



CALA TELECOM OVERVIEW
5G Americas Analyst Forum

October 4, 2016
Addison, TX

5G AMERICAS

The Voice of 5G and LTE for the Americas

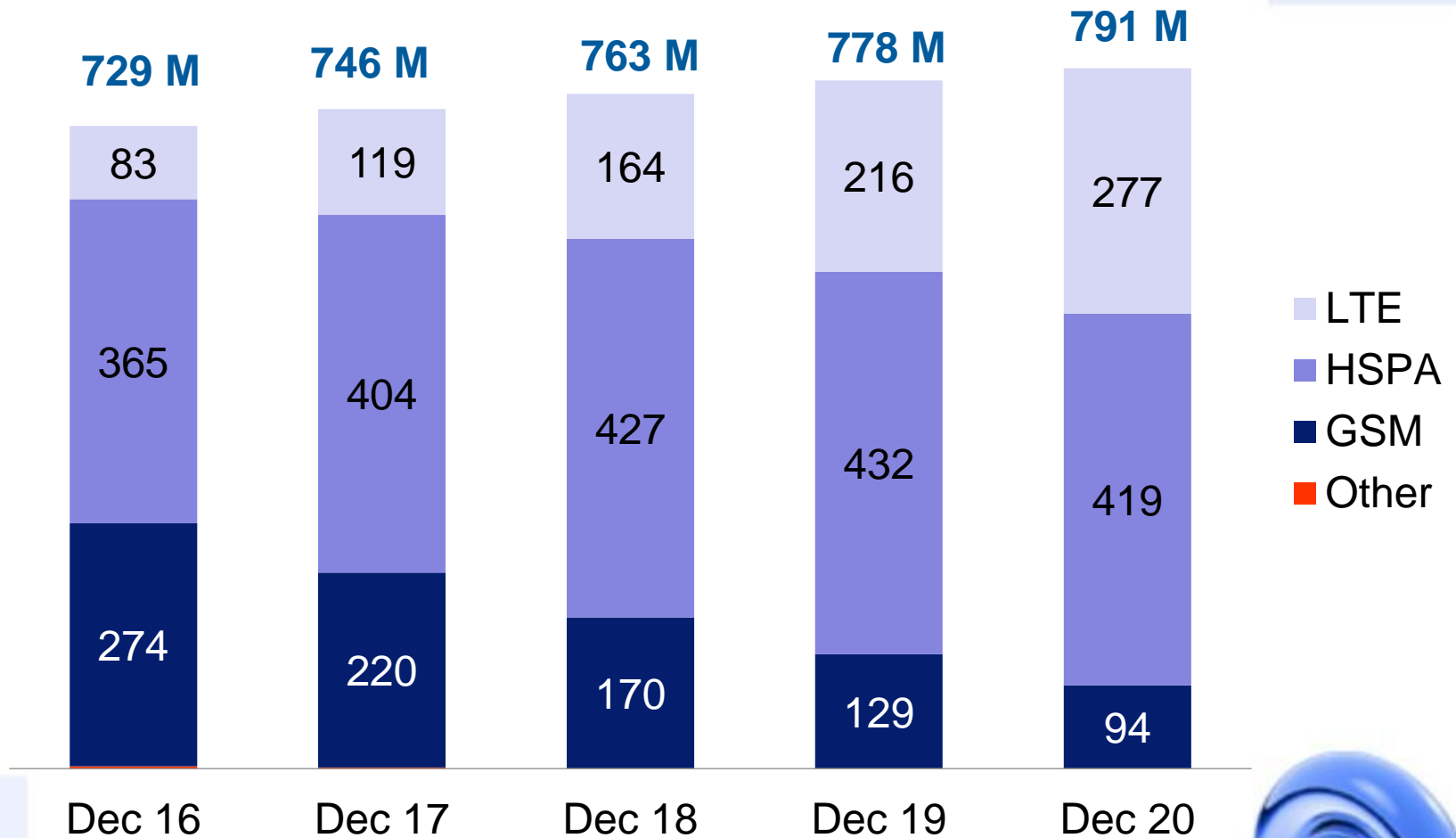
5G Americas is an industry trade organization composed of leading telecommunications service providers and manufacturers. The organization's mission is to advocate for and foster the advancement and full capabilities of LTE wireless technology and its evolution beyond to 5G, throughout the ecosystem's networks, services, applications and wirelessly connected devices in the Americas. 5G Americas is invested in developing a connected wireless community while leading 5G development for all the Americas



MEMBERS



CALA MOBILE LINES 2016 – 2020



Source: Ovum, March 2016



THE CARIBBEAN

**Pop.
(Millions)**

43.9

**Mobile subscribers
(Millions, estimated end 2015)**

35.2

Mobile Penetration

80.1%

33 Markets

85 Operators



THE CARIBBEAN



Market (by language)	Subs 2015 (000s)	Operators
English	8,193	46
Dutch	1,052	12
French	10,189	17
Spanish	15,750	10



THE CARIBBEAN



- Improve competitive position vis-à-vis incumbent telecom operator
- Continue strategy of positioning itself as innovation leader in the Caribbean
- Strengthen incumbent position prior to mobile market liberalization
- US operators' national strategy.

