July 2026
Business Value White Paper
Sponsored by Cisco

The Business Value of Cisco Services as Code

Leslie Rosenberg
Research Vice President,
Network Life-Cycle Services and
Infrastructure Services, IDC

Matthew Marden
Research Vice President,
Business Value Strategy Practice, IDC

Table of Contents

Click any title to navigate directly to that page.

Business Value Highlights

Click each to jump to related content. Use "Return to Highlights" in the page header to get back here.

258% three-year return on investment

12-month payback on investment

$1.07 million in annual benefits per 5,000 devices

172% increase in network automation

2.4 times average faster network changes

2.2 times faster network modernization initiatives

2 times faster to deploy network resources

93% average network change success rate

37% more efficient network management teams

30% more efficient network security teams

48% more efficient network modernization teams

29% more productive development teams

Executive Summary

Networks have evolved from rigid, proprietary hardware appliances to fully programmable, software-driven infrastructure and frameworks, making network as code the dominant architectural paradigm. For IT and network decision-makers, the business case is compelling: Codified configurations eliminate manual error; accelerate deployments, enabling shortened, more frequent change windows; ensure compliance;

and free up engineers for strategic work. However, skill gaps, legacy infrastructure, tooling fragmentation, and governance complexity remain real barriers. According to IDC research, these pressures are driving organizations to engage professional services firms with their defined methodologies, robust tools, and investment in technologies to accelerate networking initiatives and drive innovation.

IDC interviewed organizations to assess the business value of Cisco Services as Code. Study participants reported that it shifts how networking teams operate by replacing manual command-line interface (CLI)–based configuration with a code-driven, pipeline-validated model that treats the network as a version-controlled software artifact. This reduces human error, brings consistency and standardization to network environments, and enables networking teams to manage distributed infrastructure at a scale and quality that manual processes cannot match.

Based on these interviews, IDC calculates that study participants will realize benefits worth an annual average of $1.07 million per 5,000 devices ($10.23 million per organization) by:

- **Shifting network operations from manual to automated, code-driven processes** that reduce configuration drift, minimize errors, and free up engineering teams for higher-value work
- **Accelerating network changes and modernization initiatives** with codified validation pipelines and standardized templates that improve change quality and compress deployment timelines, delivering faster change windows without disrupting business operations
- **Improving the efficiency of network management, security, compliance, help desk, and development teams** through a unified, version-controlled network operating model
- **Reducing the frequency and business impact of unplanned outages** by catching misconfigurations before they reach the network and enabling faster detection and resolution when issues do occur
- **Driving higher revenue through faster, more reliable network operations** that improve customer experience and accelerate the delivery of new products and services to market

Situation Overview

The transformation of network architectures from hardware-based, CLI-directed devices to software-based, programmable elements has been underway for many decades, from rigid, hardware-defined appliances to fully programmable software constructs. Early networking relied on proprietary, CLI-driven hardware with no abstraction layer. The late 1990s introduced flexible network operating systems, while network functions virtualization (NFV) and software-defined networking (SDN) formalized software-defined architectures around 2011–2013. Over the past decade, APIs, new models, and cloud-native frameworks have made programmability the default design paradigm, treating the network as code and completing the shift from hardware dependency to software-driven infrastructure.

