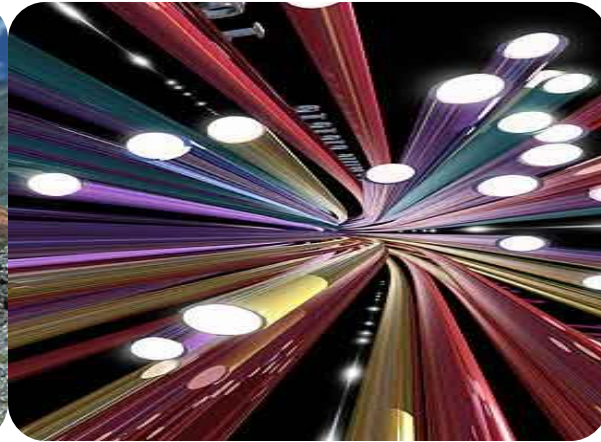




Broadband development in Argentina

Optimising risk and infrastructure development in times of crisis



Sonia Agnese
Regulatory Evolution Manager
Telecom Personal - Telecom Argentina



EUROPEAN PARLIAMENT

LatAm-EU Symposium on ICT Regulation

Brussels

Monday, November 15, 2010



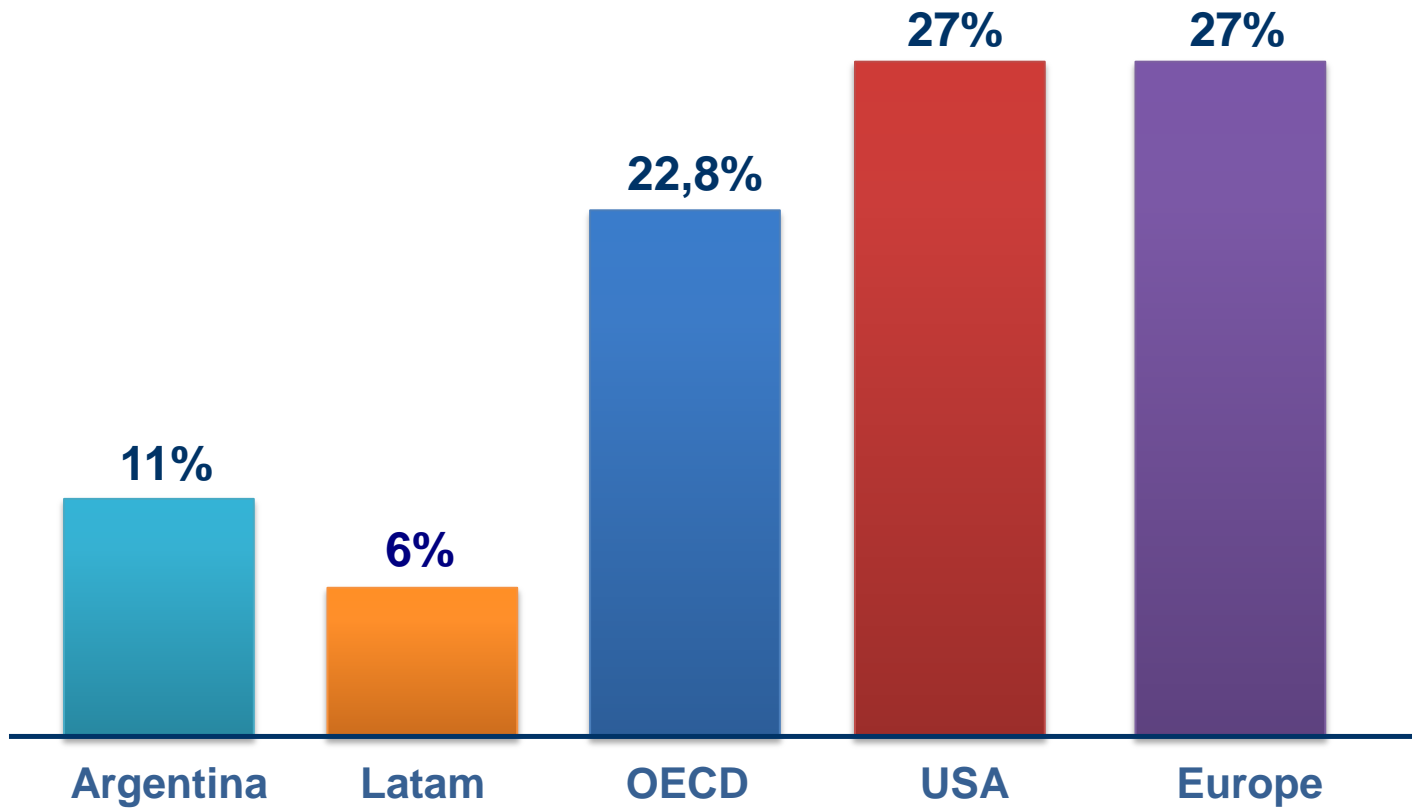
MADARIAGA
COLLEGE OF EUROPE
FOUNDATION





Argentina s Broadband Penetration: above the regional average

Fixed Broadband (% inhabitants) 2009

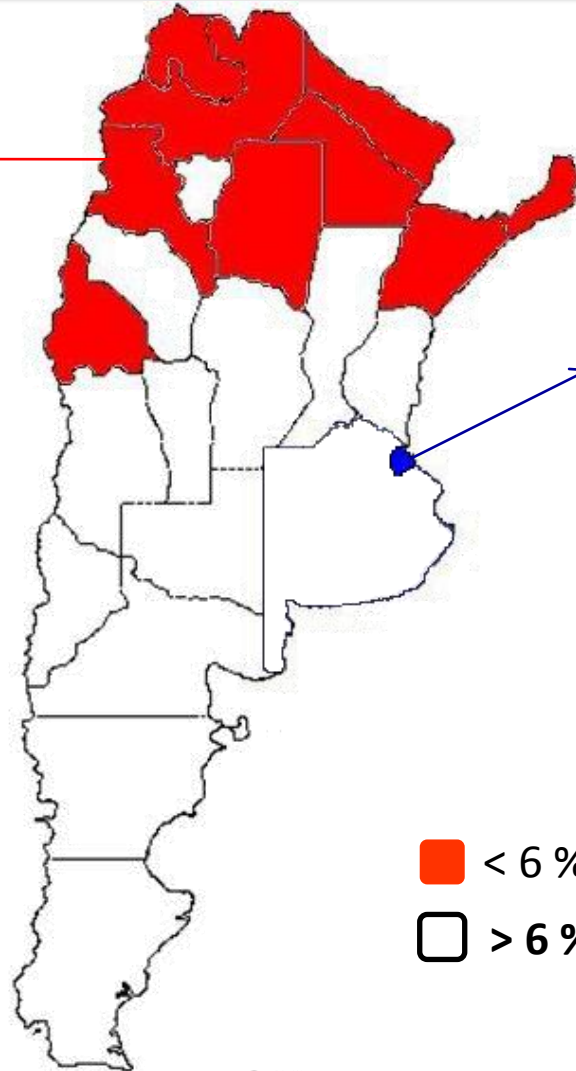


Source: Pyramid, Cisco, IDC 2009, OECD



Argentina: one country, different realities








< 6%
Below Latam average



Buenos Aires: 46%

-  **< 6 % (Below Latam penetration)**
-  **> 6 % and < 13%**

Impact of regulatory measures on cost to serve Mobile Broadband

Driver	From	To	<u>SIMULATION RESULTS</u>	Impact on cost to serve per subscriber* Percent
Spectrum availability	2.1 GHz	700 MHz	-40 - 50	
Infrastructure/spectrum sharing	No site/spectrum sharing allowed	Active site and spectrum sharing encouraged	-35 - 40	
Coverage obligations	High coverage requirements	No coverage requirements	-25 - 35	
Industry structure	5 players	3 players	-20 - 30	
Spectrum/license fees	Higher fee levels (USD 2.20 per MHz per population)	No fees	-15 - 30**	

Total impact of up to 75% reduction in cost to serve

* Individual effects if implemented stand-alone – combined effect is less than sum of individual effects