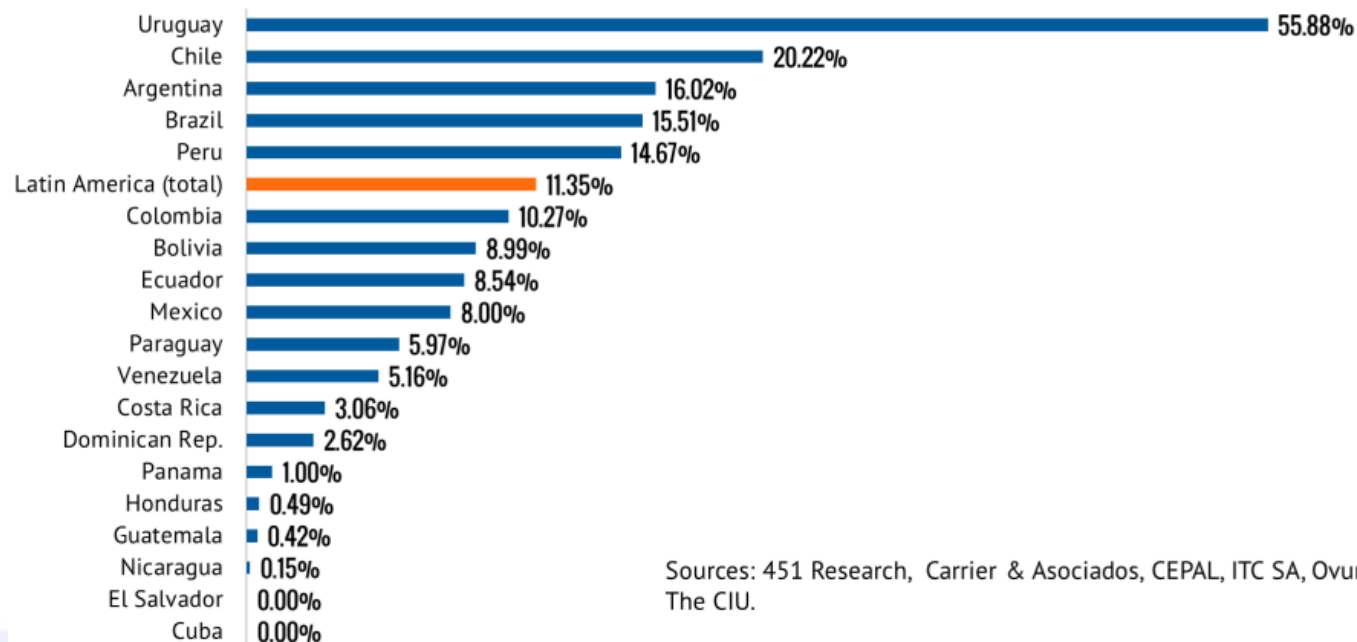


LATIN AMERICA

5G Americas LTE Penetration Index

Latin America 1Q 2016

Penetration of LTE lines in the Pop.



Sources: 451 Research, Carrier & Asociados, CEPAL, ITC SA, Ovum, Teleco and The CIU.

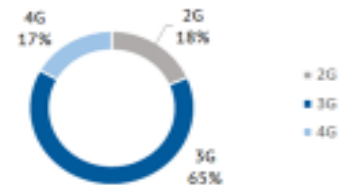


ARGENTINA



36,2 millones
Total de líneas móviles en actividad estimadas

Dispositivos por tecnología, 2015



Pronóstico de LTE (en millones)



