

# CONVERGED 5G WAN EDGE: THE INTERSECTION OF 5G, SD-WAN AND ZERO TRUST SECURITY

## EXECUTIVE SUMMARY

Cellular networking continues to gain momentum within the enterprise. The promise of improved propagation, performance, and ultra-low latency with 5G will have a transformative impact across a range of use cases, especially in operational technology (OT) environments. With the prevailing economics of unlicensed spectrum and brownfield network infrastructure investments in information technology (IT) environments, Wi-Fi and software defined WAN (SD-WAN) will coexist with cellular connectivity into the foreseeable future. Because most SD-WAN platforms today consider cellular connectivity a failover, SD-WAN must adapt given the growing consideration for both 4G LTE and 5G deployments within the enterprise.

Enterprises demand simplicity, delivered through a single platform that provides the capability to manage connectivity, regardless of modality, across both the carpeted and non-carpeted areas of the enterprise. The requisite networking infrastructure must also provide agility for fast deployment and worry-free operations, ensure efficiency and resiliency, and offer the highest level of security, regardless of location. Most importantly, network deployment plans must also comprehend core and edge-to-cloud workloads given the highly disaggregated nature and demands of modern business applications, operations, and work itself.

Many enterprises employ a best-of-breed approach when evaluating connectivity needs. This has been an effective strategy in the past, but it is fragmented. Given the rise of hybrid work, reshoring of manufacturing operations, supply chain constraints, and more, organizations must reexamine both IT and OT networking deployment plans. Additionally, 5G, SD-WAN, and security are all converging, and this presents new levels of complexity for both networking and security operations teams. For those organizations concluding that a cellular-first strategy is ideal, Moor Insights & Strategy believes that Cradlepoint is unique in its ability to provide what enterprises require in a Converged 5G WAN Edge architecture.

## WHAT IS CONVERGED 5G WAN EDGE

Converged 5G WAN Edge is a term that describes the delivery of 5G, SD-WAN and security as a full technology stack offering. A full stack is compelling given it provides consistent policy management, improved quality of experience, and ease of deployment and management. A growing number of enterprises today are considering cellular infrastructure for its primary connectivity needs. This stands in stark contrast to the past when 4G LTE was reserved for failover operations. Much, if not all, of the mind shift is attributable to 5G's "superpowers" – ultra-low latency, lightning-fast throughput, and massive device support that all have the potential to accelerate digital transformation in industries such as brick-and-mortar retail, healthcare, manufacturing, transportation logistics, and more.

SD-WAN is proving to be a compelling consideration for many enterprises, but there are challenges with respect to adoption. First, it is a crowded market with a multitude of platforms offering similar functionality. As a result, there is an ongoing consolidation of vendors complicating the decision process. Second, SD-WAN is architected for a traditional branch location but has challenges scaling to support what has materialized into the newly emerging, work-from-home "micro-branch." What is required in an SD-WAN platform providing broader coverage to the network edge that includes users, vehicles and the Internet of Things (IoT) while delivering cellular-centric capabilities such as network slicing that can tailor throughput, latency, and device support to a specific workload. 5G will play a critical role in many distributed enterprise use cases and SD-WAN must adapt given the need to support network slicing. The capability to recognize applications and steer them to the appropriate slice based on workload requirements, within future 5G standalone deployments, will become a critical requirement.

Finally, security can no longer be an afterthought. Rather, it must be an integral part of the connectivity fabric. On average, enterprises deploy scores of point solutions and the subsequent management is untenable. There is no single pane of glass, and further complicating cybersecurity deployment and management is the fact that enterprises are moving to light IT models to reduce operational expenses. Zero trust network access (ZTNA) is promising in that it affords the ability to authenticate users to applications and not a flat network thereby mitigating and often preventing lateral threat movement. Once considered a remote access solution, ZTNA is now widely regarded as universal and thus more scalable. Given the encryption improvements within the 3GPP 5G New Radio standard, the combination of 5G and ZTNA also makes for a compelling consideration,

especially in cellular-first networking environments.

## CALL TO ACTION

Enterprises demand a simple-to-deploy and manage networking platform that combines the strengths of 5G, SD-WAN, and ZTNA given the highly distributed nature of both knowledge workers and today's workloads. A full-stack solution is optimal in that it delivers a consistent set of policies, ensures high performance and resiliency, and provides network and security operations agility. For those enterprises that find value in cellular infrastructure as a primary connectivity option, a Converged 5G WAN Edge architecture is a logical choice.

5G has experienced faster deployment than any mobile technology ever developed, according to a [5G Americas](#) report published in early 2022. It is fair to assume that this trend will also manifest within enterprises through the widespread adoption of private cellular networking. Although the converged 5G WAN edge category is nascent, a handful of solutions are emerging, including Cradlepoint Net Cloud Exchange. Moor Insights & Strategy believes that Cradlepoint offers a complete solution through its Secure Connect offering, SD-WAN functionality that is optimized and fine-tuned for cost-effective scale-out to the network edge, and a compelling ZTNA feature set. To learn more, visit [Cradlepoint Net Cloud Exchange](#).

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