

# Wireless Technology Summit @ Futurecom 2014



**Mobile Broadband Future  
to LTE-Advanced and  
Beyond**

***Jose Otero***

**Director, Latin America & Caribbean**

***Vicki Livingston***

**Head of Communications & Analyst Relations**



# 4G AMERICAS' MISSION

4G Americas will advocate for and foster the advancement and full capabilities of 3GPP mobile broadband technologies, including LTE-Advanced, throughout the ecosystem's networks, services, applications and wirelessly connected devices in the Americas.



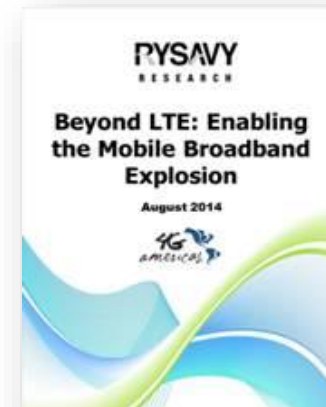
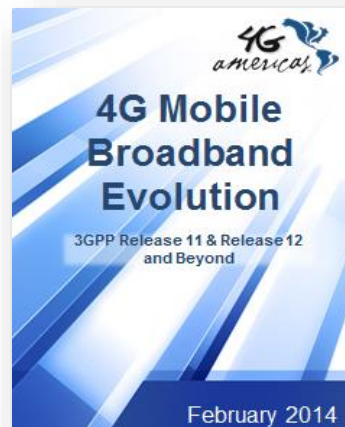
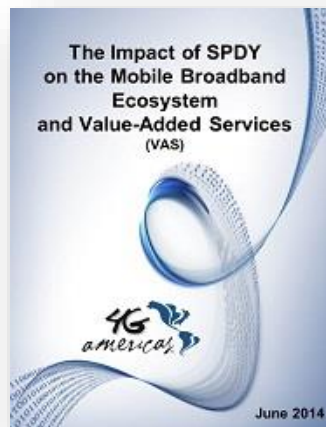
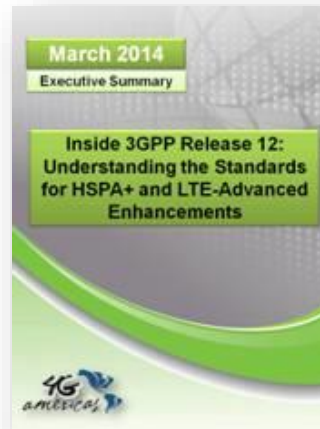
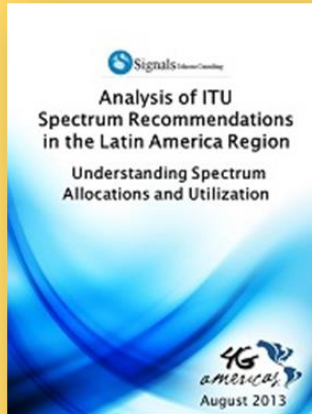
[www.4gamericas.org](http://www.4gamericas.org)