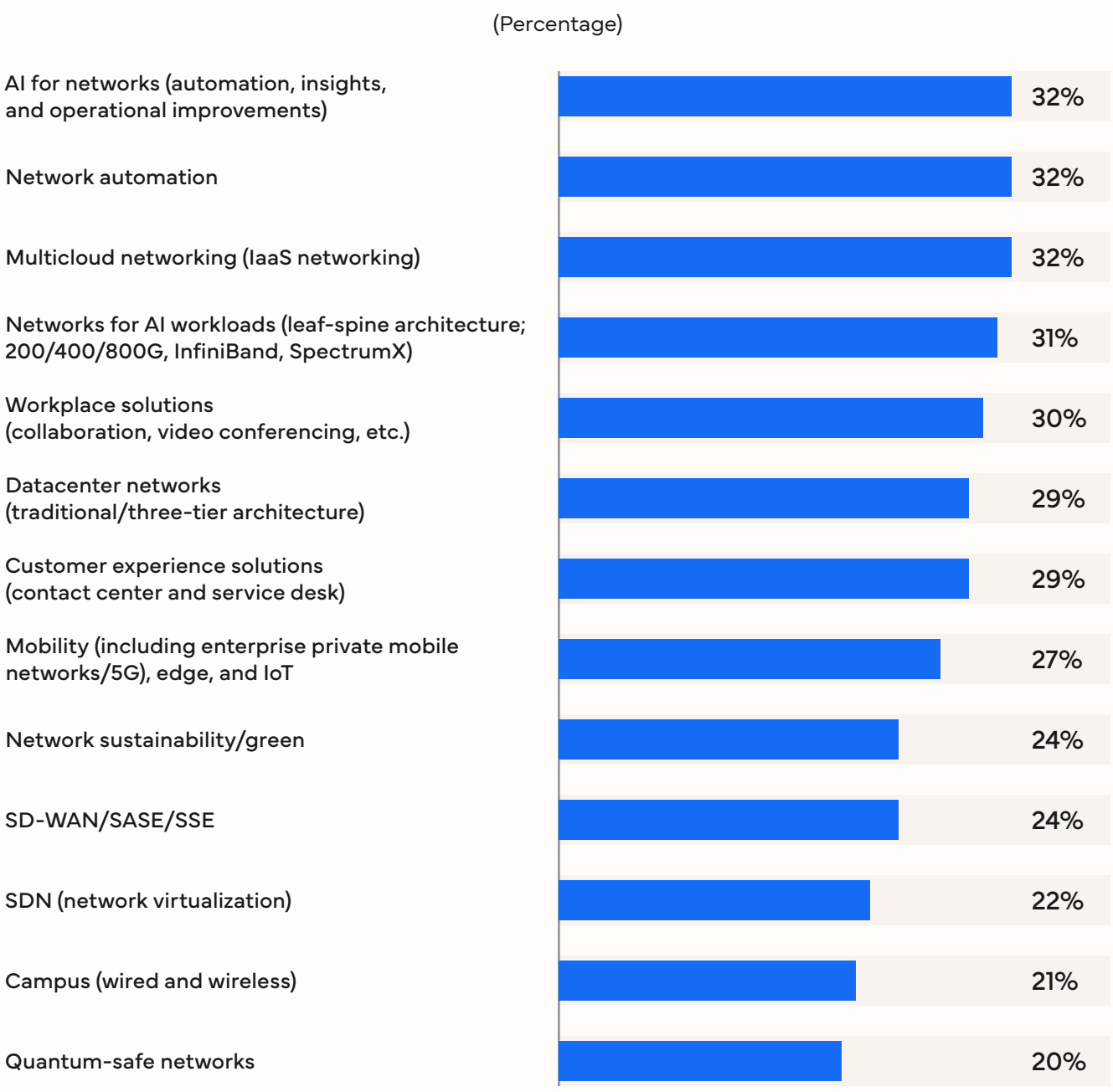
Network as code delivers compelling business and operational advantages that fundamentally transform how organizations manage infrastructure. By codifying configurations, teams eliminate manual errors, ensure consistency at scale, and reduce deployment timelines from days to minutes. Version control provides complete auditability and rapid rollback capabilities, directly supporting compliance and resilience requirements. Operationally, automation frees skilled engineers from repetitive tasks, reduces outage frequency, and lowers overall costs, enabling IT organizations to shift focus from maintenance to strategic innovation and faster delivery of business services.

While the efficiency and operational gains have been significant, as with any new technology or process, some networking teams face barriers to adoption. Network as code faces hurdles that organizations must carefully navigate. Skill gaps and cultural resistance challenge traditional networking teams unaccustomed to NetDevOps practices, while fragmented tooling and inconsistent implementations create integration complexity. Legacy infrastructure lacking modern API support undermines automation consistency, and inadequate testing pipelines introduce deployment risk at scale. State management, configuration drift, and security governance around code repositories add further operational complexity, making experienced consulting partners essential to achieving reliable, scalable automation outcomes. The impact of cloud-native and AI-native infrastructure on the network has only accelerated this requirement.

