

5G: Revolutionizing the Citizen-Government Connection

Advances in communication technologies enable the government to better connect with citizens

Wireless and broadband communications have continued to evolve as telecommunication companies invest in new technologies. The latest advancement, called fifth generation or 5G wireless, promises to revolutionize communications with improvements in speed, reliability, latency and power consumption. Such an advancement could really help traditionally underserved areas, such as those in much of rural America, but only if state and local governments can bring the 5G signal to those communities.

This goal is helped by the fact that in October 2020, the Federal Communication Commission established the 5G Fund for Rural America. This fund will help to connect many rural communities that are underserved by broadband communications, or which have never had access to wireless communications. This will allow people living in those communities to work remotely, attend virtual classes and will also provide them with better access to local government services. Below are some of the key points and advantages of this effort according to four experts speaking at a [recent FedInsider panel](#) regarding this topic.

1. 5G Is Much Better For Rural Communities than 4G

Even as other technologies such as the Internet of Things and the power of smart-phone applications continue to evolve, the

current 4G communications standard has had very few upgrades since its initial deployment in 2010. Today, 4G is so pushed to its limits that it's at the point where it is not practical to bring it to underserved rural communities. Instead, there is a unique opportunity to get these communities in on the ground floor of the 5G revolution.

"It is almost like the difference between 4G and 5G is the speed difference of your Wi-Fi connection in your house, and what you can get from a wired fiber optic connection," said Ted Okada, Chief Technology Officer for FEMA. There is just so much more that you can do with 5G compared with anything that came before it.

As an example, Okada talked about how 5G could revolutionize emergency response situations for rural areas. With 5G, all emergency responders could be reliably connected to one another, their dispatchers and the people they are trying to help. In addition, many life-saving tools like environmental sensors and other life-saving tools could be on the same network without any bandwidth concerns. And because of the software-defined networking aspect of 5G, Okada noted that local first responders could even set up their own private 5G networks.

2. The Most Impressive Aspects of 5G Will Come After Deployment

While there is plenty to be excited about in terms of the increased bandwidth

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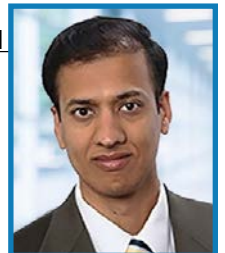
■ **Ted Okada**

Chief Technology Officer, FEMA



■ **Dr. Thyaga Nandagopal**

Acting Deputy Division Director, NSF



■ **Chris "CT" Thomas**

Lead Systems Architect, Dell Technologies Public Sector



■ **Kenneth Budka**

Senior Partner, Bell Labs Consulting



and speeds of 5G, the real innovation will occur once the network is in place and various applications and tools begin to follow. According to Dr. Thyaga Nandagopal, the Acting Deputy Division Director for the National Science Foundation, it's critical that rural areas are included in this innovation phase.

"If you look back at the history of the communication industry, in 2008 we had 3G. And when we moved to 4G, it was more of an evolution in the roadmap," Nandagopal said. The real innovation came after 4G was established.

For example, Nandagopal said that the new iPhones "did not make much of a difference" until apps such as Facebook and Uber tapped into 4G and showed the value of the new technology. Another example of this is that it was not until 4G was widely available that the gig-based economy was able to really takeoff. He predicted that 5G will follow a similar path with the world changing once it becomes the new standard.

3. End Users Want the Benefits Of 5G, But Don't Care How They Get It

We have all heard the old adage of "if you like sausage, don't watch how it's made," and this applies to technology in addition to breakfast meats. The average end user just wants the fast speed and

reliability of 5G to enable working from home and other activities. They don't really care how the connection gets to their homes, so local governments should consider every option, said Chris "CT" Thomas, the Lead Systems Architect with Dell Technologies Public Sector.

"The end user does not care what pipe they are using," said Thomas. "They don't care if it's coming from a satellite, and they don't care if it's coming from fiber. They want to work from the beach or maybe another state if they have to visit family, but for them it's all about the applications."

According to Thomas, as more companies transition to remote work environments, 5G will play a big role in enabling rural populations to reap the same rewards as their city-based neighbors. Local governments should use every tool at their disposal to connect rural communities with 5G because ultimately it will mean the difference between whether those communities gain the same advantages as everyone else this time around or again get left behind.

4. We Can't Afford to Overlook Rural Communities in 5G Deployments

It's no secret that a large digital divide exists between urban/suburban areas and rural communities. Rural users are

usually the last group to benefit from a new telecommunication technology such as 5G. This affects everyone from potential online students to remote workers and local emergency services. The FCC's 5G Fund for Rural America was created to try and bridge this gap.

"While 5G is rolling out, we still have this very strong need for broadband in rural areas," said Senior Partner with Bell Labs Consulting Kenneth Budka. "We're going to still see fixed wireless and satellite play a major role, and I'm hopeful that we will also see the U.S. begin to invest more in this type of infrastructure as we go forward."

While some rural governments have taken it upon themselves to try and implement broadband service through municipal programs, there is still a big discrepancy between those with access to reliable connectivity and those without. Making sure that rural communities have access to 5G will improve the overall economy, open up a bigger pool of potential workers and in helping the government to better serve all the members of their community. It's an opportunity, according to Budka, that we can't afford to pass up. 

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