# 4G AMERICAS BOARD OF GOVERNORS



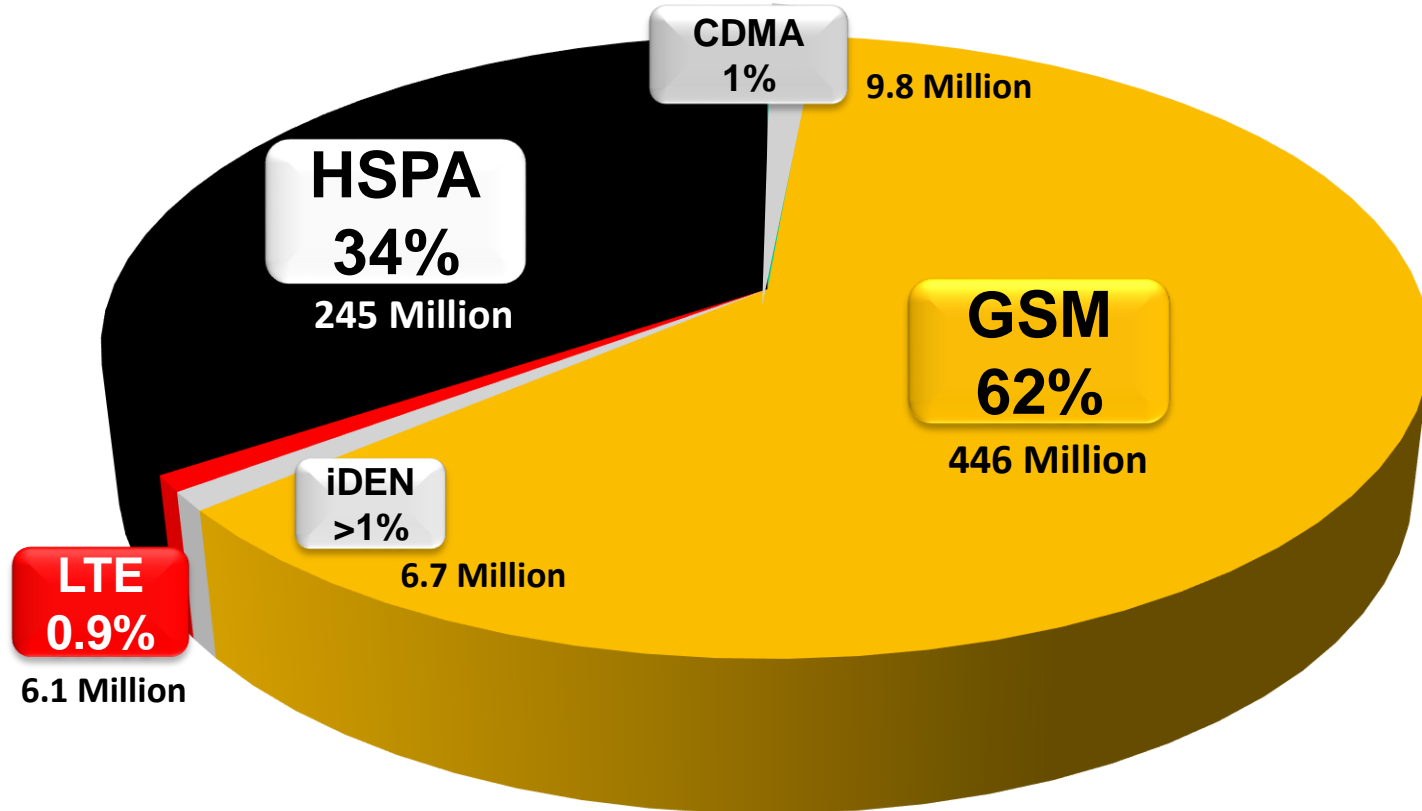


# 2014 4G AMERICAS WHITE PAPERS



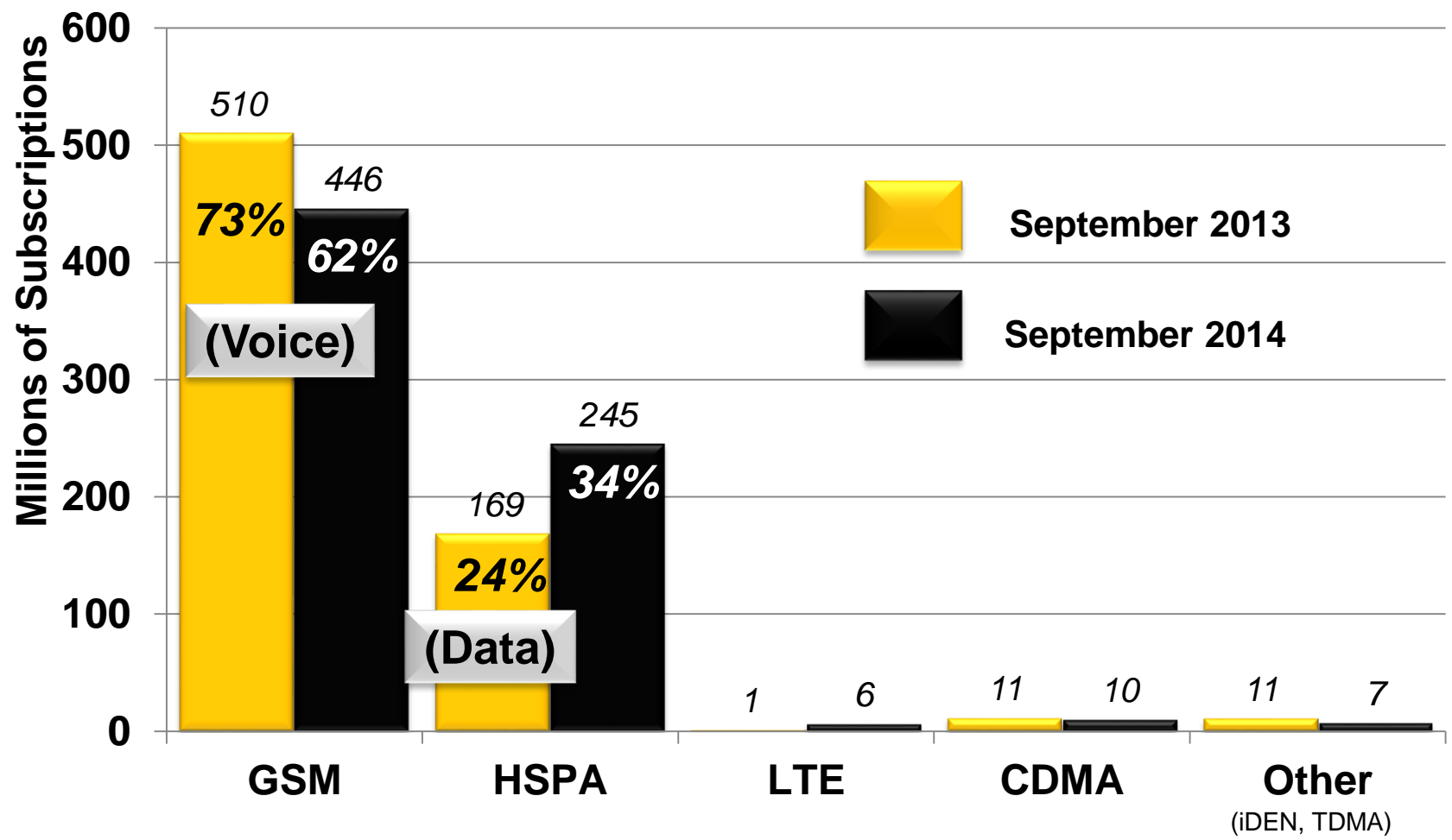
# LATIN AMERICA & CARIBBEAN MOBILE TECHNOLOGY MARKET

