



The State of Wireless WAN 2020



Introduction

Secure, reliable, and flexible network access is more critical to business success than ever before. Demands on networks have been increasing steadily, and the global pandemic of 2020 only exacerbated the strain, accelerating a network transformation that had been trending for years.

Traditionally, organizations have relied on static networks connecting fixed locations for known applications to a defined datacenter. Today a much more fluid and agile network is necessary. To support placing devices and application in a variety of new places, IT decision-makers (ITDMs) need networking products that provide LTE; Wi-Fi; and a secure, nonstop path to the cloud. Businesses are rapidly adding Internet of Things (IoT) devices to their networks. As more applications move to the cloud, the need for employees to access these services efficiently and securely ramps up. Commerce is taking place via kiosks and interactive signage. The rising need for efficiency and new services within vehicle fleets requires connectivity, too.

All of these factors underscore the need for enterprise networks to grow, adapt, and scale as business needs change — and for IT teams to be

able to monitor, manage, and troubleshoot from anywhere.

As a result, many organizations are turning to cloud-enabled, software-defined and LTE-pervasive wireless wide area networks, or Wireless WANs. These networks, which rely on cellular connectivity as the primary or secondary link, can be deployed anywhere, because the wireless spectrum is ubiquitous. They can also be set up and put online quickly.

In this whitepaper, we examine the trends behind the rising adoption of LTE, its application beyond the branch, barriers to deployment, the emergence of Gigabit LTE and 5G, and how LTE is paving the way for further wireless growth.

Cradlepoint partnered with IDG to conduct an online survey of 499 ITDMs (vice presidents, directors, and managers) in the United States, Canada, and the UK. This report details the research findings and offers insight to highlight the growth of Wireless WAN in the enterprise, how businesses are using Wireless WAN, and how they plan to use 5G and other advancements as the speed and capabilities of wireless connections continue to evolve.

Methodology

Survey respondents were required to work for a company with 50 or more employees and have a title of IT Manager or above. The respondents represented a wide variety of industries, including manufacturing, financial services, healthcare, and construction.



The Era of Wireless WAN is Here

Business today takes place almost anywhere. Gone are the days when network connections solely from a fixed branch were sufficient for daily operations and objectives. Today's networks need to be flexible and easily available while meeting growing security requirements. Enter the Wireless WAN — a secure network that can be established anywhere, quickly and cost-effectively.

Increased demand for connectivity is one factor fueling the growing need for Wireless WAN. The number of interconnected devices that organizations rely on in buildings, vehicles, and beyond is rising. Add to this the widespread need to provide work-from-home arrangements for employees globally and it's clear that the edge — that part of the network that allows data from all these devices to be processed before being sent to the cloud or the company's data center — is expanding.

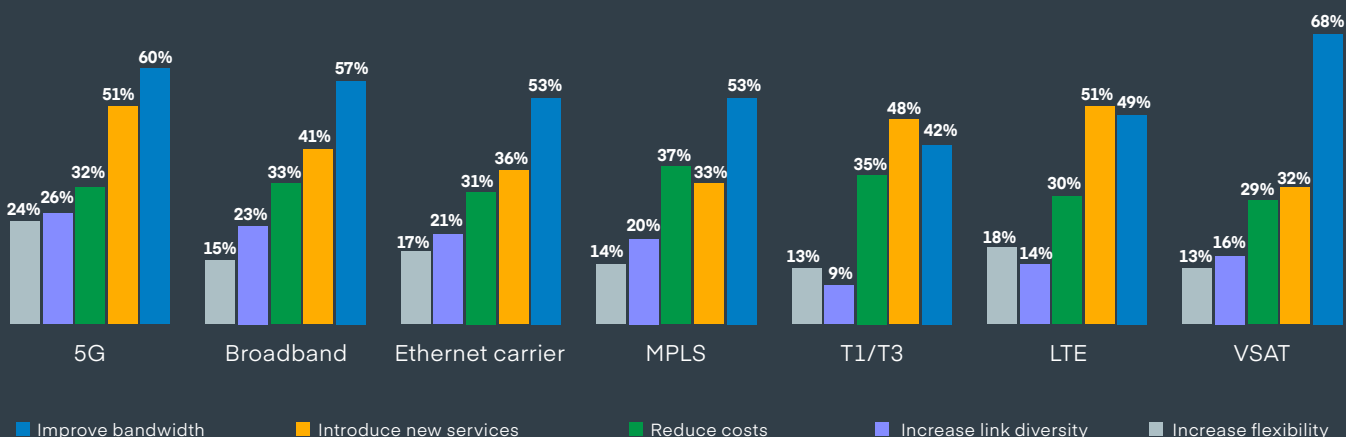
Bandwidth demand is also rising and is a second factor fueling the growth of all types of WANs. In fact, increased bandwidth was named as a major driver for the adoption of many new WAN links, including 5G, LTE and wired broadband.

