



Your Network's Edge®

2025 Telco Cloud Services Survey Report

May 2025

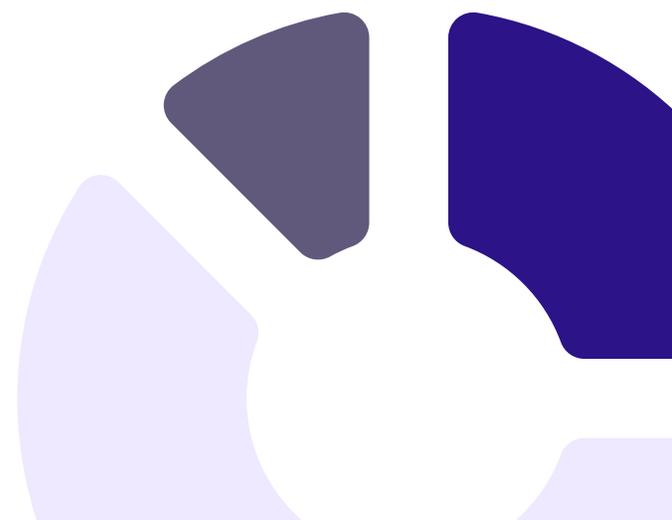


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Introduction and Key Findings



Introduction & Methodology

The telecommunications industry is undergoing a fundamental shift as Communication Service Providers (CSPs) aim to take a meaningful role in the next wave of the digital transformation. Traditionally focused on connectivity, CSPs now face pressure to adopt cloud-native agility, automation, and as-a-service models. To remain competitive, they must evolve into "techos"—technology providers that deliver value beyond connectivity.

To support this shift, CSPs are building telco clouds—cloud environments at the network edge.

This survey report examines the evolution of telco networks enabling cloud access by looking at telco cloud motivations, adoption trends and cloud service bundles. It is designed for industry leaders, technologists, and product managers seeking a comprehensive view of how networks are evolving to support new services, open and on-demand business models, and the monetization of network capabilities.

Methodology

To gain insights into telco cloud adoption, we conducted a survey involving 250 full-time employees from the telecommunications sector, with a focus on CSPs. Respondents were senior professionals, including CTOs and other C-level executives, network architects, network engineers/planners, and product managers, all with responsibility for business and enterprise services or managed services within their organizations.

The survey participants were sourced from companies with over 50,000 employees, spanning three key regions: North America, Europe, and Asia-Pacific. The survey was conducted in collaboration with Global Surveyz, an independent survey company.

Key Findings

1 **AI scalability in private campuses is driving the adoption of Telco Cloud Infrastructure as a Service (IaaS).**

The growing adoption of AI drives a need for scalable, flexible and cost-optimized compute. To address this, businesses augment their campus compute with IaaS services from telco edge clouds. Among the CSPs motivated by hosting business customer workloads, 42% believe that rising AI demands will shift workloads from private clouds to telco edge clouds. This shift underscores the next wave of cloudification, where business workloads can move off campus while still meeting data sovereignty requirements—both at rest and in motion—and benefiting from strong network performance.

2 **L2/L3 VPNs will support deterministic networking to facilitate new business applications at the telco's edge.**

The emergence of real-time cyber/physical business applications is pushing networks to become deterministic to support ultra-reliability and strict performance requirements. Human-operated remote-control applications, as well as machine-automated control applications, extend across the carrier's edge—prompting CSPs to offer not only cloud services but also new network services. 21% of CSPs providing access to the Telco Cloud over L2/L3 VPNs plan to introduce deterministic networking services. This reflects a shift from overlay-driven cloud access intelligence to an evolution of CSP network functionality, enabling new business and industry use cases.

3 **IoT data services is the top managed service planned by CSPs.**

54% of respondents plan to bundle IoT data services with connectivity, making it the top managed application planned by CSPs. By moving from commoditized connectivity to IoT-enabled, AI-driven operational insights, CSPs aim to provide higher-value managed services off their cloud. This approach positions CSPs as essential partners for enterprises seeking to optimize operations with real-time IoT data, offering differentiated, insight-driven services.

4 **CSPs plan to leverage cloud and edge for AI-as-a-Service.**

58% of survey respondents plan to offer AI-as-a-Service, indicating that CSPs intend to take an active role in enabling AI for third-party applications. This can be achieved in several ways: by exposing not only raw network data but also AI-analyzed insights for use by application developers; and by allocating AI compute resources within the telco's cloud and at distributed edge locations, including hosting them in CPEs.

5 **Security services are a cornerstone of cloud access services.**

34% of respondents said they expect a mix of security functions to be embedded in telco cloud services to maintain a strong security posture, including Secure Service Edge (SSE), zero-trust access, and network visibility. CSPs are also expected to play a major role in introducing quantum-safe access to clouds and other business resources, replacing legacy key exchange and encryption methods with a quantum-robust toolset.