714 Million Total Mobile Connections

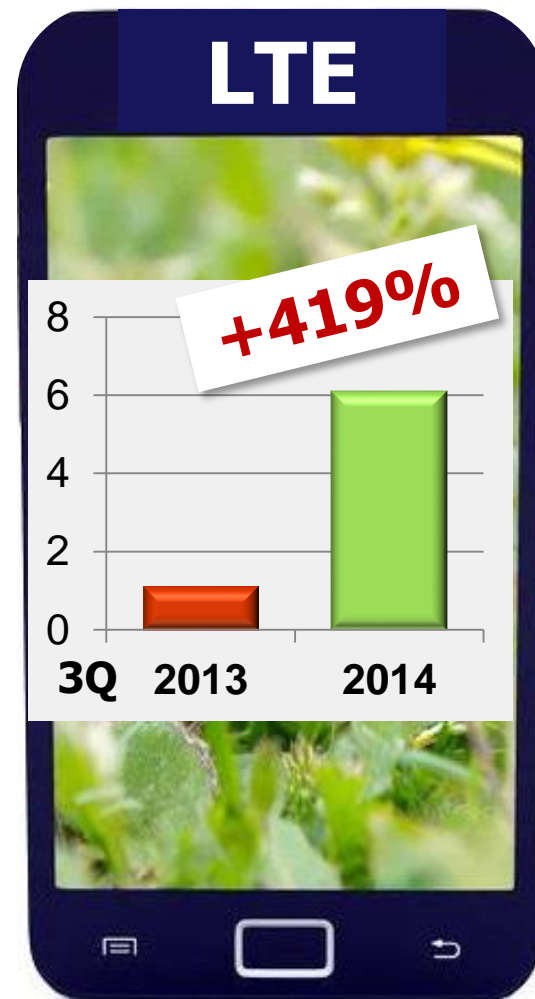




# CHANGE IN TECHNOLOGY MARKET SHARES IN LATIN AMERICA & CARIBBEAN

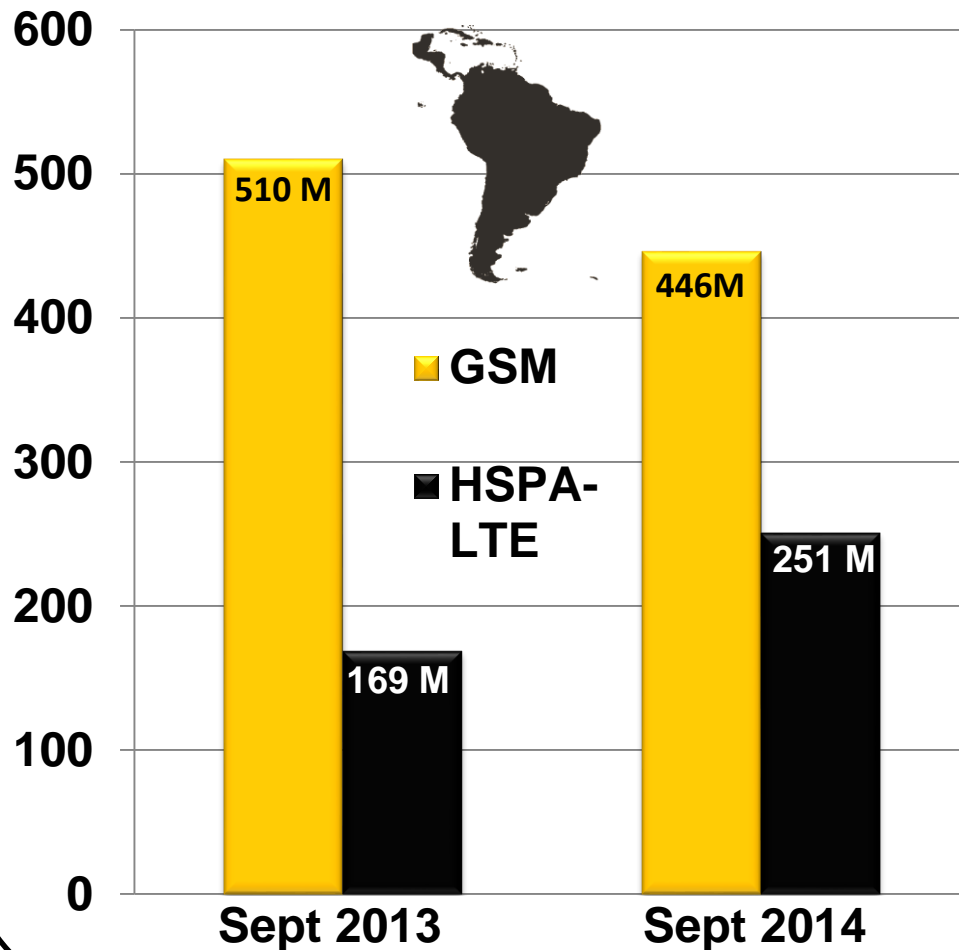