Among respondents, 57% cited bandwidth as a reason for adopting broadband and 49% cited it as a reason for adopting LTE. And as 5G is rolled out more widely, 60% see bandwidth as a reason for adopting 5G.

A third factor fueling WAN growth is the need to introduce new services. It's the No. 1 reason organizations are deploying LTE solutions, which underscores the fact that wireless isn't only useful for adding bandwidth and boosting reliability, it offers an opportunity to change how and where businesses interact with their customers. LTE is an essential facet of businesses' ongoing digital transformation.

The No. 1 reason organizations are deploying LTE solutions is for the introduction of new services.

Bandwidth Will Drive WAN Link Changes in the Next 3 Years



Source: IDG

How Wireless WAN Enables Business Today

Among respondents, 53% connect in-vehicle networks via WAN, and 77% connect fixed IoT locations such as kiosks and security cameras using WAN. Forty percent said they are connecting locations, vehicles, and IoT on their corporate WAN edge, demonstrating the expansion of the network edge beyond fixed locations.

Most companies (91%) are currently using or planning to adopt LTE and 5G for use in branches in the near future.

But clearly there are many ways LTE already is in action. From the retail operation that needs to open a temporary location to organizations equipping employees working from home with LTE solutions, the benefits of Wireless WAN are numerous. The recent pandemic-related business disruption also revealed the potential for wireless to enable fast, flexible telehealth arrangements and gave doctors the ability to work outside of hospitals, for example. Speed and flexibility are driving more organizations to rely on wireless connections.

The research also examined the most common applications for LTE and cellular connectivity,

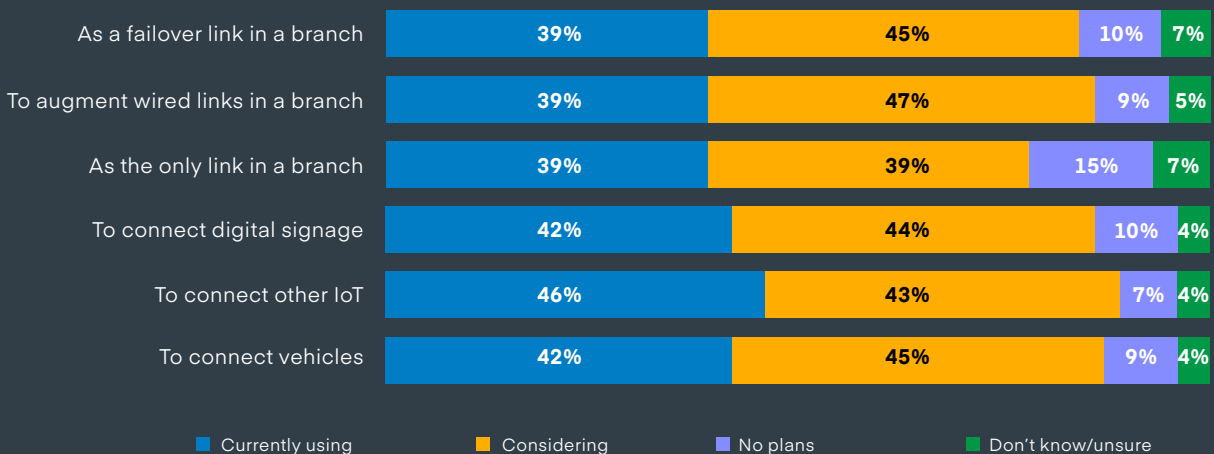
finding that 39% are using it as a failover link in a branch and 39% use it to augment wired links in a branch. But 39% use it as the only link in the branch, emphasizing that ITDMs see Wireless WAN as reliable enough to stand on its own. Other use cases include connecting digital signage (42%); other IoT devices, like sensors and security cameras (46%); and vehicles (42%).