According to IDC research, network teams' desire to introduce automation into their network environments, including adopting AI for networking and multicloud networking, is the top reason they engage with professional services firms **(Figure 1, next page).**

Figure 1

Top Networking Initiatives Organizations Utilize Professional Services to Accelerate



n = 500; Source: IDC's *Worldwide Network Consulting End-User Survey*, 2026

Cisco Services as Code

Cisco's Services as Code offering leverages NetDevOps and infrastructure as code principles for network management. It uses YAML (a human-readable data serialization language) or standard text language to declare desired infrastructure and network states, automate deployments via CI/CD/CT pipelines, and scale networks programmatically, thereby treating all network elements as software that can be versioned and managed at scale.

Cisco Services as Code leverages NetDevOps and intent-based automation methodologies to streamline provisioning, configuration, testing, and deployment to seamlessly optimize and manage network architectures. Cisco Services as Code is delivered as a professional service subscription with the backing of 24 x 7 technical support. Cisco customers can tap into Cisco's vast knowledge base, IP, and expert resources to accelerate complex changes, test and validate configurations, improve documentation, accurately track changes, collaborate, and roll back if needed.

The professional service offer includes:

- **Readiness assessment** to provide insight into functional specifications and help migrate from the "as is" to the "to be" of CI/CD/CT with seamless automation
- **People, process, and solution enablement** to accelerate the adoption and operations of the network for improved efficiency, accuracy, and scalability
- **Solution setup and continuous integration,** allowing network teams to rapidly and reliably build, deploy, and manage network infrastructure as code
- **Automated deployment** that delivers continuous deployment of changes
- **Release management** for planning, coordinating, and deploying software releases to production environments
- **24 x 7 support** throughout the life cycle

As more of Cisco's portfolio is moving to software, Services as Code is now available for most Cisco architectures, including:

- **Cisco Application Centric Infrastructure (ACI)** provides central management of network policies based on application requirements.
- **Cisco SD-WAN** connects any user to any application for multicloud, security, predictive automation, and enhanced network visibility, all on a secure access service edge (SASE)-enabled architecture.
- **Cisco Nexus Dashboard Fabric Controller (NDFC)** offers comprehensive automation and management capabilities for deploying and operating network fabrics, particularly in large-scale datacenters.
- **Cisco Identity Services Engine (ISE)** provides a policy decision point in zero trust architecture.
- **Cisco Catalyst Center** is a network management system that leverages AI to connect, secure, and automate network operations across wired and wireless infrastructures.
- **Cisco Meraki** is a cloud-managed solution that simplifies network management by providing a comprehensive portfolio of products managed through a single web-based dashboard.
- **Cisco Unified Branch** simplifies and unifies networking, computing, and communication services at branch office locations into a single platform.
- **Cisco IOS-XE** enables higher availability, modern automation, and scalable performance for enterprise networks.
- **Cisco IOS-XR** provides greater modularity, a simplified networking stack, and cloud-enhanced automation for massive scalability, high availability, and carrier-grade routing.
- **Cisco NX-OS** provides a robust datacenter OS that offers flexibility, scalability, modularity, and improved performance.
- **Cisco AI Assistant for Services as Code** is currently available for ACI, NDFC, and SD-WAN, with more coming.

The Business Value of Cisco Services as Code

Study Firmographics

This IDC study assesses the business value that organizations realize from Cisco Services as Code, a network automation solution that enables them to manage their network infrastructure through codified policies, standardized templates, and automated CI/CD/CT pipelines rather than manual, device-by-device configuration. IDC designed the interviews to understand, as fully as possible, the impact for study participants of using Cisco Services as Code from both a quantitative and qualitative perspective.

As **Table 1 (below)** shows, study participants were a diverse group of large enterprises spanning multiple continents and industries, with an average of 85,406 employees and an average annual revenue of $36.17 billion (medians of 74,000 employees and $29.33 billion). They represented seven countries, including Spain (2), the United States (2), Australia, Belgium, Hong Kong, Italy, and Japan. By industry, they spanned the financial services (5), insurance, professional services, retail, and telecommunications verticals.

