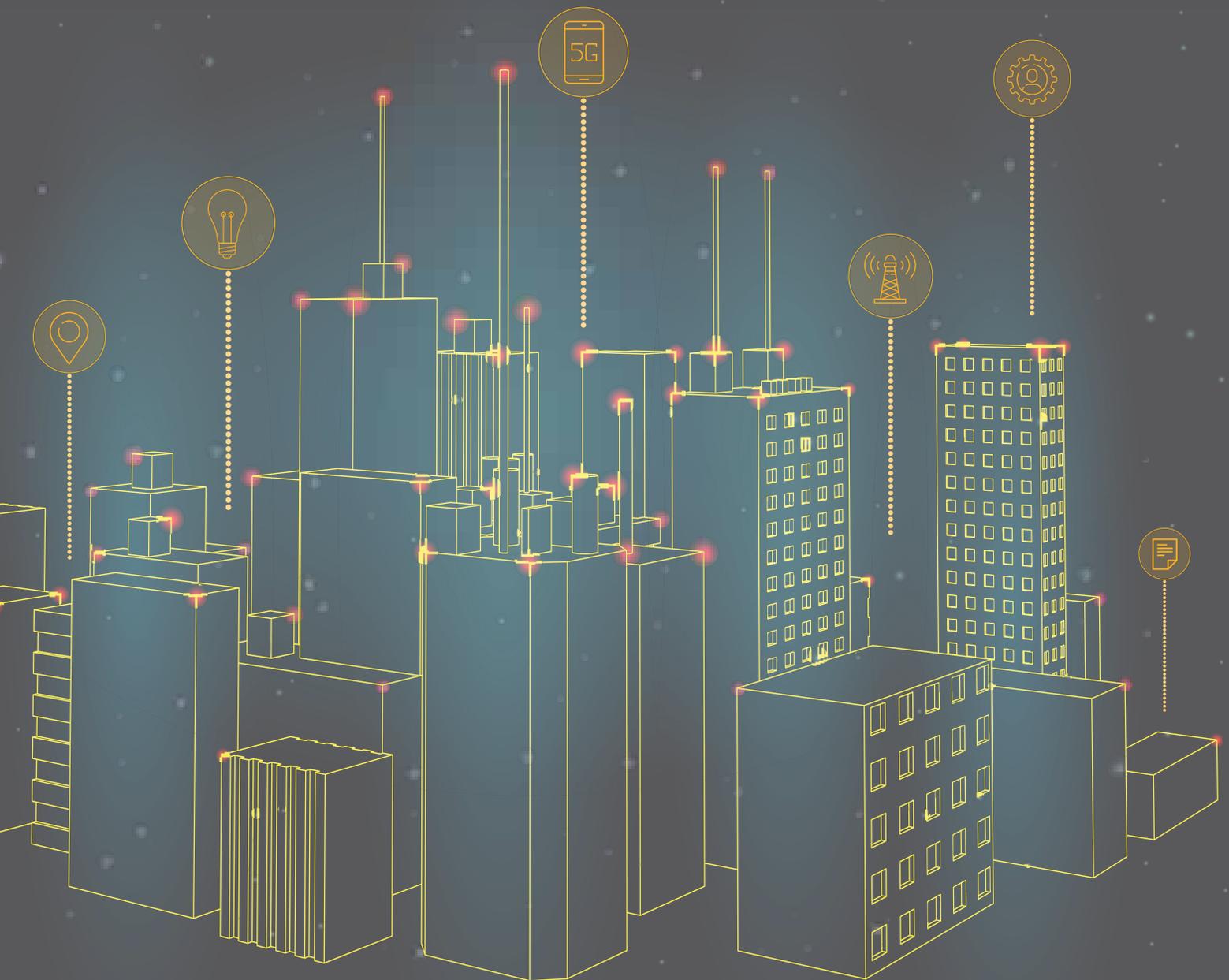


WHAT GOVERNMENT OFFICIALS NEED TO KNOW TO PREPARE FOR 5G

Industry analysts are predicting a steep rise in the demand for wireless broadband networks. Municipalities must prepare now by modernizing permitting processes.



An influx of permit requests is about to hit local government, but many municipalities aren't taking the necessary steps to prepare themselves. The driver is 5G, the latest generation of wireless broadband technology. Telecommunications carriers are still in an early stage of implementing the necessary infrastructure to support 5G. So far, municipalities typically can handle the volume of permit requests for small cells, the low power, short-range wireless transmission units that enable the new technology. But the demand for permits is expected to spike sharply as commercial carriers expand their infrastructures in a rush for 5G market share.

How big will the 5G wave be? The total market for 5G systems and related network infrastructure could hit \$26 billion within three years, a rise of 118 percent from 2018, according to IDC.¹

Unfortunately, only about half of the country's municipalities say they have a formal, well-defined submission and review process in place for 5G permitting, according to a recent survey by the Center for Digital Government (CDG). Adding to the challenge, more than 43 percent of the 200 survey respondents said at least half of their permitting processes are paper-based, which adds time and overhead to the reviews.

In addition, government executives say numerous obstacles for 5G adoption exist in their jurisdictions, such as a lack of relevant expertise among internal staff to process applications and review the new technology. This knowledge gap is exacerbated by recent changes in FCC rules, which require cities to approve or deny 5G installation requests within 60 to 90 days, the survey also found.