Survey Report Findings

Key Motivation for Operating a Telco Cloud

CSPs operate telco clouds for two main reasons: to establish a cloud-native infrastructure for their virtualized networks (as indicated by 24% of respondents), and to provide a foundation for developing and delivering new types of services. Telco cloud services include hosting services and managed data services. Hosting services are the top motivation for CSPs, with a total of 47% of responses—25% of respondents focus on hosting business customer workloads, and 22% emphasize hosting third-party provider applications. Additionally, 29% of respondents use telco clouds to host CSP services, with a particular focus on data services.

The growing importance of AI in business is significantly influencing telco cloud adoption. Among the 25% of CSPs motivated by hosting business customer workloads, 42% believe that rising AI demands will shift workloads from on-premise, business-managed data centers to telco edge clouds. This transition supports compute-intensive AI by providing scalable resources that go beyond what on-premise data centers can handle, while still safeguarding data sovereignty.

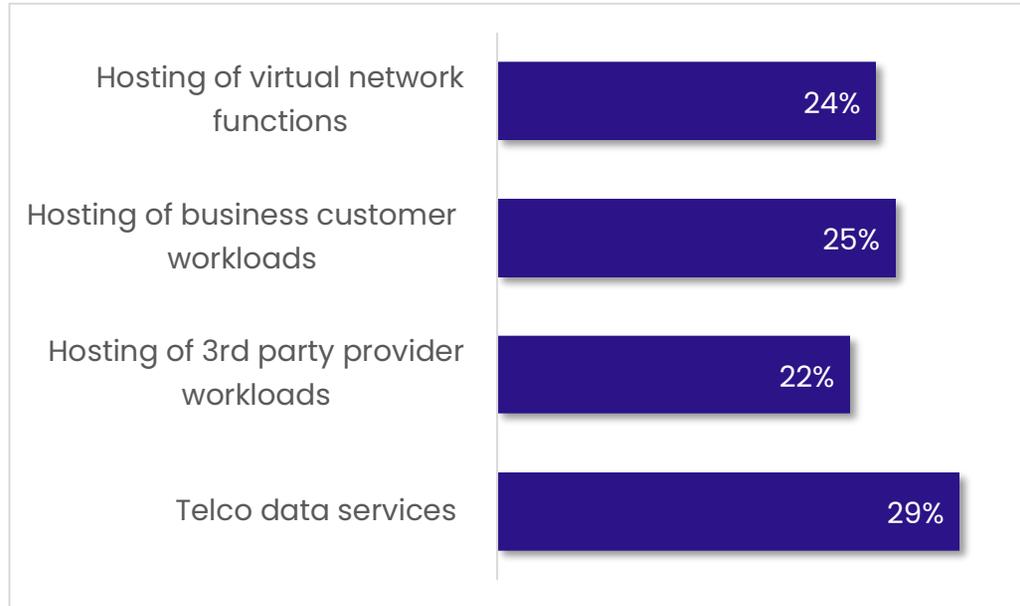


Figure 1: Key Motivation for Operating a Telco Cloud

Primary Factors Influencing Business Customer Adoption of Telco Cloud Services

Telco cloud services for business customers include both hosting services and managed services. Hosting services in the telco cloud are becoming a preferred choice when considering workload and application placement. 55% of respondents say they expect business customers to choose the telco cloud because of its location at the network's edge, facilitating managed private access to cloud services.

Another 26% of respondents say that bundling networking, security, and cloud services into a single pricing package is a compelling offering. While only 19% believe customers choose the telco cloud for its managed service offering, 45% of them say their managed service plans focus on IoT data services. As CSPs work to deliver more value-added services, IoT data services clearly stand out as a strong entry point.

