

SEPTEMBER 2020

Is Your Agency 5G Ready?

✦ **Talk of 5G, specifically the technology that will underpin new applications and user experiences and enable a step-change in connectivity, excites everyone from tech-savvy teens to CIOs. With a promise of phenomenal mobile connectivity due to higher throughput, higher bandwidth, lower latency, better connectivity, secure information sharing and easy access to data, anything “5G” is an attention grabber.**

This excitement rings especially true for military and civilian federal agencies always looking for more effective ways to fulfill their missions to protect and serve citizens in a hyper-connected world.

IT modernization is not new, nor is the search for secure, intelligent, cost-effective solutions that are scalable to future applications. 5G is no different. Planning for a 5G-enabled workplace means looking at what is possible today versus what will be possible when a genuine 5G network is in place—and how agencies can prepare for both.

To find out how federal agencies can harness the power and promise of 5G, CommScope commissioned market research firm Market Connections to conduct a study exploring the level of 5G awareness and preparedness within federal agencies.

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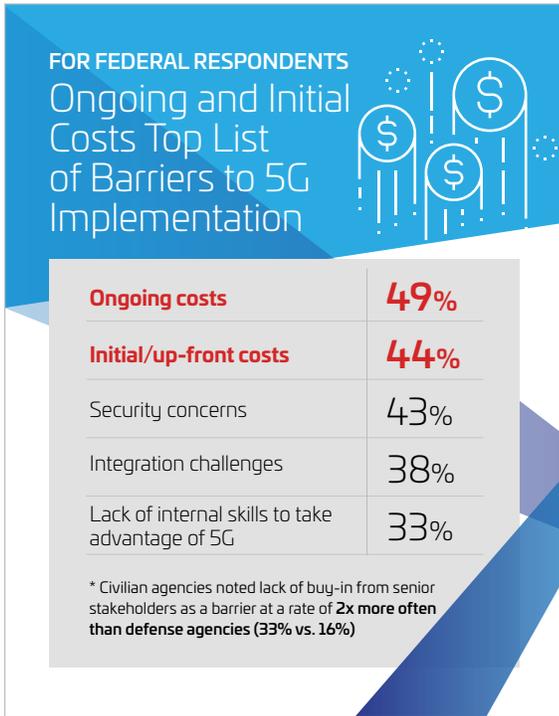
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Top Findings

While a genuine 5G network is not in place today, 5G technologies and tools are still having an impact. In fact, the majority of respondents think 5G will have a significant impact on their agency’s operations within one to four years (1-2 years, 38%; 3-4 years, 30%).

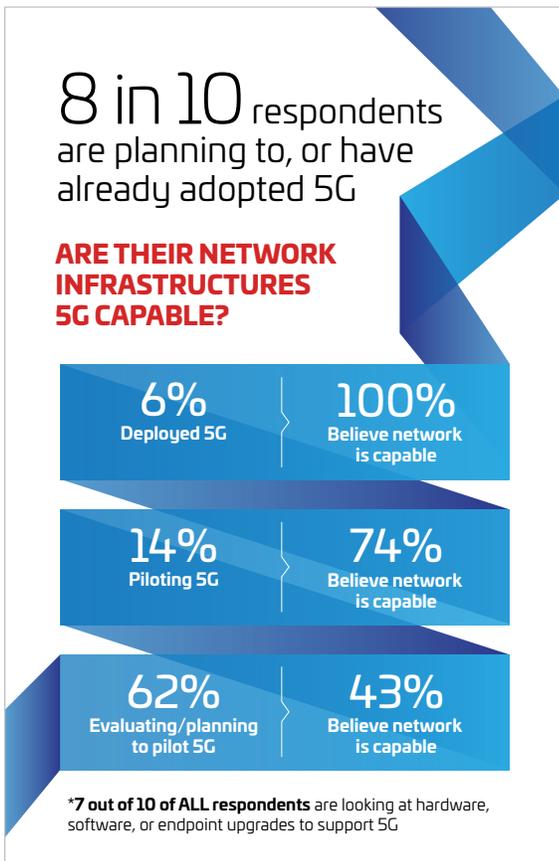
5G means operating at higher frequencies, and that means it will be more challenging than it is now to get signals inside of the building. That type of network performance requires base infrastructure such as availability of fiber to cell sites. Therefore, it is no surprise that respondents believe the biggest barriers to 5G adoption are the costs: 44% believe initial/up-front costs will be the biggest barrier and 49% are concerned about ongoing costs. About one-quarter say not being aware of what is required for adoption will be their barrier.