# 3GPP ANNUAL GROWTH IN LATIN AMERICA & CARIBBEAN





# 3GPP SUBSCRIBER TRENDS IN LATIN AMERICA



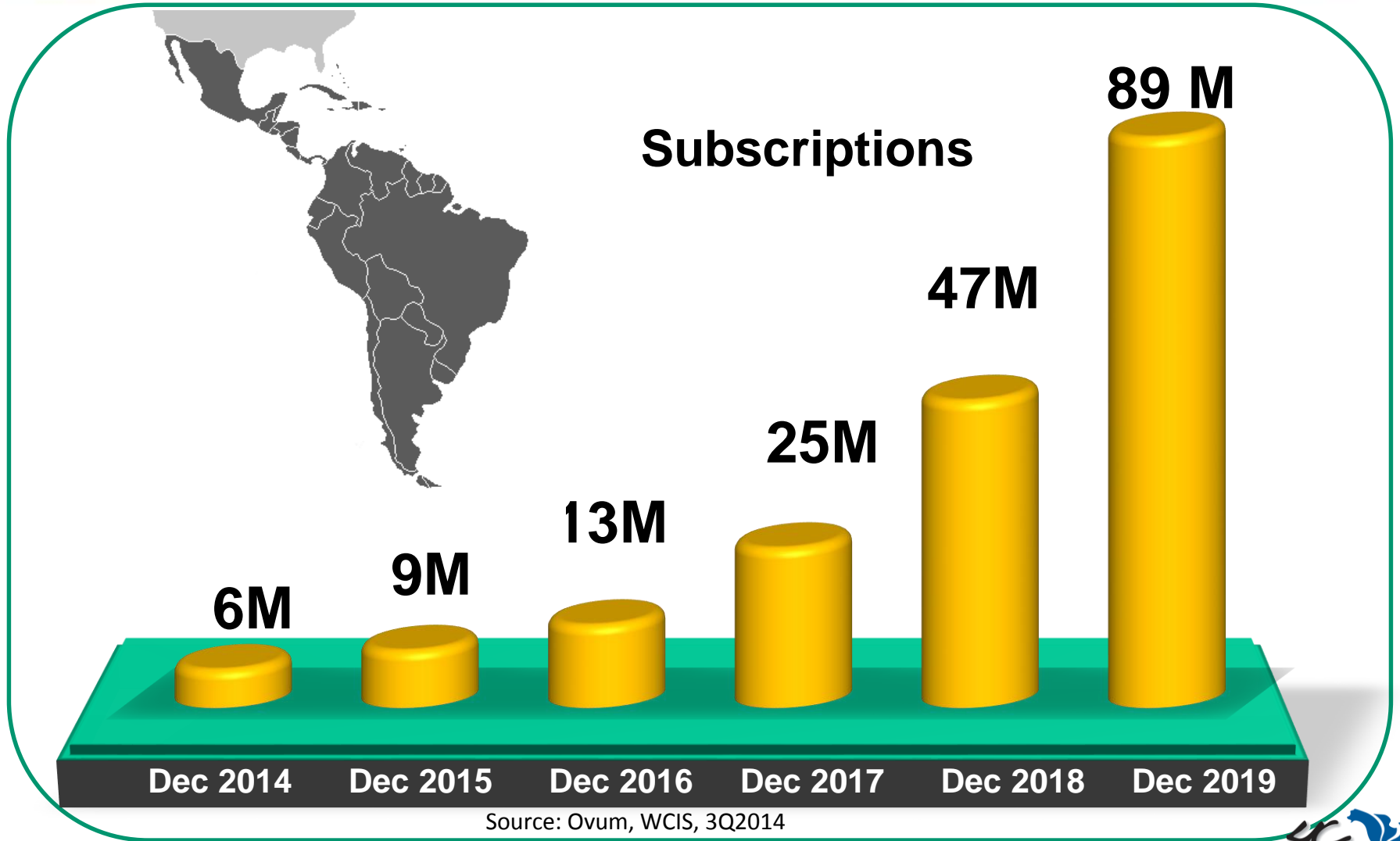
**Total 3GPP 3Q 2014**  
Subscriptions = 692 M  
Total YoY Growth = 13M

