

Fixed wireless access is one of the earliest 5G use cases to emerge with the ability to deliver high-speed, enterprise-grade connectivity covering urban, suburban, and rural areas.

5G Fixed Wireless Accelerates Connectivity Options for Business

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Introduction

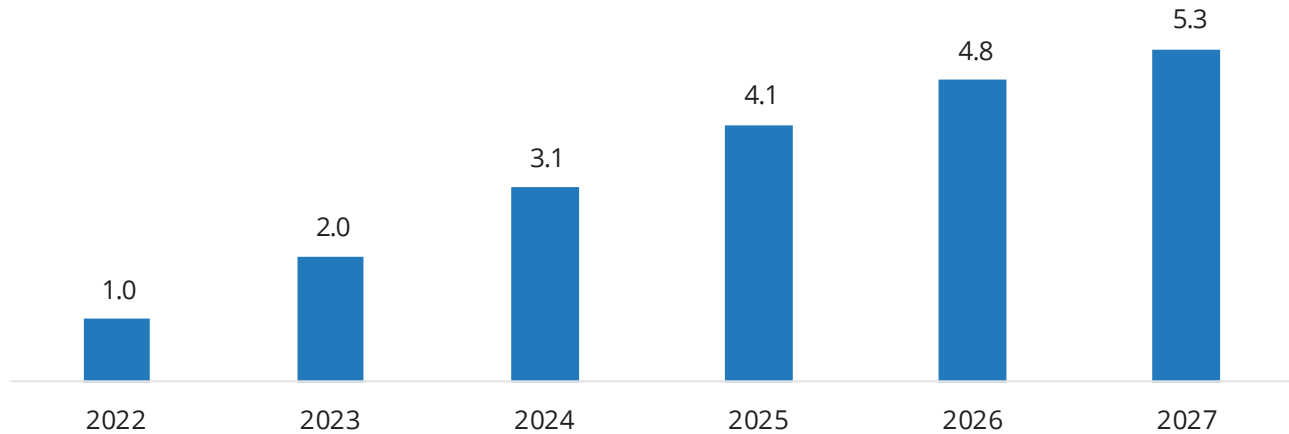
Never has the ability to access a high-quality, reliable connection to others — whether family, friends, customers, suppliers, or partners — been more important. In this new era of hybrid/remote work, 5G provides robust, carrier-grade connectivity to enable company operations and employee productivity, wherever and whenever the business requires. And new 5G networks deliver faster speeds today and will bring more responsive, intelligent connectivity in the future as a result of 5G's lower-latency performance.

One of the earliest, most readily accessible business use cases for 5G is fixed wireless access (FWA). FWA involves using a wireless connection to pipe broadband connectivity to a business location or job site via a static router or antenna in lieu of a legacy T1, cable, or fiber connection. While in some situations, tethering mobile devices to a wireless hotspot can provide a broadband connection for businesses on the go (think food trucks), 5G FWA involves a more static deployment with the equipment generally fixed to one spot at a business location. The FWA connection delivers higher-quality, guaranteed performance with a less intrusive and less costly infrastructure investment. This cost factor is as important for business start-ups as it is for companies with established operations that are seeking to grow to new locations. As a result of the cost savings and the need for increased flexibility, business interest in FWA of all types is growing (see Figure 1).

AT A GLANCE

KEY TAKEAWAYS

- » The maturity of 5G networks, a hardware evolution, and the importance of connectivity heightened by the COVID-19 pandemic have created market conditions that will allow 5G FWA for businesses and consumers to flourish.
- » Businesses can benefit by using 5G FWA to provide employees with a dedicated, business-only connection for a consistent user experience that results in improved productivity.
- » 5G FWA extends coverage to rural areas that are currently challenged by a lack of high-quality, reliable connectivity.
- » 5G FWA can be used as a backup or failover service.

FIGURE 1: **U.S. Business FWA Subscription Forecast, 2022–2027 (M)**

Note: For more details, see *U.S. Fixed Wireless Access Services Forecast, 2023–2027* (IDC #US49365023, May 2023).

Source: IDC, May 2023

Why 5G FWA Now?