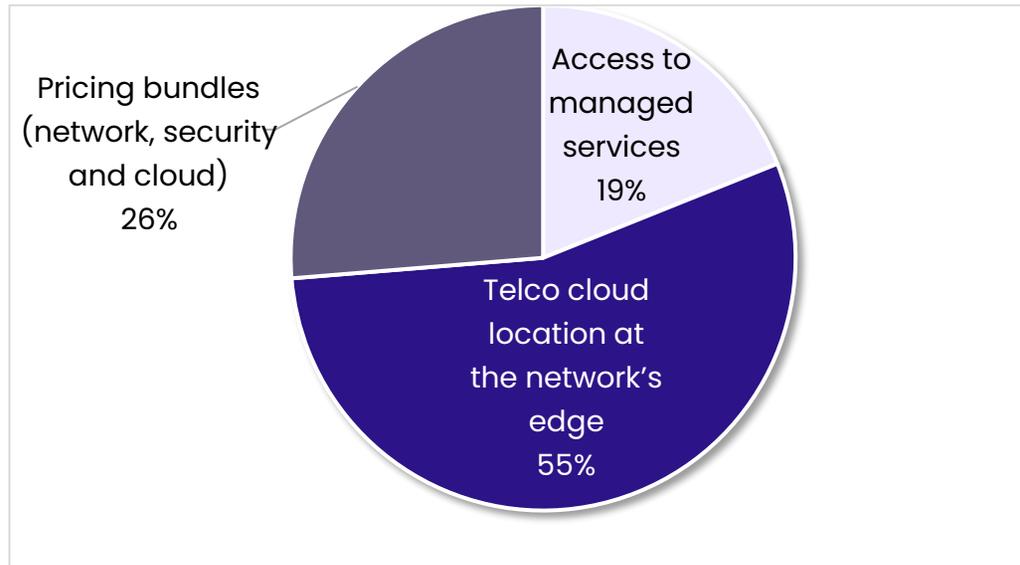


Figure 2: Primary Factors Influencing Business Customer Adoption of Telco Cloud Services

Managed Access to Telco Cloud

Access to the telco cloud is enabled through a range of connectivity services. SD-WAN is used as a secure access option to the cloud over managed and unmanaged networks. 59% of respondents say they use third-party SD-WAN for access to the telco cloud, while 34% report using CSP-managed SD-WAN.

Additionally, 62% provide direct cloud access, connecting their network directly to cloud services, and 40% offer L2/L3 VPNs for connecting to the telco cloud.

By opting for managed access and bypassing the internet, CSPs help businesses control data sovereignty. Notably, cloud access is projected to be upgraded: 21% of respondents currently using L2/L3 VPNs plan to upgrade them to support deterministic networking with bounded latency and jitter. This shift toward deterministic networking at the carrier's edge reflects the anticipated migration of business and industrial applications from private campuses to the telco cloud.

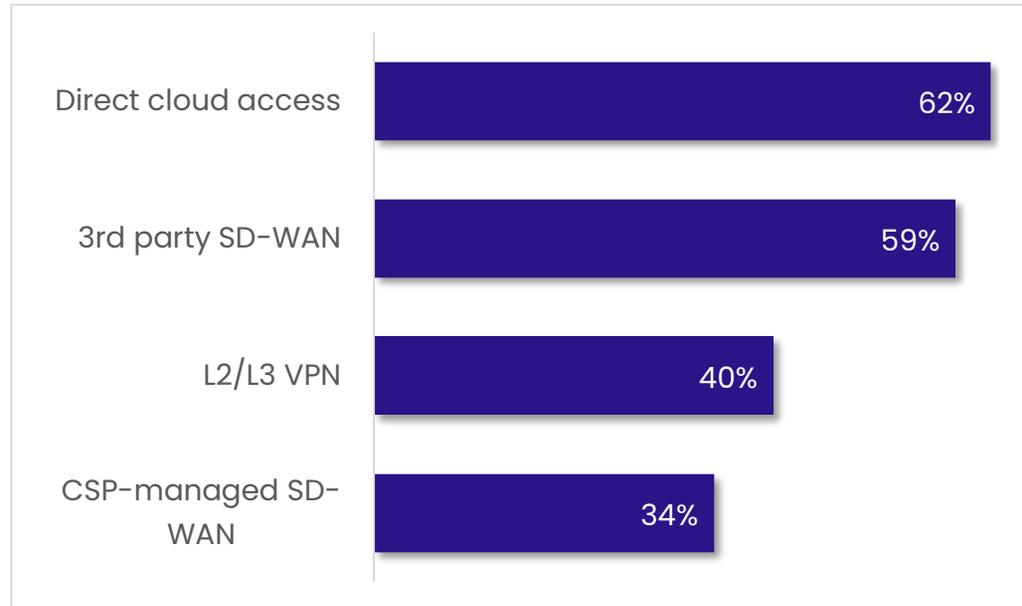


Figure 3: Managed Access to Telco Cloud

*Question allowed more than one answer and as a result, percentages will add up to more than 100%

Strategies for Applying Application Differentiation in Telco Cloud Access

As new applications move from customer premises to the telco cloud and across the carrier's edge, CSPs recognize the need for enhanced service assurances and application differentiation. These capabilities are increasingly being implemented in access to the telco cloud.

This is reflected in the responses: 39% of respondents report using a range of strategies to meet diverse application requirements, including optimizing the shortest path (16%), guaranteeing bounded latency and jitter (16%), enabling network slicing (15%), and ensuring ultra-reliability (14%).