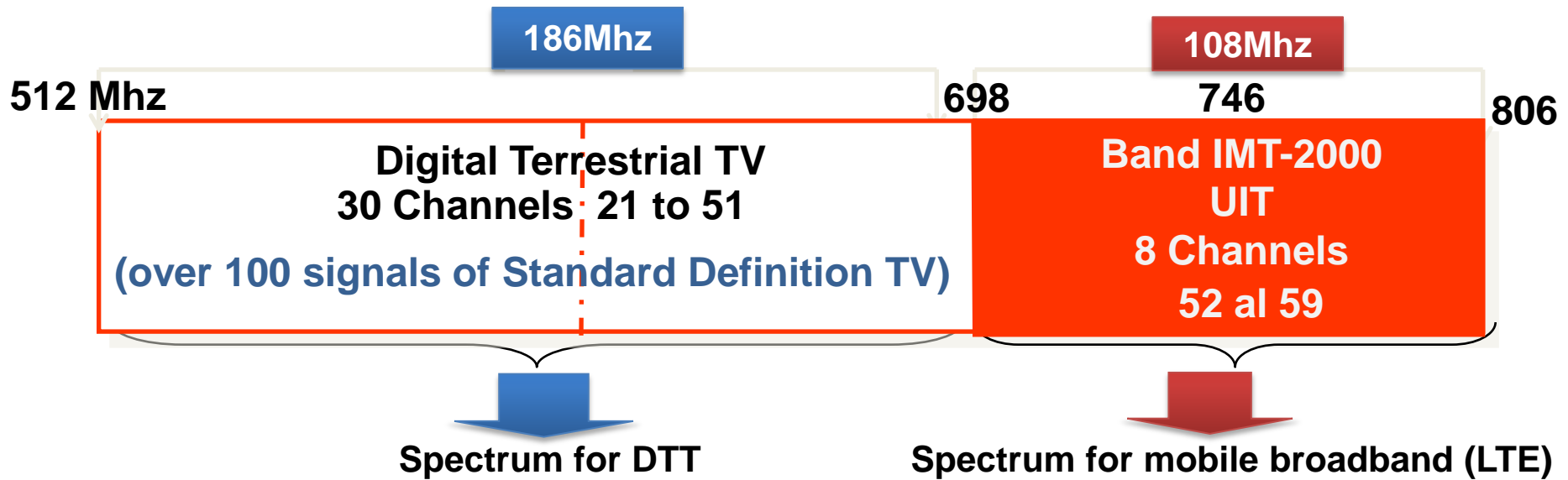
** Highly dependent on time of payment and cost of capital applied

Source: McKinsey

Digital Dividend Spectrum

Allocation of 700Mhz Band for mobile Broadband

The best suited band to the roll-out of broad network coverage at relatively low cost: critical in rural areas



Same investment: triple coverage (700 Mhz vs 2.1Ghz)



Digital Dividend: 700Mhz

- Practically **unused**
- **Economies of scale** assure low cost equipment
- Best propagation characteristics
- Broad network coverage at **relatively low cost**
- **No detriment to TDT** (more than 100 signals)
- **Universal service** investments can **be financed** with auction income



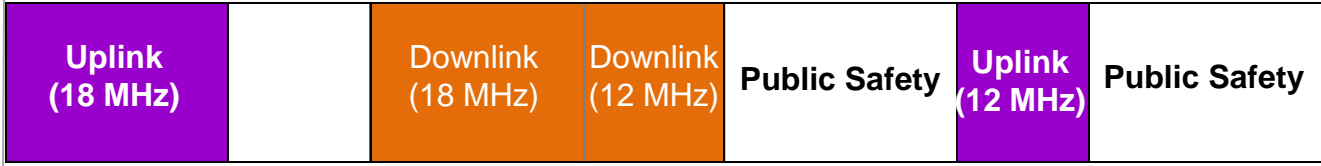
700MHz Alternative Band Plans

698 MHz

806 MHz

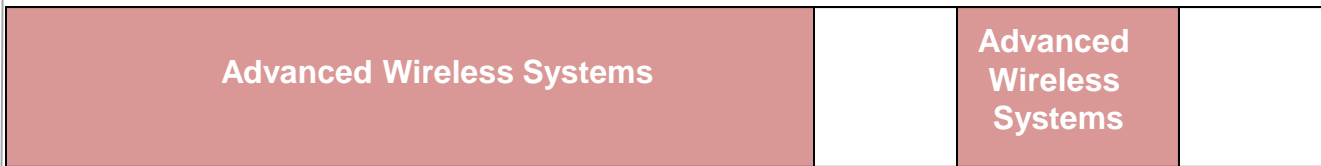
FDD

USA
Band Plan



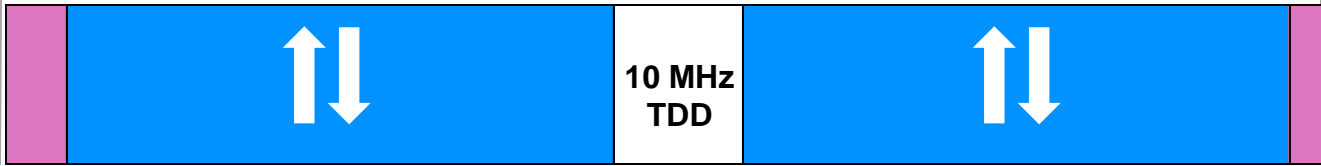
60MHz
(2x18 MHz)
(2x12 MHz)

CITEL



84MHz

ASIA
PACIFIC



90 MHz
(2x45 MHz)





FCC starts debate between TV, wireless on spectrum efficiency

By Matthew Lasar | Last updated December 3, 2009 8:22 AM

The Federal Communications Commission has released a **new public notice** seeking data on how television broadcasters use their spectrum licenses. It's politely phrased, but will doubtless amplify the noise on an already tense debate: do our nation's television broadcasters control too much spectrum?