FWA has been available in a 4G version for several years, but a number of elements are coming together to make this an opportune time for FWA to see a resurgence. First, and perhaps foremost, 5G has arguably finally arrived. The three U.S. wireless operators have each deployed a form of 5G mobile service that now covers the majority of Americans. If a business is located in a metropolitan area (urban or suburban), there is very likely a 5G signal available for connectivity. Though 5G mobile service is touching more people, FWA availability and coverage are still a bit more narrowly available. However, recent announcements have expanded the footprint for business FWA service rapidly. T-Mobile now offers FWA on a nationwide basis, while Verizon has passed 2 million business locations for its FWA service and is targeting 14 million locations by 2025.

While 5G signal availability is an important consideration when evaluating 5G FWA, it is only half the battle. 5G isn't a homogeneous connectivity band, and consequently, 5G FWA is not a one-size-fits-all offering. Depending on a business' location, the three spectrum "flavors" of 5G allow the potential for graduated performance tiers of FWA based on a company's bandwidth requirements. As noted, 5G is available on a nationwide basis via low-band spectrum, which generally represents a step increase in speed performance over most LTE service. The availability of highest-speed mmWave 5G is still rather limited due to the physics of its propagation and the economics associated with deploying widespread coverage. But for businesses with high-bandwidth requirements, it remains an option in the mix either via the public network if a business is located within a mmWave footprint or by working with a provider for a private deployment.

Midband spectrum, which unites coverage and performance, is available in a rapidly expanding footprint across the United States as a result of T-Mobile's deployment of 2.5GHz spectrum acquired via the company's merger with Sprint as well as the AT&T and Verizon buildout of C-band spectrum recently acquired via the FCC auction process. While low-band 5G has reached ubiquitous coverage, for tangible bandwidth improvements north of 100Mbps, midband spectrum is essential. U.S. carriers are racing to build out that midband spectrum coverage in order to fuel the speed performance

of their 5G networks and FWA service. T-Mobile now covers 300 million people (3Q23) with its midband solution, followed by Verizon with 200 million (1Q23), and AT&T is targeting coverage of 200 million by the end of 2023.

In addition to network availability, the hardware landscape has caught up to the 5G network deployments. Out of the gate, most of the focus was on 5G smartphones. The first-generation customer premises equipment (CPE) necessary for 5G FWA required extensive white-glove installation. More recent CPE generations are more efficient and, in many instances, practically "plug and play," enabling customer self-installs, which speeds time to market. The new CPE also integrates well with existing infrastructure that disperses that connection throughout the building.

Benefits of 5G FWA for Business

Beyond the market conditions that make it a good time for operators to bring commercial 5G FWA service to market, what is the appeal of 5G FWA for businesses? Organizations embracing wireless broadband connectivity can accelerate physical expansion efforts, improve employees' remote work experience, enhance risk management, and generate material back-office efficiencies.

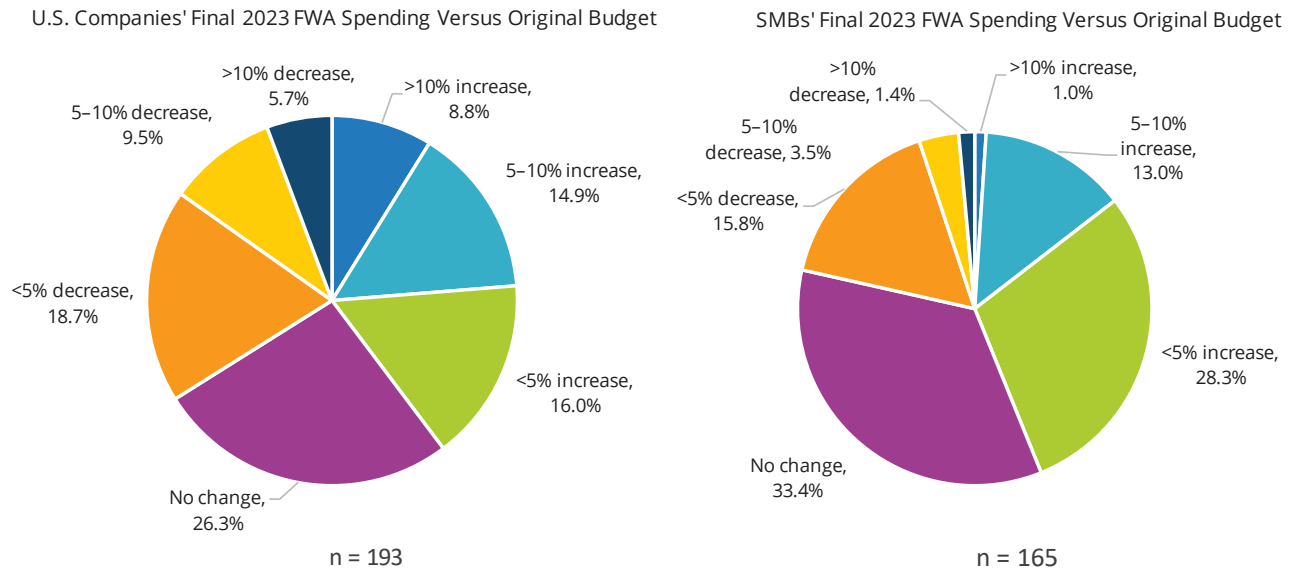
Start-ups and companies in growth mode can utilize 5G FWA to speed the buildout of new locations and facilities. Rather than wait for wired solutions to be installed across the last mile, companies can accelerate their start-up time by hanging their own 5G FWA antennas and routers. When leases expire and businesses need to relocate, the connectivity can move with the company. The use of 5G FWA also allows companies more flexibility in designing the site location with connectivity ingress aligned with other internal infrastructure rather than limited to just streetside access.