Unlike SD-WAN, service differentiation at the underlay network level cannot be implemented by Over The Top (OTT) providers. This positions CSPs as key partners to the business enterprise in supporting its digital transformation to the cloud.

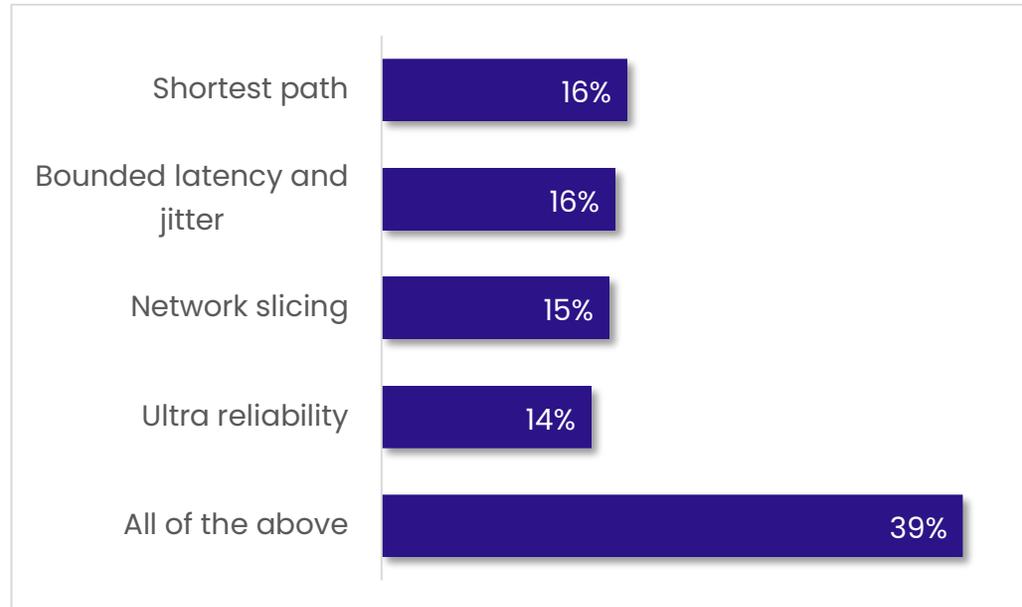


Figure 4: Strategies for Applying Application Differentiation in Telco Edge Access

Managed Security for Telco Cloud Access

Security is now considered an embedded functionality within the telco network, with managed security services viewed as essential for cloud access. Secure Service Edge (SSE) solutions are identified as the most critical functionality (26%), followed by zero-trust network access (21%) and device visibility for maintaining a strong security posture (19%). 34% of respondents point out that a mix of security services is key for telco cloud services.

With the transformation to the cloud, organizations are moving away from traditional on-premises solutions toward managed security services. This change is driven by the increasing complexity of securing distributed and hybrid environments, where data, applications, and users are no longer confined to business organization locations.

The shift toward security by design enables CSPs to offer greater protection, reduce vulnerabilities, and position themselves as security-forward providers in a highly competitive market.

We expect that CSPs will play a major role in introducing quantum-safe access to clouds and to other business resources, essentially replacing legacy key exchange and encryption with a quantum-robust toolset.