**HSPA  
& LTE**  
82M new subscriptions  
(48% annual increase)

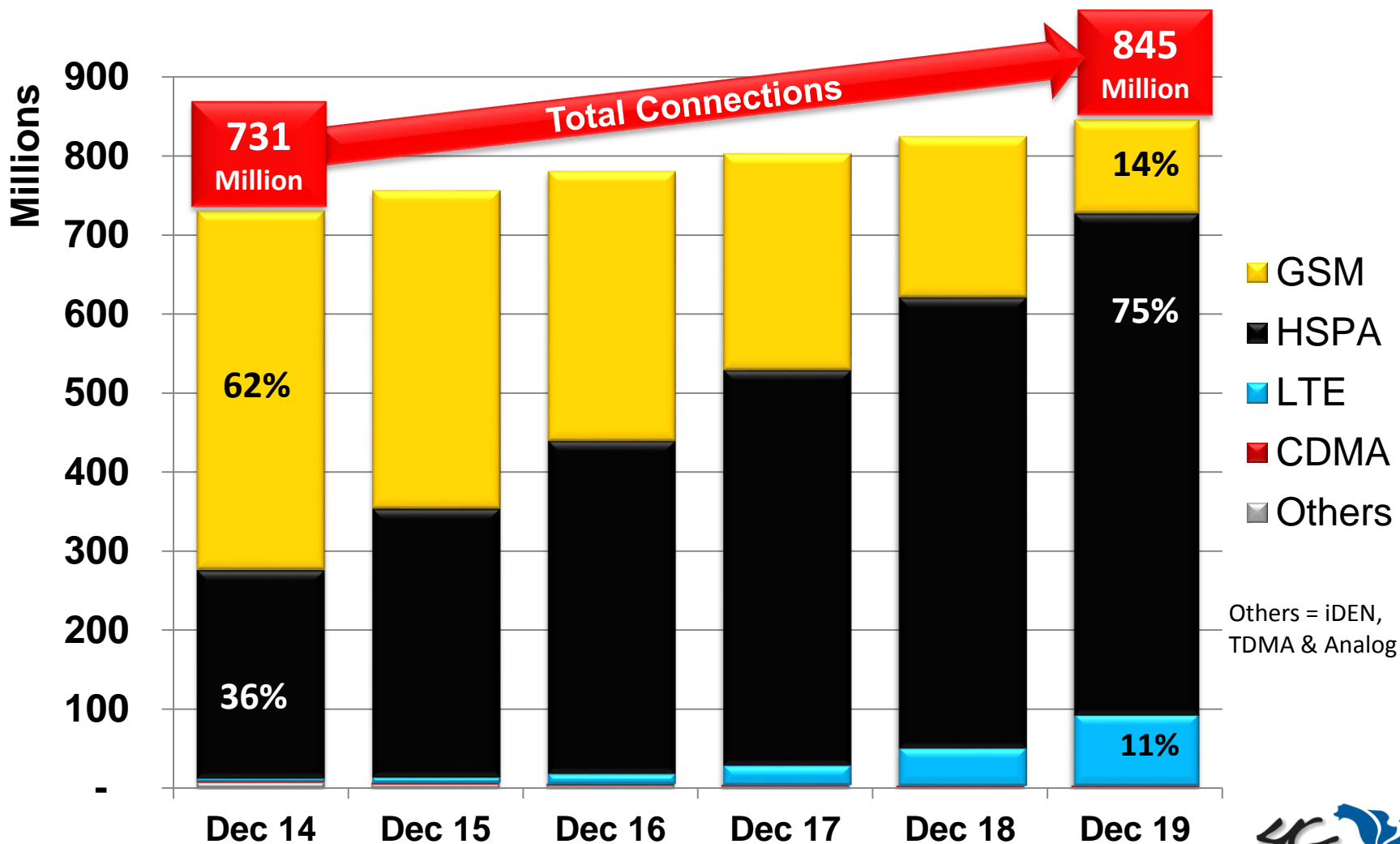




# FORECASTED LTE SUBSCRIBER GROWTH IN LATIN AMERICA



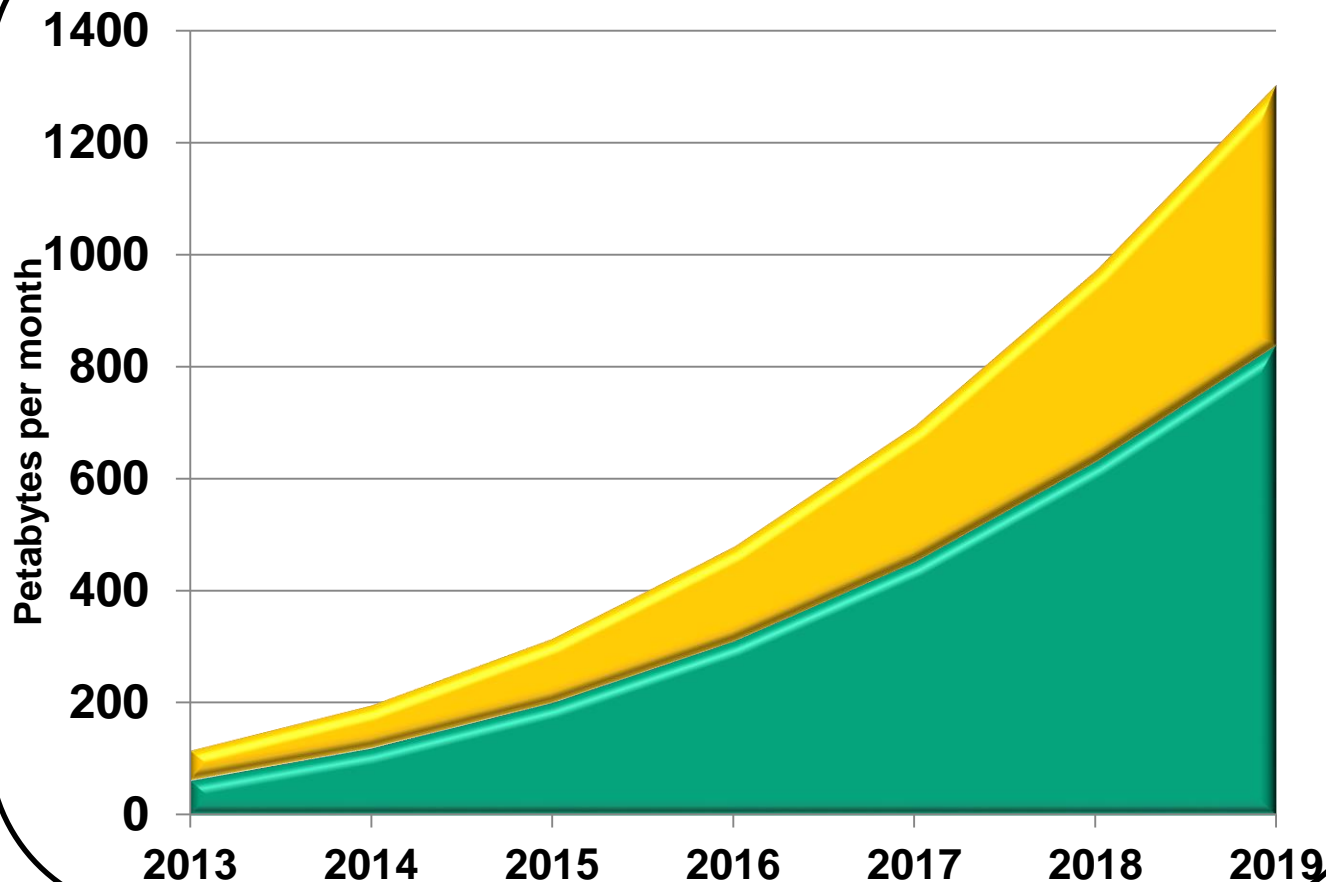
# LATIN AMERICA & CARIBBEAN MOBILE TECHNOLOGY FORECAST 2014-2019