The FCC's inquiry acknowledges "the value that the United States puts on free, over-the-air television," the item delicately explains, while exploring "market-based mechanisms for television broadcasters to contribute to the broadband effort any spectrum in excess of that which they need to meet their public interest obligations and reported, broadcast trade associations across the the reallocation of about 800MHz of spectrum below

The wireless industry says the enormous growth in broadband use by consumers and service providers is especially tender about a **new study** that notes that most TV watching takes place over the air. The FCC says that spectrum allocated to broadcast television could be reallocated to broadband use.



US National Broadband Plan

PCWorld

News

Reviews

How-To's

Downloads

Shop & Compare

Forums

Business Center

Los Angeles Times

BUSINESS

FCC Chairman Julius Genachowski delivers tough love to broadcasters

April 13, 2010 | 10:54 am



In a wide-ranging speech to broadcasters, Federal Communications Commission Chairman Julius Genachowski tried to ease fears in the industry about the agency's broadband plan, expressed concern about recent battles over carriage fees between broadcasters and cable operators, and warned of a potential crisis in journalism.

Speaking at the National Assn. of Broadcasters conference in Las Vegas, Genachowski said all the talk in the industry that the FCC is going to forcefully take spectrum from broadcasters to sell to telecommunications companies is a "myth." The goal of the FCC's broadband plan, he said, is not to "confiscate broadcasters' spectrum and drive broadcasters out of business."

More...

spectrum
broadband
spectrum
Tuesday.

Free additional 120 MHz in UHF Broadcast Band



FCC to set stage for more broadcast airwaves for mobile devices

By Cecilia Kang

Wednesday, October 20, 2010; 11:29 PM

Federal Communications Commission Chairman Julius Genachowski said he plans to encourage broadcasters to give up unused spectrum for auction to wireless carriers, an initial step toward achieving an agency goal of making networks faster for mobile phones and tablet computers.

FCC: Additional 275 Mhz of spectrum needed by 2014

RCR Wireless
INTELLIGENCE ON ALL THINGS WIRELESS

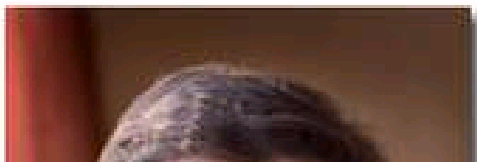
Wireless Technology

U.S. faces spectrum crunch by 2014

FREEING 275 MEGAHERTZ OF SPECTRUM COULD SAVE \$120B

October 22 2010 - 12:11 pm ET | Tracy Ford | RCR Wireless News

6 retweet



The United States will need another 275 megahertz of spectrum by 2014 to keep up with mobile broadband demand, according to a white paper the Federal Communications

