



Transform your infrastructure.



One of the biggest issues for network managers is the growth of IT costs for network operations. The rapid growth of data and devices may be outpacing your IT team's capabilities, and manual approaches just won't allow you to keep up. Unfortunately, up to 95 percent of network changes are still performed manually, resulting in operational costs two to three times higher than the cost of the network. Increased IT automation, centrally and remotely managed, is essential for businesses to keep pace in the digital world. Proven innovations like software-defined networking, intelligent network edge enhancements, and unified domain controls and policies can help your organization achieve greater IT efficiency, consistency, and service quality.

Does your organization use a software-defined WAN (SD-WAN) solution to automate IT?

Organizations need continuous, automated network monitoring and optimization to support increasingly dynamic and digitally driven business models. Software-driven networks can accommodate these desired capabilities and create infrastructures that are flexible and programmable for changing business needs. Software-defined networks (SDNs) abstract the control plane from the forwarding plane, making the network more adaptable to the dynamic traffic demands of the business. In addition to SDN, policy-based automation and intent-based networking (IBN) are also very important to meet the business needs of agility, portability, and scalability.

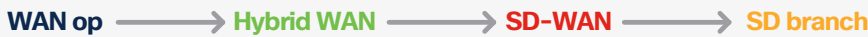
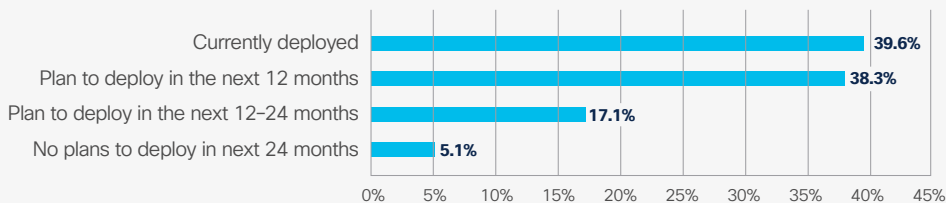
According to IDC, 40 percent of global IT leaders surveyed say they've currently deployed SD-WAN; nearly 55 percent more expect to deploy within 24 months. Additionally, network automation (25 percent), SDN (23 percent), and IBN (16 percent) are among the technologies that will have the most impact on networking over the next five years. (Source: Cisco [2020 Global Networking Trends Report](#).)



Recommended action

With the increasing adoption of hybrid cloud and enterprises' expanding bandwidth requirements, business WAN traffic flow patterns are becoming more software based and hybrid in nature (combining Internet and Multiprotocol Label Switching [MPLS]-WAN). In response to this trend, IBN provides more intelligence and autonomy. IBN solutions can translate and maintain declarative intent through every networking phase—provisioning, deployment, management, troubleshooting, and remediation.

Enterprise SD-WAN adoption plans



Source: *Software-Defined WAN (SD-WAN) Survey 2018*, IDC, 2018. [Percent of respondents: N = 1,202]

What role does the network edge play in your organization's digital transformation?

Edge computing brings high-performance compute, storage, and networking resources closer to users and devices than ever before. The goals of this approach include lowering the cost of data transport and decreasing latency. SD-WAN is connecting the enterprise edge to the data center in new ways, setting the stage for cloud-managed or virtual customer premises equipment (CPE).

There are various use cases driving the business need for greater edge compute capabilities. Enterprises are shifting their orchestration and management capabilities to be more function or location specific. Service providers are using their telecom edge to deliver external services to enterprise clients.

