



3GPP Mobile Broadband in a Connected World

Chris Pearson President, 4G Americas

June 2011

www.4gamericas.org

Chris.Pearson@4gamericas.org

4G Americas Board of Governors

4G Americas will promote, facilitate and advocate for the deployment and adoption of the 3GPP family of mobile broadband technologies throughout the ecosystem – including networks, services, applications and wirelessly connected devices – in the Americas.



Liaison with Global Organizations

Association of Telecommunications Providers of the Andean Region

Inter-American
Telecommunication
Commission



Colombian
Telecommunications
Research Center

GSM
Association



International
Telecommunication Union



Next Generation
Mobile Networks
Alliance

3rd Generation
Partnership Project

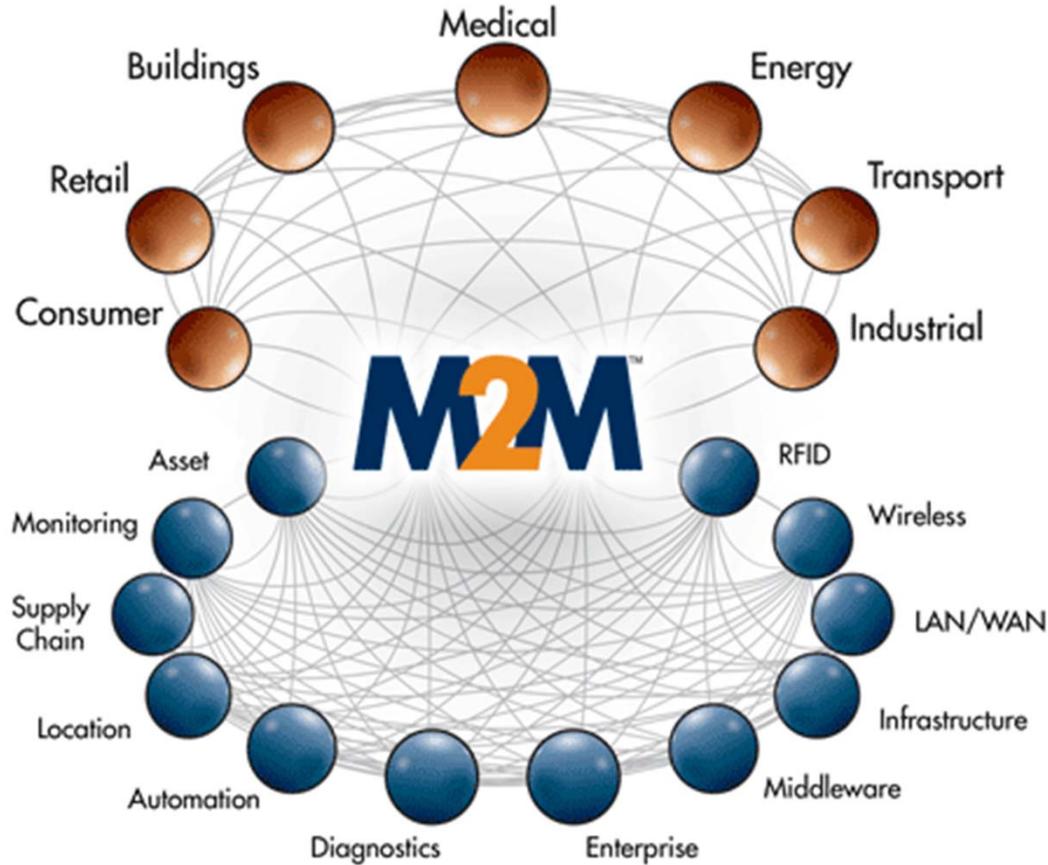


Chamber of Business
Telecommunications
Services



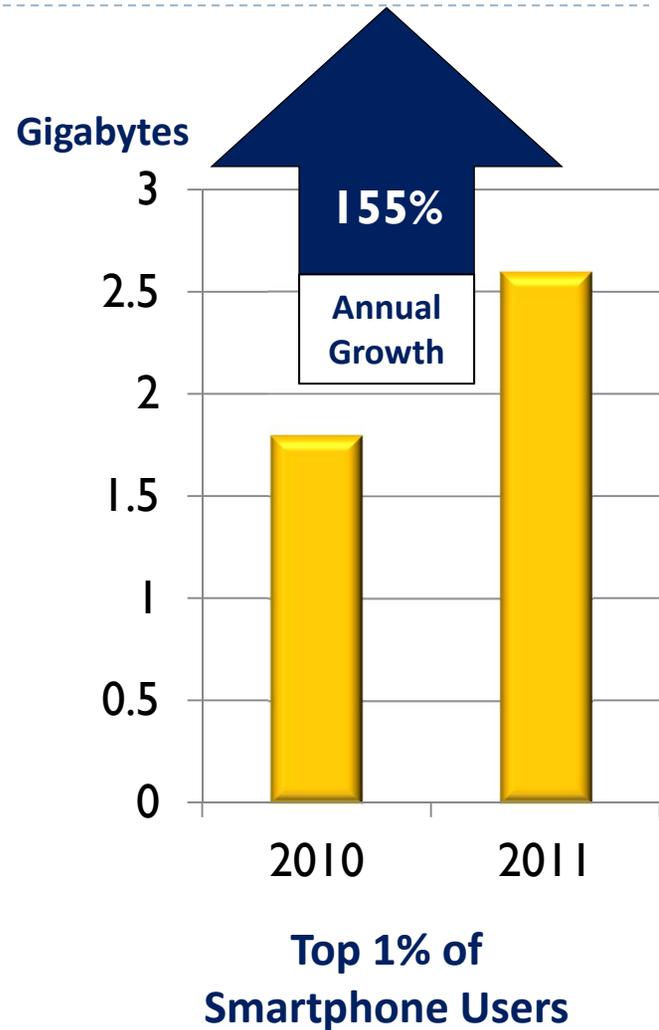
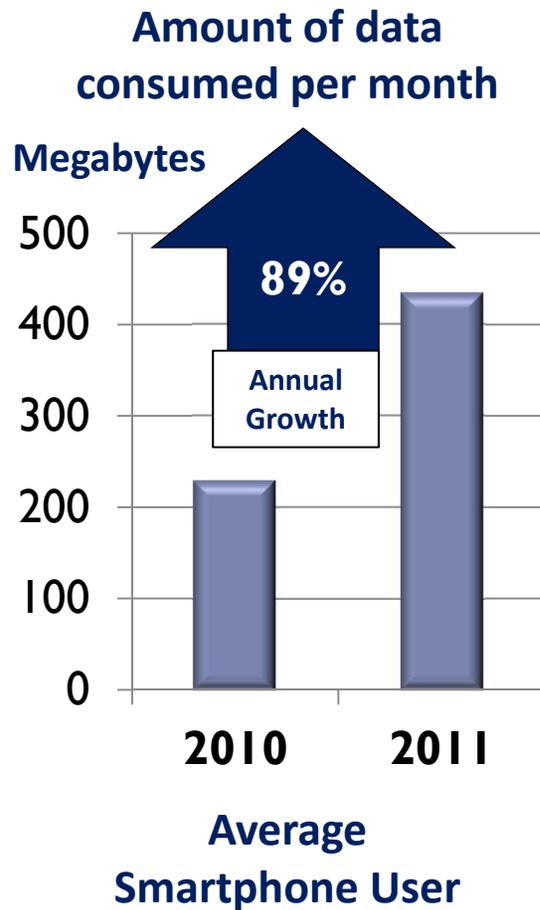
Ibero-American Association of
Research Centers and
Telecommunication Enterprises