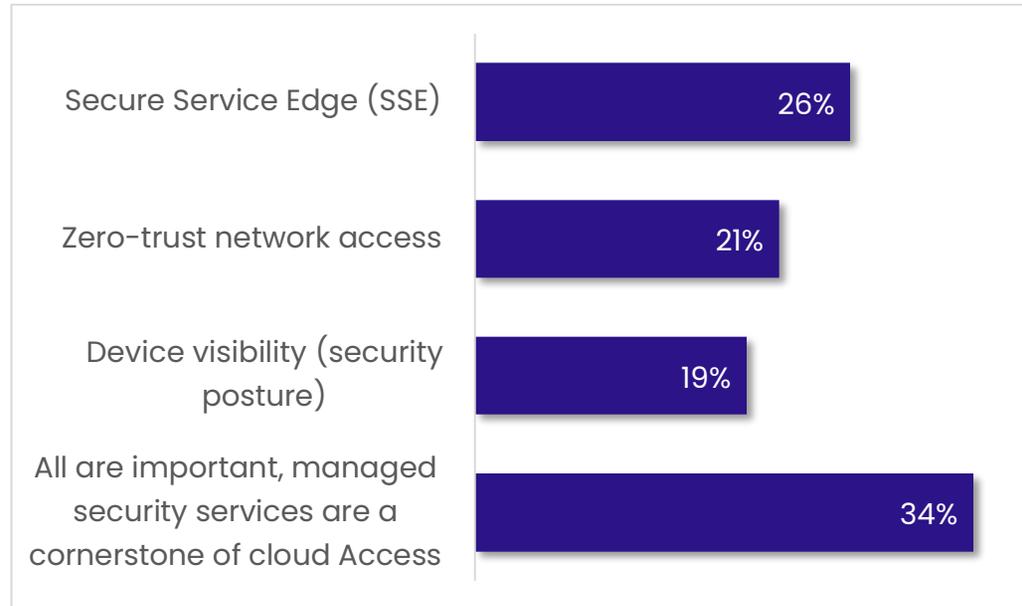


Figure 5: Managed Security for Telco Cloud Access

IoT services in the Telco Cloud

The adoption of IoT in businesses creates new opportunities and use cases by leveraging connected devices. These smart devices gather and transmit data, allowing businesses to enhance operations and streamline processes. Telcos are expanding their IoT connectivity services through their telco cloud, providing a more comprehensive range of solutions.

IoT data services use AI to generate operational insights and recommendations. By bundling connectivity with IoT data services, telcos are positioning their clouds as hubs for IoT and business intelligence. 54% of respondents identified this as their leading IoT strategy. Another key strategy, chosen by 47% of respondents, is allocating a network slice for IoT services to enable service differentiation. Integrating Secure Access Service Edge (SASE) into SIM cards to provide secure IoT access was selected by 44% of respondents. Lastly, 44% of respondents cited bundling IoT with other enterprise services using a common CPE as one of their strategies.

This shift marks an evolutionary path for CSPs, as they build on their existing connectivity capabilities to deliver more comprehensive managed services with greater added value.

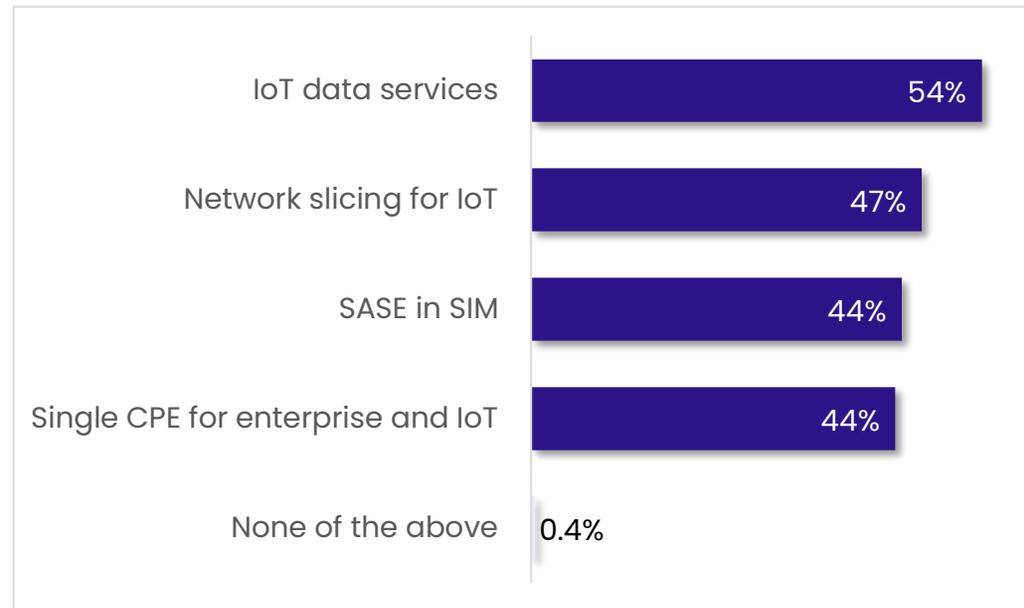


Figure 6: IoT Services in the Telco Cloud

*Question allowed more than one answer and as a result, percentages will add up to more than 100%

Telco Cloud Data Services

The emergence of AI and data services presents new opportunities for CSPs. The responses highlight a strong focus on enabling services by third-party application developers. The leading strategy, cited by 64% of respondents, is offering network APIs to third-party developers. Another prominent strategy is offering AI as a service (58%). These approaches reflect a broader trend of CSPs maintaining an infrastructure-first mindset, providing the foundation for others to build applications on their platforms.

Managed IoT data services that deliver business and operational insights (49%) are also gaining traction. By enabling third-party development and hosting through APIs and AI services, CSPs aim to position their platforms as essential hubs for innovation and service delivery.

