

# The Growing Importance of Macro Cell Towers: A Core Digital Infrastructure Sector

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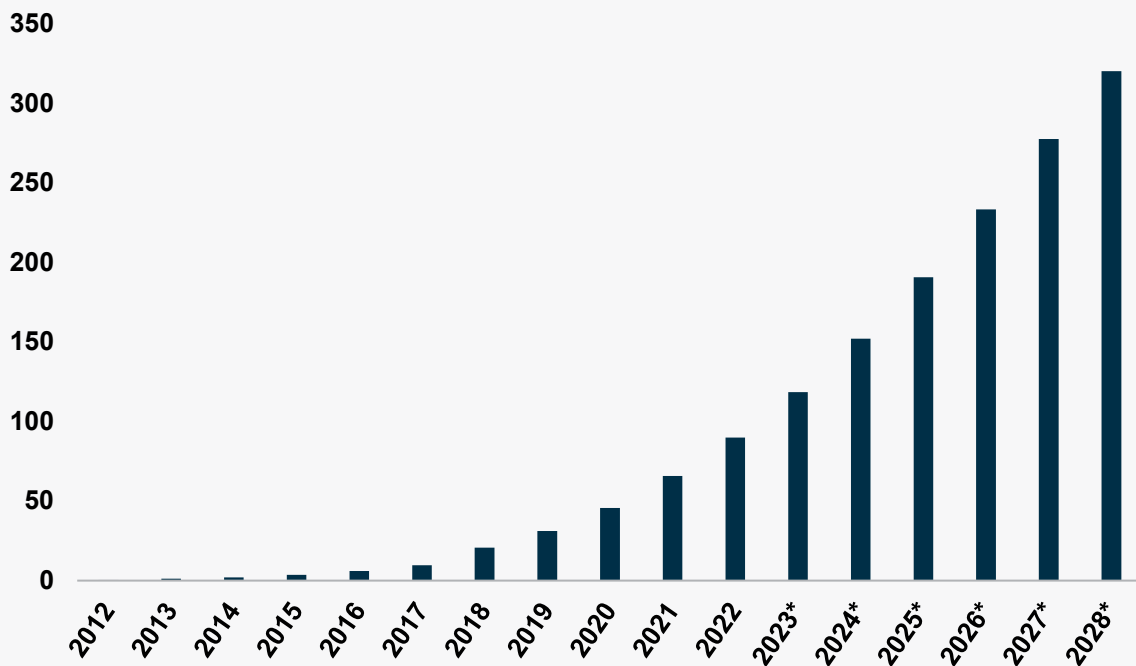


*Macro cell towers serve as the backbone of wireless communication, playing a crucial role in supporting the digital world. With the rapid expansion of 5G technology and the increasing prevalence of the Internet of Things (“IoT”), the demand for these towers is projected to rise significantly. As a result, their importance within the digital infrastructure ecosystem continues to grow. As illustrated in Figure 1, the volume of data transmitted by smartphones is expected to increase steadily in the coming years.*

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## What are Macro Cell Towers?

Macro cell towers are large vertical structures that lease space to businesses—most commonly mobile network operators (“MNOs”)—for wireless communication equipment. Unlike small cell towers, which enhance network coverage in densely populated areas, macro towers transmit data over large distances. The most common tower types are monopoles (i.e., a single vertical pole) and lattice structures (multiple leg towers with cross bracing). The towers can be “naked”, or camouflaged, for example with attachments to make it resemble a tree rather than a metal scaffold. By leasing space to multiple MNOs, tower operators can generate higher yields and increase asset values.



**FIGURE 1**  
Average Monthly Global Smartphone Traffic (in exabytes)

Source: Statista, as of June 30, 2023. Years marked with an asterisk (\*) indicate a forecast. An exabyte is equal to one billion gigabytes.

## Operational Shift

Historically, telecommunications providers like Verizon, T-Mobile, and AT&T built and maintained their own towers. However, as the demand for expanded networks grew, these MNOs began selling their towers to independent operators, entering long-term lease agreements to keep their equipment on-site. Independent tower companies now represent a larger share of the market, generating revenue by leasing tower space to multiple tenants. The ability to host multiple tenants increases cash flow and the overall value of each tower, often with minimal additional cost.

American Tower, SBA Communications, and Cellnex are examples of publicly traded tower companies. Privately held tower companies include Vertical Bridge and Diamond Communications. Some key statistics for the public tower companies are presented in Figure 2 below to provide context and color around the size and scale of such businesses.

