



650 GROUP
MARKET INTELLIGENCE RESEARCH

The Shifting SMB Wi-Fi Market: Key Considerations for Buyers White Paper

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Summary

- Everyone needs Wi-Fi these days. Nearly every business computing device uses Wi-Fi and a growing number of applications and services are being delivered using cloud-services. Whether a business is small or large, therefore, Wi-Fi is critical, so it is important that it is fast and reliable.
- In the past, many Small and Medium Sized Business (SMB) organizations had used consumer-class products, which were lower priced than enterprise-class Wi-Fi. More recently, though, market growth for the sale of Wi-Fi systems to SMBs has been strong; this strength has come as SMBs have replaced consumer-class Wi-Fi with enterprise-class Wi-Fi. But, higher-end enterprise-class Wi-Fi systems generally had more features, which make them more expensive compared to traditional SMB offerings. So in the past couple of years, Wi-Fi vendors have created a new class of enterprise-class products targeted towards SMBs.
- With Wi-Fi vendors now targeting SMBs with aggressively priced systems, SMBs are poised to benefit. It is no mistake that these vendors have targeted SMBs—that's where the growth is. And, this is the opportunity for SMBs—get the features you need and enterprise-class reliability at far lower prices. In fact, these SMB-focused enterprise-class systems are priced more similarly to consumer-class products but offer higher performance and a more comprehensive capabilities such as design, deployment, and management tools found on large-enterprise focused Wi-Fi systems.
- Vendors that rely heavily on consumer-class Wi-Fi markets, such as D-Link, Netgear, and TP-Link, are attempting to move up-market to the SMB market, which is causing price pressure for SMB-focused enterprise-class products.
- Vendors that have traditionally offered large enterprise focused Wi-Fi gear, such as Cisco, Aerohive, and HPE Aruba, are now creating specialized products and solutions targeted at SMBs. Features such as high-reliability and cloud-managed services are good examples of systems targeted towards SMBs, with many leveraging cloud networking to reduce CapEx.
- Growing vendor competition in targeting SMBs has led declining prices in the market – SMBs can enjoy enterprise-class products with control systems such as cloud-managed services that simplify network operations and reduce operations cost.

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Introduction. Big companies start as small companies. While this statement is obvious, as it pertains to Wi-Fi infrastructure deployment, it has significant implications. If a company installs a Wi-Fi system, and then its workforce grows, more Wi-Fi Access Points (APs) need to be deployed. Additionally, as the company grows, new features may be needed (voice support, analytics, remote office support) that may not have initially been envisioned. A company's network quality should not be underestimated—not in any industry—and selecting the right Wi-Fi system for your business can improve many aspects of a business—customer response time, application availability, workforce satisfaction, reduced downtime, and improved security.

Several years ago, consumer-class WLAN devices were sufficient for many small businesses. In recent years, the use of Wi-Fi enabled notebooks, smartphones and other devices have proliferated in small businesses; furthermore, these devices are using more bandwidth-hungry services like media streaming, file sharing, and Voice over IP. Put together, small businesses have seen Wi-Fi connectivity become a 'need to have' instead of a 'nice to have' function. In the past few years, WLAN equipment vendors have responded to this change in the WLAN industry and have created a special class of enterprise-class WLAN systems tailored to small businesses. And since there has been more growth in vendor revenues in recent years in selling to small businesses—a trend we see continuing—vendors have priced their small business focused enterprise-class equipment aggressively so they can participate in this growth. As a result, small businesses can take advantage of this competition in the marketplace, and get the capabilities they need for sometimes as little as half the price.

What do we mean by enterprise-class WLAN? Enterprises have many Wi-Fi users, and hence need multiple WLAN Access Points to cover large areas and provide sufficient capacity for a large population. Managing multiples of Access Points with a single control system, such as a controller or cloud management, is the main attribute that separates enterprise-class from consumer-class WLAN devices. Additionally, enterprise-class devices coordinate multiple access points, deal with load balancing, address Radio Frequency (RF) management, enable roaming, handle power settings, enable simplified activation, and offer performance optimization functions. Historically, enterprise-class devices were significantly more expensive than consumer-class devices in large part because expensive controllers were used to coordinate the activities of these many Access Points. In fact, 3-4 years ago, the average enterprise-class WLAN system cost about ten times more than the average consumer-class WLAN device. But, while prices for certain consumer devices have risen, especially multi-radio consumer wireless routers, while prices for certain SMB-targeted enterprise-class devices dropped to the same range as consumer systems. It is true that some SMB-targeted enterprise WLAN systems lack the full feature set of enterprise-class WLAN systems targeted to the largest enterprises; but since many customers have no need for these features, why pay for them? The main focus for many organizations is simply having high capacity, reliable connectivity that can be easily managed and supported.