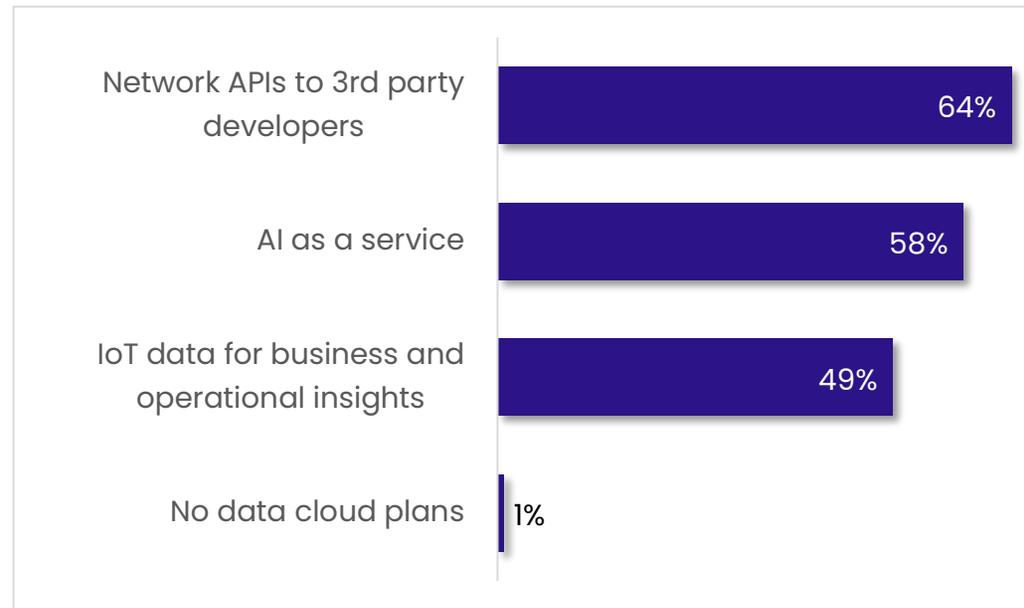


Figure 7: Telco Cloud Data Services

*Question allowed more than one answer and as a result, percentages will add up to more than 100%

The Value of Deploying AI Inference Models in Next-Gen CPEs

Customer Premises Equipment (CPE) is evolving with AI-driven capabilities, enabling CSPs to deliver new value at the network's edge. AI inference models—trained models that apply acquired knowledge to new data—are central to this evolution. The top benefit of deploying inference models in CPEs, cited by 39% of respondents, is application detection and differentiation, a traditional CPE function now made more intelligent and efficient with AI.

Other key benefits include power consumption optimization (33%) and enhanced cybersecurity (28%).

AI enables fast correlation of data points, predictions based on historical behavior, and anomaly detection through pattern recognition.

Placing these capabilities at the edge allows AI to trigger real-time, closed-loop operations for network automation, including dynamic allocation of network resources and real-time adjustments to traffic forwarding policies.

By embedding AI models in CPEs, CSPs can enhance customer experiences and enable more efficient resource management.

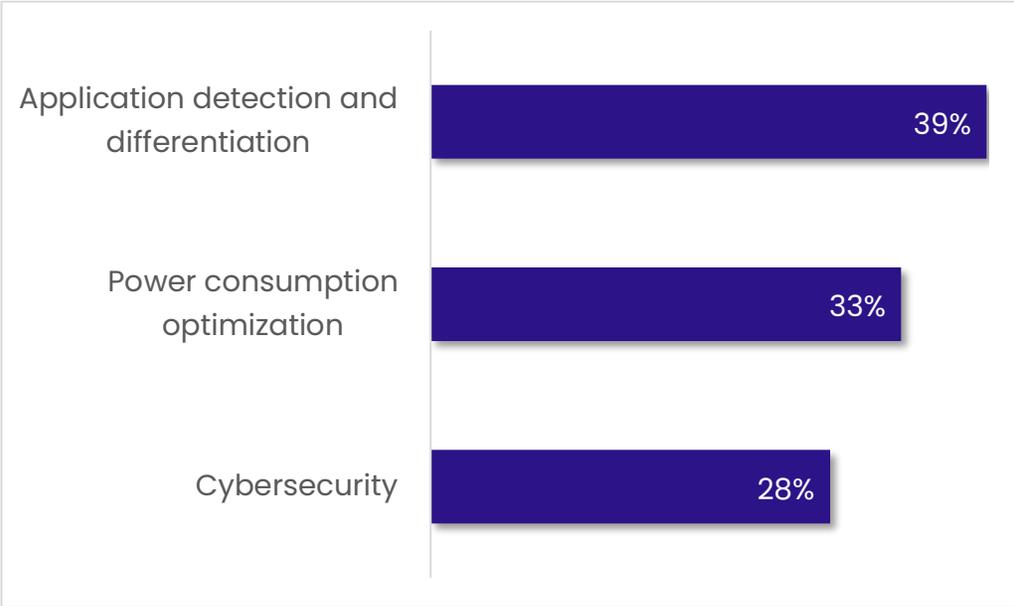


Figure 8: Value of Deploying AI Inference Models in Next-Gen CPEs

Strategies to Promote Openness in Telco Cloud Access

Traditionally, telco networks were built on proprietary, vertically integrated solutions. However, the adoption of cloud-native architectures and disaggregated networks is pushing telcos toward open ecosystems. Open telco architectures foster innovation, enhance competitive differentiation, and support the shift to multi-domain, multi-tier autonomous networking.

