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Funding Uncertainties Wreak Havoc for Rural Communications at the Worst Time Possible

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Key Points:

- The Secure and Trusted Communications Networks (STCN) Act requires operators to rip and replace all non-compliant equipment in their networks, and prevents them from using Universal Services Funds (USF) to procure non-compliant equipment.
- STCN includes \$1 billion to cover the associated network costs. The funding is not only insufficient, but it has yet to be appropriated by Congress.
- Affected operators are stuck in a holding pattern as they wait for the Federal Communications Commission (FCC) to define the rip and replace rules, and for Congress to appropriate the funds.
- All of this uncertainty is wreaking havoc for affected operators and is putting rural residents at risk of losing critical communication services at the worst possible time.
- Operators urgently need Congress and the FCC to act so they can do their work to ensure rural residents stay connected.

Introduction

As the U.S. and China continue to battle over trade, technology, and intellectual property rights, those living in rural America are getting caught in the middle. The ban on Chinese-made telecom equipment and the associated government funding risks are creating headaches for rural wireless operators. Recall that a new law requires U.S. companies to rip and replace non-compliant telecom equipment from their networks, but the funding to pay for this has yet to be appropriated by Congress. These funding uncertainties and USF restrictions are wreaking havoc on affected rural operators, and increase the risks that rural residents will lose access to critical communication services. The confluence of these events could not have come at a worse time as the pandemic has forced people to rely on communication services to live, learn, and work like never before.

In this report we look at the challenges facing rural operators as they are forced to overhaul their networks, and how the current environment is impacting rural residents.



Secure and Trusted Communications Networks Act

Enacted in March 2020, the Secure and Trusted Communications Networks (STCN) Act establishes “(1) a mechanism to prevent communications equipment or services that pose a national security risk from entering U.S. networks, and (2) a program to remove any such equipment or services currently used in U.S. networks.” STCN authorizes but does not appropriate \$1 billion to pay for the rip and replacement of non-compliant equipment for operators that have less than 2 million subscribers. STCN also prohibits the use of USF receipts to pay for any products or services sourced from non-compliant vendors.

Waiting Game

Rural operators are desperately waiting for Congress to appropriate the \$1 billion that was included in STCN. Until then, they cannot start signing contracts and procuring new equipment. These uncertainties and restrictions paralyze an operator’s ability to make the necessary investments in their network to support the surge in data traffic stemming from home-bound consumers, and the associated massive digital transformation we are witnessing.

For example, some wireless operators have experienced a 200% increase in data traffic as more people work and learn from home. To support this increase in traffic, while

still maintaining minimum data speeds, operators have two choices: 1) cell split (adding new cell sites) or 2) add additional sectors to a site. Making these investments in today’s environment is a massive risk, as there is no guarantee operators will be reimbursed. Another option is to secure a bridge loan, but without assurances that Congress will authorize the funding, banks may be unwilling to extend financing.

Access to funding is only part of the problem.

The STCN stipulates that the FCC is responsible for establishing the rules operators need to follow as they rip and replace non-compliant equipment. Unfortunately at this point, the FCC has yet to formalize the rules, which keeps operators in a holding pattern that impedes their ability to develop a network transition strategy. The next opportunity for the FCC to establish these rules is at its December 10 meeting. To provide some much needed clarity, we encourage the Commission to include rip and replace rules on the agenda.

Lastly, while operators with non-compliant equipment wait for the FCC and Congress to go through their processes, they also run the risk of not complying with pending FCC requirements. In particular, the upcoming STIR/SHAKEN mandate – that deals with reducing robocalls – requires operators to implement their solution by June 30, 2021. Operators who fail to meet FCC mandates are at risk of being fined, but until money is appropriated and FCC rules are established, implementing the required technologies to be in compliance is problematic.

Vendor Issues

For operators who have access to capital, procuring compliant replacement parts is easier said than done. Before the recent advent of O-RAN – a concept to standardize, or “open,” radio access network elements – infrastructure manufacturers interpreted and implemented wireless standards differently. And these differing interpretations make it very difficult for operators to mix and match vendor equipment in a cell site. For example, mixing and matching makes it almost impossible to do end-to-end network testing which could



result in unexpected outages and network performance issues. This increases network operation costs while negatively impacting customer access to the network.

The lack of interoperability and the closed nature of many systems is especially problematic for networks that are exposed to the wraths of Mother Nature that can destroy radio access network equipment. This includes operators in high-risk fire, tornado, and hurricane areas.

The other supply chain issue rural operators face is gaining access to equipment and labor once the rip and replace rules are finalized and funding has been appropriated. At this point it is unclear exactly how much time the FCC will give operators to replace their non-compliant equipment. Per the STCN, operators will have 12 months to rip and replace non-compliant equipment, but the FCC can grant a general extension to everyone for 6 months.

There is no doubt rural operators will want to move quickly, but the choke point could quickly become access to labor and equipment. Given the significant amount of wireless network build activity currently underway (5G upgrades from national operators, cable operators building new networks, Dish Network's national build, new CBRS networks, etc.) small rural operators are at risk of being pushed to the back of the line. The reality is, there are simply much larger opportunities for manufacturers and construction companies outside of rural America.

These supply chain issues not only put rural operators at risk of violating of FCC rules (if they are not giving a reasonable amount of time to complete the rip and replace) but they will also increase the risks of network outages.

Limited Options

For rural American residents, the fallout from STCN would be less of an issue if they had other options – say from the deep-pocketed national operators such as T-Mobile, AT&T and Verizon. But unfortunately for many rural residents, the service offered by local wireless operators is their only option. For example, in parts of northeast Montana, the national operators combined have approximately 20 cell sites. In contrast, Nemont, the local service provider in the region, has approximately 80 cell sites. So despite all the talk of national operators expanding service to rural America, there simply isn't evidence that this is happening in any meaningful way.

This puts some rural residents in an untenable situation. With many affected rural operators unable to access replacement parts, residents are at risk of losing their critical communications services. Given how the pandemic has upended the way people live and work – with no end in sight – not having access to communication services has far-reaching consequences (think not having access to 911 or health care services, not being able to work, having to attend online classes from a McDonalds parking lot, etc.).

Conclusion

Rural wireless operators with Chinese-made equipment have been operating under a great deal of uncertainty for several years. As a result, they have fallen woefully behind the national operators, which has expanded the digital divide. Operators are terrified that as they plan network upgrades with foreign-made equipment, the nation's friends of today could become enemies in the future. The last thing they want is to go through another government-mandated network overhaul. The industry therefore should explore adopting a virtualized/O-RAN

architecture as it will give operators flexibility to pivot should the need arise. However, they will need significant up-front software development support, as most lack the expertise and capital needed to employ this strategy.

In the near term, operators need funding certainty and defined rules of engagement. Until then, they are stuck in a holding pattern that jeopardizes rural residents' access to any wireless communication services. The FCC also needs to take into account all the supply chain challenges facing the industry to ensure that rural operators are given sufficient time to rip and replace Chinese-made equipment. ■

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