Enterprise-class capabilities. When we look at most enterprise-class APs, we find that the processor and memory specifications exceed those of consumer-class Wi-Fi systems. Generally, these added capabilities allow for more features and higher user capacity. In addition to multi-AP management through a control system, other features commonly found in enterprise-class WLAN include:

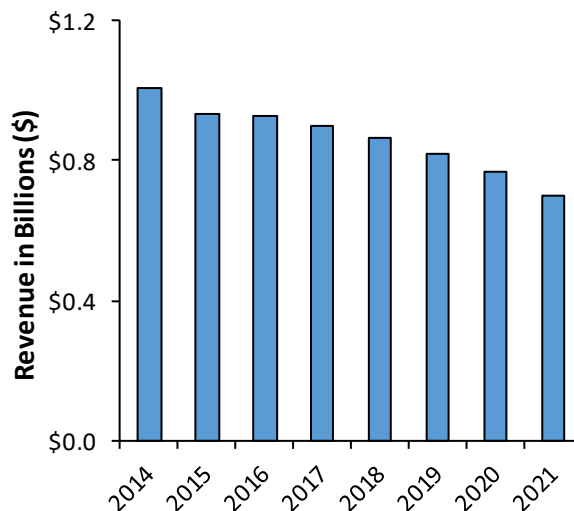
- Always-on, high-performance connectivity
- Application & network visibility and control
- High levels of security
- User management (role-based access, user profiling)
- Network visibility
- Integration to directory systems and guest management

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Enterprise-class control systems. Hardware based controllers enable central control of many access points. This coordination feature is critical to managing larger networks. The first controllers were introduced into the marketplace over ten years ago. These days, many alternatives have emerged to manage multiple access points not requiring controllers, most of which are less expensive. The competition has driven Controller revenues to decline for several years – a trend that is expected to continue (see forecast chart later in this report). With controller revenues in decline, we view this as evidence that the marketplace has been accepting alternatives to the controller, including:

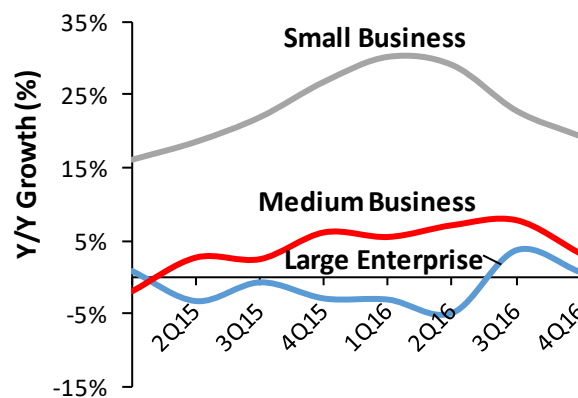
- Cloud-Managed
- Controller-less
- Software
- Integrated controller into other devices such as firewalls

WLAN Controller Revenue Forecast



Why are Wi-Fi equipment vendors rushing to address the SMB segment? That’s where the growth is. Amongst buyers of enterprise-class WLAN equipment, SMBs represent the fastest growing group in recent years. This buyer segment has grown so much in recent quarters, that it has become the largest buyer group of enterprise-class WLAN equipment. In the fourth quarter of 2016, for instance, SMB Enterprise Wi-Fi revenues grew 19% Y/Y, while Large Enterprise and Medium Enterprises grew 1% and 3% Y/Y respectively. Why is this? Well, there have been a lot of product, service and software innovation that has been specifically targeted for SMBs, while at the same time, there has been growing vendor competition, forcing prices lower. Great features at consistently declining prices have driven SMBs to look past the consumer-class devices that satisfied Wi-Fi coverage a couple years ago. In fact, pricing for the upper end of consumer-class Wi-Fi devices now exceeds the prices of several enterprise-class brand’s prices, a discrepancy in the market for Wi-Fi, for sure. With many enterprise-class WLAN infrastructure systems that have become available at prices that compete with high-end consumer WLAN products, we expect to see continued growth of enterprise-class WLAN systems sales to SMBs. What this trend means is that SMBs have the opportunity to get enterprise-class WLAN at far lower prices than ever before. We expect that SMBs will continue to purchase WLAN infrastructure at a faster rate than Large and Medium Sized businesses for the next couple years.

Enterprise WLAN Revenue Growth by Customer Size



SMB-focused Wi-Fi. A new market segment has formed as enterprise-class vendors have moved to address SMBs. These enterprise-focused vendors recognize that SMBs now need great connectivity in line with data-heavy, Wi-Fi-first network usage, and so they are tailoring their solutions to address the fast-growing SMB segment.

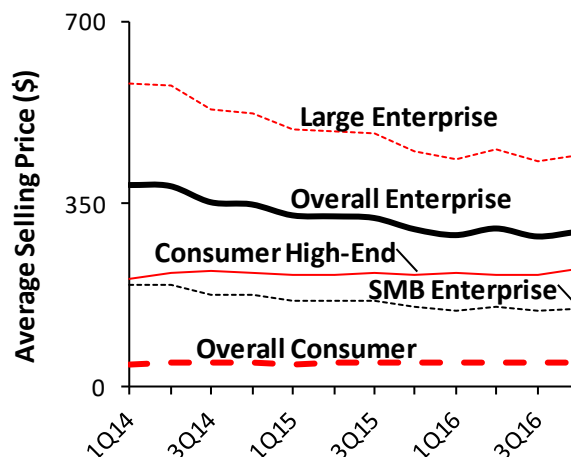
- One way enterprise-class vendors can offer high performance Wi-Fi at competitive prices is to provide an essential feature set but allow customers to purchase additional features as they are required. Generally, as consumer-class products move up-market, the products won’t have the scalability and reliability capabilities, nor will they offer high

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-end features in the case the business needs of the SMB change. It is important, though, that SMBs consider that their needs may change in the future, and when selecting a vendor, give consideration as to whether the Wi-Fi system can be upgraded in the future as more APs, capabilities, and features are required to allow the business to grow.