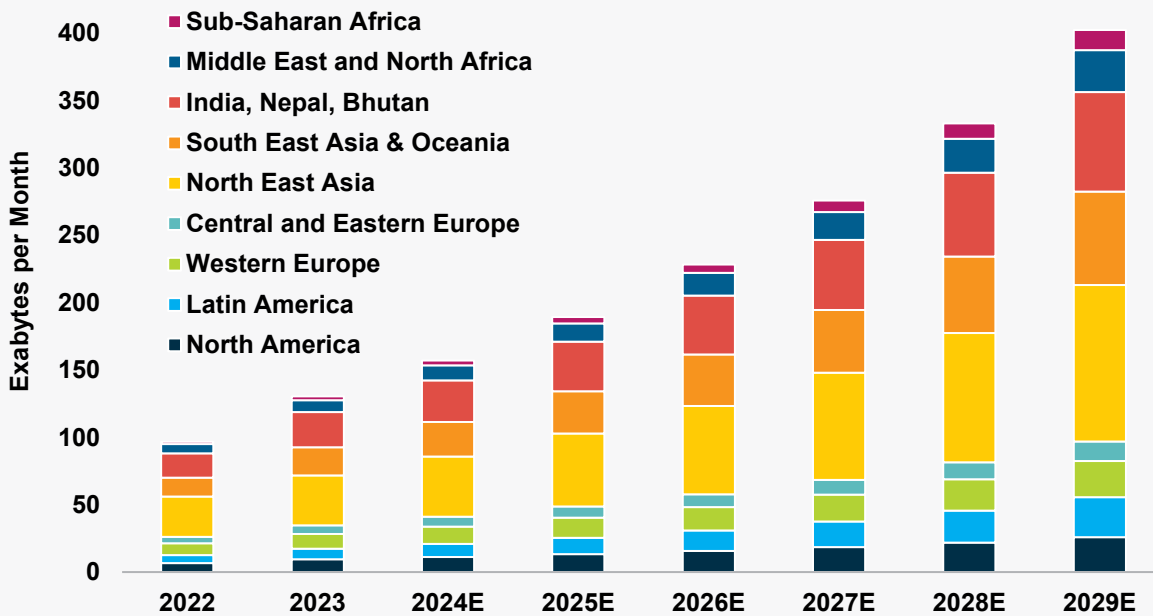
Company	Countries	Employees	Communications Assets	Market Cap (\$B)	EBITDA (\$M)	EV (\$M)
American Tower	25	~5,700	~224,000	86.4	6.3	144.0
Cellnex Telecom	12	~2,900	~138,000	25.9	3.1	48.6
SBA Communications	15	~1,800	~48,000	20.1	1.6	37.7

**FIGURE 2**  
Key Metrics of Public Tower Companies

Sources: Data for number of countries, employees, and communication assets is from the respective company websites of American Tower, Cellnex Telecom, and SBA Communications as of May 2024. Data source for Market Cap is Pitchbook, as of May 28, 2024. Data source for EBITDA and EV is Pitchbook, as of March 31, 2024.

## Demand for Macro Cell Towers

Technological evolution, such as the transition to 5G and the Internet of Things has driven the growth of total data consumption and led to the need for additional infrastructure to keep up with demand. Measuring the amount of mobile data traffic, a way to quantify this data consumption, shows that it has been consistently increasing and is expected to continue to increase over the next five years, as shown in Figure 3.