Use Cases for LTE

The potential for Wireless WAN with LTE connectivity to help businesses innovate is vast, including transforming the traditional branch. For example, a pop-up location inside another, larger retail outlet allows companies to sell products and services in places where their customers are already congregating — something that's easy to accomplish with a "bring your own" LTE network. When it comes to IoT connections, restaurants can use LTE WAN to conduct remote monitoring of data from sensors.

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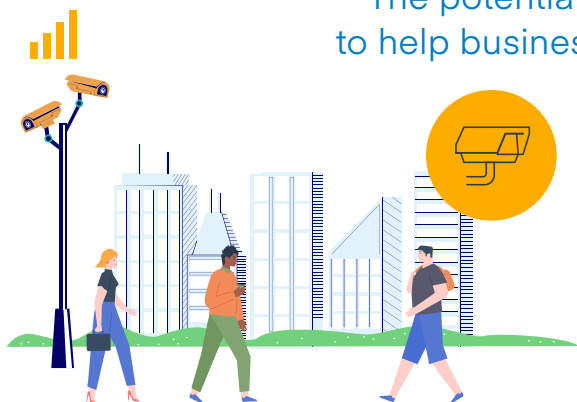
LTE and 5G Will Be Used Across Multiple Applications



Source: IDG

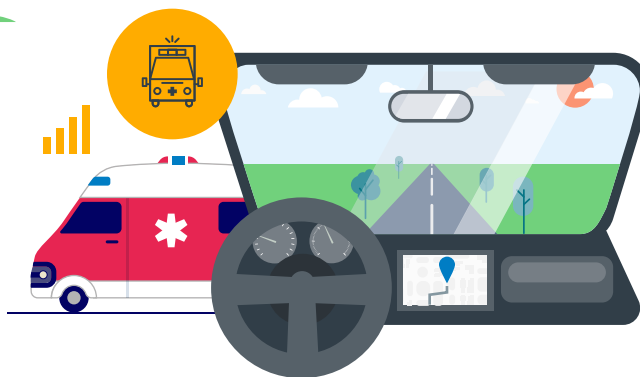
For example, sensors can monitor fry oil or cooler temperatures and alert staff to issues. Many kiosks that offer remote services or products without human intervention are connected to the cloud or the data center by Wireless WAN — something that's easy to accomplish with a "bring your own" LTE network.

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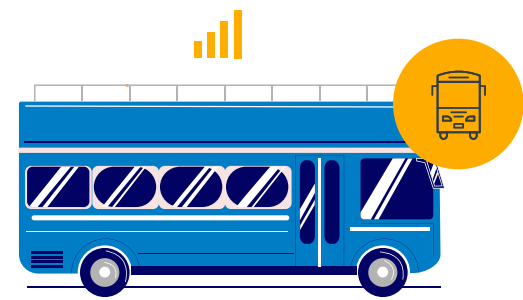


Remote monitoring of video surveillance is another common use case for LTE connections. Whether inside a facility or on city streets, Wireless WANs are used to provide connectivity to video cameras with enough bandwidth to allow for live streaming.

In-vehicle wireless technology is becoming mainstream as first responders leverage modern public safety devices and applications and take advantage of cellular networks dedicated to public safety.