Table 1

Firmographics of Interviewed Organizations

Firmographics	Average	Median
Number of employees	85,406	74,000
Number of IT staff	7,200	4,000
Number of business applications	2,495	700
Annual revenue	$36.17B	$29.33B
Countries	Spain (2), United States (2), Australia, Belgium, Hong Kong, Italy, Japan	
Industry verticals	Financial Services (5), Insurance, Professional Services, Retail, Telecommunications	

n = 9; Source: IDC Business Value In-Depth Interviews, May 2026

Choice and Use of Cisco Services as Code

Study participants adopted Cisco Services as Code because they recognized that manual network management could no longer meet the scale, consistency, and quality demands their organizations face. For most, the decision reflected a broader infrastructure as code strategy already established to at least some extent in cloud and compute environments, with Cisco Services as Code intended to extend those principles of version control, pipeline validation, and repeatable deployment to the network layer. Several participants cited regulatory requirements as a direct catalyst because ensuring consistent network segmentation and audit-ready documentation across thousands of devices had become unmanageable manually. Further, existing standardization on Cisco hardware made a native automation layer the natural path forward.

Interviewed organizations offered more details about the reasons for adopting Cisco Services as Code:

Good fit with strategy of automation for better deployment and testing (Financial Services, APAC):

"Cisco Network as Code aligns with our broader automation strategy by enabling high-quality changes with minimal human intervention. This leads to more predictable, consistent deployments and standardized testing, all of which are codified within the product."

Need to evolve operating model with Cisco (Financial Services, EMEA):

"Digital Operational Resilience Act (DORA) regulations required us to reassess our approach to network segmentation and control. Managing this manually was no longer feasible given the scale of our network, so we needed to evolve our operating model. With branch devices already standardized on Cisco, adopting Cisco Services as Code was a natural next step."

Driver of change enablement at scale (Retail, APAC):

"Cisco Services as Code enables change at scale, with an emphasis on quality over agility. This ensures products and services are standardized, consistently managed, and reliably maintained across the entire network stack, which is the primary driver behind our infrastructure as code journey."

Strong functionality and easy standardization (Financial Services, EMEA):

"The most significant benefits of Cisco Services as Code are to have flexibility and standardization for easy creation with the code. It is now easy to configure new things in the network datacenter or site for ACI."

As **Table 2 (below)** shows, study participants operate large, complex network environments managed with Cisco Services as Code, averaging nearly 48,000 total devices across more than 1,100 business locations. Environments span datacenter (Cisco ACI, Cisco Nexus), WAN and edge (Cisco SD-WAN), campus and branch (Cisco Catalyst Center, Cisco Meraki), and network security (Cisco Identity Services Engine) platforms. This mix of network environments and Cisco solutions reflects the depth of integration that Cisco Services as Code enables across the network stack.

Table 2

Cisco Services as Code Use by Interviewed Organizations

Use	Average	Median
Number of network switches	2,207	1,500
Number of edge devices	22,951	350
Total number of devices	47,979	5,000
Number of business locations	1,116	238

n = 9; Source: IDC Business Value In-Depth Interviews, May 2026

Business Value Results

Study participants reported that Cisco Services as Code improves how their networking teams operate, creating value across every dimension of network management, ranging from the speed and quality of individual changes to staff efficiency, network reliability, and business agility. The shift from manual, CLI-based configuration to a code-driven, pipeline-validated model represents a change in the operating model itself. Networking teams that previously spent most of their time on routine changes and manual validation can instead focus on managing code repositories, building automation pipelines, and higher-value engineering work.

The most direct and consistently reported benefit of Cisco Services as Code is the elimination of manual configuration as the primary method of network change. Study participants described how this shift reduces the human error that causes network incidents, brings consistency and standardization across environments that previously accumulated configuration drift, and frees up networking engineers from low-value, repetitive work that impairs both productivity and staff engagement.

Study participants described the most significant benefits of Cisco Services as Code:

Time savings, mistake avoidance, deployment speed (Financial Services, North America):
"The time savings and the staffing costs are by far the number 1 benefit of Cisco Services as Code. Second is the ability to avoid mistakes, which means a lot fewer outages and problems post-change. And the third is just the speed of deployment."