# 9X INCREASE IN MOBILE DATA USAGE IN LATIN AMERICA 2013-2019

## Mobile Data Growth by Device Type

Smartphone    Mobile PC/Router/Tablet



From **53 PB** to **463 PB** monthly, the majority from smartphones



# FROM 2020 MOBILE NETWORKS NEED TO BE READY TO COPE WITH THE 1000X DATA CHALLENGE

## ASSUMPTIONS

Traffic volume per subscriber

+50% per year

+25% per year

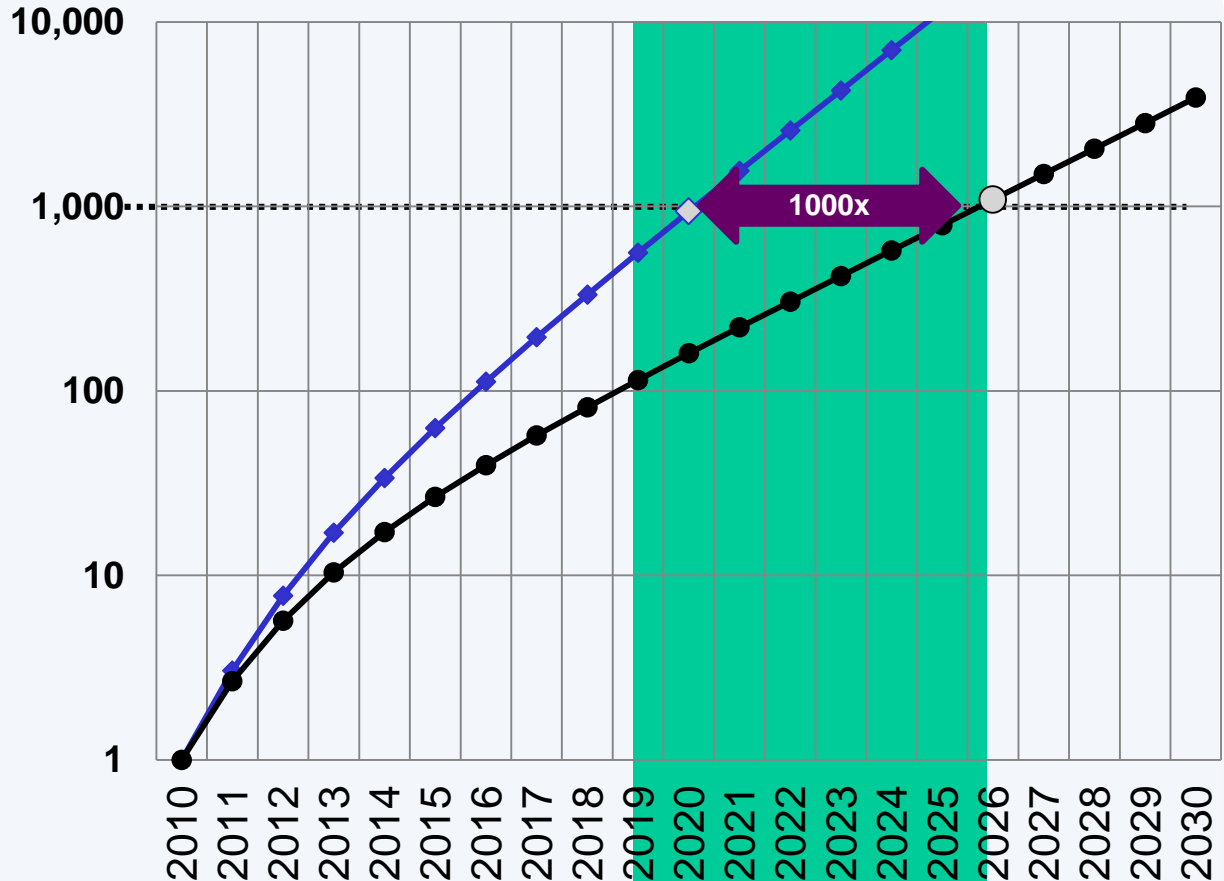
Total subscriber base

+10% per year

Mobile broadband penetration

reaching 100% by 2020

Realistic traffic increase modeling (M2M/IoT traffic not considered)