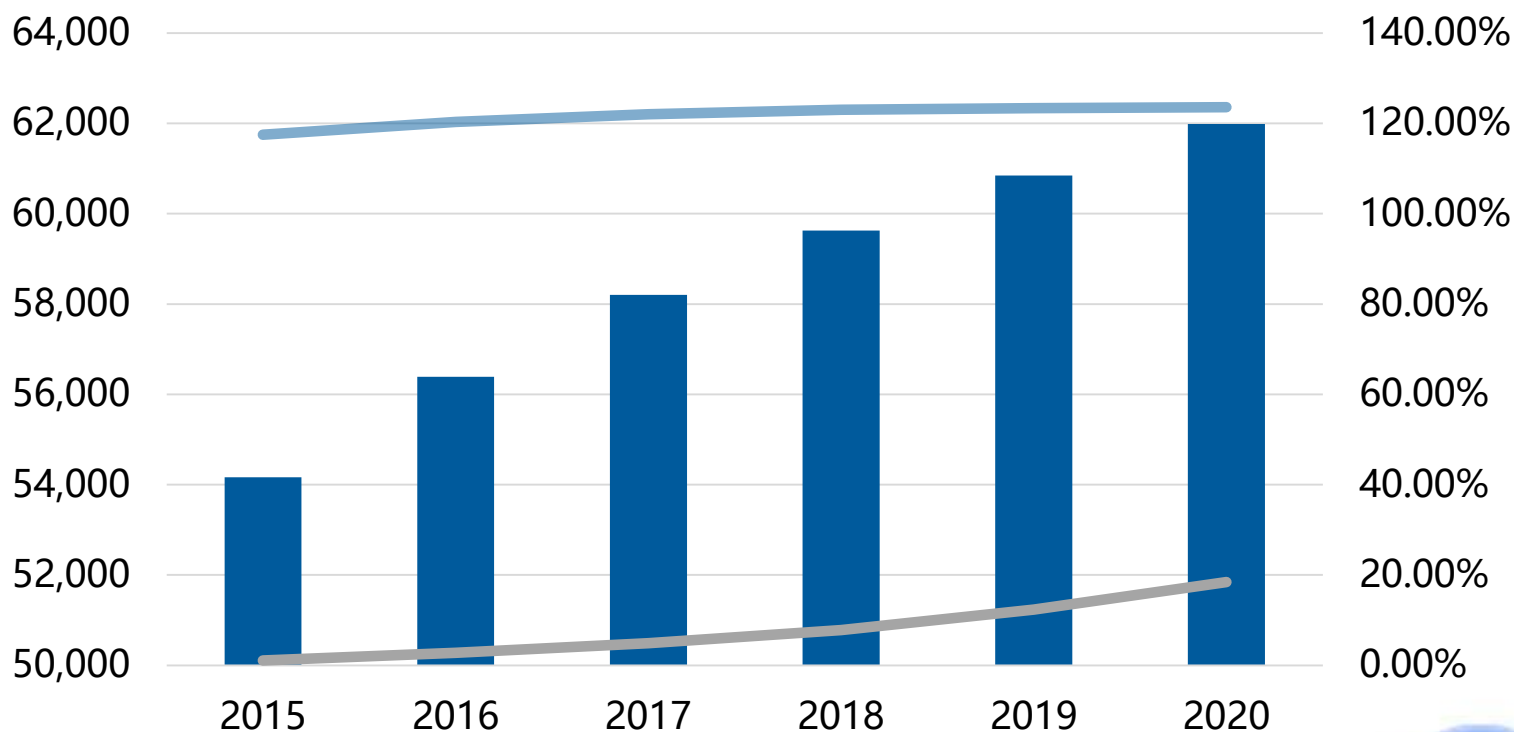
Fuente: Carrier y Asociados, Marzo de 2016



