



PUERTO RICO
TELECOM
CONFERENCE 2011
THE NEW FUTURE

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Broadband is not longer a luxury

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Reaching Out

Education for everyone

- **Distance Learning**

Where we are today?

From 1964 to 2012

✓ Are we there yet?

- **Telecom Fluency**

We need more the just voice

Data the Big IF

✓ What can telcos do?

Distance Learning

Where we are today?

From 1964 to 2012

- 1 Radio Santa Maria: started operations in 1956
 - 1964: alphabetization of young adults.
 - 1971: Elementary school coverage,
 - 1977: this program accredited by DR MOE.
 - 2005: high school level.



Distance Learning

Where we are today?

From Radio Waves to Web Service

2

- Radio was state of the art then, with great rural penetration - the first step in the Distance Learning evolution process.
- Only 23,000 student enrolled using this technology today.
- Today we have many forms of communications, roads had been build, TV is ubiquitous. Wired communication has a large penetration and Wireless is spreading fast.



Distance Learning

Where we are today?

From Radio Waves to Web Service

3

- Which services are available?
- Affordability?
- What is the government's role?



Broadband Penetration

Is this the reality?

YEAR	Users	Population	% Pen.	GDP p.c.*	Usage Source
2000	55,000	8,338,100	0.7 %	US\$ 2,062	<u>ITU</u>
2007	2,100,000	9,260,258	22.7 %	US\$ 3,550	<u>INDOTEL</u>
2011	3,851,278	9,956,648	38.7 %	US\$ 4,510	<u>INDOTEL</u>



Most internet users are located in urban areas, Santo Domingo, Santiago, la Romana and other cities.



Telecom Influence

Dongle the new pencil

DATA the Big if: IF you built it, they will come.

- For people out in remote areas traveling to schools is not an option in most cases. So the school has to come to them. And this is where technology can play a big role.
- Most of the carriers are bringing wireless networks closer to remote areas. But in many cases only bandwidth for voice is available.
- The broadband network needs to be extended to these rural areas. Broadband is a requirement for distance learning.



Telecom Influence

Dongle the new pencil

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DATA the Big if: IF you built it, they will come.

- Social media, videos, electronic content becoming part of the distance learning offering these days.
- Without the proper telecommunication infrastructure Distance learning programs will be limited to that part of the population that already has access to multiple local schools and colleges.



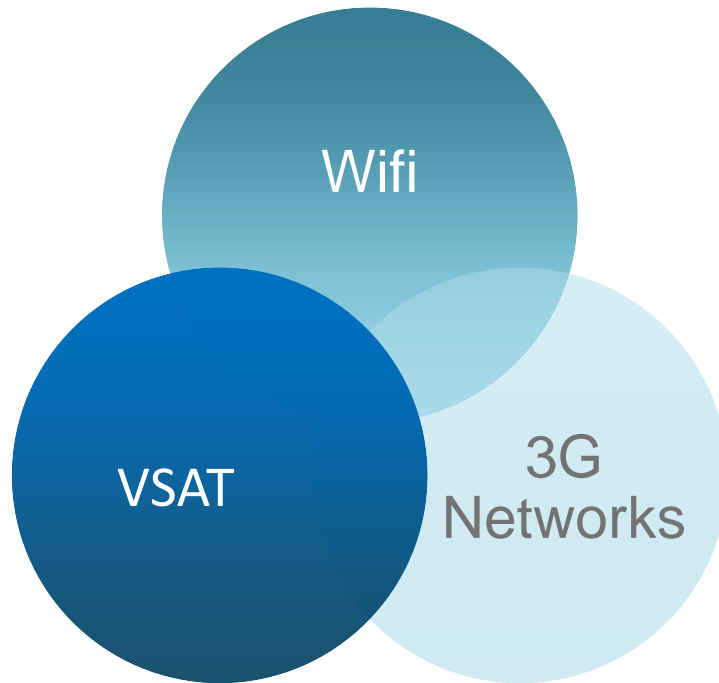
Broadband is not longer a luxury It is a way of life

- Are we there yet?
 - The short answer is no.
- What can Telcos do?
 - It does not only has to make economic sense, the client based need to effort it.
- Which services are available?
 - There must be more than just voice available for these users in rural areas. Prepaid broadband is an option that can be explore.
- What is the government's role?
 - Entities like INDOTEL in Dominican Republic are collecting special tax to build infrastructure. Like the Universal Service Fund reform implemented by the FCC in the US.



