

BBVA

RESEARCH

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Digital Context:
Paraguay

Outline

- Overview
- 1 Digital scenario
- 2 Demand side
- 3 Supply side
- 4 Regulation side



Overview

- Paraguay has **room for improving** in terms of the **Digitization Index**, particularly on affordability and content dimensions
- Paraguay **almost duplicates Internet use** between 2011 and 2014, but it is still lower than other Latin American countries
- **Mobile phone** is the most important device to **access Internet**
- The use of **e-banking** and **e-commerce** is limited in Paraguay. It is not larger than 4% in both cases.
- The **prices** of one minute call in Paraguay are **lower** than in developed countries
- **39.23%** of Paraguay's population has a **mobile** and **wireless broadband subscription** in 2015
- Paraguay shows a **high piracy rate** and a **low efficiency of the legal system**
- The **political** and **regulatory environment** of **Paraguay** is **below** the global median



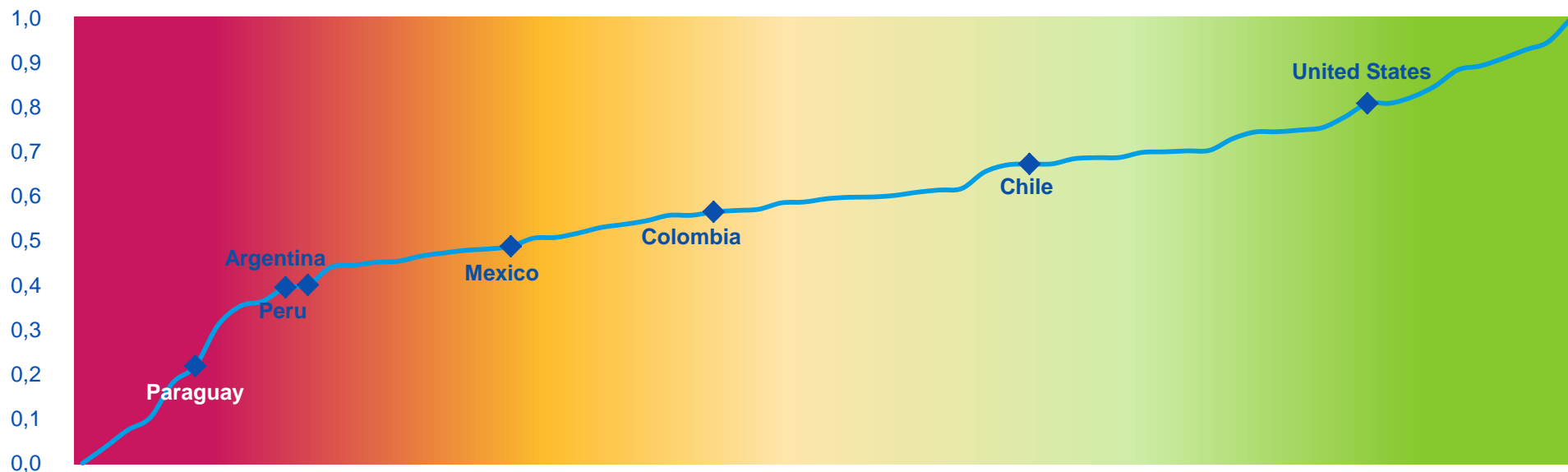


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Digital scenario:

Digitization Index

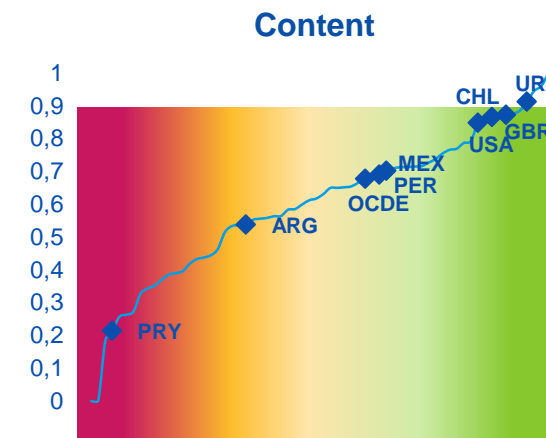
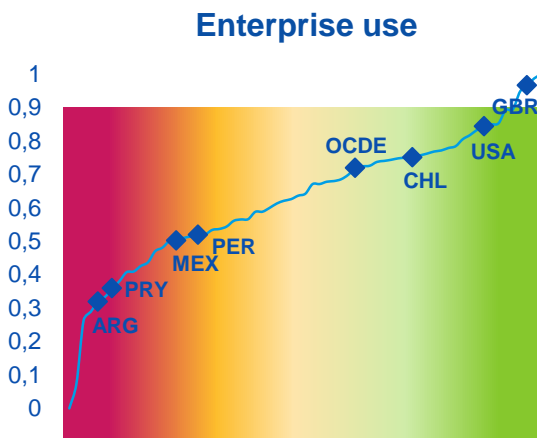
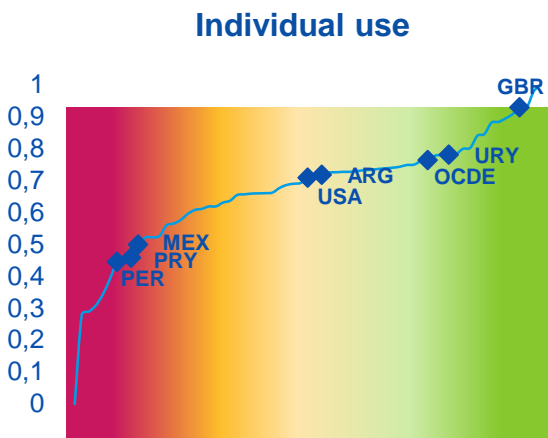
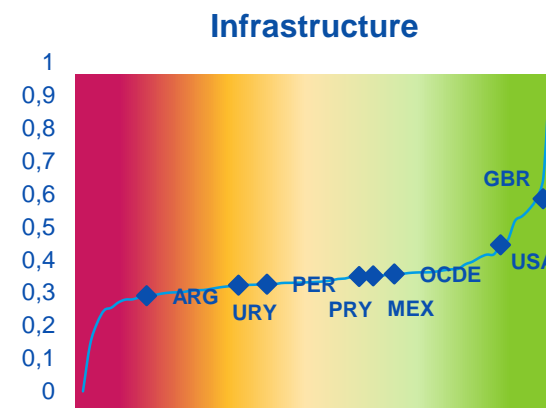
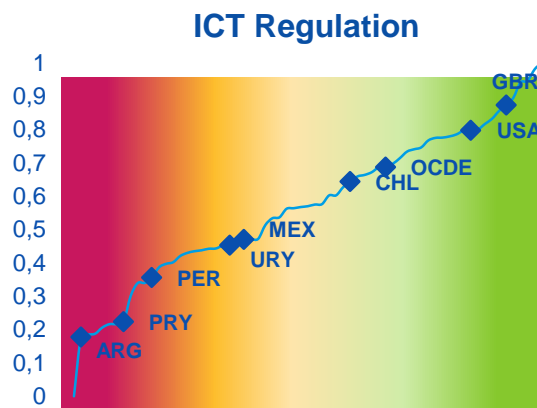
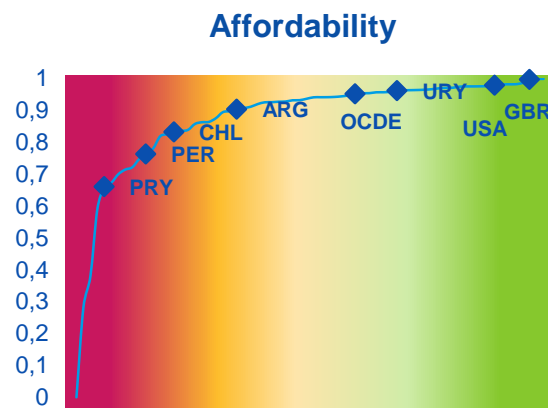
1.1. Structural Digitization Index, 2015