Nearly half of all respondents (46%) said they feel their current network infrastructure is capable of supporting 5G; however, this depends on how far along they are in the process. It’s no surprise that all of the small percentage (6%) of respondents who have already deployed 5G feel their network infrastructure is capable. Meanwhile of the 14% who are piloting 5G, three-quarters (74%) feel their network is capable, and for the 62% who are planning to deploy, less than half (43%) feel their network is capable.

Nearly three quarters (71%) said they’re looking at hardware, software, or endpoint upgrades to support a 5G initiative. Significantly more civilian than defense agency respondents are not looking at upgrades to support a 5G initiative.

What will respondents use 5G enabled technologies for? More than two-thirds will use it for data analytics and over half will use it for the Internet of Things. Artificial intelligence is ranked third (45%). Keeping traffic traversing the agency’s network on site is important to the majority of respondents: mission-critical traffic is 83% and non-mission critical traffic is 64%.

Given these desires and concerns, what does it mean for a federal agency to be 5G ready?





What Does Being 5G Ready Mean?

Migrating to 5G will not automatically be quick or easy—there are several base infrastructure requirements that are critical for the technologies to work. In addition, data privacy and security are true concerns in terms of building the network—particularly regarding compliance with GDPR rules and cybersecurity.

From a critical infrastructure standpoint, an agency needs to have:

1. Sites available across the campus where they can deploy base stations that are all interconnected with fiber. Small cell sites placed across campuses closer to users along with an internal building DAS (Distributed Antenna System) to ensure in-building coverage improves the coverage, capacity, and overall experience for users. While they can be backhauled over copper and air, fiber-based small cell MBH is scalable, secure, and often the most cost-effective.
2. A data center that can support the 5G-NR (New Radio) core, which the 3rd Generation Partnership Project (3GPP) just ratified. The 4G network architecture, which many agencies are initially using to deploy 5G, was defined to meet mobile network needs that existed several years ago. Today it presents limitations that a 5G-NR core overcomes—particularly around how much data can be quickly transferred across blocks of spectrum.

Data analytics and IoT are the top applications respondents say they will use 5G for. That means massive increases in data processing. The data center’s power will be needed to create the algorithms that enable this data to be processed. In an IoT-empowered world, the importance of augmented intelligence (AI) and machine learning (ML) cannot be understated. Neither can the role of the data center in making it happen.

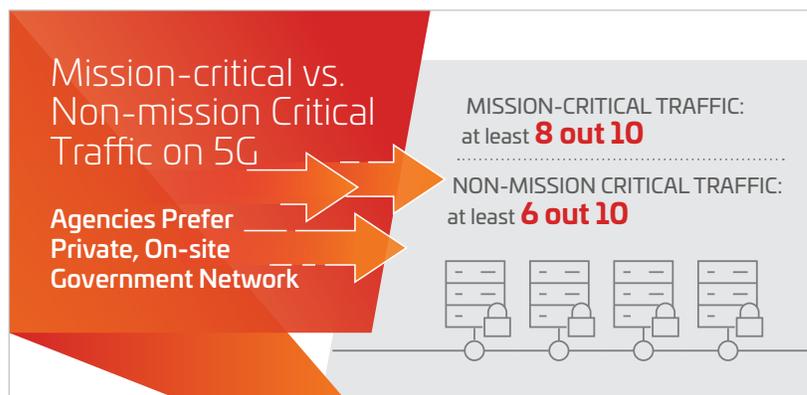
3. Tower sites where you can mount the equipment so that you are able to cover the campus. Masts that transmit data to and from a device to the wider network are essential for the radio layer of a 5G network and ensuring that DAS systems are deployed for internal LTE coverage.

There is no single approach to 5G, and no one-size-fits-all 5G solution Chris Collura, CommScope VP Federal says. However, in addition to the general 5G connectivity, federal agencies should also consider private networks, whether those are private LTE networks, private 5G networks, or a migration from one to the other to ensure flexibility and scalability. A DAS or small cell solution for in-building connectivity is crucial for any deployment scenario.

Private Networks

The choice between a public or private network for federal agencies is clear: if an agency deploys a private 5G network, the infrastructure and the data is theirs and they are able to control the ongoing costs because there are no more subscriptions for services.

In addition, respondents indicate they want to protect both their mission critical and non-mission critical traffic. Agencies do not want to be in a situation where they are depending on continued changes to an operator’s public network. Therefore, the idea that private networks create an environment where you can actually keep the data on the premises is an important concept. LTE and Citizens Broadband Radio Service (CBRS) allow that today.