Connectivity Explosion



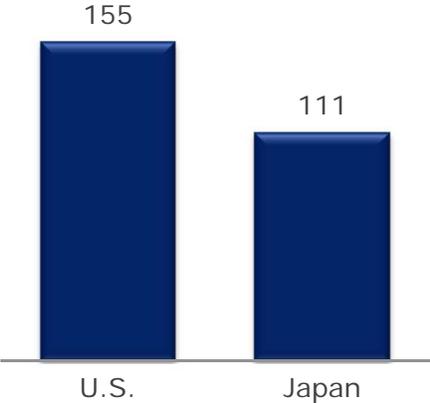
Smartphone Data Usage

1st Quarter Comparisons 2010-2011



The U.S. leads the World in Mobile Broadband

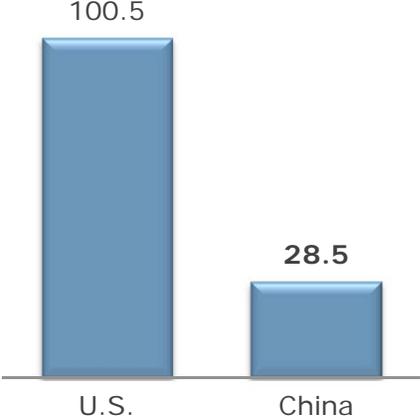
Mobile BB Subs
2010E (millions)



Source: OVUM, Mobile Technology Forecast, June 2010

The U.S. leads the world in mobile broadband subscribers

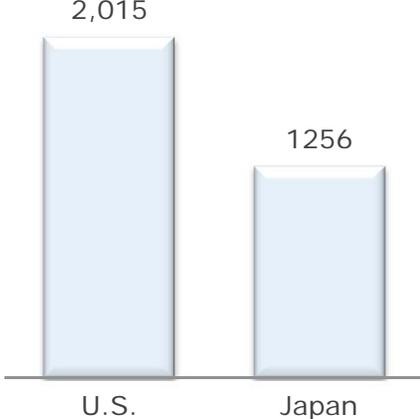
Smartphone Sales
2011E (millions of units)



Source: Strategy Analytics, Global Smartphone Sales Forecast by Country, Jan 2011

The U.S. leads the world in smartphone sales

Application Downloads
2010 (in millions)



Strategy Analytics, Feb 2011

The U.S. leads the world in application downloads

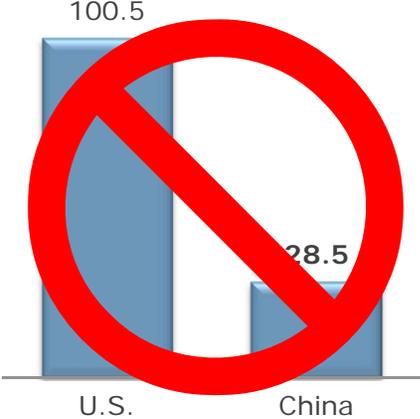
The U.S. leads the World in Mobile Broadband

Mobile BB Subs
2010E (millions)



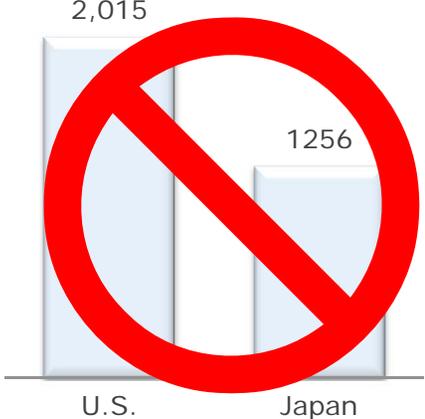
Source OVUM, Mobile Technology Forecast, June 2010

Smartphone Sales
2011E (millions of units)



Source: Strategy Analytics, Global Smartphone Sales Forecast by Country, Jan 2011

Application Downloads
2010 (in millions)