# INCREASING SUPPORT & CAPACITY UP TO

# 1000x

Technology  
Evolution

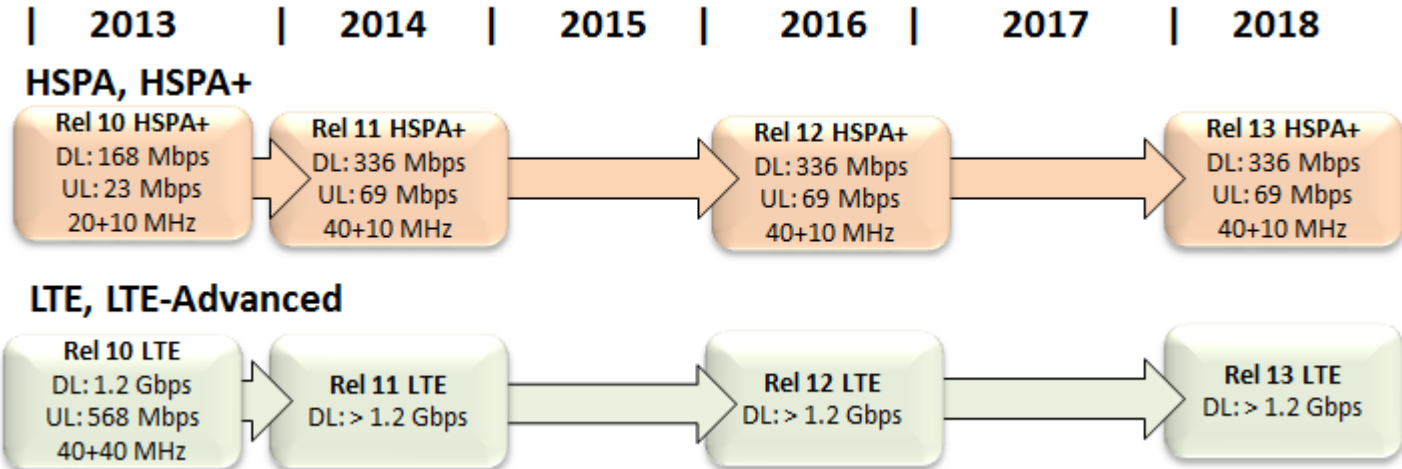
Regulatory  
Innovation

Spectrum

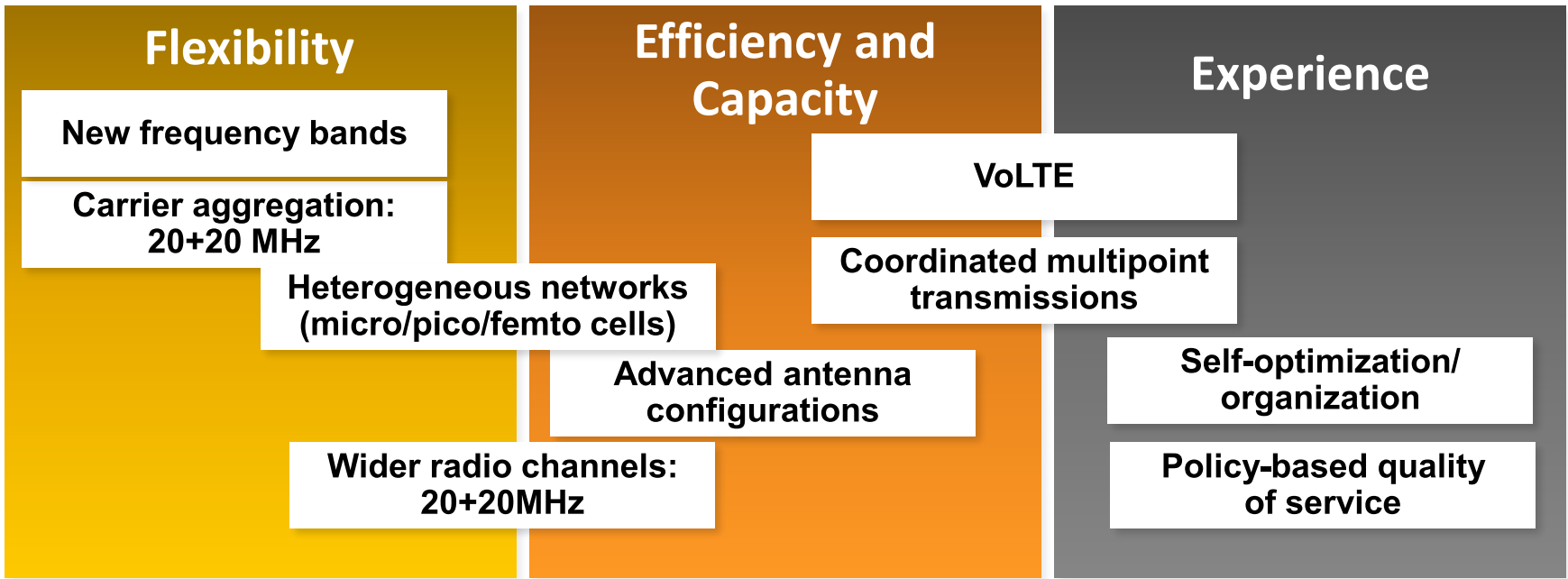




# TECHNOLOGY EVOLUTION TO LTE-ADVANCED



Throughputs rates are peak theoretical network rates for that technology release.







# REGULATORY INNOVATION

- **The economic impact of wireless** in the region is tremendous and operators are one of the largest investors
- **Cooperation** among operators and regulators is essential to the future of wireless in the region
- Regulations that **foster the growth of mobile broadband** in the region are vital to closing the Digital Divide
- Mobile Broadband is vital to **enhancing the connected society** in Latin America
- **Less regulation or light regulation** is sometimes better than more regulation
- Policies that support societies' needs in **education and health** are essential