In discussions about FWA, the conversation tends to default to FWA as a means of primary connectivity for the organization. But that narrow view overlooks an incredibly important way that FWA can be utilized to benefit the organization — that is, by providing backup or failover connectivity. As the pandemic, natural disasters, and network outages have demonstrated, connectivity is a critical element of keeping business operations running, enabling employee productivity, and engaging customers. Any competent business continuity strategy must incorporate backup connectivity. And while the primary connectivity provider may offer some backup services, a thorough business continuity program should absolutely consider a separate connectivity provider for backup services to avoid a singular outage impacting both primary and backup connections. FWA can be easily layered onto existing IT infrastructure with nominal costs to provide failover connectivity at a practical price point. In addition, once FWA is in place for failover connectivity, its presence can also be leveraged as an innovation platform that allows the organization to explore and experiment with wireless connectivity and "wireless first" initiatives without incurring substantial costs or disrupting existing operations. As new uses and ROIs for wireless connectivity are proven out, they can be expanded to the rest of the organization relatively seamlessly.

Although difficult to quantify, another beneficial use of 5G FWA is providing employees with broadband connection for dedicated corporate use, which can help eliminate in-home competition for bandwidth. Importantly, such a connection can also function as a considerable risk management tool for the company. A business can deploy more robust security policies and identity management tools to its remote employees to better protect corporate systems and data. In addition, a corporate-exclusive connection allows companies to manage content access (e.g., websites, apps) to further reduce risk and distractions, resulting in improved productivity. According to IDC's September 2023 *Future Enterprise Resiliency and Spending Survey, Wave 8*, 40% of business technology leaders said their 2023 spending on FWA will be higher

than their original budgets called for, with most spending increases in the 1–10% range. SMBs have also increased spending on FWA, with 42% indicating their 2023 spend on FWA will be higher than originally planned (see Figure 2).

FIGURE 2: **Enterprises' Anticipated 2023 Spending on FWA Versus Original 2023 Budgets**



Source: IDC's Future Enterprise Resiliency and Spending Survey, Wave 8, September 2023

5G FWA also brings the opportunity to leverage a single, nationwide provider for all connectivity. Using a single provider can drive material efficiencies in back-office operations for companies with multiple locations or those seeking to enable more options for employees' WFH connectivity. Businesses can push for multilocation discounts and avoid piecing connectivity together across geography-based providers. In addition, using a single provider streamlines the hardware options, lessening the burden on in-house IT while driving some procurement efficiencies. For companies that take on responsibility for providing WFH broadband to employees, a corporate-liable broadband program can eliminate the time and cost burden of managing an employee reimbursement program. It is also important to note that some states are mandating that employers provide or reimburse employees for WFH technology and supplies. If distributed employees work in one of those locales, 5G FWA may be a way to manage those new costs more effectively.