- Cloud-managed systems are being offered by enterprise-class vendors as a way to reduce up front spending because a controller won't often be necessary. Some vendors charge a lot for cloud-managed services, some charge nothing. Vendors such as Cisco, HPE Aruba and Aerohive are vendors that offer cloud-managed services that control multiple access points. Generally, the up-front spending on Access Points that use cloud-management are lower than those that use controllers, especially for smaller sized networks. This is because controllers cost a lot in comparison to a small number of Access Points. On the other hand, using cloud-managed services spread the cost over the lifetime of the Access Points (if there is even a charge). There are other alternatives to using a controller, as well: (a) Software that replicates the function of a controller is available from some vendors at costs as low as free, and (b) controller-less Access Points generally function as if a controller was embedded in each of the Access Points. The benefit of either cloud-services, software-only or controller-less systems is lower cost with sufficient capabilities.
- Commoditization of Wi-Fi market has been underway over the past several years. This has been driven by a variety of factors, including increased competition in the SMB market and the slowdown of WLAN industry growth as the market moves towards saturation.

Average Selling Prices Enterprise and Consumer WLAN

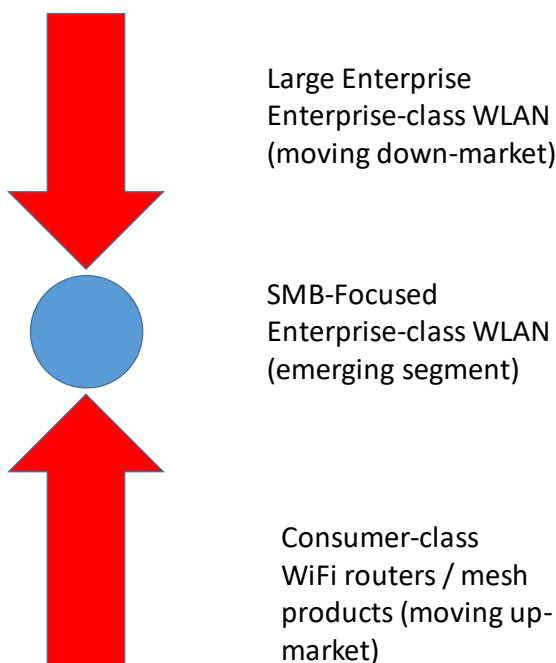


Pricing trends for SMB Wi-Fi. SMBs are cost conscious. Consider that 4-5 years ago, it was most common for SMBs to have purchased consumer-class Wi-Fi routers for connectivity, using 802.11n technology. Now that SMB-oriented enterprise-class WLAN infrastructure pricing has approached the high-end of consumer-class Wi-Fi router pricing, SMBs can get superior Wi-Fi systems at much lower prices. We note that over the past three years, prices have dropped for overall enterprise-class systems by over \$50 per Access Point due to faster growth in the lower-priced SMB segment and due to growing competition from consumer-class vendors moving up-market. During this time, some SMB-focused enterprise-class products prices have actually dropped lower than the high-end of consumer-class Wi-Fi; this means it may be worth an SMB's time shopping around for enterprise-class Wi-Fi systems.

What should SMBs look for when upgrading their Wi-Fi?

As a buyer group, most SMBs differ from medium and large enterprises; they often have limited IT resources and are frequently

WLAN Market Re-classification



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more cost conscious. Given that vendors are now focusing heavily on the fast-growing SMB segment, it is reasonable for SMBs to demand:

- Exceptional Value
- Enterprise-class quality
- Cloud-managed (or other non-controller based technology)
- Ability to upgrade as needs change

By incorporating these capabilities, SMBs can ensure their networks will cope with user demand that drives productivity and keeps the business competitive. Simultaneously, incorporating these capabilities will allow the SMB's Wi-Fi system to grow as the company adds more employees and serves more customers. Consider this: there are good business reasons why an SMB should upgrade its Wi-Fi network. Companies need Wi-Fi to be more competitive, to enable employees to be more productive and to satisfy customers. For a small business to grow and to operate at greater scale, the Wi-Fi network has to be enterprise-class to meet reliability and growth needs.

About 650 Group

650 Group is a leading market intelligence research firm focused on cloud and IoT growth markets, as well as the broader communications and Information Technology industries. Our team has decades of research experience, has worked in the technology industry, and is actively involved in standards bodies.

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