To promote openness in Telco Cloud access, CSPs are adopting a range of strategies to enable third-party service integration and collaboration. The most popular approach, cited by 37% of respondents, is establishing network APIs for use by application developers.

Other key strategies include building compute-aware service function chaining solutions (25%), enabling the hosting of AI within network functions (20%), and deploying CSP-built SD-WANs that offer access to best-of-breed security services (18%).

By supporting openness and enabling external developers, CSPs not only position themselves as facilitators of third-party innovation but also open new revenue streams from application providers that use network data and telco cloud hosting.

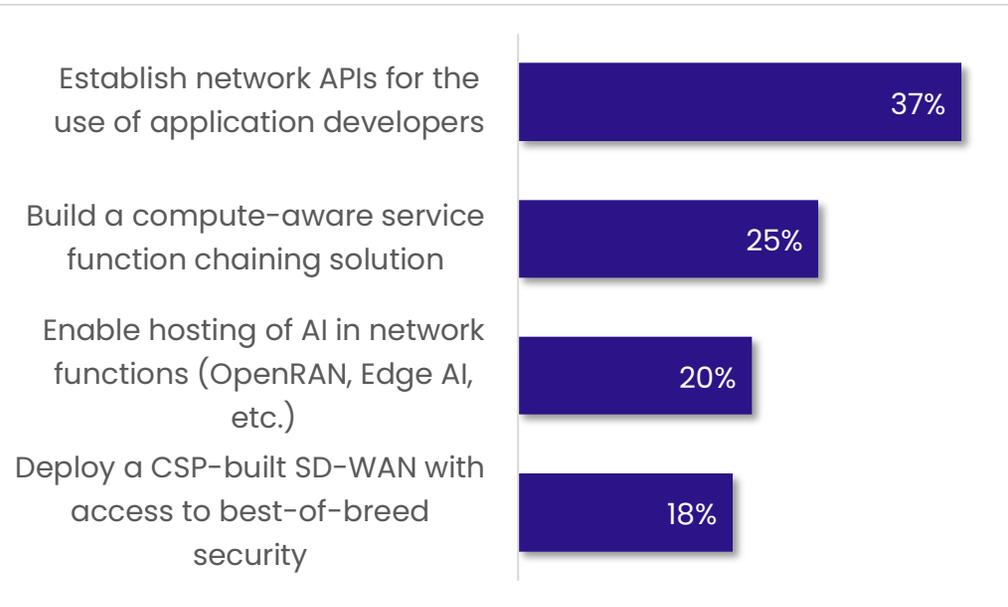


Figure 9: Strategies to Promote Openness in Telco Cloud Access



Demographics

Country, Company Size, Job Seniority, Areas of Responsibility, Roles

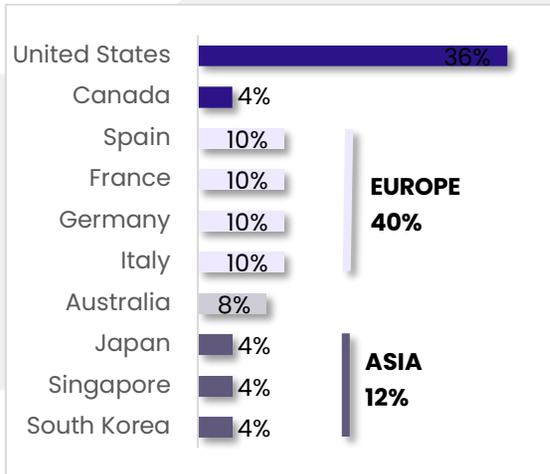