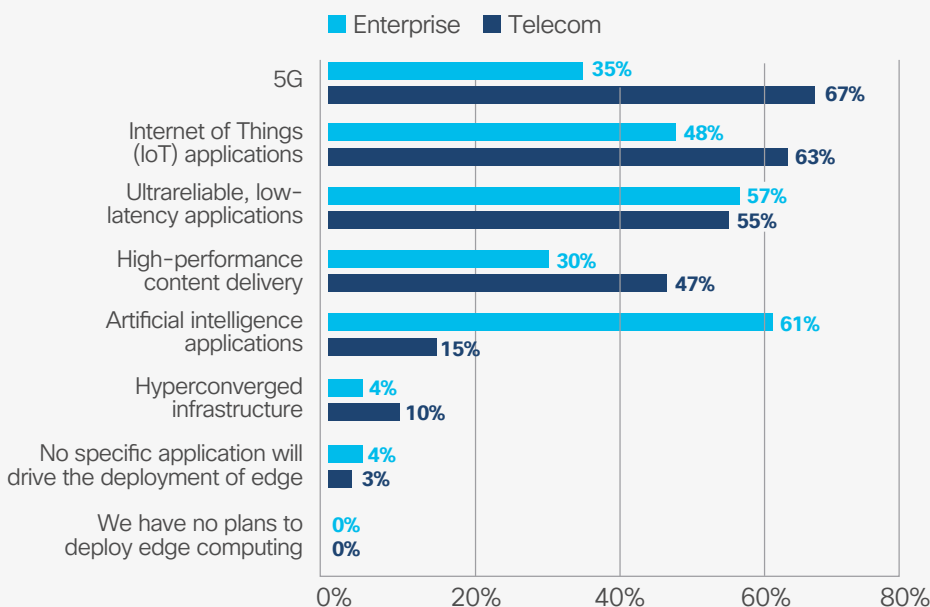
The enterprise edge is IT heavy and usually includes locations that were previously classified as remote offices and branch offices without data center facilities. Most enterprise edge locations are controlled via corporate-IT-specific provisioning and management capabilities based at the infrastructure "core" (i.e., the primary data center or public cloud). As enterprises embark on IT/operational technology convergence, endpoints are becoming more dynamic, mobile, and dispersed, forcing edge locations to be more distributed as well.



Recommended action

The addition of billions of devices to the network edge drives the need for enterprises to manage and analyze data from IoT endpoints. Shifting traffic from the network core to the edge affects computing and communications architectures. Before you add edge computing capabilities, focus on making your overall IT infrastructure more efficient, more manageable, and better performing. Your edge computing strategy will only be successful if it's built on a strong IT base.

Edge computing use cases



Source: *Strategies for Connecting the Edge*, Heavy Reading, September 2019.
[Percent of respondents: N = 60 telecom, 23 enterprise]

Does your organization have a comprehensive plan to capitalize on the promise of 5G?

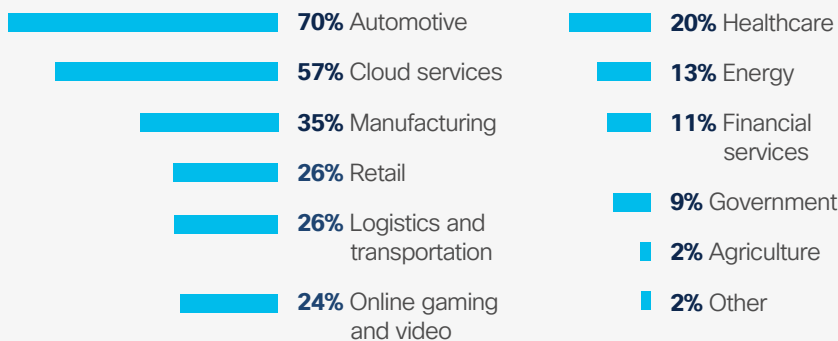
The advent of 5G offers unprecedented opportunities for mobile network operators (MNOs) to provide differentiated services to enterprises. According to a survey of global IT leaders and service providers, 5G is expected to have a significant impact on many business segments. While the use cases will vary, every business will need a comprehensive 5G plan that includes employee coverage, policy and security, analytics, and much more. While enterprises have always turned to MNOs to provide last-mile connectivity, they haven't had visibility into the areas of the network controlled by the MNO. Today, enterprises want more than just bandwidth. They want to be able to extend the control of their network to the carrier network. Enterprises want visibility and control of the entire network (fixed and mobile), which historically hasn't been possible.



Recommended action

Your business needs to develop a unified domain management strategy that addresses identity and access management, security, and segmentation. Your employees need to have the same quality of experience from their mobile devices when they aren't connected to your enterprise network. Ideally, your solution should allow you to manage all enterprise endpoints from a single dashboard and flexibly provision access policies for licensed and unlicensed endpoints.

Where will 5G cause the most disruption?



Source: *Business Performance Innovation (BPI) Network Survey*, BNI, 2019.
[Percent of respondents: N = 145 global IT leaders and service providers]
Respondents selected top three industries.

Cisco can help you build and enhance a strategy and tactical plan to transform your infrastructure.

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- Find out more about Cisco's [IoT solutions](#).
- Explore Cisco's [Unified Domain Center solution](#).
- Discover Cisco's [IBN solutions](#).