How is the evolution of transportation influencing governments' technology needs?

Collisions and accidents are still increasing, despite everything departments of transportation (DOTs) have done to try to address that. So I expect more technology to be put to work on things like traffic congestion, speed limit enforcement, and disaster notifications.

Change is coming in two arenas. The first is commercial. Trucking may see more drone convoys, with a human driver leading unmanned vehicles. The second arena is motorists and passengers. I expect there will be an ongoing data flow among vehicles, roadside devices, and roadside services. We could also have true multi-modal transportation, with personal vehicles, buses, light rail, and subway stations providing an end-to-end mobility solution coordinated through a single portal.

How will 5G networks help support transportation initiatives?

Devices and sensors deployed along highways help reduce congestion and accidents. And technology like artificial intelligence (AI) and analytics allow for real-time decisions. But all of these solutions require robust network connectivity. 5G will provide the bandwidth to enable edge connectivity, smart technologies, and vehicle-to-infrastructure communications that will improve the transportation experience.

How should government transportation leaders prepare for the mainstreaming of vehicle-to-infrastructure communications?

There will always be data going from vehicles to devices to data centers and then back again. And that’s going to require connections to current fiber networks that will connect to 5G cell towers. Governments have to get this network right ahead of time before they get into deploying intelligent transportation applications.

How can governments tap underused fiber to improve connectivity for underserved people?

Today’s technology can maximize the traffic going over fiber. This allows more use of fiber along DOT right-of-ways. DOTs can use this extra fiber connectivity to provide broadband access to municipalities and counties. This can extend broadband to remote and underserved communities. Agencies also can monetize those fiber assets, doing things like public-private partnerships to create additional revenue streams that can be invested in improving the passenger and motorist experience.

What are the greatest network security concerns for transportation leaders in this decade?

Many intelligent transportation devices are not necessarily monitored 24/7. That’s a physical security vulnerability. There are also network vulnerabilities because those devices don’t necessarily have strong passwords. They’re certainly not updated or patched as often as they need to be. It’s the same with the network devices, routers and servers along the roadside. Agencies should constantly upgrade, patch, and replace those devices.

Leaders really need to start to think of how to push out those security patches and upgrades from a central location. With software-based security, they can do that in an hour or two versus what might have taken a month to physically visit each of those individual devices.