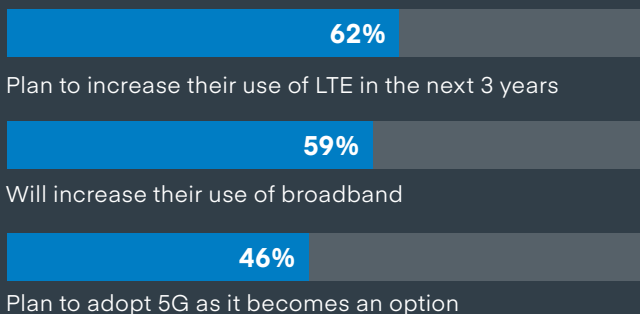


Public transportation leverages LTE connections for conducting credit card transactions, gathering and sending passenger analytics and vehicle telemetry data, enabling GPS-dependent tools such as Automatic Vehicle Locator (AVL) systems and rider apps, supporting dynamic on-board digital signage, and offering guest Wi-Fi.



Wireless WAN offers a great deal of potential for businesses to innovate and find new uses for this kind of flexible connectivity — and the survey reflected that. Among respondents, 62% plan to increase their use of LTE in the next 3 years, and 59% will increase their use of broadband. Also, 46% plan to adopt 5G as it becomes an option.

Wireless WAN on the Rise



Broadband and SD-WAN Gain Traction; 5G Expected to Explode

5G is expected to explode over the next 3 years, and clearly enthusiasm is high, as nearly half of respondents plan to deploy 5G links in existing locations when it becomes an option. This makes sense, as 5G – which boasts lower latency and higher throughput – is expected to enhance user experience and improve workforce productivity. The survey reveals ITDMs are confident that 5G will deliver on the promise of increased speed, improvement over 4G LTE, enhanced coverage, and better reliability as it rolls out.

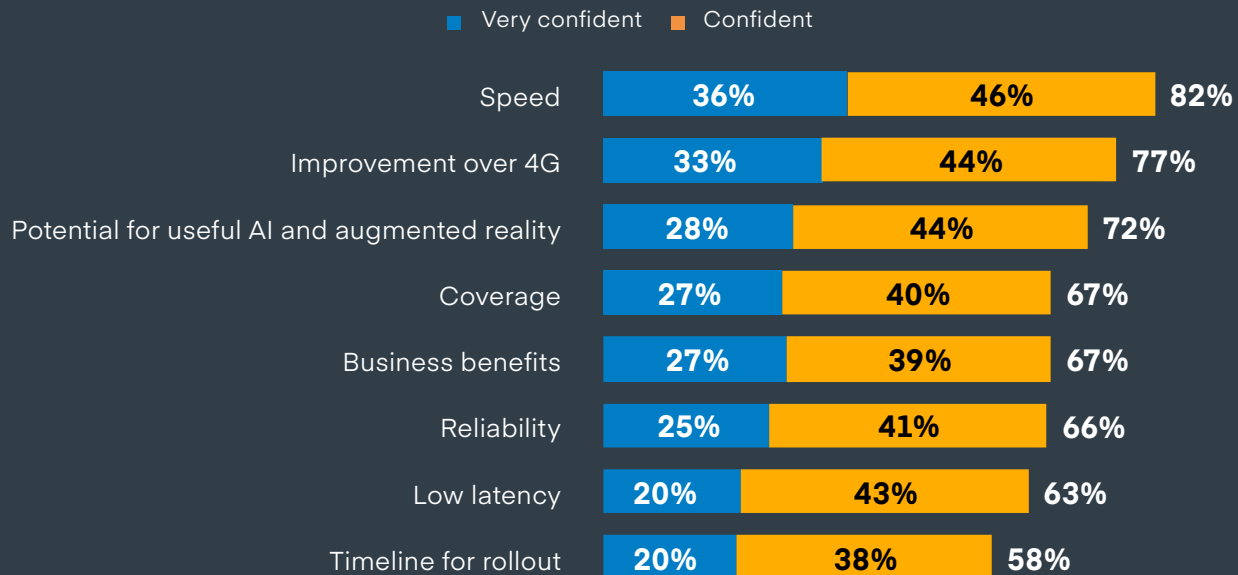
Among respondents, 46% said they expect to increase their use of 5G at existing locations within the next three years. The excitement over 5G appears to be similar in both North America and the United Kingdom. In the UK, 48% of ITDMs said they plan to increase use of 5G in existing locations, and 44% of respondents in North America have their sights on adopting the technology in the near-term.