Which Technology

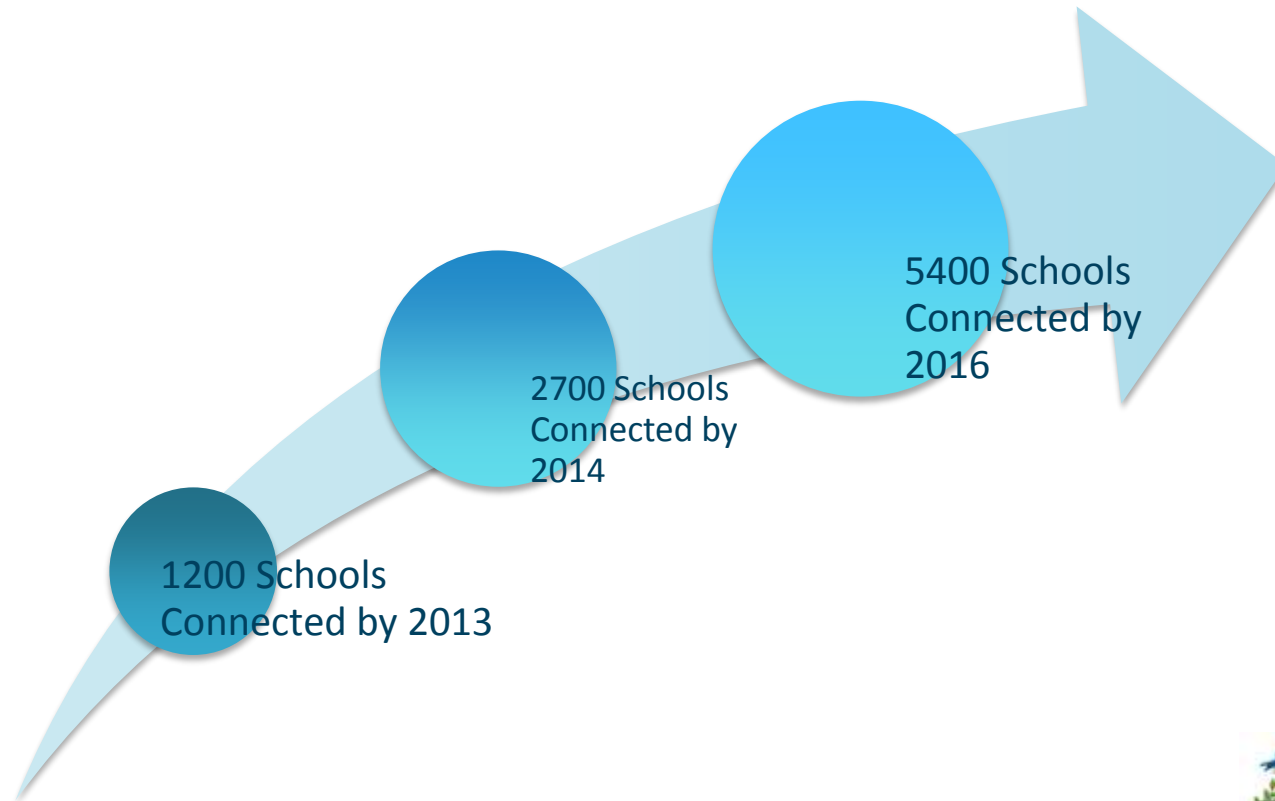
Getting there faster



1. The Ministry is using these technologies.
2. Some area are only reachable via VSAT.
3. 3G connections used by almost 80% of the Principal Schools.



Where we are aiming Connected Schools



Ministry of Education, Dominican Republic



Peter Drucker

- Universities won't survive. The future is outside the traditional campus, outside the traditional classroom. Distance learning is coming on fast.
- In the future traditional university campuses will be relics. Universities won't survive.
- It's as revolutionary as the first printed book.
- The cost of higher education has risen as fast as the cost of health care? And for the middle-class family, college education for their children is as much of a necessity as is medical care—without it children have no future. Higher education is in financial crisis.



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THANK YOU!