Algeria	Vietnam	Morocco	China	Hungary	Ireland	Germany	Sweden
Qatar	Peru	Thailand	Saudi Arabia	Turkey	Chile	Malaysia	Netherlands
Nigeria	Argentina	Mexico	Croatia	Romania	United Arab Emirates	Denmark	Finland
Pakistan	Egypt	Sri Lanka	Colombia	Uruguay	Belgium	Latvia	Lithuania
Bangladesh	Ukraine	Italy	Slovenia	Luxembourg	Spain	Canada	Korea, Rep.
Paraguay	Greece	Poland	Kazakhstan	Brazil	Singapore	Australia	Japan
India	Philippines	Bulgaria	Russian Federation	Czech Rep.	Austria	France	Estonia
Venezuela	Indonesia	Cyprus	Slovak Republic	South Africa	Portugal	United States	Hong Kong SAR
							United Kingdom

The index is made up of indicators related to the level of infrastructure, ICT adoption and usage, costs and regulation conditions

1.2. Digitization Index 2015: Dimensions



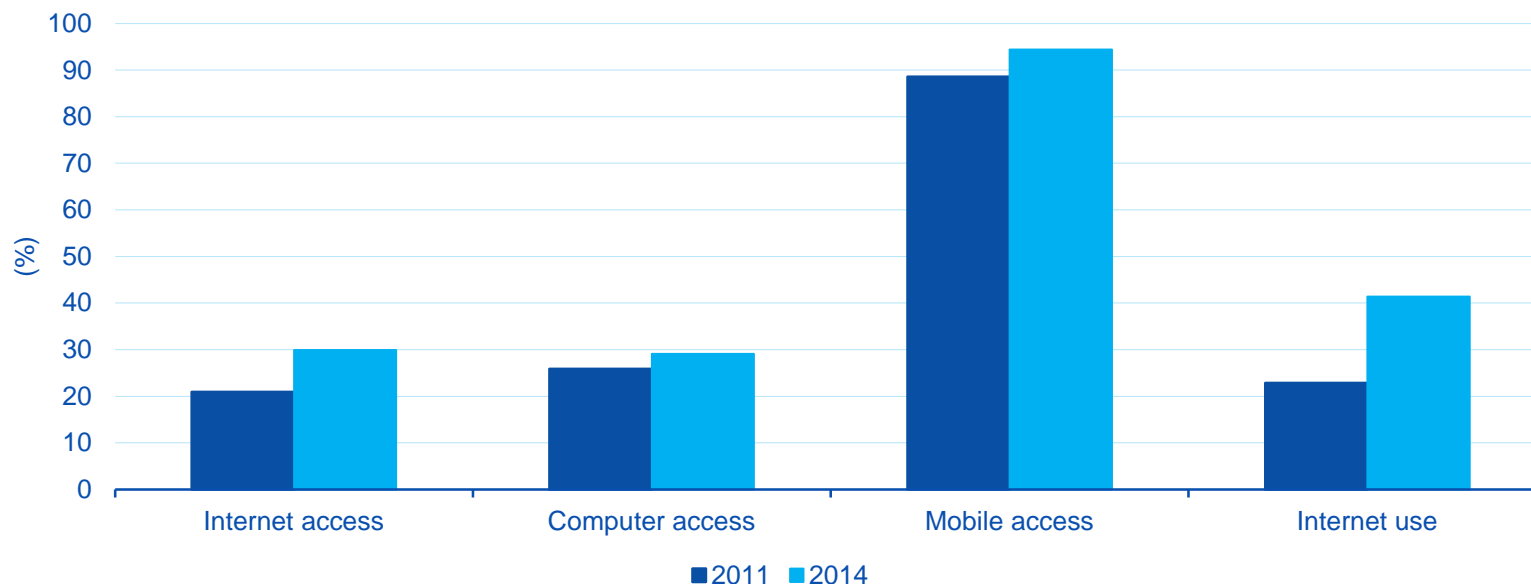
Nota: En el indicador de infraestructura, si se consideraran variables más relacionadas con Internet como cobertura 3G o cantidad de servidores seguros de Internet en el país, la posición de Paraguay mejoraría y sobrepasaría a la de países como México o Perú.



2 Demand side

2.1. Computer and Internet: access at home and usage

ICT access and Internet use



Internet use in 2011
22,83%

↑ 18,6 p.p.