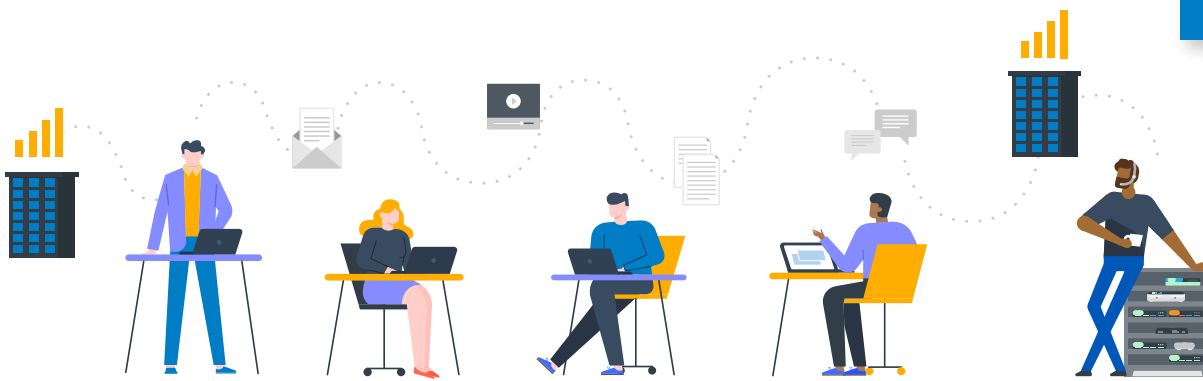
The anticipated benefits of 5G are clear, with 60% citing bandwidth as a top driver for 5G adoption. Others noted they think 5G will enhance their ability to introduce new services (51%) and 32% cited cost reduction as a major driver for 5G deployment in the next few years.

The research also finds use of broadband has increased as T1/T3 and MPLS (Multi-Protocol Label Switching) has declined since 2018. The research found 50% of respondents are using broadband today, compared to just 36% in 2018.

Those currently using or planning to adopt LTE and 5G are more likely to also have plans to adopt SD-WAN. That's because as more and more businesses rely on wireless technology to support their WANs, SD-WAN has become a critical part of encouraging this type of modern WAN. Almost half (46%) of companies will deploy SD-WAN within six months, and two-thirds (68%) within the year.

