5G Update

Dr. Arda Aksu Verizon Fellow, Network Technology and Strategy

2017 Silicon Valley 5G Summit 19 October 2017



Verizon 5G Fixed Wireless Activity

2105 – Lab Work

Early testing of basic features and capabilities

2016 - Field Technical Trials

Structured and systematic testing

2017 - Pre-Commercial Pilots

Multivendor environment

Full system testing (5GTF RAN + Core)

2018 – Limited Commercial Launch



Key Learnings and Challenges @ 28 GHz

Capacity

Multi Gbps throughputs

Latency in low milliseconds

MU-MIMO

Coverage

Beam management is crucial

Sensitivity to environment

Variability in foliage and building penetration losses can cause large deviations

Rich scattering multipath in indoor environment can be beneficial

Deployment

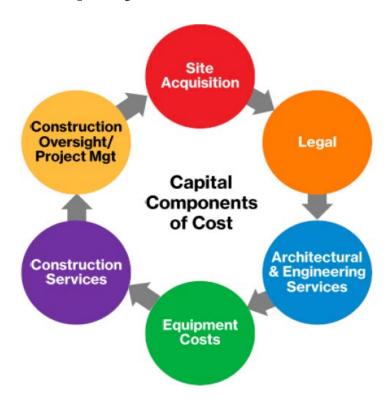
Complex RF planning and modeling; highly cluster dependent

Inverse relationship between reach and household penetration/coverage

End user devices may require outdoor antenna installation in some cases

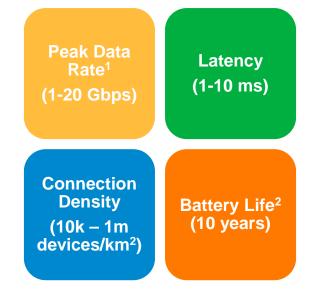


Non-Technical Deployment Considerations





Key Expectations of 5G



¹Peak data rate is spectrum dependent ²For low power IoT devices in ~ 1 GHz band

Additional 5G enhancements:

Network density
Area traffic capacity
Network reliability/availability
Position accuracy
Security
Energy efficiency



Thank you.

