Utilizing Public Network Infrastructure: Is Cost the Tipping Point?

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The Cost of Modernization:

Utilities are modernizing at a rapid rate. Growing demand for electricity, mandated decarbonization commitments, integrating alternative energy sources, and managing the impacts of increasingly extreme weather events require utilities across the globe to explore new approaches to address these challenges.
Yet with service areas that cover extensive geographies, delivering these programs requires significant capital investment, and the cost must be passed on to the customer. For essential services like electricity, these increased costs have impacts across the community and supply chains.

Rethinking Connectivity:

Connectivity for a modernized grid has the potential to be a significant cost for utilities. The grid must support bi-directional flow of energy from households back to the grid, the growing proliferation of Distributed Energy Resources (DERs) while at the same time providing hybrid mobility, for example, connected workers moving from utility facilities to their service vehicles. Implementing these new technologies also requires SCADA elements deployed throughout the territory. This is only possible by ensuring Field Area Networks (FANs) cover 100% of the service area extending to homes and businesses, while controlled in real-time.

However, upgrading connectivity is prohibitively expensive, with estimates in the ranges of $ 100 of million to billions of dollars, in addition to the specialized skills to build and operate the infrastructure. Traditionally utilities transferred these costs to businesses and consumers, but increasing economic pressures will require alternate options around building out massive private networks. Why would a utility not consider utilizing public cellular networks?

Zero-Trust Public Network Infrastructure:

Discussions around leveraging public network infrastructure generally have the cost benefits counterbalanced with the risks associated with such a strategy. Public networks are argued to be synonymous with loss of operational control along with increased risks of outages and reduced safety in operations. However advances in network technologies have eliminated the basis for these concerns.

A hybrid 4G/5G mobile network can serve the connectivity needs of the modern grid. The ability to overlay a networking connectivity platform, built with a zero-trust, cloud-native architecture, over a public network to provide real-time private network control, visibility, and management capabilities down to individual connected assets is a game-changer for utilities looking at alternate solutions. The 'private-over-public' network enables utilities to egress data directly to their networks and leverage their existing security policies to provide complete security and control of field assets and data. Where public coverage is not available or it is more cost-effective to deploy a private network, a private radio network can be deployed, and the connectivity platform will centralize the control of both the public and private mobile networks as a single hybrid mobile network.

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Utilities must ensure that the connectivity foundation they choose to power their modernization initiatives can not only prepare for sustained success in the future but also deliver the greatest value to customers. It's time to consider leveraging public networks as a future-proof, highly secure, fully controllable, and rapidly scalable connectivity platform using a single multi-carrier SIM/eSIM with improved mobility coverage as an alternative to traditional private deployments.