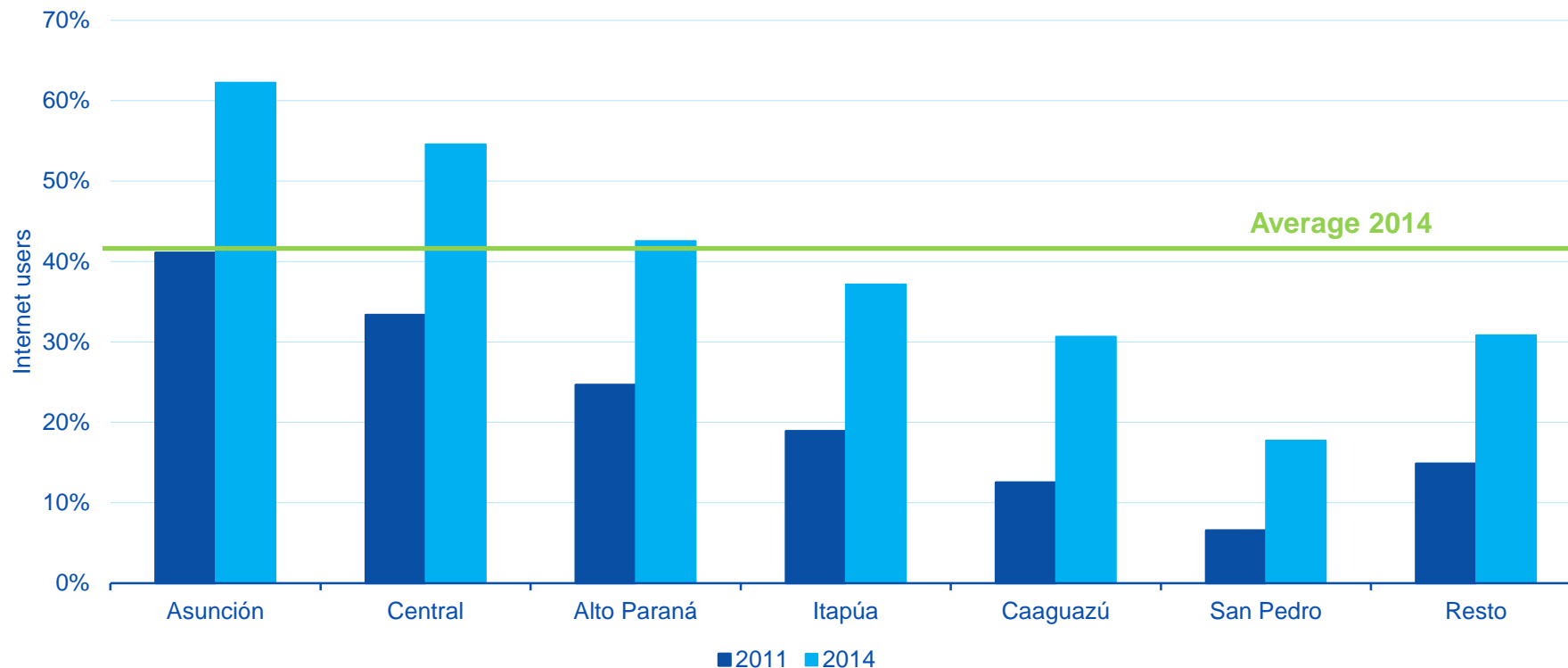
Internet use in 2014
41,43%



Significant increase in Internet access and Internet use between 2011 and 2014

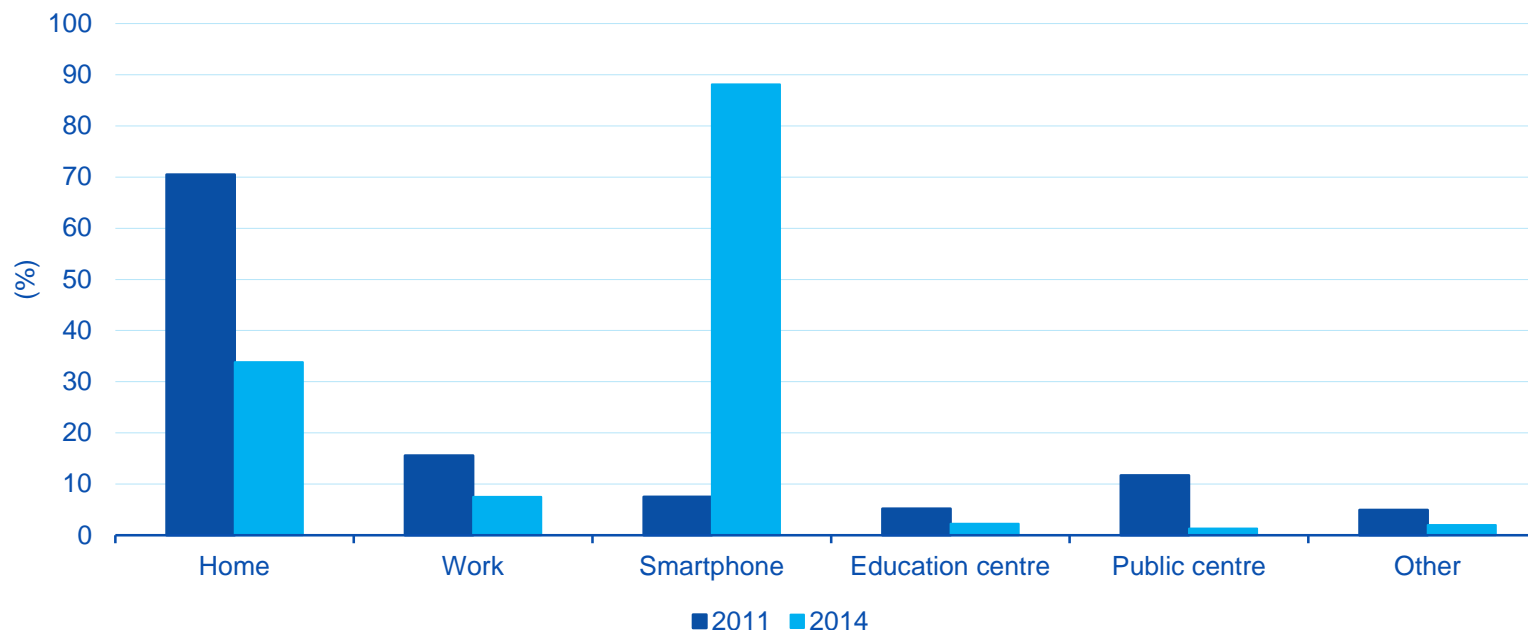
Note: use of Internet over the last 3 months.

2.2. Internet use: evolution by geographies



Asunción, Central and Alto Paraná are the departments with higher Internet use

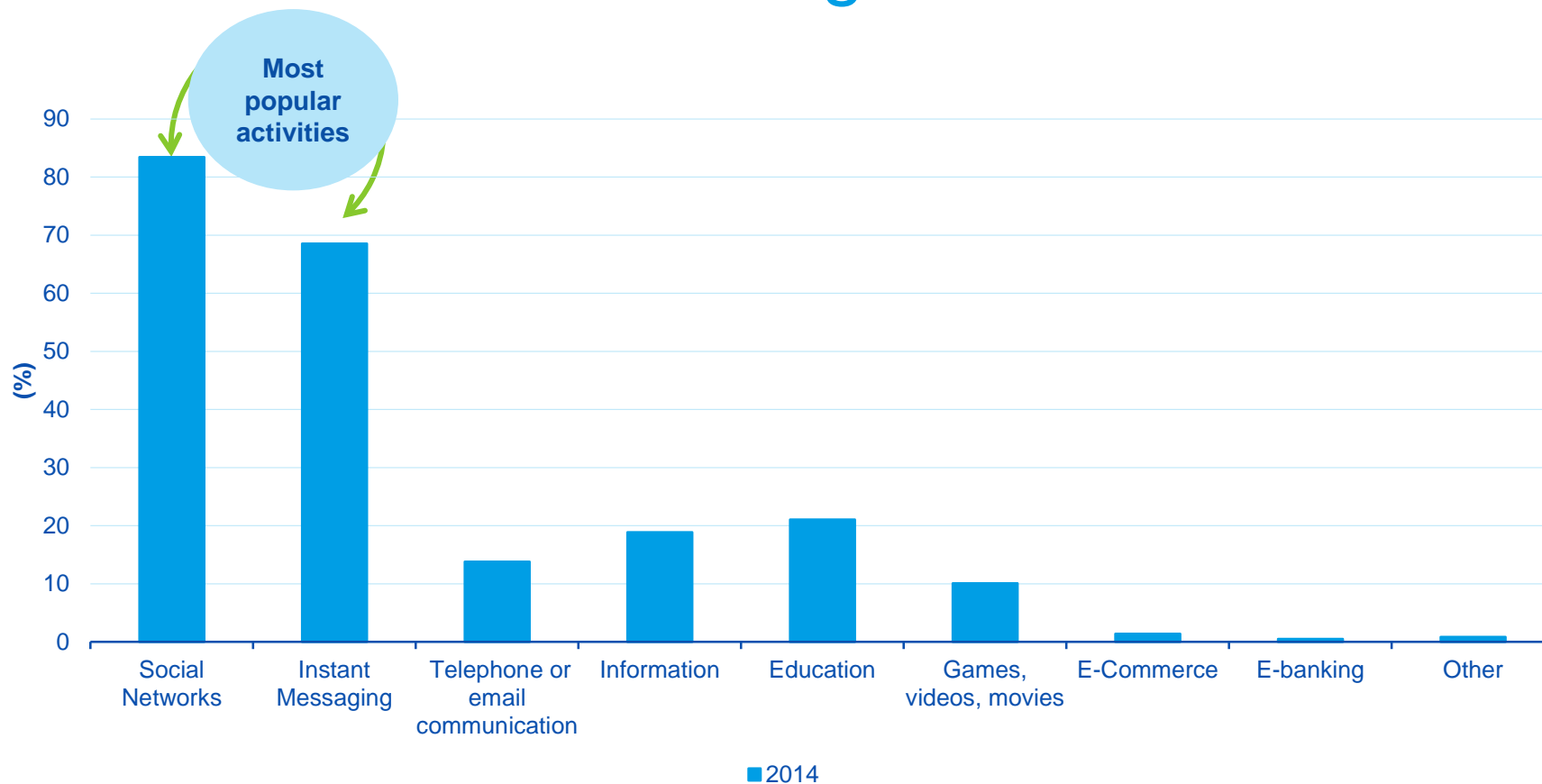
2.3. Places for Internet access (last 3 months)



