



Supporting the Mobile Network Evolution:

Macro Towers and the Foundation for 5G Deployment

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The Impact of 5G

5G, the fifth generation of wireless networks, promises a radical expansion of wireless functionality, further extending wireless service beyond mobile phones and weaving connectivity into the fabric of society.



5G will deliver faster connections, near-instant communication between devices and network applications, and new opportunities for machine connectivity, as well as drive fundamental changes in nearly every area of the economy, including healthcare, education, and agriculture.



Early deployments of commercial 5G will make meaningful near-term economic contributions. The global 5G value chain is expected to generate \$3.5 trillion in output and support 22 million jobs by 2035.*



5G will propel us toward realizing technologies that have been on the horizon for years, such as autonomous vehicles, smart factories, and virtual and augmented reality. These anticipated applications will facilitate much more than daily convenience, heralding profound advancements in transportation, manufacturing, energy efficiency, home security, and more.



Macro cell towers across the United States will anchor the deployment of 5G, providing the foundational infrastructure service providers need to usher in the wireless networks of the future.

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*The 5G Economy research study, by IHS Markit, Penn Schoen Berland, and Berkeley Research Group, commissioned by Qualcomm

American Tower and 5G

American Tower owns, operates, and develops wireless infrastructure to enable a connected world. Founded in 1995, American Tower is one of the largest global Real Estate Investment Trusts (REITs) with a portfolio of approximately 186,000 communications sites in 22 countries, including nearly 43,000 properties in the United States. Our multitenant leasing model allows us to play a critical role in satisfying today's tremendous network coverage and capacity needs. In addition to leasing space on towers, we provide customized solutions through our in-building systems, managed rooftops, and services that speed network deployment.

Spectrum

Spectrum comprises invisible airwaves that help transmit information wirelessly to enable connectivity for mobile devices, television and radio broadcasting, GPS, satellite communications, and more—every day, everywhere. As a result, almost all technological advances in wireless communications involve at least one of the following:

- New spectrum
- Improved efficiency of existing spectrum
- More transmission infrastructure, such as macro towers, small cells, rooftops, In-building Distributed Antenna Systems (IDAS), and Outdoor Distributed Antenna Systems (ODAS)

Infrastructure

Macro cell tower infrastructure will be the foundation for 5G wireless networks across most of the U.S. While some urban areas and large venues will require small cells infrastructure to support high concentrations of mobile users, towers and rooftops will continue to provide the coverage layer of service.

Enhanced equipment placed on existing macro towers will deliver 5G speeds, low latency, and more capacity, helping ease the often uneven distribution of access to communications technologies in rural and urban areas. In addition, 5G equipment will benefit from the inherent network resiliency of macro towers.

5G networks need all three for wide availability in the U.S.

American Tower

Typically constructed of galvanized steel with capacity for multiple tenants

Land owned or operated pursuant to long-term leases

On-site renewable energy generation on solar assist sites

Shared generators available on some sites

Tenant

Wireless antennas, radios, and other equipment

Coaxial cable

Shelters containing base station and HVAC equipment