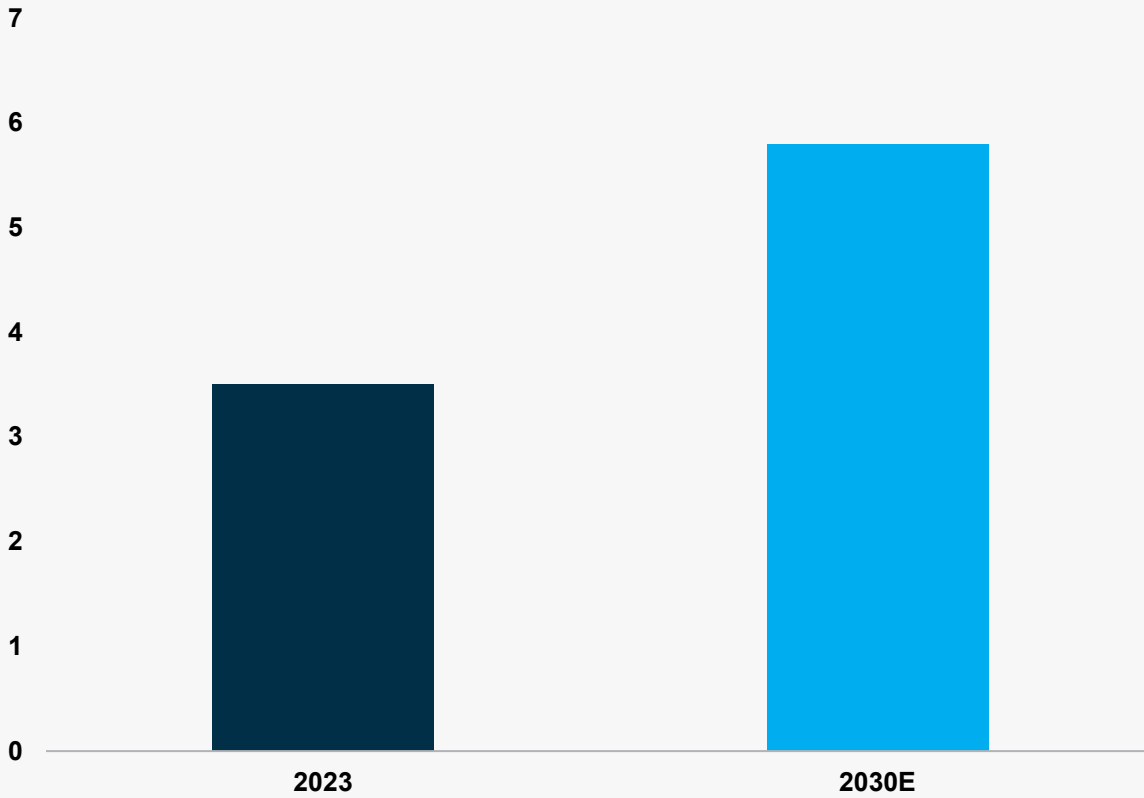


**FIGURE 3**  
Projected Mobile Network Traffic by Region

Source: Ericsson Mobility Report, "Business Review 2024," data as of November 2023. Exabyte is a unit of measurement for large data equal to a million trillion bytes.

The macro cell tower subsector of digital infrastructure is expected to continue to grow for a number of reasons. An increasing number of global users, each with an increasing amount of expected mobile network traffic, as well as the continued adoption of 5G and its new capabilities are primarily driving the heightened demand for cell towers. Although Asia has the largest data traffic consumption, North America and Western Europe accounted for combined 16% of total 2023 data traffic. With projected growth rates of 18% in North America and 16% in western Europe over the next five years, this presents an attractive investment opportunity.

Increasing the bandwidth for 5G networks helps facilitate the continued adoption of the Internet of Things ("IoT"). IoT refers to computing and connected devices that have the ability to send and receive data. Typically, the devices are embedded with sensors, processing capabilities, software, and other technologies. Examples of IoT technologies are smart thermostats, fitness trackers, and smart cars. These IoT connections will require additional bandwidth. While cellular networks currently handle roughly 15% of total IoT connections, this is forecasted to grow in the future, as shown in Figure 4. These new functionalities and heightened technological interconnectedness also require an increased number of cell towers to run smoothly. Thus, global 5G adoption and growing mobile network traffic trends are helping drive the current and forecasted future demand for macro cell towers.



**FIGURE 4**  
**Number of Licensed Cellular Internet of Things Connections (B)**

Source: GSMA, "The Mobile Economy 2024."

## What are the Risks?

While the outlook for macro cell towers is positive, several risks must be considered. Consolidation within the telecommunications industry could reduce the number of tenants competing for tower space, potentially lowering lease revenues. Additionally, market concentration and reliance on a few major MNOs expose tower companies to risks tied to the broader telecom sector. Inflation is another concern, as many tower leases, particularly in the US, are negotiated at fixed rates, leaving companies vulnerable to rising costs.

## Conclusion

Macro cell towers are critical assets within the digital infrastructure landscape. The combination of increasing mobile data consumption, the rollout of 5G, and the expansion of IoT devices presents a strong growth trajectory for the sector.

Investors can gain exposure to macro cell towers via public or private markets, depending on their preferences and constraints. Public market investors can often benefit from the shorter time horizon and increased liquidity, but their returns will be more heavily influenced by market volatility and represent a less pure macro cell tower investment. Private market investors can benefit from the (typically) lower volatility, but they also need significant capital, longer time horizons, and a tolerance for illiquidity.

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