5G and Beyond: 5 Considerations for Next-Gen Wireless Networks
5 Considerations for Next-Gen Wireless Networks:

1. User behavior driving demand
2. 5G Drivers
3. Near-term 5G technologies
4. Infrastructure options to support 5G
5. Other considerations and technologies
User Behavior Driving The Demand
Wireless User Behavior
Driving Demand

HOW OFTEN?
How the Smartphone Replaced Radioshack

There's an app for that
5G Drivers
FCC Plan for 5G

5G FAST Plan:

- Innovation in 6 GHz
- mmWave bands
- Expand 3.5 GHz for 5G
- Promote deployment of more fiber for smaller, rural carriers
- “C” band
Near-Term 5G Technologies
- 5G NR (new radios)
- D-RAN
- Beamforming

**Diverse Spectrum**
- Operates in licensed and shared licensed & unlicensed spectrum
- Wide frequency range (Sub-6 GHz and above 6 GHz)
- Supports FDD, TDD, and Half Duplex technologies
- Flexible network topologies

**Diverse Service & Devices**
- Multi-6 pbs to 10s of bits per second
- Provides optimal multiplexing for low latency and nominal traffic
- Efficient support for high user traffic, as well as low user traffic
- Ideal for enterprises as well as residential deployments

**Diverse Deployments**
Infrastructure Options to Support 5G
• Usability of current coaxial and fiber DAS architectures
• Cat-5E and Cat-6 not sufficient: Cat-6A is minimum
• 4x4 MIMO
• Fiber to the “X”
• The fiber backhaul challenge
Other Considerations & Technologies
CBRS-opening up 150 MHz of spectrum

- Incumbent users
- PAL (Priority Access License)
- GAA (General Authorized Access)
• LTE-based technology solely in unlicensed spectrum

• Targets small-cells in unlicensed spectrum bands such as the global 5GHz band

• Harmoniously coexists with Wi-Fi and LTE U/LAA
V-RAN (virtual RAN)

Centralized Ran (C-RAN)
Backhaul
Baseband Units
Fronthaul
RRH

C-RAN with network functions virtualization (NFV)
Backhaul
Fronthaul
RRH

Core functions may be colocated with cloud RAN
Takeaways
Summary

- Demand for wireless use and connectivity driving technology
- Near-term 5G and related technologies impacting infrastructure to support
- More coverage. More throughput. More fiber! (wireless does not mean cable-less)
- New technologies will open up markets for smaller (under 500,000 SF) building coverage solutions
Thank you

Questions?

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