These factors are combining to make 5G FWA an appealing asset in SMBs' operational toolkit. According to IDC's November 2022 *Future Enterprise Resiliency and Spending Survey, Wave 10*, 32% of SMBs are currently paying or planning to pay at least some of the costs of remote worker connectivity. The investment in connectivity is also evident across different industries, with more than 20% of organizations in government, hospitality, healthcare, professional services, finance, and retail looking at providing company-funded connectivity for hybrid workers. 5G FWA provides a cost-effective, scalable connectivity option, with a consistent network architecture that streamlines the deployment and use of company resources wherever an employee or business location needs them.

What also makes 5G FWA appealing versus prior generations of wireless connectivity is the ability for the provider to offer guaranteed service-level agreements (SLAs). Previously, wireless connectivity was provided largely on a best-effort

basis, with the quality and performance of the connection fluctuating based on network traffic and other variables. For many companies, that unpredictability is a nonstarter. With 5G, providers will be able to offer assurances that connectivity performance will consistently meet specific benchmarks.

Considerations: Mapping the Path to 5G FWA

How does a business determine if 5G FWA is the right solution for its connectivity needs? First, it begins with an understanding of what those connectivity needs are. Does the business operate or have locations in rural areas where broadband connectivity is lacking or in locales where broadband competition is limited, resulting in reduced pricing flexibility? Are employees uploading and downloading large data files? Are there bandwidth-sensitive apps in the organization's toolkit, and if so, what are those speed tolerances? As noted, the mmWave versions of 5G FWA can deliver speeds of 1Gbps or more, though the coverage is very limited. Few businesses actually need that much speed. According to IDC's 2022 *U.S. Enterprise Communications Survey*, 68% of large U.S. companies indicated that the average bandwidth capacity per location is less than 1Gbps, and 50% said that they need less than 500Mbps. With the majority of users that have a broadband speed preference indicating they need less than 500Mbps, 5G FWA is more than capable of serving both enterprise and WFH requirements. Ultimately, 5G FWA's ability to deliver a return on investment (ROI) is contingent on company leaders understanding where they can align the benefits of 5G FWA with the needs of the business.

Once a business has an understanding of its connectivity needs, it should consider its growth strategy. A business that is adding locations or growing its payroll can tap into the economies of scale offered by 5G FWA to achieve both cost and efficiency gains. New sites can be stood up quicker and at less cost. For many companies, rural areas remain off-limits as a locale for expansion because of a crippling lack of business-grade connectivity. With the ability to provide service to rural areas where traditional wired broadband does not currently reach, 5G FWA will enable businesses to locate greenfield sites in rural locations with a lower cost of living and position new facilities closer to key customers. Utilizing 5G FWA to provide a separate, reliable connection for dedicated business use can aid in tapping into a broader talent pool for new employees, particularly in rural areas; it can also improve the productivity of existing staff and serve as an employment perk in these WFH times. However, if a business involves a single location that is capably served by existing wired connectivity or if current staff levels are to remain static, then 5G FWA ROI calculus may not make sense at this time. Now that businesses and employees have found a reasonable cadence in this evolving "new normal," it's an opportune time for business leaders to examine connectivity through a more strategic, longer-term lens and consider how 5G FWA may play a greater role in the organization.

Further, a business should not undertake the task of designing its connectivity strategy, whether for 5G FWA or mobile service, alone. Collaborating with the company's current mobile operator or communication service provider on strategy development can ensure that the correct wireless solutions are brought to the table to meet the specific operating needs of the business and that those solutions can be seamlessly integrated into other IT deployments and use cases.

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Conclusion

One of the overarching lessons since the start of the decade is that connectivity matters more than ever and is essential for both consumers and businesses. The broadening availability of 5G networks brings improved speeds and guaranteed performance — essential elements of business connectivity needed as companies adapt and evolve to the new normal for today and beyond. FWA is one of the most immediate, and accessible, uses of 5G and in many instances can provide a business with greater flexibility and potential cost savings than wired options.

About the Analyst



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Jason Leigh is a research manager for IDC's Mobility team responsible for 5G and mobile operator research. Jason's research focuses on the strategic implications and market opportunities presented by the emerging 5G ecosystem, including commercial availability, installed base forecasts, regional adoption trends, content and services enablement, device impacts, 5G's role in the Internet of Things (IoT), and innovative use cases leveraging 5G.

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