Confidence that 5G Will Deliver Promised Enhancements



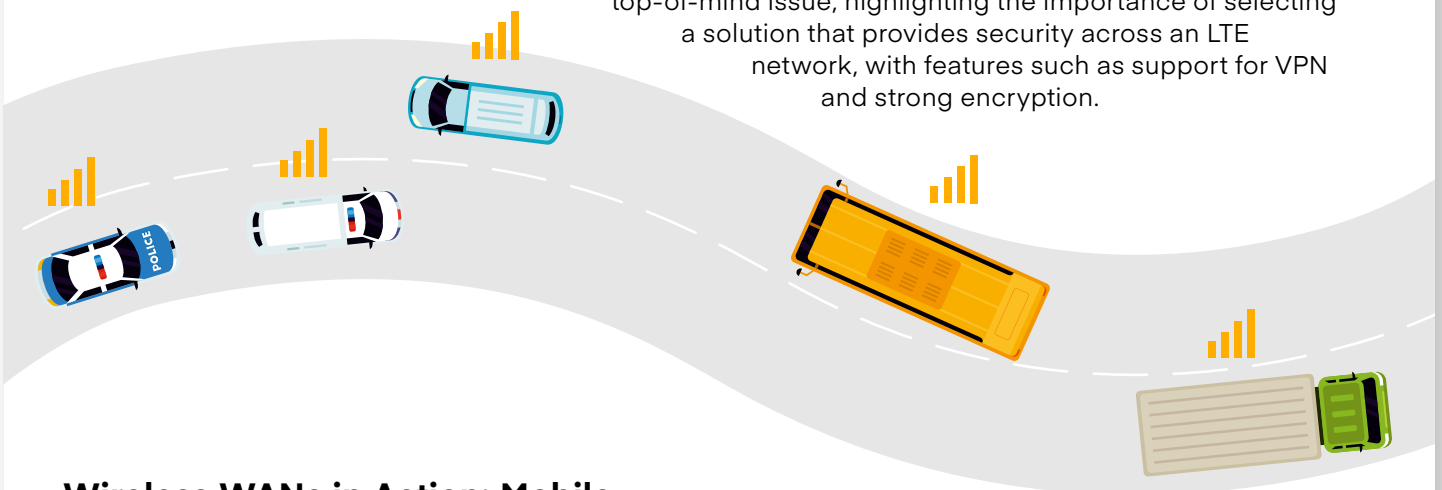


Wireless WANs in Action: Branch

Overall, companies in the survey have more than 200 branches in their WAN, on average. Larger companies connect even more with an average of 364 branches in their WAN. And the benefits of the technology are clearly anticipated in these locations as the vast majority (91%) are planning to deploy LTE and 5G over the coming years, with 53% noting they will blend both technologies within branches in the next 3 years. Additionally, 78% say they are using or considering using LTE or 5G as the only WAN link in their branch locations; a testament to confidence that the technology is reliable enough to stand on its own.

78% say they are using or considering using LTE or 5G as the only WAN link in their branch locations.

However, cost is a concern when it comes to branch connectivity, as ITDMs say they struggle most with the high cost of WAN. Nearly half are seeking a cost-effective solution – 40% cited high costs as the biggest challenge for WAN branch connectivity. Security is also high on the list of priorities when it comes to choosing a solution: 39% noted security is a top-of-mind issue, highlighting the importance of selecting a solution that provides security across an LTE network, with features such as support for VPN and strong encryption.



Wireless WANs in Action: Mobile

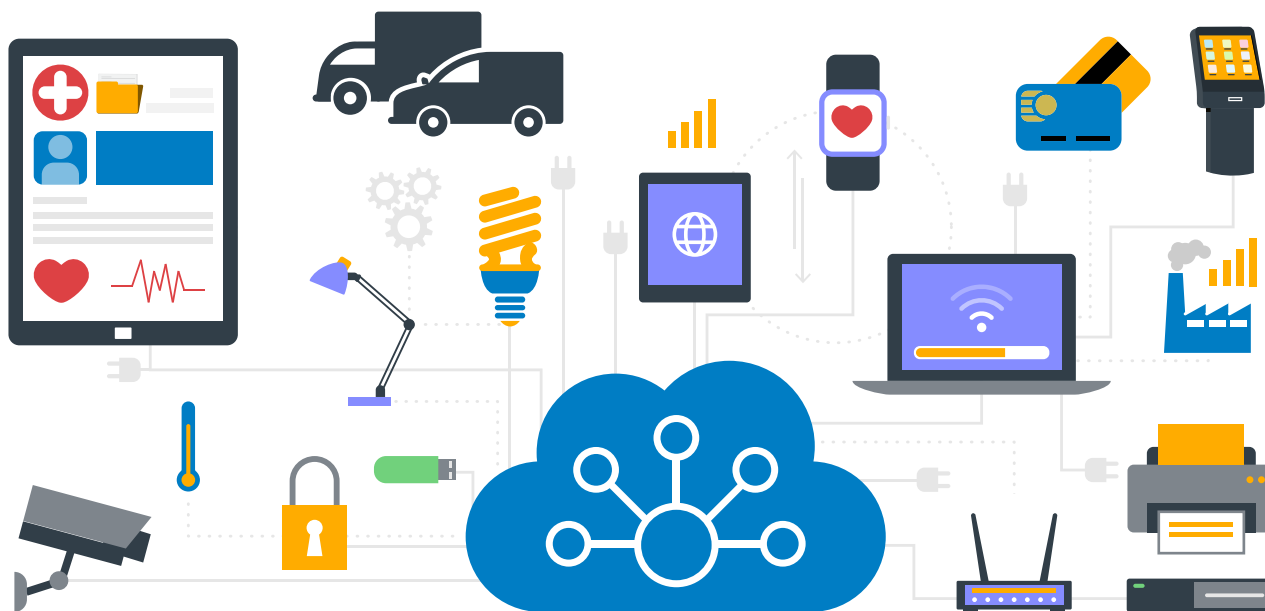
LTE WAN links are especially important in vehicles, where wired broadband is not an option. Companies in the IDG survey have more than 200 fleet vehicles on average, and almost half of fleet vehicles have mobile network solutions. Three-in-five respondents expect the number of connected vehicles to increase, pointing to an obvious opportunity for further Wireless WAN growth. At this time, most fleets are a blend of links, including Wi-Fi as WAN and LTE.