Additional 275 Mhz of spectrum needed by 2014



Government announced in October 2010

U\$S 2,000 Million budget

Plan Nacional de Telecomunicaciones



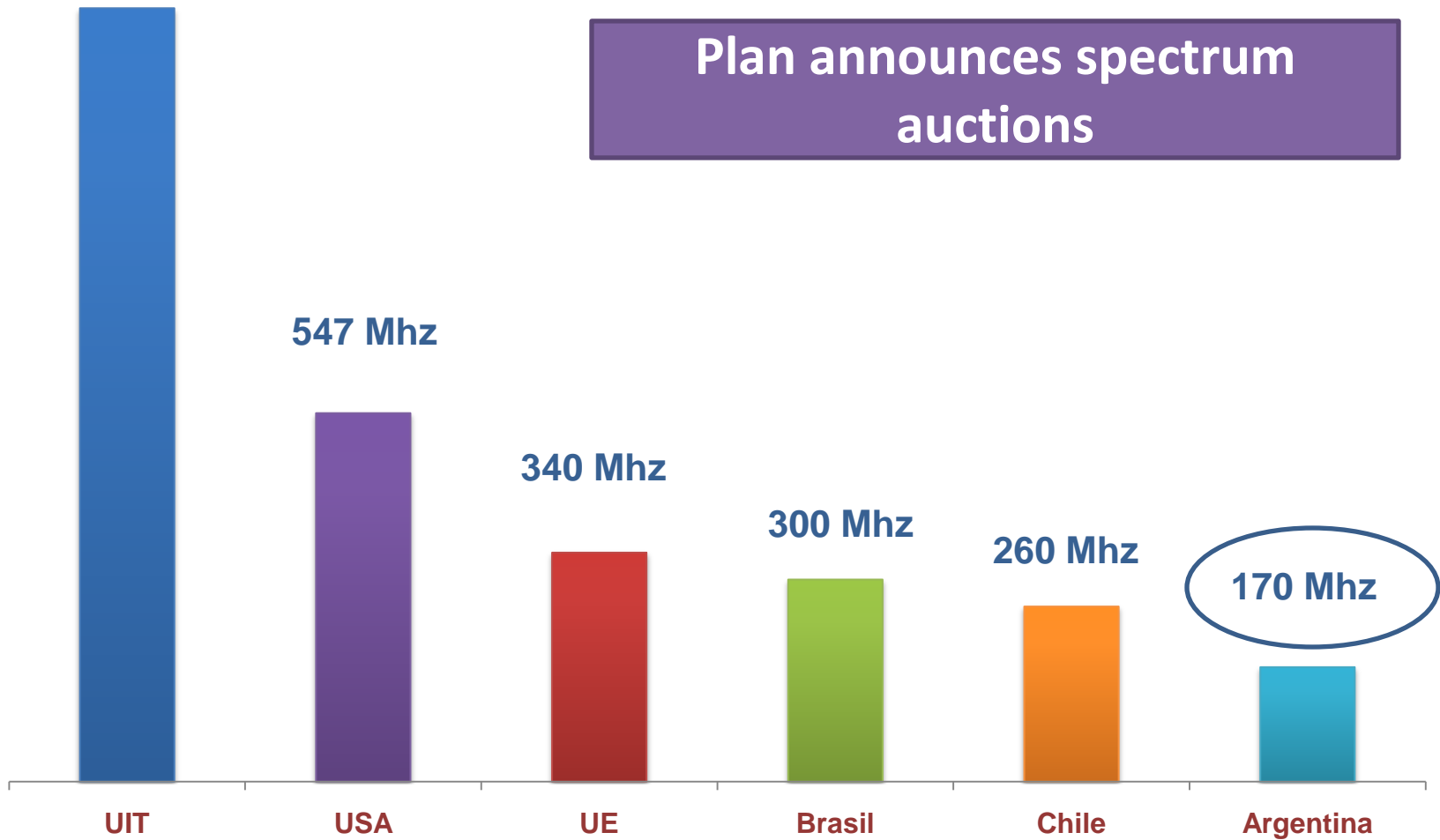
- **Spectrum**
- **Terrestrial Digital Television**
- **3 MM school student netbooks**
- **Universal Service**
- **Fiber Optic National Backbone**