Smartphones become the favorite option to access Internet in 2014



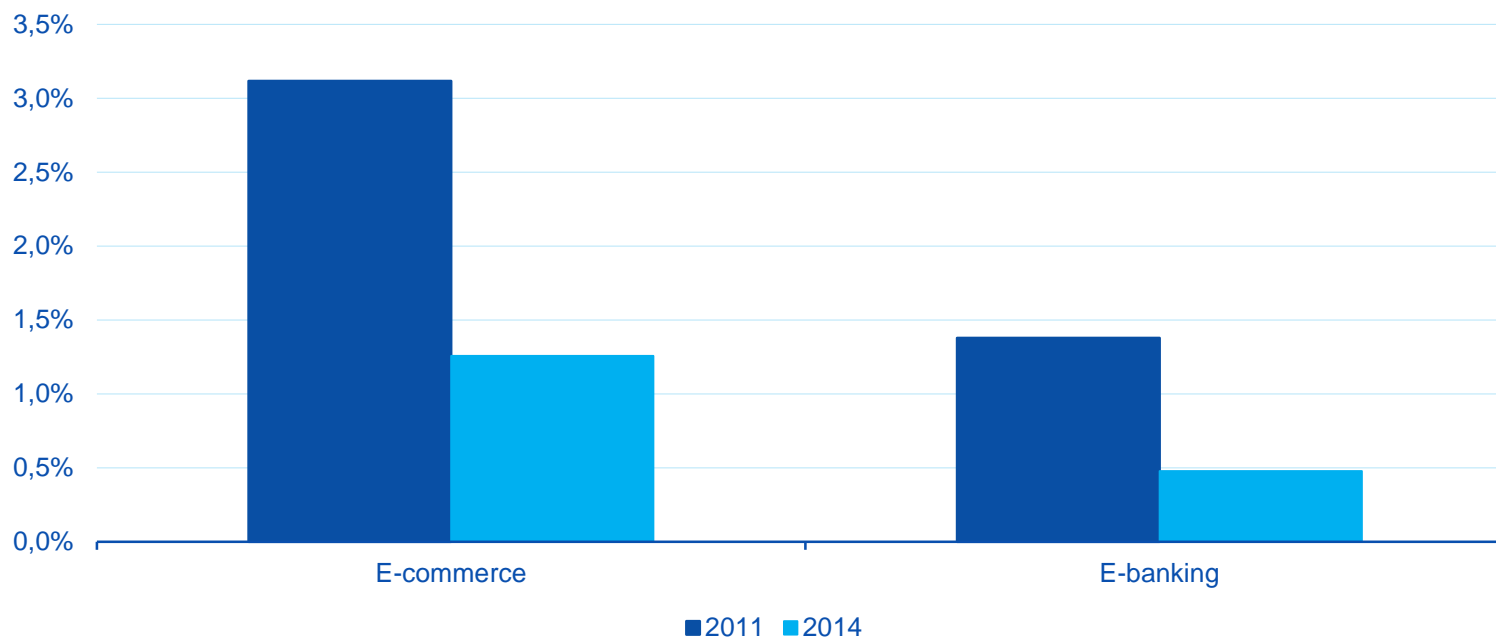
2.4. Internet activities: usage over last 3 months



Social Networks and Instant Messaging are the most popular activities among Internet users

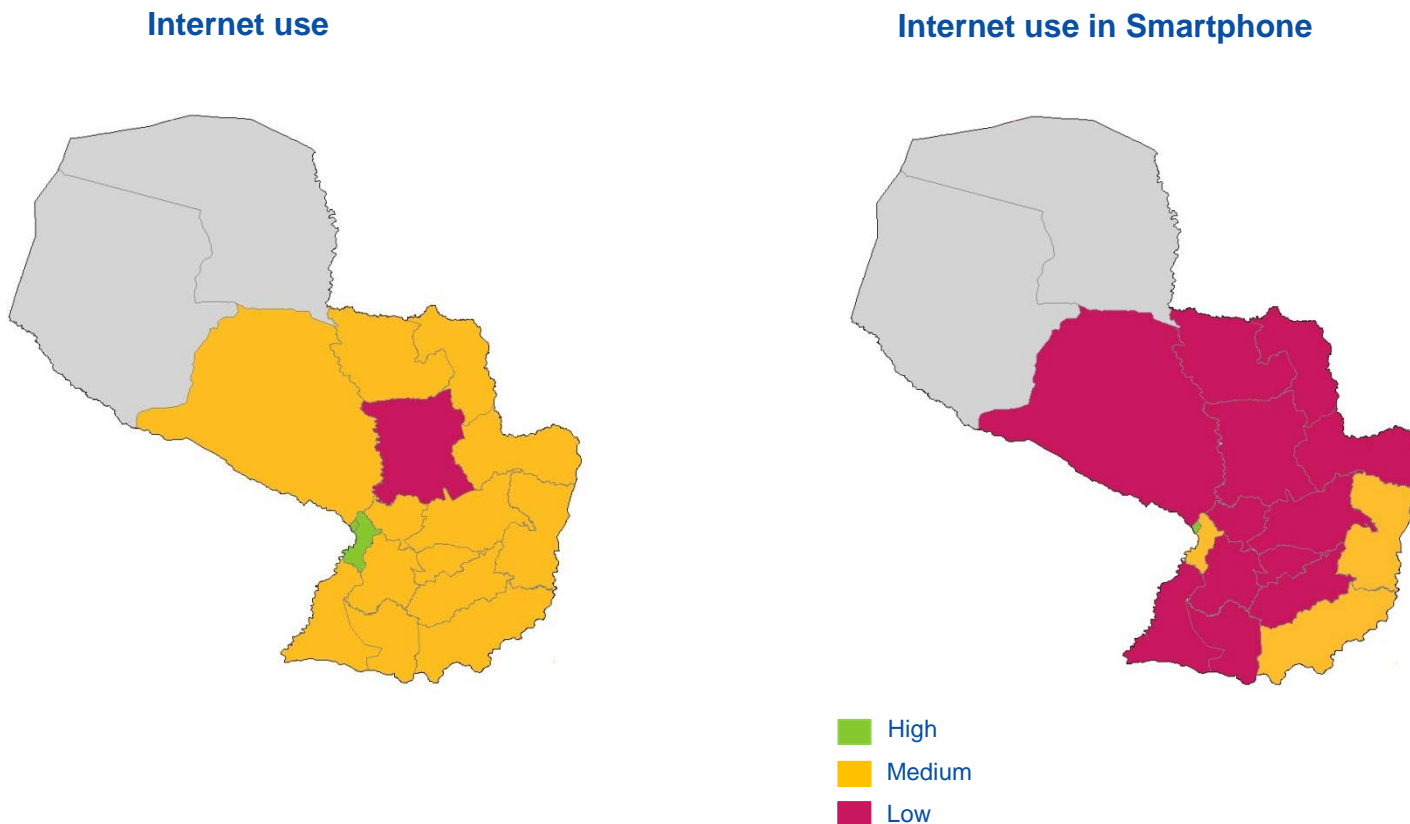
Note: % over Internet users.