But with the push to 5G accelerating, some forward-thinking municipalities, such as Houston, San Jose and Prince George's County, Md., are implementing comprehensive 5G strategies. The plans take advantage of cloud-based applications to modernize and streamline permitting processes.

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This paper outlines best practices that can help state and local jurisdictions jumpstart 5G plans and prepare for a future enabled by wireless broadband services.

WIRELESS BROADBAND BENEFITS

Wireless industry analysts say a 5G rush is looming because the next-generation technology's throughput promises to redefine wireless communications. The wireless industry association CTIA clocks top-end 5G transmission speeds at 100 Megabits per second, or approximately 10 times faster than 4G networks.² This will allow municipalities to expand Internet of Things (IoT) systems for better traffic control, emergency management services and environmental testing. Reliable, wireless broadband networks will also help hospitals roll out advanced telemedicine applications that include detailed digital images of patients. At the same time, citizens and businesses will be able to smoothly stream large video files in seconds using smartphones and tablets, and rural communities will be able to extend broadband networks to areas that are currently underserved because of the costs and logistics problems of running underground cables.

BIG CHALLENGES FOR LOCAL GOVERNMENT

A 5G world shows promise, but governments will face many problems along the way. First, cities and counties must work closely with wireless carriers to help them lay the foundation for 5G advancements, creating an extensive network of small cells that relay high-frequency airwaves to each other via receivers that are often mounted on streetlight poles and other structures. The receivers communicate over short ranges — radiuses of approximately 500 to 600 feet. This keeps signals strong and minimizes interference. The impact for municipalities is they may need hundreds of 5G receivers to be installed across their jurisdictions, rather than the smaller number of 3G and 4G cell towers that now dot their regions. That means officials will need to review plans and issue permits for scores of small cells as each wireless carrier tries to achieve blanket coverage in their market.

Second, municipalities see gaps in internal training and expertise related to 5G and permitting processes. When asked to name the biggest obstacles they face in the 4G/5G permitting

process, officials participating in the CDG survey listed lack of knowledge and staff experience as the top roadblock.

Third, in the fall of 2018 the FCC passed new rules designed to speed up small cell permitting. The mandates also capped permit fees. Many government officials are still learning the details of these rules and trying to fully understand their implications. More than half of respondents in the CDG survey acknowledged their awareness of these rules was low.

Finally, many government agencies say they lack modern tools and processes to accommodate what could soon be a large spike in permit request volumes. Legacy, paper-oriented permitting tools, which add complexity and inefficiency to permitting workflows, are still widely used. Only 4.5 percent of CDG survey respondents said their permitting processes have been completely digitized. Nineteen percent said they rely solely on paper-based processes, while the others use a mix of paper and digital processes.

HOW TO PREPARE FOR 5G

To create a successful strategy to accommodate the anticipated spike in permit requests for 5G infrastructure, cities and counties should start by addressing two key areas.

First, close gaps in internal expertise. In addition to internal audits and detailed assessment of staff resources to identify problem areas, municipalities should seek out vendors and consultants with track records in wireless telecommunications. These third-party partners can help officials understand and navigate FCC rules and offer advice for practical upgrades from paper-based to digital permitting processes. A growing number of officials are already tapping into outside expertise. Nearly one-third of the executives in CDG's survey reported they are currently or planning to use a third party to assist with small-cell permitting.

Next, capitalize on the latest cloud services to digitize permit reviews and processing. Leading Software-as-a-Service (SaaS) providers offer solutions to standardize submission reviews, which can help government staffs handle the anticipated spikes in requests from wireless carriers. When evaluating these services, look for key features such as self-serve tools that enable carriers to submit applications and plans, and once they're approved, to electronically pay the associated fees.

The services should also let government staffs electronically review and approve the requests using workflows that are flexible enough to be tailored for existing internal processes. Choosing cloud services versus on-premises applications

The best digital permitting services include ancillary applications with specialized tools to conduct electronic plan reviews.

lets government organizations speed deployments of the applications, while mitigating the upfront capital expenses associated with procuring, installing, and testing onsite servers and software.

The best digital permitting services include ancillary applications with specialized tools to conduct electronic plan reviews. These complementary systems support collaboration among all relevant stakeholders in the various departments involved in the permitting processes, including those dedicated to municipal planning and zoning.

Another valuable option is a web-based citizen access portal that lets government staff create customized electronic forms to smooth online submissions. Leading eForms platforms check to ensure submissions are complete. Once the eForms are verified, the portal automatically starts the internal review workflow process. This automation allows for faster processing, helping local governments turn around requests quickly to meet FCC timelines.

Finally, as many jurisdictions are already beginning to roll out 5G, it's important to learn from their experiences. Municipal leaders should network with these leaders to help identify best practices and lessons learned.

TIMING IS EVERYTHING

A 5G tsunami may be about to hit local governments. But with timely planning, strategies to shore up training and skillsets, and digitalization of permit processes, municipalities can position themselves to see the benefits rather than feel the pain of wireless broadband rollouts.

This paper was created by the Center for Digital Government Content Studio, with input from Avolve Software.

Endnotes

1. <https://www.marketwatch.com/press-release/idc-forecasts-5g-network-infrastructure-revenue-to-reach-26-billion-in-2022-as-network-build-outs-progress-and-5g-enabled-solutions-gain-traction-2018-11-06>
2. https://api.ctia.org/docs/default-source/default-document-library/5g_white-paper_web2.pdf

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