When it comes to in-vehicle networks, 37% of respondents point to cost as the biggest challenge to vehicle WAN deployment, while 30% are concerned with security issues.

Wireless WANs in Action: IoT

The number of connected devices and applications needing WAN connectivity continues to increase. On average, companies deploy more than 200 devices on their IoT networks, with security cameras and sensors the most commonly deployed devices. Three-in-five respondents expect the number of connected devices to increase — driving demand for a Wireless WAN.

Manageability of WAN in IoT deployments is a top concern for ITDMs, with 31% noting it as an issue. However, cost and security are even more challenging in IoT deployments, as both were named by 38% of respondents as a concerning issue.



Overcoming Misperceptions

Concerns about Wireless WAN have changed very little in past two years. Roughly the same number of respondents listed security and cost as top concerns in Cradlepoint's 2018 survey of ITDMs. While security is top of mind, it is important to note that with a cellular network, users can use an Access Point Name (APN), which is a private cellular network provided by a carrier.

While cellular usually costs more on a per-megabyte basis than other forms of broadband, network

operators are beginning to offer flat-rate pricing and no-coverage data plans. Also, cellular networks often save organizations money when it comes to vendor relationships, as most can contract with one or two nationwide carriers instead of dozens or even hundreds of regionally based wired ISPs.

While the security and cost concerns of potential users are valid, they do not outweigh the many benefits of wireless.

Wireless WAN Has Arrived; 5G is its Future

The global workforce is undergoing dramatic changes. This transformation requires unprecedented connectivity that is agile, fast, reliable, and secure. Figures from Cradlepoint clearly reveal that wireless is the network choice for the future.

In today's 24x7, always-on environment, with a large percentage of employees working remotely and operations taking place in a variety of spaces, agility is key. Businesses have new and evolving needs, such as opening locations quickly and setting up operations in unusual

spaces. This requirement for fast-paced flexibility has been unfolding for several years, but was accelerated by the recent pandemic.

In order to meet today's business demands, ITDMs are embracing Wireless WANs, which deliver the freedom needed to make business decisions that will drive innovation and lay a foundation for future success.

5G is on the horizon and represents yet another sea change in technology. 5G will create fiber-fast networks for business and enable new applications and use cases that will allow further innovation. Deploying LTE now only further positions organizations for success for transitioning to 5G as it becomes available.

The State of Wireless WAN 2020: Key Takeaways

40%

Expanded WAN Edge:

40% of organizations have branch locations, vehicles, and IoT devices connected via a WAN.

78%

Wireless WAN Branch:

78% of IT decision-makers are using or considering using LTE or 5G as the only WAN link in their branch locations.

89%

Continued Rise of IoT:

89% of IT decision-makers are using or considering using LTE or 5G to connect IoT.

87%

Highly Connected Fleets:

87% of IT decision-makers are using or considering using LTE or 5G to connect vehicles.

67%

5G Future is Now:

67% of IT decision-makers are either confident or very confident 5G will deliver the promised business benefits within the next year.

51%

Flexibility to Innovate:

The No. 1 reason IT decision-makers (51%) are increasing their use of LTE as a WAN link is to introduce new services.

Cradlepoint can help you on the pathway to 5G by fully unlocking the power of secure, reliable, and agile Wireless WANs.

[Learn more at cradlepoint.com.](https://www.cradlepoint.com)