“There are several options for private networks that depend on the agency mission and needs. For example, CommScope is involved on a project with the DoD where they’re using CBRS as a steppingstone to 5G networks because of the mid-band spectrum that it operates in. This solution will meet their needs now and, in the future,” said Collura.

This makes LTE on CBRS an attractive option because if and when the agency is ready to migrate to 5G, you’ve got a platform in place to do it.

Planning the Next Steps

For agencies at the beginning of the 5G journey, there are several steps to take to decide how to move forward with piloting and adoption. Before selecting a vendor or solution, ask:

1. What is the ultimate use case of the network?
2. What do we need to be able to do, who do we want to do it, and who do we want to give access to?
3. How much flexibility to develop custom solutions, control over the network and security do we need?
4. Will we be able to operate and maintain the networks? What kinds of skill sets should my people be attaining?
5. Consider initial costs and costs over time of both public and private implementation models. What is the initial capital expenditure required to set up a private network? How does that compare to the multi-year cost over public networks (hint: it’s not always less expensive)? How will we adapt our connectivity strategy to the 5G evolution path?
6. How often can we review our digital transformation goals to assess how they are evolving and how quickly we can pivot?
7. How long will this transformation take and do we need interim steps?

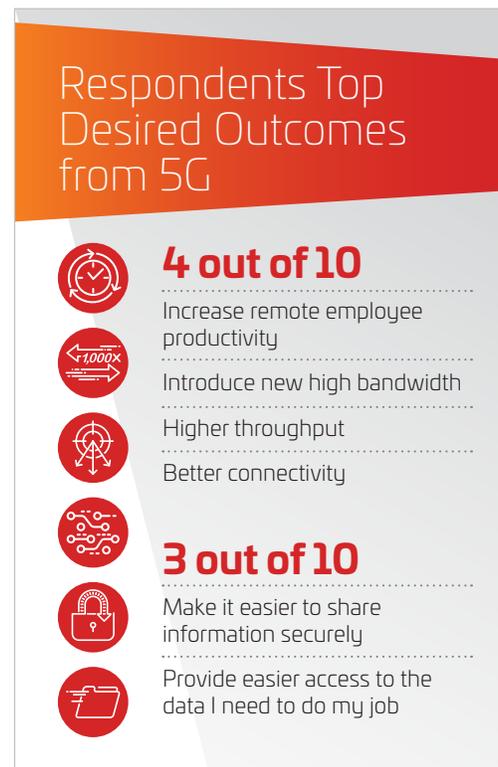
Conclusions

The technologies and devices 5G enable are, and will continue, to transform how the federal government works.

Ensuring that the base level infrastructure to support the bandwidth, throughput, and traffic needed is in place will make the promise of 5G a reality today and tomorrow.

Understanding federal agency desired outcomes and mapping them with the right infrastructure is key to meeting those expectations.

As a part of a complete solution 5G, CBRS and Wi-Fi should be considered to support all connectivity requirements.





ABOUT THIS STUDY

From April 23 to May 13, 2020, 200 federal government decision makers involved in wired or wireless network and communications infrastructure solutions participated in a blind online survey. Respondents included: 56% federal civilian or independent government agency; 40% defense, military, or intelligence agency; 3% federal judicial branch; and 2% federal legislature. All respondents had some knowledge of 5G adoption within their agency: 71% evaluate or recommend firms; 65% are on a team that makes decisions; 50% develop technical requirements; 38% manage or implement solutions; 17% make the final decision; and 3% have some other involvement. Two-thirds (62%) are evaluating or planning to pilot 5G; 6% have deployed 5G; 14% are piloting 5G; 13% are not planning to implement 5G; and 7% do not know their agencies' status of adopting 5G.

ABOUT MARKET CONNECTIONS, INC.

Market Connections delivers actionable intelligence and insights that enable improved business performance and positioning for leading businesses, trade associations, and the public sector. The custom market research firm is a sought-after authority on preferences, perceptions, and trends among the public sector and the contractors who serve them, offering deep domain expertise in information technology and telecommunications; healthcare; and education.

For more information visit: marketconnectionsinc.com

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At CommScope Federal, we push the boundaries of communications technology to create the world's most advanced networks. Across the globe, our partners and their solutions are redefining connectivity, solving today's challenges and driving the innovation that will meet the needs of what's next.

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