Network quality for business purposes (Retail, APAC):
"We have a large network, so the role of the orchestration and automation of services as code is about maintaining state, so that effectively, we've got consistent products and services across the network stack, and they're managed and maintained in a standard way."

Flexibility and standardization (Financial Services, EMEA):
"The most significant benefits of Cisco Services as Code are to have flexibility and standardization to create a lot of things very easily with the code."

Security and scalability (Financial Services, EMEA):
"We have guaranteed fast implementation, security, and scalability with Cisco Services as Code. The reason for our implementation was the desire for a secure network with access control and renewed segregation. From the business point of view, the main point is having a secure network."

Based on interviews with study participants, IDC calculated that they will realize average annual benefits worth $1.07 million per 5,000 devices ($10.23 million per organization) in the following areas of value (Figure 2, next page):

- **IT staff productivity benefits:**
  Study participants leverage the automation, standardization, and codified change management of Cisco Services as Code to improve the efficiency of their network management, modernization, security, help desk, compliance, and development teams. IDC calculated that they will realize staff efficiency and productivity gains worth an annual average of $539,000 per 5,000 devices ($5.17 million per organization).

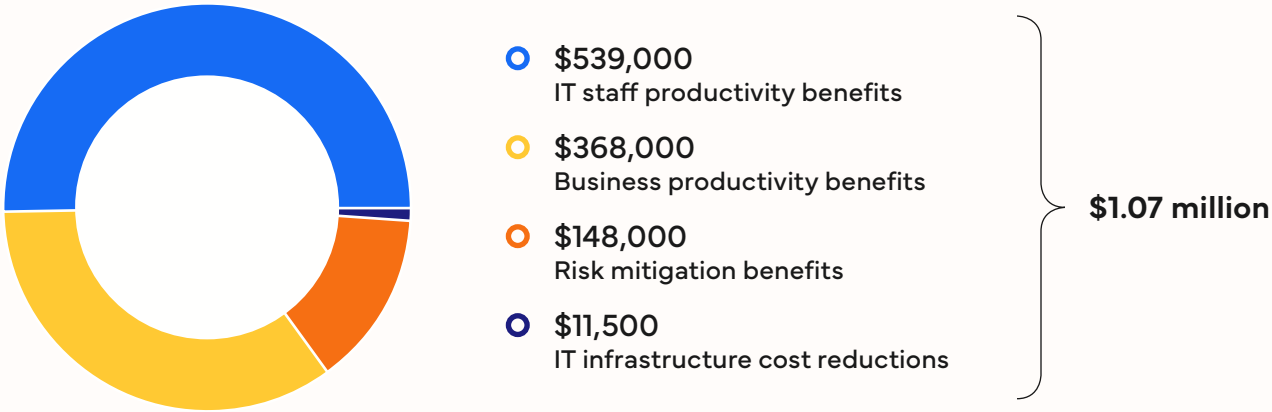
- **Business productivity benefits:**
  Study participants apply faster, more reliable, and more consistent network operations to accelerate the delivery of new products and services to market and better meet customer expectations. IDC calculates the value of higher net revenue at an annual average of $368,000 per 5,000 devices ($3.53 million per organization).

- **Risk mitigation benefits:**
  Study participants reduce the frequency and business impact of unplanned outages because codified validation pipelines prevent misconfigurations and trained automation enables faster incident detection and resolution. IDC calculates risk mitigation benefits from reduced productivity losses at an annual average of $148,000 per 5,000 devices ($1.42 million per organization).
- **IT infrastructure cost reductions:** Study participants reduce network infrastructure spending by optimizing network resource utilization. IDC calculated annual savings of $11,500 per 5,000 devices ($108,900 per organization).