Spectrum

1.148 Mhz Mobile spectrum current situation - comparison

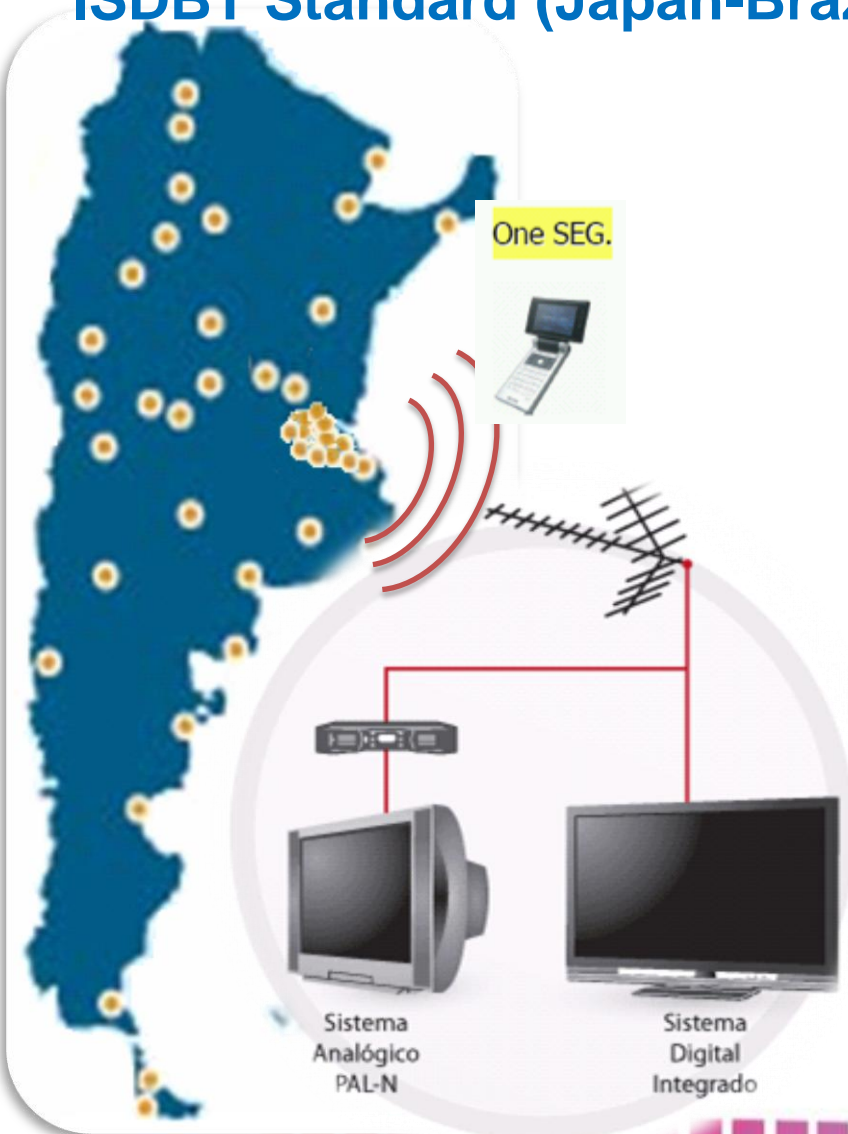
Plan announces spectrum auctions



Recomendation

Source: Regulator web sites, GSMA

Terrestrial Digital Television ISDBT Standard (Japan-Brazil)

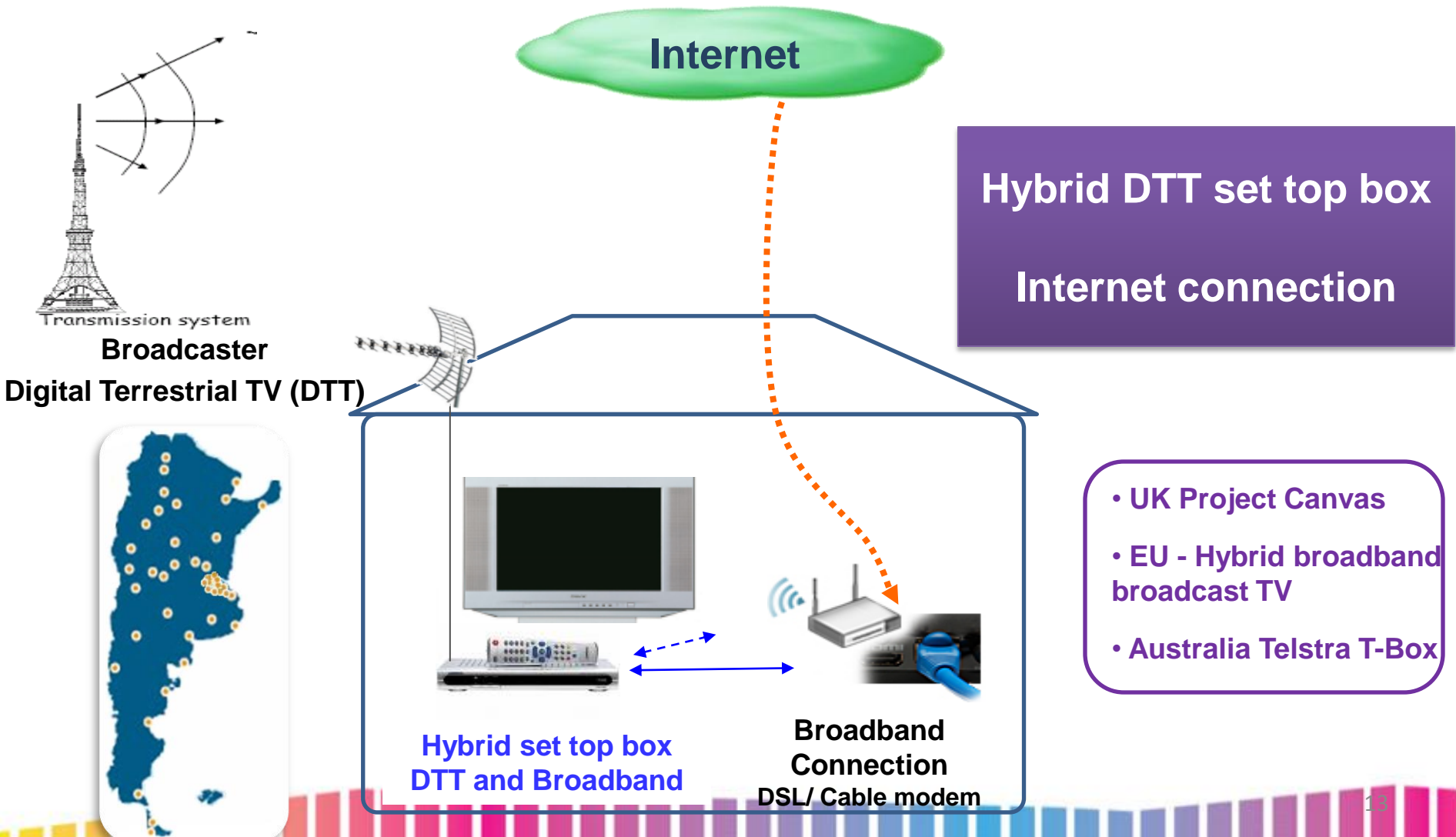


INITIAL 2011	FINAL 2014
• 47 cities	• 400 cities
• 70% coverage	• 95% coverage
• 1.2 MM STB	• 4 MM STB
• 20 signals	• 40 signals