# Spectrum



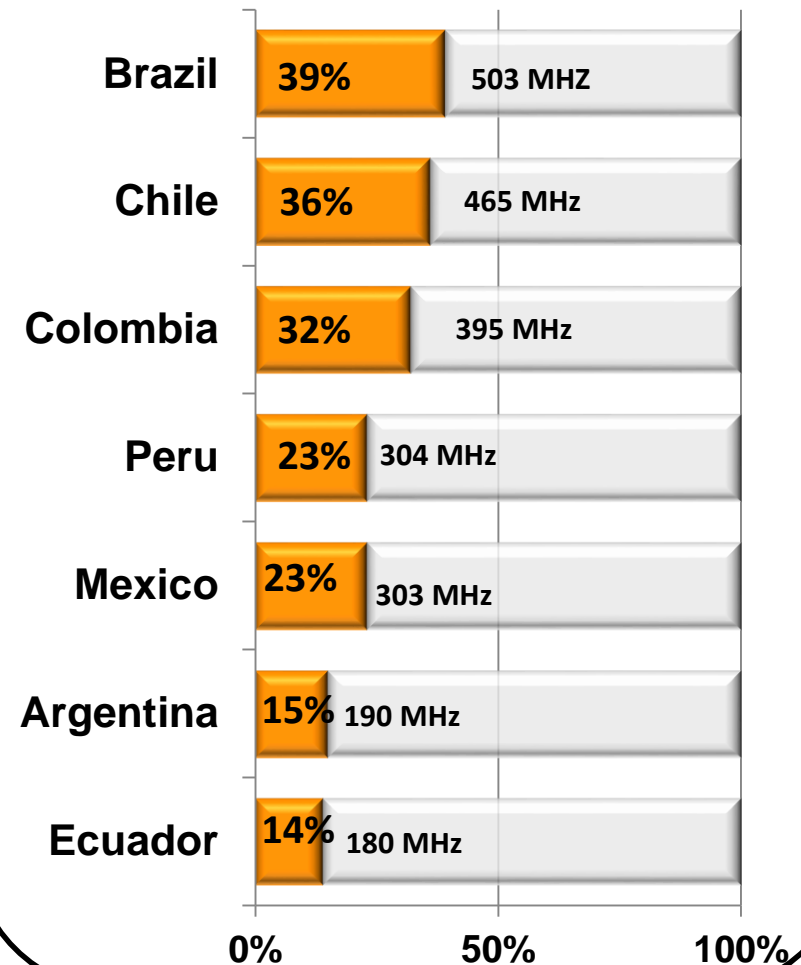
# LATIN AMERICA SPECTRUM STATUS

- **Reference point** - requirement for 1300 MHz by 2015 indicated by the ITU (ITU-R M.2078)
- **Summary of Regional Situation:** 3 markets are between 30%-40% of this goal, 6 are between 20%-30%, and the remainder are between 10%-20%.
- **Source:** 4G Americas, *Analysis of ITU Spectrum Recommendations in the Latin American Region (2013)*.



Percent of ITU recommendation achieved, selected countries

1300MHz





# LTE IN CENTRAL AND SOUTH AMERICA



## México

Movistar	1700/2100 AWS
Telcel	1700/2100 AWS



## Colombia

Avantel	2100 MHz
Claro	2500/2690 MHz
Movistar	1700/2100 AWS



## Bolivia

Tigo/UNE	1700/2100 AWS 2500/2690 MHz
Entel	700 MHz
Tigo	700 MHz



## Brazil

Claro	2500/2690 MHz
Nextel	1800 MHz
Oi	2500/2690 MHz
ON*	2500/2690 MHz
Sky Telecom*	2500/2690 MHz
TIM	2500/2690 MHz
VIVO	2500/2690 MHz



## Chile

Claro	2500/2690 MHz
Entel	2500/2690 MHz
Movistar	2500/2690 MHz



## Costa Rica

ICE/Kolbi	2600 MHz
Claro	1800 MHz
Movistar	1800 MHz



## Ecuador

CNT Mobile	1700/2100 AWS
------------	---------------



## Paraguay

Personal	1900 MHz
VOX	1700/2100 AWS



## Peru

Movistar	1700/2100 AWS
Claro	1700/2100 AWS



## Uruguay

Antel	1700/2100 AWS
-------	---------------



## Venezuela

Movistar	1900 MHz
----------	----------

Digitel	1800 MHz
---------	----------



# LTE IN THE CARIBBEAN



**Antigua & Barbuda** Digicel 700 MHz



**Aruba** SETAR 1800 MHz



**Bahamas** BTC 700 MHz



**Cayman Islands** C&W Lime 700 MHz

Digicel 700 MHz



Claro 1700/2100

**Dominican Republic** Orange AWS

Dominicana 1800 MHz

Tricom 1900 MHz



**Puerto Rico**

AT&T 1700/2100 AWS

Claro 700 MHz

Open 700 MHz

Mobile

Sprint 850/1900 MHz

T-Mobile 1700/2100 AWS



**Virgin Islands**

AT&T 1700/2100 AWS

Sprint 1900 MHz



# LTE DEVICES PER BAND

## LTE FDD

Frequency	Band	Devices
1800 MHz	Band 3	769
2600 MHz	Band 7	740
2100 MHz	Band 1	544
800 MHz	Band 20	467
800/1800/2600	Tri-band	413
AWS	Band 4	405
700 MHz	Bands 12, 17	379
850 MHz	Band 5	345
900 MHz	Band 8	335
700 MHz	Band 13	308
1900 MHz	Band 2	220
1900 MHz	Band 25	107
APT700	Band 28	33



## LTE TDD

Frequency	Band	Devices
2300 MHz	Band 40	361
2600 MHz	Band 38	360
1900 MHz	Band 39	203
2600 MHz	Band 41	183
3500 MHz	Band 42,43	24







# SPECTRUM AND OTHER CONSIDERATIONS FOR LATIN AMERICA IN 2014

- **700 MHz in Latin America**
  - Auctions: Chile (Complete); Colombia (2015); Brazil & Argentina (4Q 2014)
  - Mexico: novel wholesale network planned
- Preparations within CITEEL for **WRC 2015**
- Other topics
  - Spectrum liberation
  - Secondary spectrum markets
  - 2G license renewals
  - Quality of service regulation



© **THANK YOU! QUESTIONS?**



***Vicki Livingston***

Head of Communications

***Jose Otero***

Director, Latin America & Caribbean

---

[www.4gamericas.org](http://www.4gamericas.org)