Figure 2

Average Annual Benefits per 5,000 Devices

($ per interviewed organization)



n = 9; Source: IDC Business Value In-Depth Interviews, May 2026

Improved Network Automation and Documentation

The foundational shift that Cisco Services as Code enables, and the one that generates most downstream benefits discussed in this study, is replacing manual, undocumented, device-by-device configuration with a codified, version-controlled, repository-based operating model. Before adopting Cisco Services as Code, study participants described network environments characterized by configuration drift, inconsistent documentation, and persistent risk related to making changes. Managing the network as code addresses

these problems: Changes are version-controlled, device configurations are documented in a repository, and pipeline validation becomes the primary quality control mechanism.

Study participants described documentation as one of the most strategically important outcomes of Cisco Services as Code. This is not merely for operational convenience but for the regulatory auditability, troubleshooting clarity, and standardization it enables.

As study participants noted:

Automation driving faster and more effective modernization (Insurance, North America):
"We implemented Cisco Services as Code to modernize our network infrastructure, including upgrading switches, routing architecture, DNS, and expanding to better serve customers. Previously, manual work made this twice as slow due to complex, tedious processes. With Cisco's infrastructure as code, automation cut our modernization time in half."

Standard templates across branches (Financial Services, EMEA):
"With Cisco Services as Code, we created standard templates for different branch types, which is a crucial advantage. It pushed us to define clear standards and remove exceptions. Now all branches share the same templates, which is fundamental for documentation."

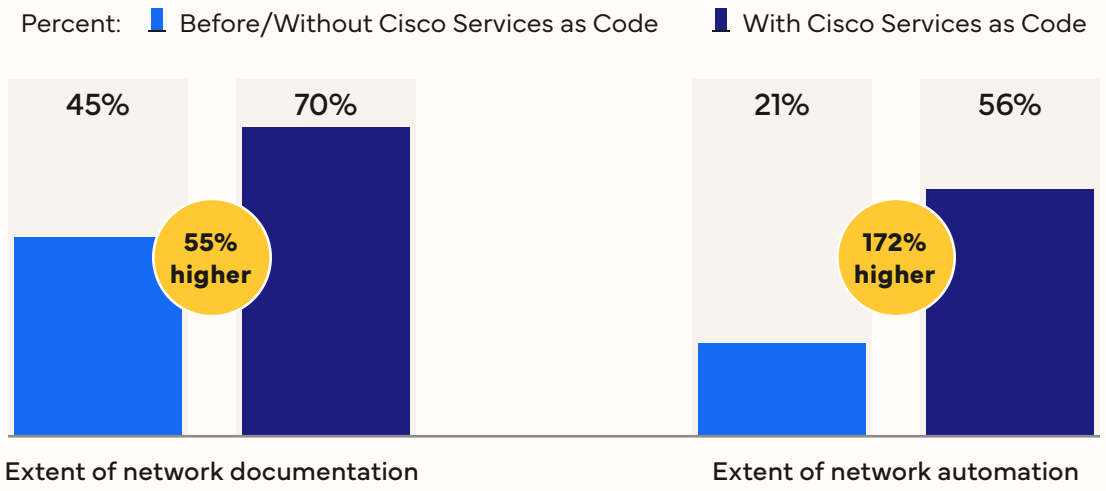
Network as software (Financial Services, EMEA):
"Cisco Services as Code transforms our operating model because our networking engineers become software engineers. We modify a repository, generate changes, and trigger a pipeline of validations that are delivered to the network. For us, the network is now software."

As **Figure 3 (next page)** shows, Cisco Services as Code drives a 172% increase in the percentage of network activities and responsibilities that are automated and a 55% gain in the percentage of devices with up-to-date documentation. These findings reflect the comprehensive coverage that code-based management provides when it becomes the standard operating model.

Figure 3

Impact on Network Documentation and Automation

See the figure data in an accessible table format.



n = 9; Source: IDC Business Value In-Depth Interviews, May 2026

Faster and More Efficient Network Changes and Modernization

With Cisco Services as Code in place, study participants reported substantial improvements in the speed, quality, and scale at which they execute network changes and undertake network modernization. On the change side, the combination of standardized input validation, prechange testing pipelines, and automated deployment minimizes time spent on manual preparation, peer review, and post-change verification, which makes individual changes time-consuming and error-prone. For teams managing high volumes of routine changes, the shift to touchless, template-driven execution transforms the scale at which they can operate.