Terrestrial Digital Television

Digital Terrestrial Television + Internet



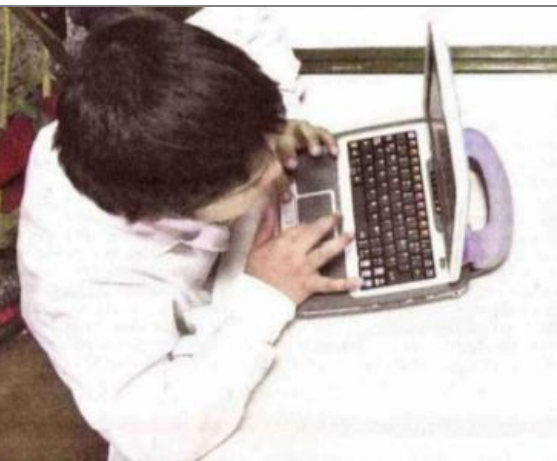
Hybrid DTT set top box
Internet connection

- UK Project Canvas
- EU - Hybrid broadband broadcast TV
- Australia Telstra T-Box



3MM school student netbooks

- Government will deliver netbooks to **3 million** school students (secondary and tertiary levels).
- Scheduled: 2 years
- **2.1 million 3G access** dongles and DTT one-sec
- **Largest global project**



3 millones de netbooks
para escuelas públicas del país.

Para alumnos y docentes de todas las escuelas públicas del país.

Para escuelas de educación especial e institutos de formación docente.



ver video institucional



descubrí la netbook en 3D





Redefinition of Universal Service: orientation to Broadband Development

- Internet Broadband service to schools



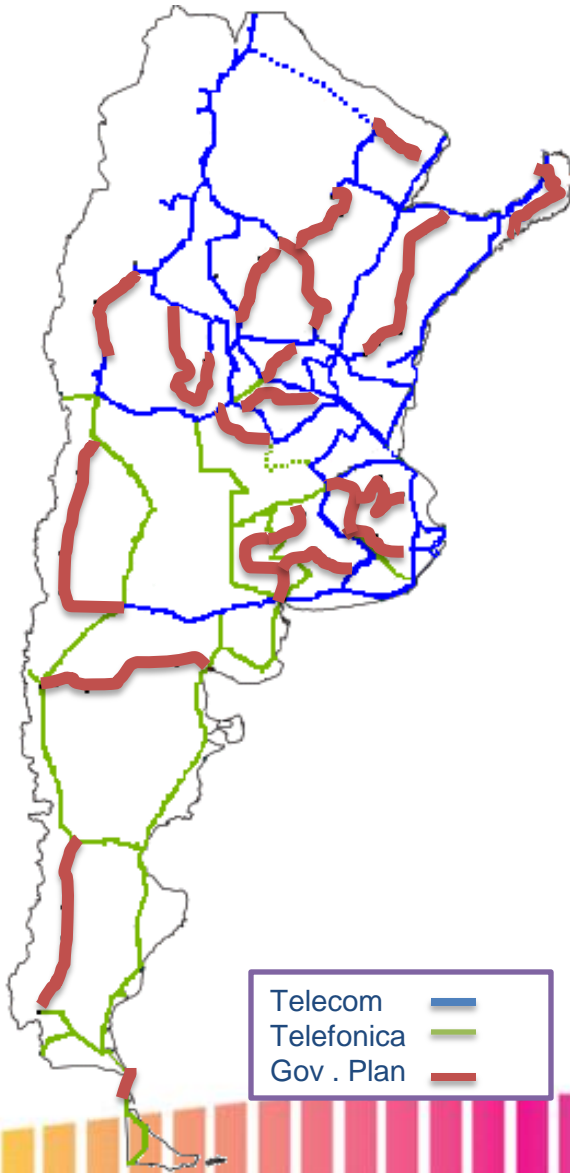
- 2G and 3G coverage in low populated areas