Figure 10: Country

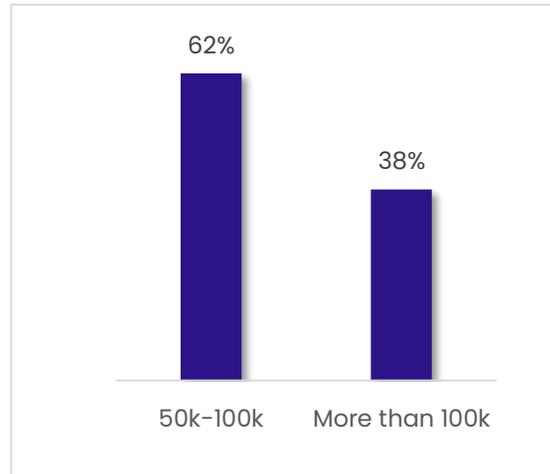


Figure 1: Company Size

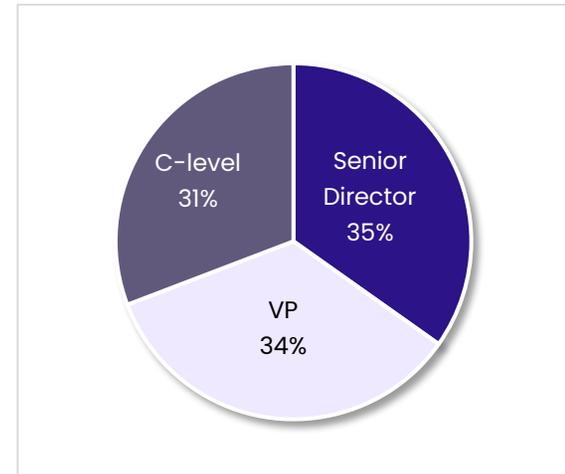


Figure 12: Job Seniority

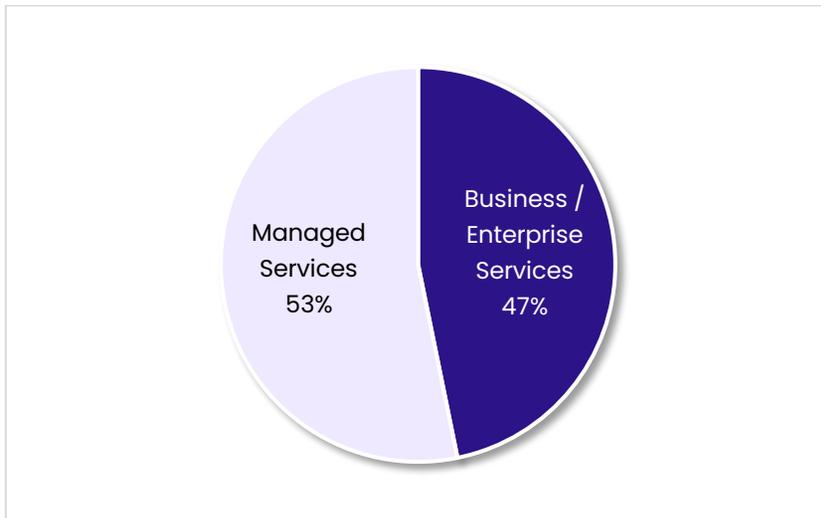


Figure 2: Areas of Responsibility

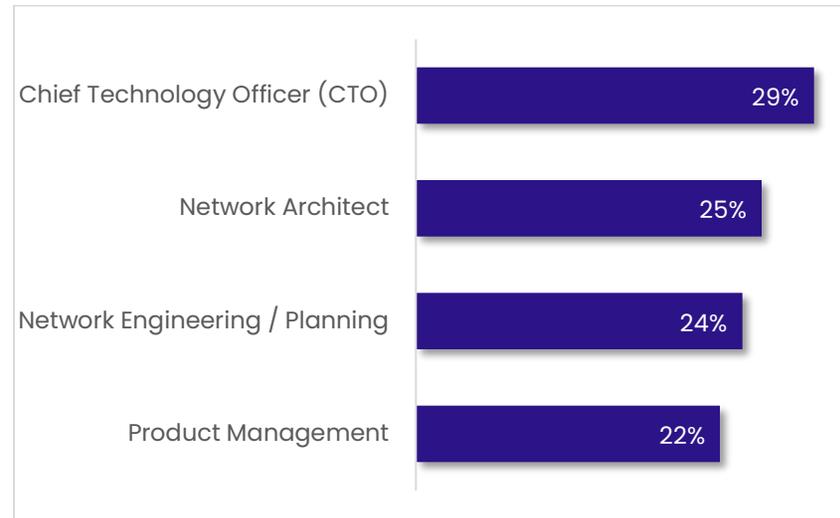


Figure 3: Roles

About RAD

RAD is a global leader in networking edge solutions. As an industry pioneer for over 40 years, RAD reliably supplies communications service providers and critical infrastructure operators in over 150 countries with best-of-breed Carrier Edge, industrial IoT, 5G, and critical operational network solutions. RAD co-innovates solutions with customers, offering always-on connectivity from anywhere, In addition to data-driven, AI-powered, actionable insights at a glance. Founded in 1981, RAD serves as the anchor of the RAD Group, an umbrella of independent companies that develop diverse networking and telecom solutions.

Contact Us

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