

# Spectrum: Lifblood of the Wireless Industry



With more wireless devices than people, **America is a mobile nation that increasingly uses advanced wireless devices** such as smartphones, tablets, laptops, and other wireless tools to improve life and increase efficiency and productivity.

**Mobile data continues to skyrocket.** In 2017, Americans used a record 15.7 trillion megabytes (MBs) of mobile data — nearly quadrupling since 2014 and 40 times the volume of 2010 traffic.<sup>1</sup> That equals nearly 250 million people simultaneously binge-watching every episode of Game of Thrones in HD.

**Wireless connectivity is evolving with 5G on the horizon.** Data-only devices — like connected cars, IoT devices, and wearables — rose to 126.4 million in 2017, up nearly 20% year-over-year and 147% in the past five years.<sup>2</sup>

**Creating a platform that connects the country.** With more than 400 million mobile devices in service, that means there are 1.2 wireless devices for every person in the U.S. In addition to 15.7 trillion MBs of mobile data, America's wireless networks carried more than 2.2 trillion voice minutes and 1.5 trillion text messages last year.<sup>3</sup>

## Wireless carriers must keep up with this demand:

- **By building** additional cell sites to add capacity and allow for the reuse of channels.
- **By investing** in new technologies which use spectrum more efficiently (such as the move from 3G to LTE and now to 5G).
- **By obtaining** additional spectrum.

## What does the industry look for in spectrum?

- **Propagation** – coverage and penetration. Lower frequencies provide for better propagation.
- **Capacity** – higher frequencies not only provide for greater capacity, but also enough bandwidth to provide for multiple competitors.
- **Contiguity** – adjacency to similar or complementary uses which will impact interference.
- **International harmonization** – bands allocated for certain services regionally or globally, increases economies of scale in equipment, minimizes cross-border interference, and makes roaming across countries easier.

No greenfield spectrum is currently available since there are incumbents in all existing frequencies. **Thus, in order to reallocate spectrum to another use, decisions must be made as to where an incumbent can relocate to or whether the spectrum can be shared.**

<sup>1</sup>[“New CTIA Annual Survey Shows Beginning of Evolution to Next-Generation,”](#) CTIA, July 10, 2018.

<sup>2</sup> Id.

<sup>3</sup> Id.