- Broadband infrastructure deployment in non-profitable areas



Fiber Optic National Backbone



Telecom	—
Telefonica	—
Gov . Plan	—

Backbone construction in non profitable areas

- 7000 Km of FO
- 1.000.000 inhabitants
- ARSAT (State owned company)

Important to remain as wholesale operator in order not to distort competition



Valuable: Government recognizes the importance of the ICT sector and broadband

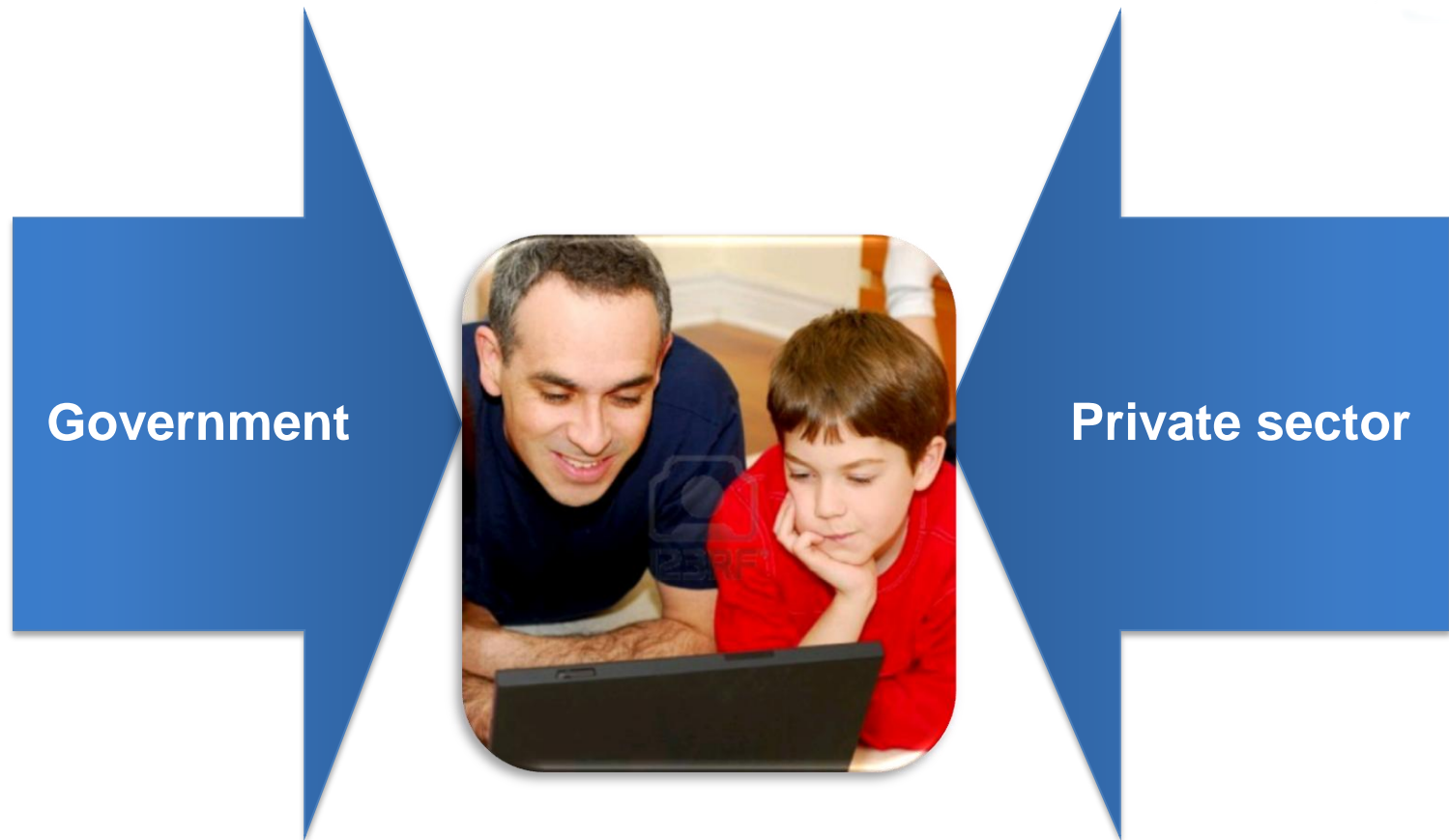
Private sector has an important **role**

Considering the **investment effort involved, cooperation would be very productive** in the implementation of universal access policies, the deployment of new networks and the development of the information society

Clear and sustainable policy environment that encourages investments, giving predictability and ensuring the sustainability of these infrastructures



Collaboration model



Essential a **fluid communication** between regulators and operators to move towards an **agreement of complementary effort** for the **development** of the sector and society as a whole



Thank you!