2.5. E-commerce and e-banking



Use of e-banking and e-commerce in Paraguay shows very moderate results
The percentages have declined between 2011 and 2014, especially, because of the increase of the number of Internet users (it has been higher than the growth in e-commerce and e-banking users)

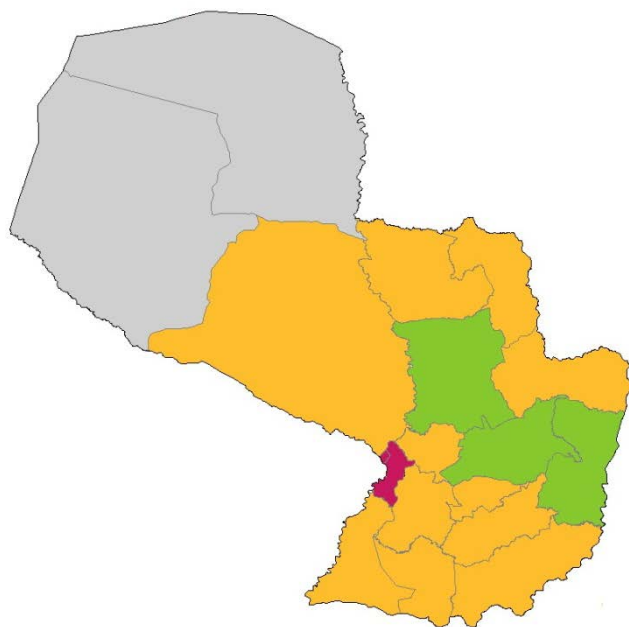
2.6. Geographical distribution in 2014: usage over the last 3 months



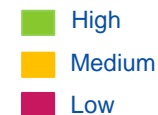
Note: "High" is above average, "Medium" around average and "Low" is below average.
% over total population. Boquerón and Alto Paraguay departments are not included in the EHP 2014 survey.

2.6. Geographical distribution in 2014: usage over the last 3 months

Social Networks



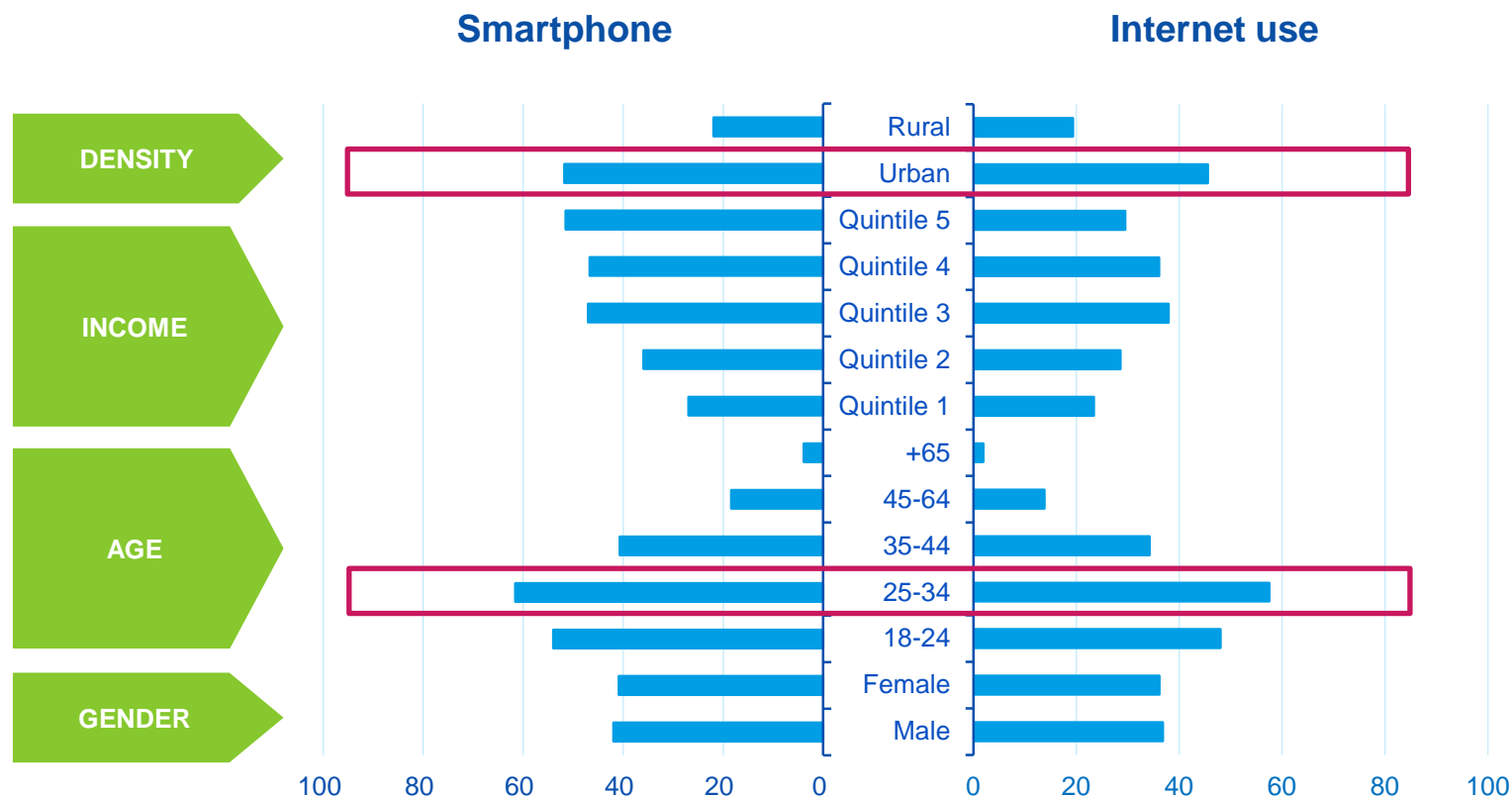
Instant Messaging



**The averages for social networks and instant messages are 83% and 69%, respectively
These figures are calculated over the total number of Internet users**

Note: "High" is above average, "Medium" is around average and "Low" is below average.
% over Internet users. Boquerón and Alto Paraguay departments are not included in the EHP 2014 survey.

2.7. Population characteristics: Internet and smartphone use (%)



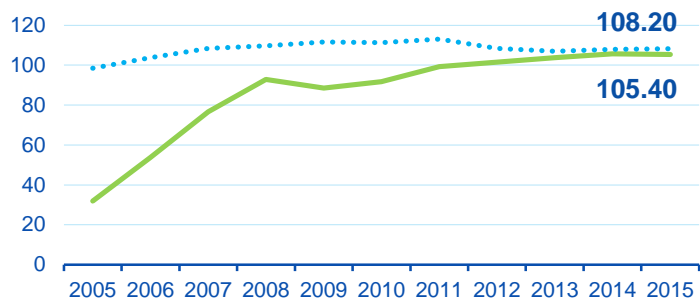
Note: % over total population.



