



NETWORK UPDATE

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Verizon is Killing Off 3G

- Since [Apple introduced the 4G-capable iPhone 5](#) in 2012, 4G adoption has exploded and 3G has fizzled.
- Meanwhile, wireless carriers have been forced to simultaneously maintain three networks -- 2G, 3G and 4G. It's expensive and incredibly inefficient. 4G networks are able to cram significantly more data into their wireless spectrum than 3G and especially 2G. Earlier network technologies occupy a lot of valuable spectrum that carriers would like to shift to 4G.
- That's exactly what they intend to do, industry analysts say. Gartner's Ken Dulaney predicted that 3G will be gone by 2018.

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LTE Utilization

- LTE is already more than 5 times our MB utilization as that of EVDO
- How to relieve the MB pressure?
 - Add LTE capacity another eNB
 - Use small cells
 - Install DAS
- LTE advance – Carrier aggregation

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Trends Driving Technology Evolution

- High traffic growth especially in video/multimedia
- Expectation of ubiquitous broadband access
 - Users expect and need wireless broadband everywhere
- Expectation of very high throughput (Gbps), low latency access
 - Critically in dense traffic areas: enterprise, transportation centers, etc.
- Emerging opportunity for “Internet of Things”

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The Basics of XLTE

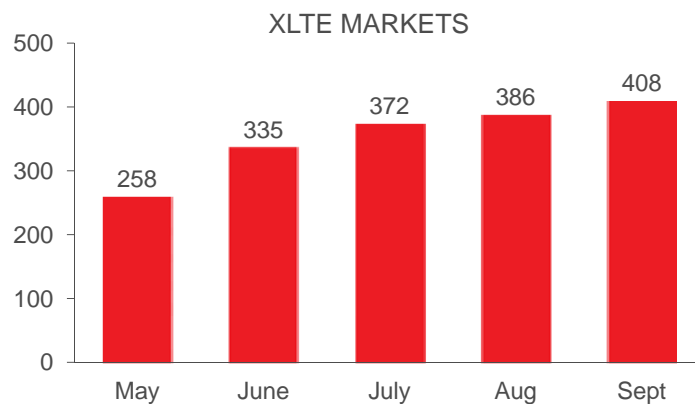
20x20 MHz AWS LTE Spectrum



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2014 XLTE Deployment



Triple The Capacity In Most Major Markets

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Advanced Calling 1.0 (VoLTE)

- National Deployment
 - Includes Alaska
- AMR-WB vocoder (HD Voice)
 - VoLTE to VoLTE calls
- Video Calling
- Integrated Features
- N-way Calling
- iPhone 6 and 6+ Simultaneous Voice and Data



Platform To Enable Functionality

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What's Next?

- Densification
 - Small Cells/Distributed Antenna Sys
 - In-building Systems
 - Improved LTE Performance
- CDMAless
- Multicast
- WiFi Calling
- LTE Advanced
- Not 5G



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