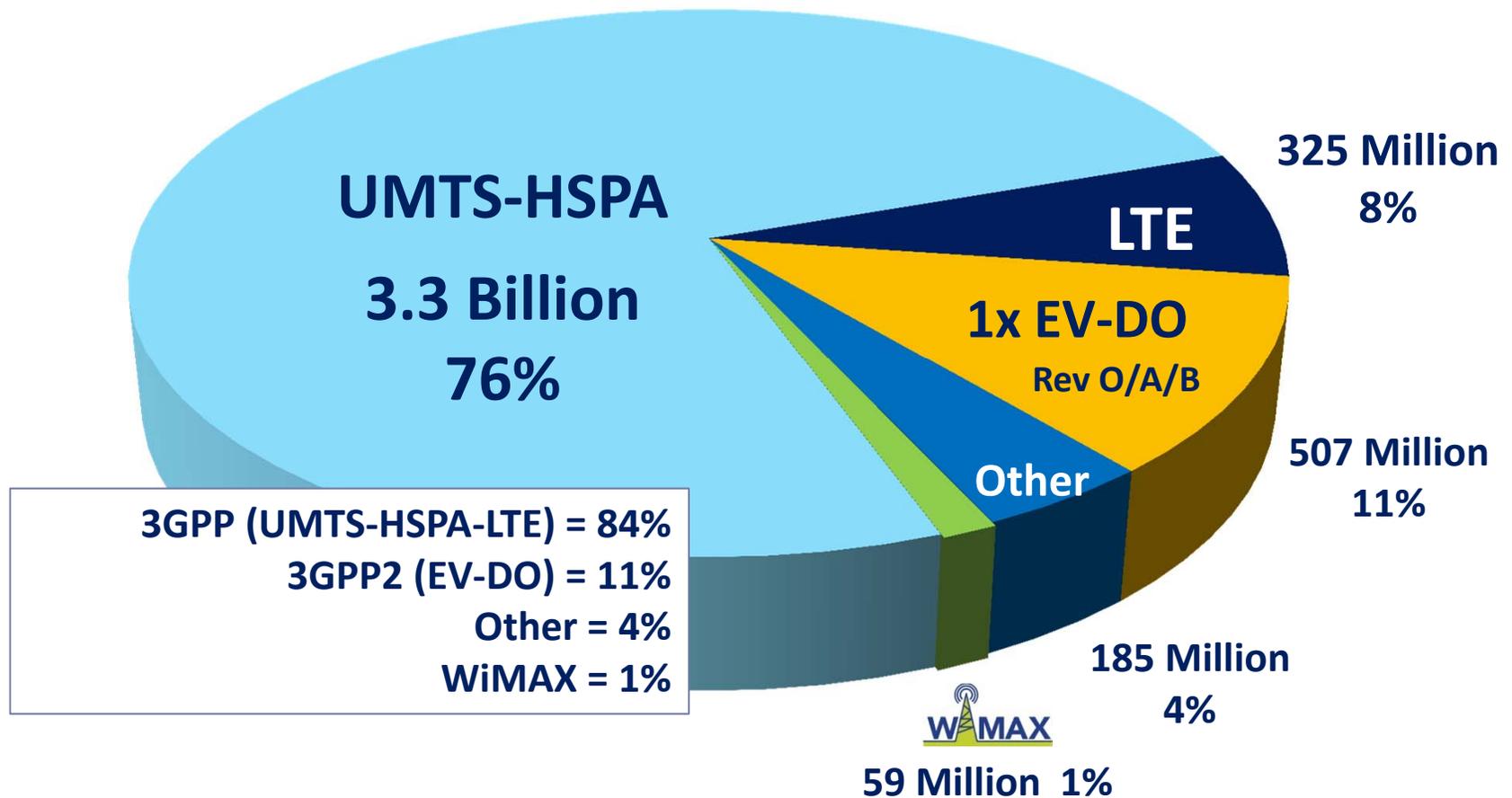


Strategy Analytics, Feb 2011

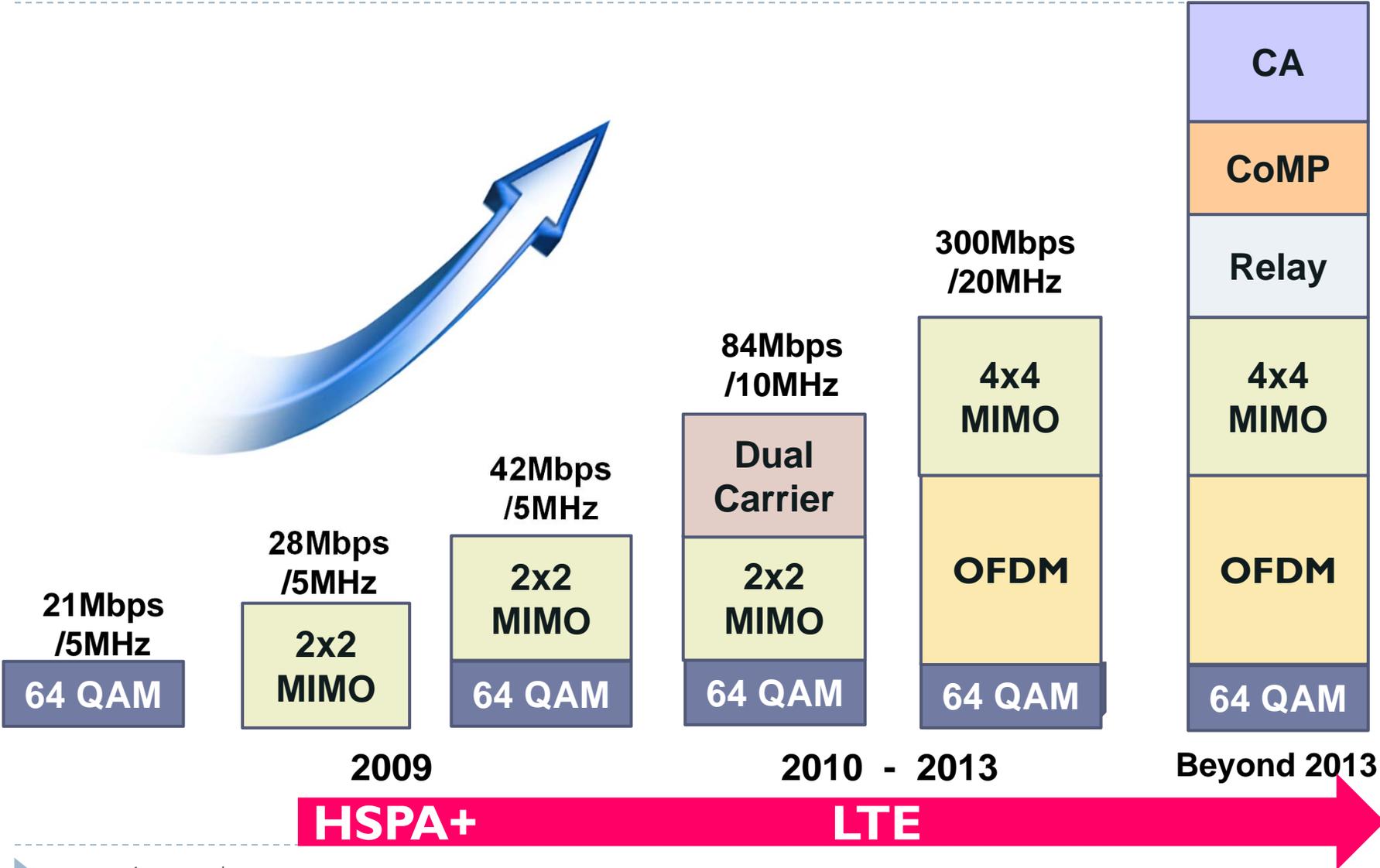
The US could go from leader to laggard in 5 years without new spectrum!

