

Industry Futures: Network & Edge Providers

Wipro's Industry Futures report predicts that by 2030, network equipment and edge providers will embrace nextgen networking with software-defined networking (SDN) and network function virtualization (NFV) for dynamic, scalable infrastructure. AI in network management, digital twin networks, and network ecosystem integration will enhance orchestration and operational efficiency. Network edge security will leverage autonomous AI and quantum encryption for resilience, enabling hyper-scalable, sustainable, and intelligent networks.



NextGen Networking

01



Nextgen networking is undergoing a paradigm shift, enabling intelligent, adaptive, and ultra-secure infrastructure. Composable networks, driven by software-defined networking (SDN) and network function virtualization (NFV) will dynamically adjust to real-time demands, ensuring agility. Multicloud networking integrates AI-driven orchestration, optimizing workloads across hybrid environments for seamless operations. Quantum networking leverages quantum key distribution (QKD), fortifying data security in high-speed communications. At the edge, IoT networking, powered by 5G/6G and AI, transforms industries, enabling autonomous transport and industrial automation with real-time decision-making and ultra-low latency, redefining how networks evolve and operate. As network management services evolve, nextgen networking continues to leverage software-defined networking and network function virtualization for enhanced operational efficiency and agility.

Intelligent Operations

Intelligent operations are redefining network management through AI-driven automation and predictive analytics. Digital twin of networks creates virtual replicas using ML and real-time telemetry, optimizing performance and fault prediction. AI in network management enhances efficiency with self-learning algorithms for automated troubleshooting and decision-making. Zero-touch network operations leverage intent-based orchestration to enable autonomous adjustments. Intent-based networking ensures dynamic policy enforcement through NLP and closed-loop automation, driving applications like self-optimizing telecom networks. The digital twin network also supports proactive cybersecurity, highlighting the impact of AI in network management.



02

Network Ecosystems

03



By 2030, network ecosystem will be fully autonomous, intelligent, and service-driven. Network as a Service (NaaS) will replace rigid infrastructure with AI-driven, on-demand connectivity, enabling enterprises to scale seamlessly. AI-enabled unified platforms will integrate multi-vendor solutions, automating network management solutions across 5G, 6G, and satellite systems. Network marketplaces will emerge, where businesses dynamically procure bandwidth, edge computing, and security services. At the core, a cloud and edge ecosystem will power ultra-low latency applications like autonomous transport and immersive AR, redefining digital experiences within the evolving network ecosystem.

Resilient Network Security

Network and edge providers are advancing network edge security by integrating AI-driven, adaptive architectures. As networks become more distributed, SASE will converge SD-WAN and cloud security, offering dynamic threat detection and mitigation at the network edge. Autonomous security will harness AI/ML for predictive defense, creating self-healing networks that proactively counter cyber threats. Decentralized authentication using blockchain will secure device identities in 5G/6G environments, while quantum-safe encryption will protect data integrity, ensuring robust network edge security against emerging quantum cyber risks.



04

Sustainable Infrastructure

05



In the future, network and edge providers will lead sustainable infrastructure innovation, designing networks with AI-optimized energy-efficient equipment that dynamically adjusts power consumption. Sustainable network development will integrate 5G/6G energy-aware protocols to reduce carbon footprints. Green data centers, enabled by liquid cooling and renewable energy, will minimize environmental impact. Meanwhile, using modular design and recycled materials, circular networking hardware will allow a zero-waste supply chain. These advancements will help telecom operators achieve net-zero emissions while maintaining high-performance connectivity.

By 2030, network infrastructure will be redefined by AI-driven automation, cloud-edge integration, and intelligent security. Network and edge providers must embrace programmable networks, zero-touch operations, and sustainable hardware to drive efficiency and resilience. Partnering with Wipro will enable them to accelerate innovation, enhance scalability, and navigate evolving regulatory and connectivity challenges.

About the Authors



Varun Dube

Varun Dube is the Head of Tech Strategy at Wipro. He is a seasoned technology consultant, advising CXOs on transformative business outcomes. With a deep understanding of emerging technologies and their potential to disrupt industries, Varun drives innovation and digital transformation for Wipro clients. His expertise in crafting and executing technology strategies, combined with his focus on emerging tech and co-innovation, helps organizations achieve sustainable growth and competitive advantage.

Wipro Limited
Doddakannelli
Sarjapur Road
Bengaluru – 560 035
India

Tel: +91 (80) 2844 0011
Fax: +91 (80) 2844 0256
wipro.com

Wipro Limited (NYSE: WIT, BSE: 507685, NSE: WIPRO) is a leading technology services and consulting company focused on building innovative solutions that address clients' most complex digital transformation needs.

Leveraging our holistic portfolio of capabilities in consulting, design, engineering, and operations, we help

clients realize their boldest ambitions and build future-ready, sustainable businesses. With over 230,000 employees and business partners across 65 countries, we deliver on the promise of helping our clients, colleagues, and communities thrive in an ever-changing world.

For additional information, visit us at www.wipro.com