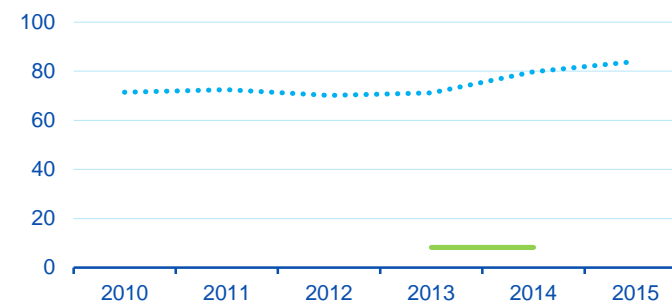
3 Supply side

3.1. Mobile situation

Mobile-cellular telephone subscriptions
(per 100 inhabitants)



Domestic mobile-telephone traffic
(billions of minutes)



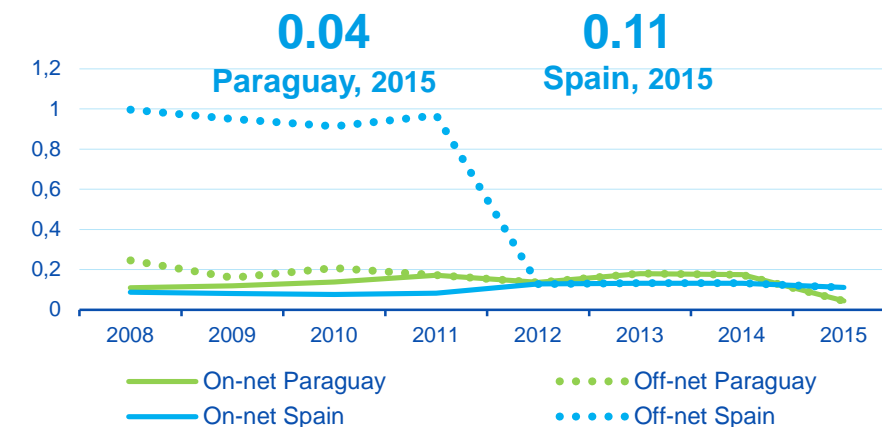
Mobile population coverage



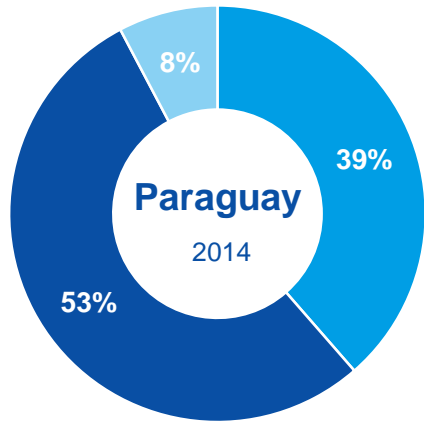
Spain
99.8%

Paraguay
99.7%

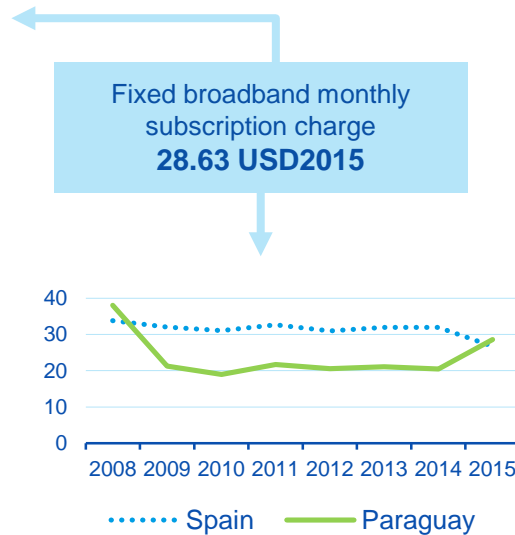
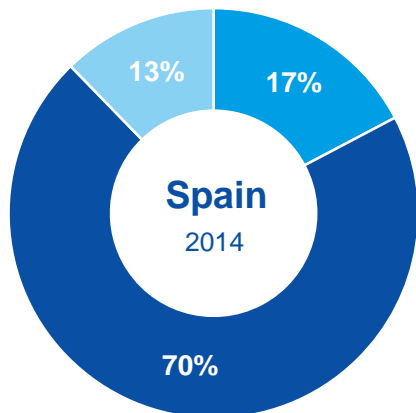
Tariffs: Mobile-cellular prepaid-1 min call
(USD)



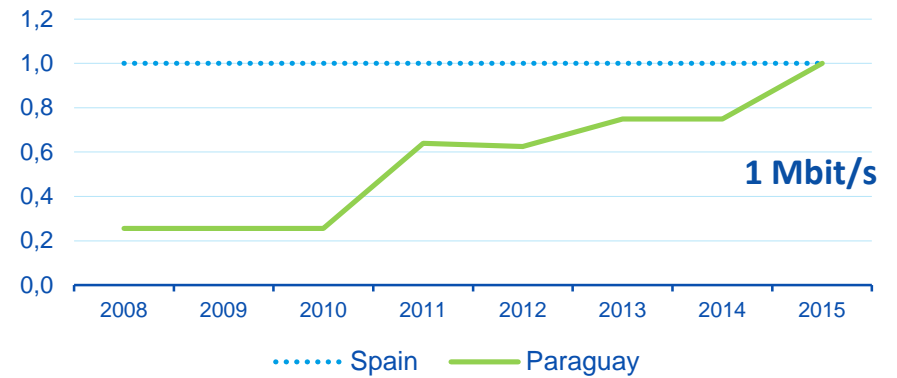
3.2. Fixed broadband



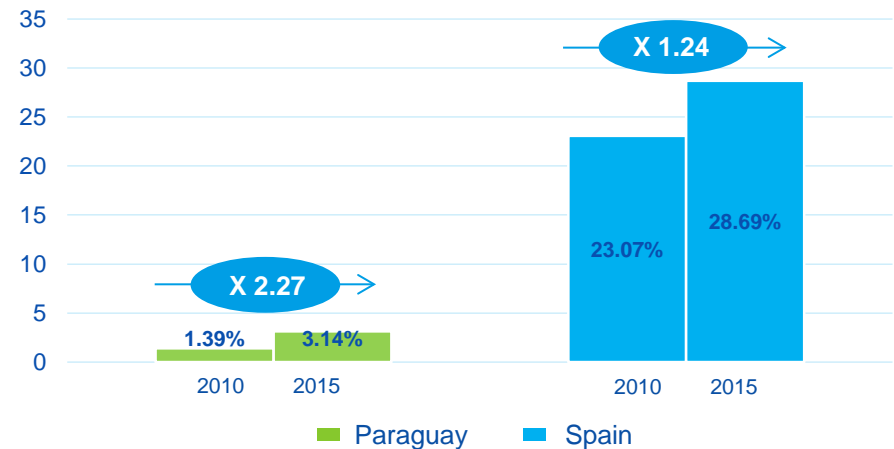
■ Cable modem ■ DSL ■ Fibre



Fixed broadband speed (in Mbit/s)

