

**Testimony of Tareq Amin  
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Hearing on “Leading the Wireless Future: Securing American Network Technology”**

**U.S. House of Representatives  
Committee on Energy and Commerce, Subcommittee on Communications and Technology**

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Good morning, Chairmen Pallone and Doyle, Ranking Members McMorris Rodgers and Latta, and Members of the Subcommittee. Thank you for the opportunity to testify today on this important topic. I am Tareq Amin, Representative Director, Executive Vice President and CTO of Rakuten Mobile.

To start, let me say Rakuten doesn't think of itself as a mobile operator. We are a technology company, with both Japanese and American DNA, committed to bringing the best of what the technology sector offers to advance the agility, security, and affordability of the wireless networks and services. In fact, Rakuten Mobile is its own first customer. Running on our open cloud-based Rakuten Communications Platform (or RCP), our mobile network in Japan proves that cloud-based wireless networks are no longer a vision that merits discussion. They are not just a proof of concept, they are a reality. We are driving a more diverse supply chain, with continuing innovation across multiple technologies, and providing significant consumer benefit. And, the majority of our network components come from U.S. suppliers. In today's testimony I want to help you see through my eyes and those of our employees, executives, and customers how we decided to revolutionize mobile and wireless networks and the advantages of such an architecture for American networks.

Almost seven years ago, I had an opportunity to visit the data centers of one of America's top Internet platforms and I was shocked to see how they engineered, how they built, and how they architected their systems. Their culture of rapid innovation, software-centric, and service agility is not the norm in traditional telecom industry. When I joined Rakuten, I was fascinated that Rakuten, as a company that focused on ecommerce and cloud services, not telecom, shared the same Internet culture. I was optimistic that Rakuten would give me the opportunity to do something for the wireless industry that is well overdue—to reimagine the network end to end – from Radio to Transport to the Core and Support Systems – leveraging the Internet and cloud principles.

In 2018, Rakuten got a grant of spectrum from the Japanese government to offer commercial wireless services in Japan and we got to work. Our vision was a network that is more secure, more agile, more resilient, and more affordable than legacy wireless networks. The problem was that network didn't exist – anywhere. Undaunted, Rakuten had the courage, the commitment, and the foresight to forge ahead with our vision. And in 2020, Rakuten Mobile launched the world's first end-to-end, fully-virtualized, cloud-native mobile network. In just two years, we went from concept to fully deployed commercial network. We have a highly secure network with total cost of ownership that is at least one third less than the same network built in the traditional model would have been. It's a secure network that can flexibly serve our customers changing

demands with new services; it's a network that's more resilient than its counterparts; and it's a model that cultivates a more diverse and innovative telecom supply chain.

When we started this journey, Rakuten had a choice: to select a traditional vendor or to bring the ethos of the technology sector to telecom. In fact, the behind-the-scenes story is that we did consider going with Chinese equipment. One of my first jobs at Rakuten was to cancel that RFP and reimagine how future networks should be built and the possibility that networks could be more secure. Now we had a vision and we had committed executive leadership, but we did not have an ecosystem. We knew that for this network concept to become credible, an ecosystem needed to be created.

Historically, wireless networks have relied on a small number of vendors to provide complete vertical solutions from radio to the core and other parts of the network. It has always been about replacing proprietary hardware with new proprietary hardware—it was never about software. While that model has evolved somewhat from its early days, the reality is that there are now only a handful of mobile network vendors.

In order for our model to come to life, we had to find the right partners. For example, in 2018, we reached out to Nokia and said, “I want to buy 4G radio equipment from you with an open interface.” In lay terms, we were asking Nokia to sell us only the radio parts of their complete solution, so that we could use those with our preferred radio software solution. It took significant courage from Nokia to agree to our request given that it is anathema in the telecom industry to unbundle the radio, but to their credit, they did. From there, we invested very heavily in a US-based start-up called Altiostar to work with Nokia on our cloud-based radio software components. You can imagine the challenge: we had a very large traditional vendor in Nokia being asked to partner with a small startup in Altiostar. We convinced Nokia by showing them that this design concept was the future of wireless. We believed that with this model, an advanced radio network could come at the cost of deploying outdoor Wi-Fi. Our thesis proved to be right.

Employing the concept of an open network, and moving all network functions including radio, core, support systems, and transport, to the cloud would cost a whole lot less than a traditional mobile operator deployment. That is significant. But lower cost wasn't the only benefit. Through more diverse supply chain options and greater network component control, security was drastically improved, too.

I have always felt that there are too many “black boxes” in traditional telecom networks – equipment that comes ready to use, but with little insight into the components and software of the unit. If you look at your own house today and say, “I want to secure my house,” the first thing that you might think about is visibility, by installing cameras to monitor your security. For me, security through visibility included every part of our network. I wanted everything to be open so that we could dictate how we monitor this network and how we apply security, whether to components, software or even hardware itself. That is something on which we made a cognizant choice.

That choice enables Rakuten to have more visibility and control points in our network. Because we are not beholden to one vendor, the various parts of the network provide a needed check on each other to help keep the overall system more secure. This system also has the benefit of allowing us to better isolate problem areas in the network and prevent them from contaminating other parts of the network.

In summary, because Rakuten chose to move to a more open, software-centric, and cloud-native architecture, we are able to innovate at more granular levels, we are relentlessly automating our network, we are driving a more diverse supply chain, we are better equipped to secure our network, and we are driving costs down. I urge you to adopt this approach and actively work to promote and incentivize open and cloud-native technologies for telecom. As an inaugural Board member of the ORAN Policy Coalition and a Board member of the ORAN-Alliance and Co-Chair of a Telecom Infra Project (TIP) Working Group, Rakuten is committed to collaborating with the U.S. government and industry stakeholders to serve the American market. U.S. leadership will be critical if we are to succeed on a larger scale.

To that end, I offer three suggestions for how Congress can continue to drive innovation and security in wireless networks.

First, the U.S. government should actively promote open and cloud-based technologies for telecom networks through its policies and international engagements. The Japanese Government has been incredibly supportive of Rakuten Communications Platform and it has helped begin the transformation of the telecommunications sector in Japan. Importantly, in addition to providing funds for research, they have driven a positive global dialogue on openness and competition. The open- and cloud-based communications ecosystem is the way of the future. But it is young and needs to be cultivated and nourished if it is to grow. American leadership is imperative to advance this important evolution. We are pleased to see the announcement of the partnership between the U.S. and Japan governments last week during the in-person visit of President Biden and Prime Minister Suga. We applaud the two governments for working together across a range of fields, from promoting secure and reliable 5G networks to increasing cooperation on supply chains for critical sectors.

Second, Rakuten urges Congress to provide positive incentives for American companies to make the switch. Rakuten knows well that it takes courage and investment to make the leap from legacy systems to open and cloud-based solutions. To date, Congress has been very supportive of these advanced technologies, but more needs to be done. These incentives could come in the form of grant priority, public-private partnerships, and “walking the walk” by adopting the technology for government users. I urge Congress, as you look to investing in American wireless services, to lead the way to an open and cloud-based future.

Finally, Rakuten urges Congress to fund the USA Telecommunications Act. I’d like to thank this Committee for your leadership on that bill, particularly Chairman Pallone. With the authorization now signed into law, Congress should fund the programs at a significant level in order to drive innovation and deployment in open and cloud-based systems. Chairman Pallone, I support your efforts and urge your congressional colleagues to join you in supporting the programs through significant funding. Nothing less than America’s competitiveness is at stake.

Again, I thank the subcommittee for the opportunity to testify today. I look forward to your questions.