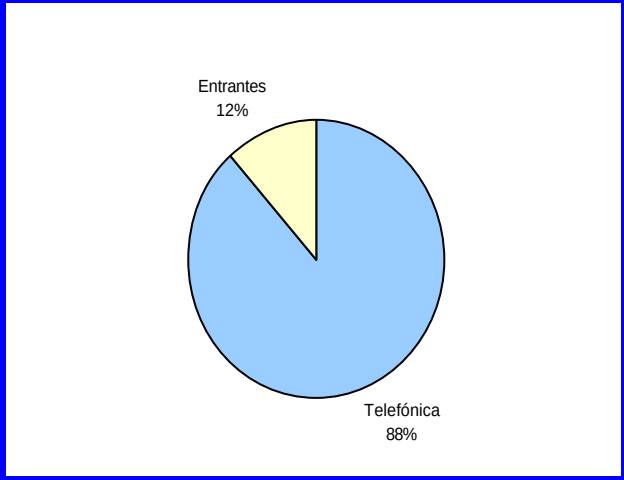

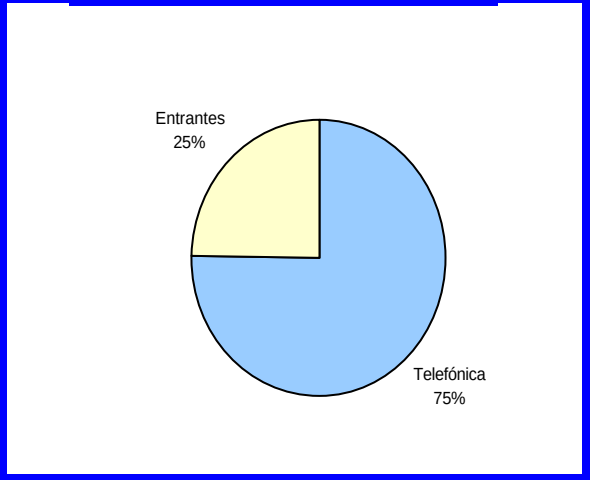

WHAT IS THE REGULATORY TREATMENT?

- **Peruvian Case (1):**
- "Voice services in real time through the the public Internet are prohibited. Provision of voice or fax services are allowed if they are delivered using IP networks

WHAT IS THE REGULATORY TREATMENT?

- **Peruvian Case (2):**
- Internet Access is Valued Added Service
- Packet Switching is VAS, but voice transmission in real time is excluded. (Art. 102, Reg)
- Int'l traffic only through carrriers' networks with concession. (Art. 103, Reg)
- VAS providers do not contribute with Universal Access, like telcos operator.

WHAT IS THE REGULATORY TREATMENT?

Peruvian Case (3), IP Telephony:

- Regulate Services, not Technology
- VoInternet- PC to PC is VAS. Allowed.
- PC to Telephone is VAS. Allowed.
- VoInternet- Telephone to Telephone through Internet requires LD carrier concession.
- VAS providers requires MTC`s authorization to built up their own infrastructure of network.
- Signaling between Networks have to be R2 or SS7.

WHAT IS THE REGULATORY TREATMENT?

- Technological neutrality: To have a competition mechanism that works adequately it is necessary that all carriers be subject to the same rules.
- Services not technologies are regulated.
- IP telephony is not considered a NEW service. Peru applies the already established rules for all carriers independently of the technology used.

Proposal for a change in regulation

With public consultation (1)

- **RECOMENDATIONS**
- For voice communications that use IP in one segment of the total communication link: phone to phone or call termination in the public network there should be an evaluation of whether or not a norm is required taking into consideration interantional trends.

Proposal for a change in regulation

With public consultation (2)

to introduce new guideline:

- Those activities that allow communication from data terminals that convert voice signals to IP packets from their origin, including those that are done from public Internet cafes will not require an autorization.
- Those signals should go over the carrier's network and Internet access through a registered value added service provider.

CONCLUSIONS

- IP Technology facilitates technological convergence.
- It allows user tarifs to decrease. An option is to choose: Lower Quality thus Lower price
- Facilitates the entrance of new carriers due to low costs and fast implementation.
- Introduces greater competition.
- Traditional operators should adapt their networks to IP and be prepare to face competition.

CONCLUSIONS

- Regulación should not put entry barriers but it should guarantee qualtiy of service to the user.
- Dilemma: infraestructure vs competition
- Perú is well positioned to introduce IP Technology. ILD market, Accounting rate.
- Operators are preparing IP Networks.

THANK YOU

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