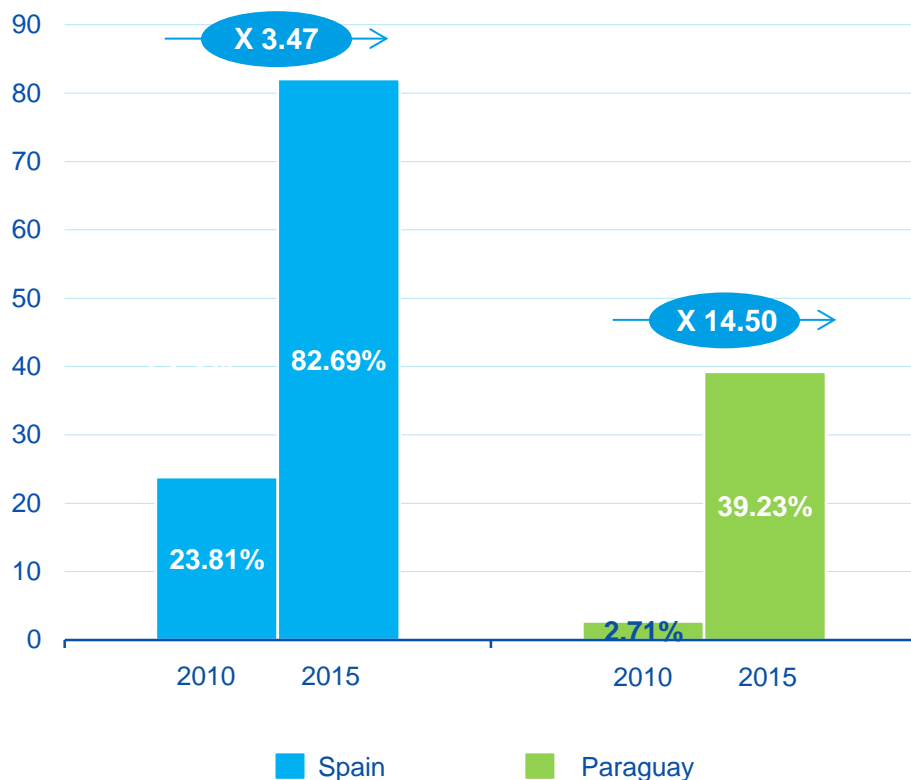


Fixed broadband subscriptions (per 100 inhabitants)

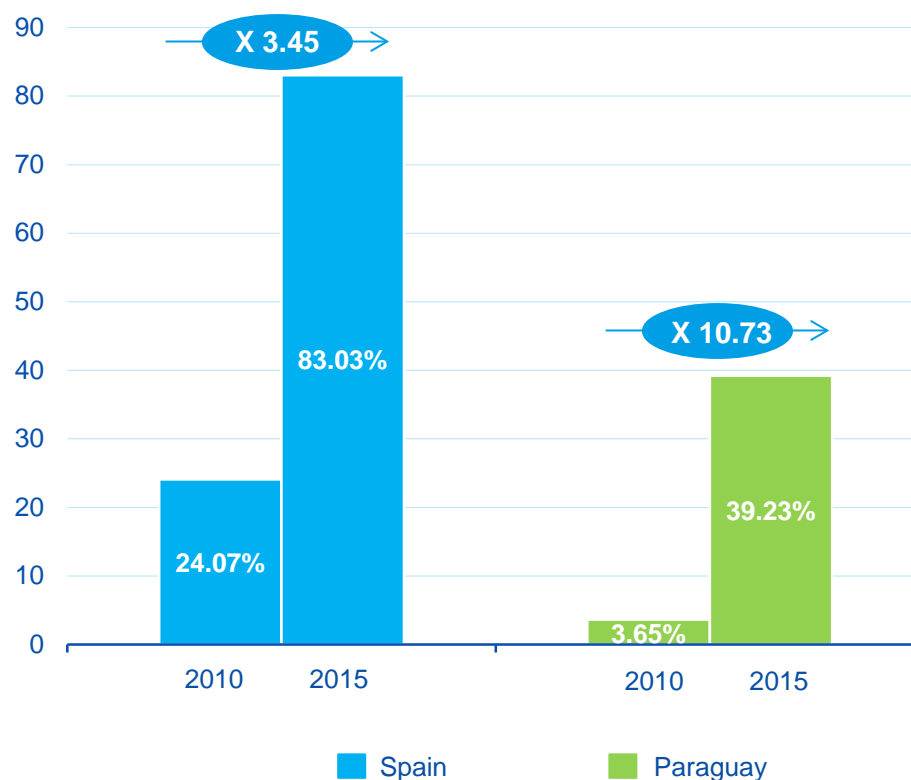


3.3. Wireless broadband

Mobile-broadband subscriptions (%)



Total wireless broadband subscriptions (%)



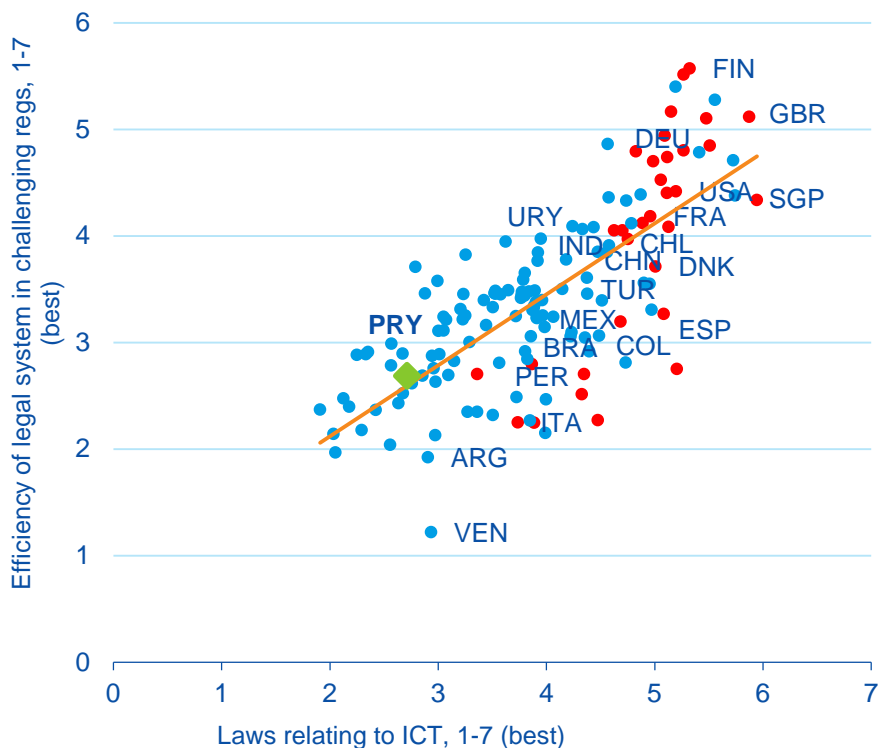
Note 1: The numbers inside the bars show number of subscriptions per 100 inhabitants

Note 2: The total wireless broadband subscriptions indicator is composed of satellite, terrestrial fixed wireless and mobile broadband subscriptions