Mobile Broadband 2015

4.3 Billion Mobile Broadband Subscriptions in 2015



3GPP Technology Evolution



HSPA+ Today

141 Networks in Service in 73 countries*

Commercial HSPA+ Deployments



Commercial HSPA+ deployments

Source: World Cellular Data Metrics

- **100 networks at HSPA+ (21Mbps)**
- **12 networks at HSPA+ (28Mbps)**
- **29 networks at HSPA+ (42Mbps)**

- The HSPA+ ecosystem builds on the successful foundation of HSPA
 - ✓ 408 UMTS-HSPA Networks in 156 countries
 - ✓ 2000 UMT-HSPA Devices from 170 vendors
- HSPA+ upgrades provide efficient speed enhancements
- Future networks could theoretically evolve speeds up to 168 Mbps and beyond
- More than 25 companies have introduced over 140 HSPA+ and LTE-enabled mobile broadband devices from handsets, dongles, routers to embedded modules

LTE By the Numbers

- 22 commercial networks worldwide in 16 countries
- Nearly 50 more commercial deployments expected in 2011
- 250 operators committed to date
- Over 50 LTE user devices available in the market today
 - ✓ Modems, PC cards, notebooks, tablets, routers, modules, handsets
 - ✓ Most devices are LTE and HSPA or HSPA+



*Source: iSuppli, February 2011



Toolkit for congestion issues

Heterogeneous networks

- Overlaid coverage from macro, metro cells, picos and femtos
- Sophisticated interference management techniques
- WiFi offload

Optimizing Signaling Traffic Usage

- Several applications and services (Email, Instant Messaging, Social Media Messaging, Presence etc.) have small payload but frequent data transfer. These always-on applications may also rely on keep-alive messages. While data traffic is growing, signaling traffic is outpacing the actual mobile data traffic.
- Increased signaling traffic due to growing demand for always-on mobile applications has resulted in increased instances of network congestion.

Deployment of Service Layer Optimization Solutions Incorporates Awareness of:

- Device capabilities such as screen size and resolution,
- User characteristics such as billing rates and user location,
- Network capabilities such as historic and instantaneous performance and
- Application characteristics such as the use of specific video codecs and protocols by an application such as Video-on-Demand to ensure better management of network resources.

Key Tool Required: Additional Harmonized Spectrum

Summary from 4G Americas whitepaper titled “Sustaining the Mobile Miracle: A 4G Americas Blueprint for Securing Mobile Broadband Spectrum in this Decade”:

1. Demand is likely to outstrip supply in short order if business as usual.
2. There is no single panacea to addressing this gap.
3. Supplemental spectrum allocations are critical.
4. Well Considered Spectrum Allocation Policies are Imperative
 - Configure Licenses with Wider Bandwidths
 - Group Like Services Together
 - Be Mindful of Global Standards
 - Pursue Harmonized/Contiguous Spectrum Allocations
 - Exhaust Exclusive Use Options Before Pursuing Shared Use
 - Align Allocation with Demand
5. Market oriented spectrum assignment approaches work – spectrum caps should be disfavored.

The Best Tool for Greater Value: Internationally Harmonized Spectrum

- Pairing 1755-1780 MHz with 2155-2170 MHz - AWS-3 Extended - will raise more for deficit reduction.
- Duplex spacing in 1755- 1780 similar to AWS-3, so lower costs for developing compatible devices.
- AWS-3 Extended is internationally harmonized – Band 10 in 3GPP
- Internationally harmonized spectrum benefits more parties in the ecosystem – network equipment and devices lower cost for carriers; larger addressable market for vendors; lower cost for consumers.
- Other regulators in the Americas follow U.S. auctions.
- Auction proceeds of harmonized spectrum expected to be 13%+ greater – Coleman Bazelon, The Brattle Group (April 11, 2011).
- Incentive auctions would allow for U.S. international leadership and be ideal for LTE because would provide new spectrum for mobile operators.

Thank you!



Chris Pearson
President
4G Americas

Chris.pearson@4gamericas.org
www.4gamericas.org