Source: Carrier & Asociados



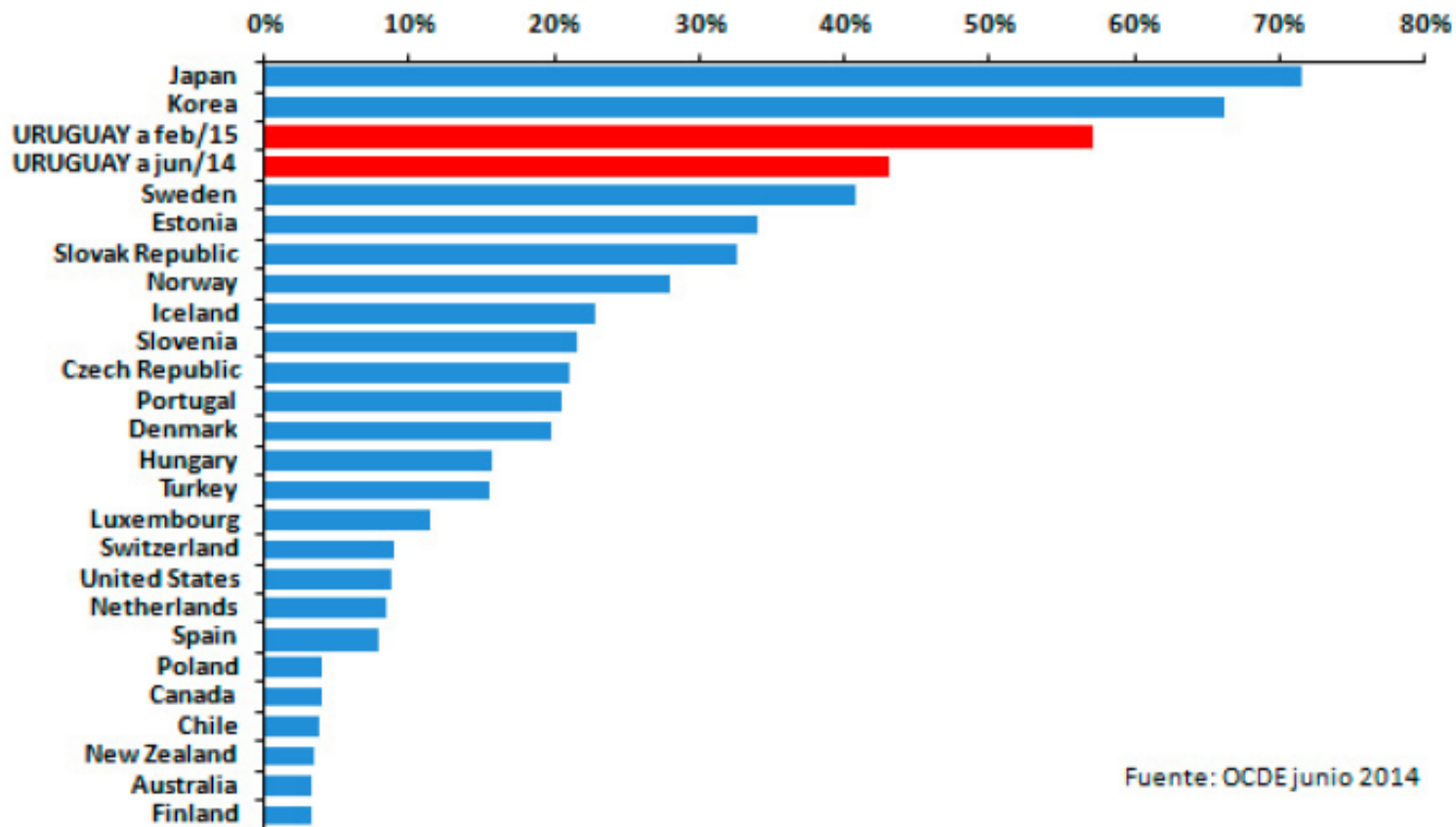
CENTRAL AMERICA



- Suscripciones móviles (en miles)
- Penetración móvil total (sobre población)
- Penetración de LTE (sobre población)



FTTH HOUSEHOLD PENETRATION



Fuente: OCDE junio 2014



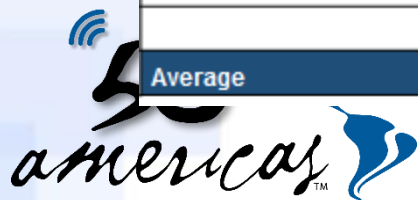
ITU Spectrum Suggestions

Year	Spectrum RATG 1 (MHz)			Spectrum RATG 2 (MHz)			Total Spectrum Requirement (MHz)		
	2010	2015	2020	2010	2015	2020	2010	2015	2020
Low POP	840	880	440	0	420	900	840	1300	1340
High POP	760	800	540	0	500	1420	760	1300	1960



ITU Spectrum Suggestions

Market	Spectrum	2015	Percentage 2015	2020	Percentage 2020
Brazil	609	1300	46.84%	1960	31.10%
Chile	465	1300	35.80%	1960	23.70%
Costa Rica	460	1300	35.40%	1960	23.50%
Nicaragua	420	1300	32.30%	1960	21.40%
Argentina	403	1300	31%	1960	20.60%
Peru	394	1300	30.30%	1960	20.10%
Colombia	355	1300	27.30%	1960	18.10%
Venezuela	324	1300	24.90%	1960	16.50%
Mexico	314	1300	24.20%	1960	16.00%
Dominican Republic	312	1300	24%	1960	15.90%
Ecuador	290	1300	22.30%	1960	14.80%
Honduras	290	1300	22.30%	1960	14.80%
Paraguay	280	1300	21.50%	1960	14.30%
Bolivia	274	1300	21.10%	1960	14.00%
Uruguay	270	1300	20.80%	1960	13.80%
Panama	220	1300	16.90%	1960	11.20%
Guatemala	210	1300	16.20%	1960	10.70%
El Salvador	208	1300	16%	1960	10.60%
Average	339	1300	26.05%	1960	17,28%



CONCLUSIONS

- LTE is the fastest growing mobile technology to have arrived in Latin America and the Caribbean
- Great need for investment in fiber optics
- There's a need for more spectrum to be awarded to mobile operators.
- IoT market in Latin America is incipient, although operators are showing interest
- The Caribbean is a complex microcosm where political, cultural and historical variables play a role in the development of the telecommunications sector.
- Telecom development is asymmetrical in the Caribbean. Operators may respond to pan-Caribbean, local or trans-national strategies.
- Cuba will reshape the Caribbean telecom dynamics.