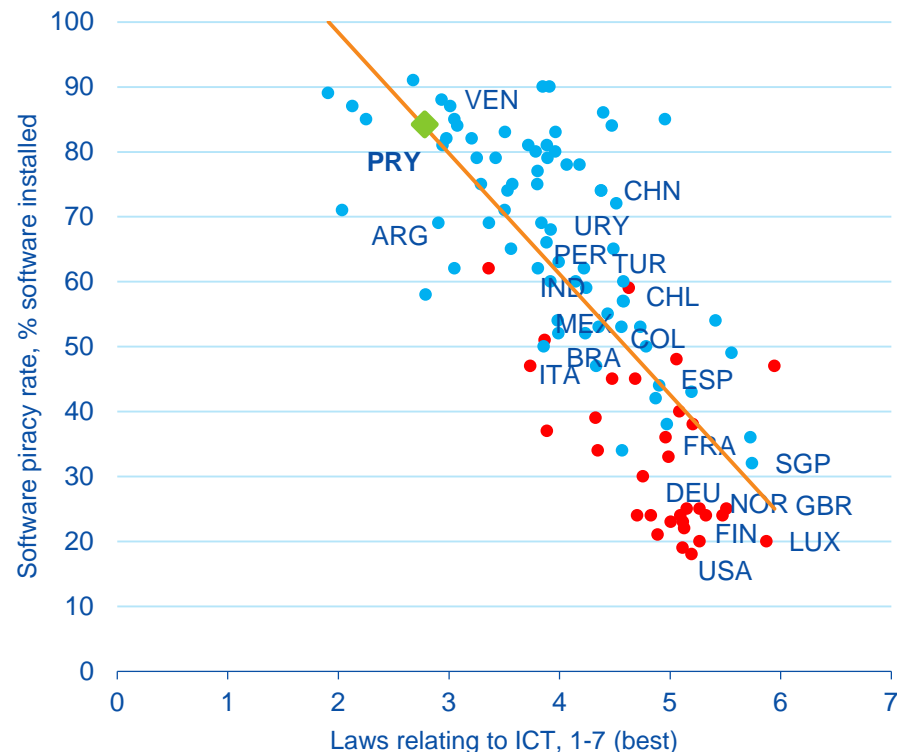


4 Regulation side

4.1. ICT laws: Efficiency and Piracy

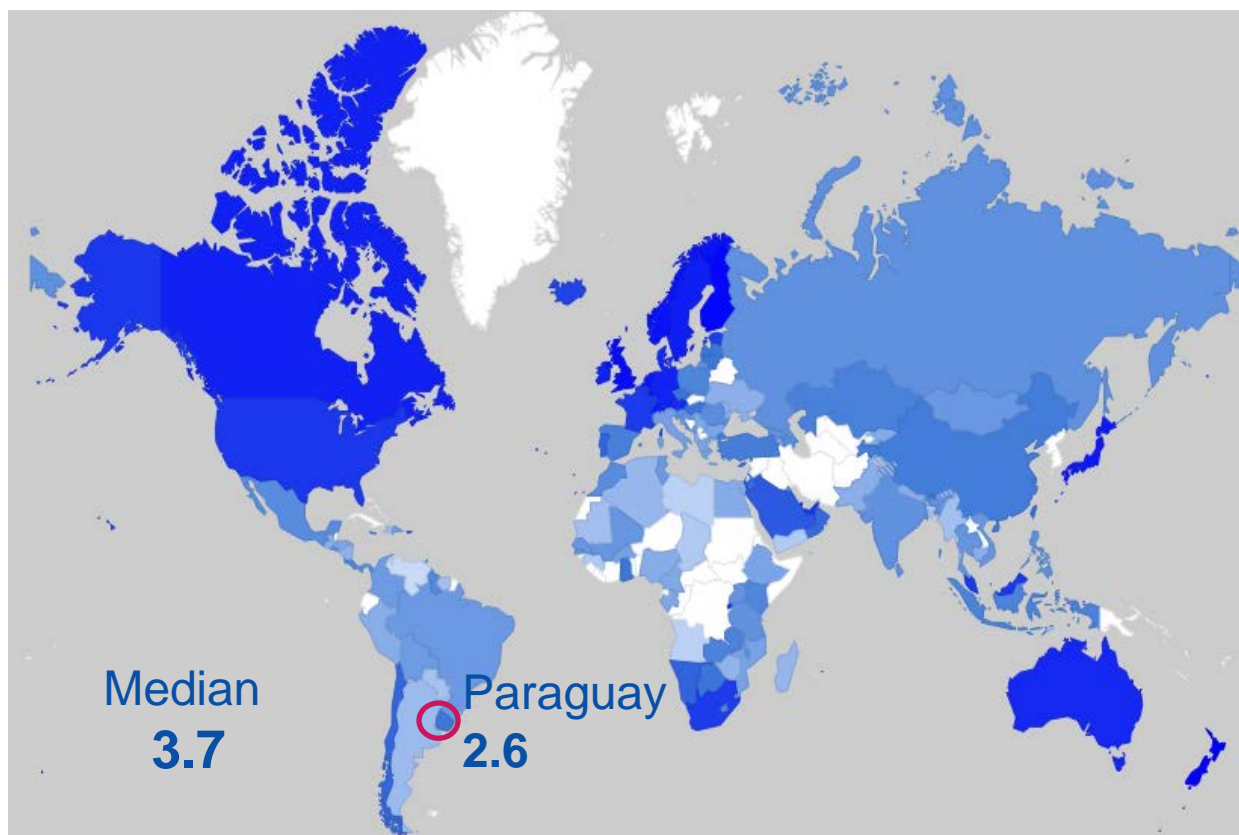


● High income OECD countries



● Rest (Paraguay is highlighted in green)

4.2. Political and regulatory environment (1-7 best)



The political and regulatory environment of Paraguay is below the global median

Source: BBVA Research & World Economic Forum, 2015

Note: In order to measure the political and regulatory environment, indicators such as ICT-related laws, piracy rates, efficiency of legal system and protection of intellectual property are taken into account.



5 Appendices

Composition of the Digitization Index

Infrastructure

- ✓ Fixed (wired)-broadband speed, in Mbit/s.
- ✓ International Internet bandwidth. It is measured in bits per second per Internet users.
- ✓ Percentage of total population covered by a mobile network signal.
- ✓ International Internet bandwidth in megabits per second (Mbit/s).

Cost

- ✓ Monthly subscription charge for fixed (wired) broadband Internet service (PPP \$). Fixed (wired) broadband is considered to be any dedicated connection to the Internet at downstream speeds equal to, or greater than, 256 kilobits per second, using DSL.

Users adoption

- ✓ Active mobile-broadband subscriptions.
- ✓ Fixed (wired)-broadband subscriptions.
- ✓ Mobile telephone subscriptions
- ✓ Percentage of households with Internet access at home.
- ✓ Proportion of individuals that have used the Internet in the last 12 months.
- ✓ how widely used are virtual social networks in the country.

Regulation

- ✓ How developed are your country's laws relating to the use of ICT (e.g., electronic commerce, digital signatures, consumer protection)?

[1 = not developed at all; 7 = extremely well-developed]

Firms adoption

- ✓ What extent do businesses use ICT for transactions with other businesses in the country?
- ✓ What extent do businesses use the Internet for selling their goods and services to consumers in the country?
- ✓ What extent do businesses adopt new technology in the country?

[1 = not at all; 7 = to a great extent]

Content

- ✓ The Government Online Service Index assesses the quality of governments' delivery of online services on a 0-to-1 (best) scale. There are four stages of service delivery: Emerging, Enhanced, Transactional and Connected. In each country, the performance of the government in each of the four stages is measured as the number of services provided as a percentage of the maximum services in the corresponding stage.

Source of data from the Demand Side: EPH

The survey is elaborated by the General Directorate of Statistics, Surveys and Censuses of Paraguay for the years 2011 and 2014.

The objective of the Permanent Household Survey (EPH) is to investigate the economic activity of individuals based on their socio-demographic characteristics. It also provides information on the characteristics of housing, access to basic services and goods possession.

Source of data from the Supply Side: World Telecommunication/ICT Indicators database (ITU, 2016)

The World Telecommunication/ICT Indicators database contains time series data for the years 1960, 1965, 1970 and annually from 1975 to 2015. These data are available for over 200 economies, however the availability of data for the different indicators and years can vary

The data are collected from an annual questionnaire sent to official economy contacts, usually the regulatory authority or the ministry in charge of telecommunication and ICT. Additional data are obtained from reports provided by telecommunication ministries, regulators and operators and from ITU staff reports

Financial Inclusion

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