

Companies today need to routinely assess their wireless network connectivity options related to their products and overall operations

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In this hoganlovells.com interview, Hogan Lovells partner Trey Hanbury talks about the need for wireless carriers to broaden their offerings to meet the demands of an increasing number of niche markets. At the same time, companies are faced with the challenge of selecting the right connectivity option that's efficient and optimized for their connected devices and for their overall operations.

"Everything is connected," Hanbury said. "How can carriers serve all these niche markets with all kinds of different needs because they are offering different kinds of connectivity products? If you are on the other side and you are trying to connect to your subscribers, how do you choose among what's going to be offered to you so that you provide the best product for the best price and best service?"

How has the connectivity of devices changed how companies across many verticals need to think about network access and spectrum?

Hanbury: My message to companies is this: You may not think you are a communications company but you really are. You'd be surprised by the number of companies that have U.S. Federal Communications Commission (FCC) licenses but never realize they actually have them until it is time to transfer control.

What's radically new is that everything is becoming connected and access to the transmission path becomes critical to gathering performance data, user data, and information about battery life on a new product. It's dawning on companies that the network connectivity component is as important as the actual product that they are making. Drones, cars, or even microwaves won't be competitive if they are not connected in an efficient manner. You need to think about a lot of different parameters, such as battery life. If you have great coverage, your device won't have to work as hard to reach the network. If you have poor coverage, your device is going to burn through battery much more quickly.

Coverage is a function of which band you use and which provider you contract with. If you go with one that offers a cheaper price, there is a tradeoff. You might have poor coverage and

consumers who can never access your service. Or you might have spotty coverage and your device has to work harder and its battery life suffers. There can be all kinds of interesting choices to make among desirable but potentially incompatible features.

How are wireless carriers positioning themselves to provide connectivity to companies in a variety of niche markets?

Hanbury: The carriers are well aware of the need to have a balance of coverage versus capacity. They are very sophisticated about understanding that they need different types of spectrum in different quantities and in different areas. At Hogan Lovells, we help those on the carrier side secure the resources that they need to serve many different verticals. There is the phone component, but phones serve many different functions – from video consumption to email to texting to voice calls. There are also different kinds of users: consumers, small businesses, enterprise users, first responders, and other niche markets that these carriers need to serve. To offer these services efficiently, carriers need a variety of resources — and the spectrum is that different resource.

Different bands have different properties; low frequency bands travel long distances and penetrate walls really well. There's not that much low-band spectrum — many of the bands are also heavily encumbered. Limited access to this resource presents a challenge. There are plenty more of the higher frequency bands but coverage performance can be poor even though the capacity benefits may be great. So you need to be thoughtful about how you put all of these resources together. For so long it has been the province of wireless operators to find a solution. But it's now becoming a business and a legal imperative to find that solution. You have to know the engineering, the rights that are available in the different bands — whether or not they exist, whether they are allocated in the right way, whether they can be used in a certain way.

How do companies across industry need to think about wireless connectivity in ways they haven't before?

Hanbury: As consumer of wireless solutions, companies need to be smart about how they choose the network resources and connectivity because it will feed into the devices a company makes and the capabilities, range, and service life those devices have. Companies need to be smart consumers about how they contract these services and decide on the right option to pursue. Is it an unlicensed option? Or is it a relationship with a carrier? Or is it some kind of private wireless solution or something totally different?

Companies that never had a smart or connected product have to think about how they make it connected or they won't be competitive. After those companies make that leap, they also need to think about how they do it efficiently and optimize that connectivity in a way that lowers

cost, simplifies the end-user experience, makes it more reliable, consumes less battery, or supports different types of services not previously offered.

Companies need to realize that they have some agency here. They have the ability to select the bands, the operator, and the allocation model — licensed or unlicensed — that's best for them. And companies will need to keep making that decision because what's right for this year and a particular product is not necessarily going to be right three or five years from now. To me, it's this really fascinating challenge that continues to change as technology changes and the market evolves.

Are there any unrealized revenue opportunities associated with connectivity solutions?

Hanbury: Yes. For example, some port operators have their own private wireless networks for walkie-talkies. That may be a perfectly good solution. But there might be a revenue opportunity for the port operator if it allows a carrier to come in and install a few cell sites at its terminal in return for free cell phone service with new features and connectivity. There might be some sort of creative solution — so instead of it being a cost center it could become a profit center.

From an operational perspective, how can the right type of network connectivity benefit a company's bottom line?

Hanbury: For companies, connectivity is about how they can enhance their performance and make their operations more efficient or develop product over time that takes advantage of all the access that they are buying. It's about increasing your response time, accessing information, or quickly providing your workers with greater opportunities to collaborate. It could come from a third-party provider. It could come from a bespoke type of solution that's developed for you. Or it could be just going to the local electronics vendor and ordering some unlicensed devices. Whatever the option, the choice needs to be made thoughtfully because the effects could prove long lasting.

Can you describe some of the new platforms and technologies that are coming online?

Hanbury: I'm always impressed with the sheer number of offerings that come online every day. It's really an exciting time because all of the technology is changing in terms of capabilities and it's also getting a lot more affordable. So you've got a lot more options to choose from.

Moving computing power to the cloud continues to transform the telecommunications industry. There are ten-by-twenty centimeter satellites that cost approximately US\$100,000 to construct. These small sats have made it very affordable to launch and operate a satellite with an

18-24 month lifespan and the remote location of computing power allows for some incredibly innovative applications that would not have been financially viable just a few years ago. With enough small satellites in the air, for example, you can transit signals among them and then measure how the transmissions are delayed or bent as they go through the atmosphere. This simple form of radio occultation allows us to understand an immense amount of information about our planet and its weather, including barometric pressure, temperature, and humidity in the upper atmosphere, which can help you predict weather on the ground.

Because the technology is becoming more scaled and easily accessible, you are seeing a lot of new companies entering the space. And the one thing that holds them up time and again is access to spectrum. Each band has different properties, so if you want to be that one company that's launching small sats into the air and exploring for oil, there are only certain frequencies that resonate with oil. And we help companies get the right assets to make their businesses run more efficiently in the market.

About Trey Hanbury

With more than 20 years in the field, Trey Hanbury has a wealth of experience helping clients tackle their most challenging technology, media, and telecommunications policy issues. He recognizes that companies operating in the TMT sector face increasing competition and an ever-changing regulatory environment. Whether his clients require assistance with spectrum auctions, licensing, and allocation; mergers and acquisitions; regulatory compliance; procurement; or competition policy, Hanbury brings his legal background and a deep understanding of technology policy to help solve his clients' most pressing and complex issues.

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