For network modernization, the scale of efficiency gains is striking, given the importance of network modernization for study participants. They described large-scale projects involving up to thousands of devices across hundreds of locations that previously required months of manual effort but can now be completed in a fraction of the time. The ability to define a desired state once and deploy it across the entire device estate, with validation at each step and the ability to control the impact of rolling deployments, changes the risk profile of major network upgrades fundamentally.

Study participants described the impact:

Doubled velocity of delivering new resources and completing changes (Professional Services, EMEA):

"Cisco Services as Code roughly doubled our velocity. Time to deploy new network resources dropped from four hours to one hour, changes per week increased by 40%, and time per change was cut from one hour to 30 minutes."

Higher change success rate (Insurance, North America):

"Our overall change success rate has improved with Cisco Services as Code. We are cautious about making changes and understanding their impact. We've seen a 20% increase in the success rate, from around 70% to up to 90% now."

Safety net of higher change quality (Financial Services, APAC):

"Cisco Services as Code's role in improving change quality gives us a safety net. Without it, there would be more risk. We still carry some risk, but we remove 80–90% of it through our templates and input validation."

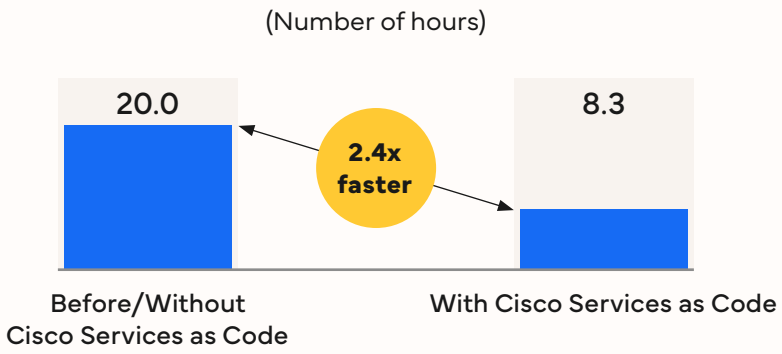
Very substantial time savings in upgrade (Financial Services, North America):

"With Cisco Services as Code, we were able to do an entire fleet upgrade within four to eight hours. In the past, with manual processes on the command line interface and all the human validations, it would be a two- to three-month effort with two or three change windows per week across those months. We've saved a substantial amount of time."

As **Figure 4 (next page)** shows, study participants reported that Cisco Services as Code enables them to carry out network changes in 59% less time (2.4 times faster) on average, going from over an hour to under 30 minutes. The improvement is attributable to standardized templates, automated input validation, and pipeline-driven deployments minimizing the manual preparation, peer review, and post-change verification that previously characterized change windows.

Figure 4

Impact on Time per Network Change

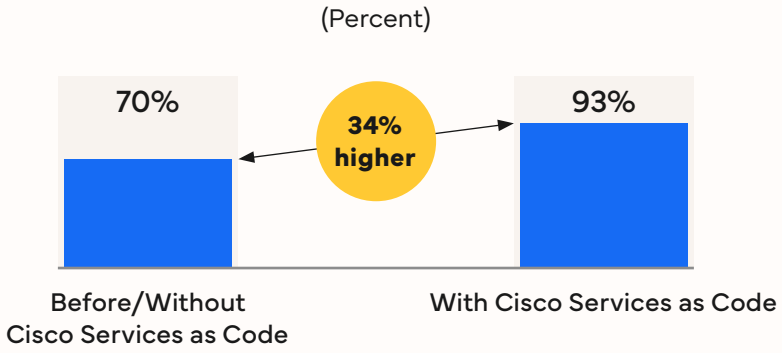


n = 9; Source: IDC Business Value In-Depth Interviews, May 2026

Figure 5 (below) shows that network change success rates for study participants have improved from around 70% to 93% on average with Cisco Services as Code, a 34% relative improvement. These gains have been driven by prechange validation pipelines that catch misconfigurations before they reach the network. For organizations where a failed change can trigger service outages, compliance violations, or customer impact, this improvement in change quality ranks among high-value outcomes that Cisco Services as Code delivers.

Figure 5

Impact on Success of Network Changes

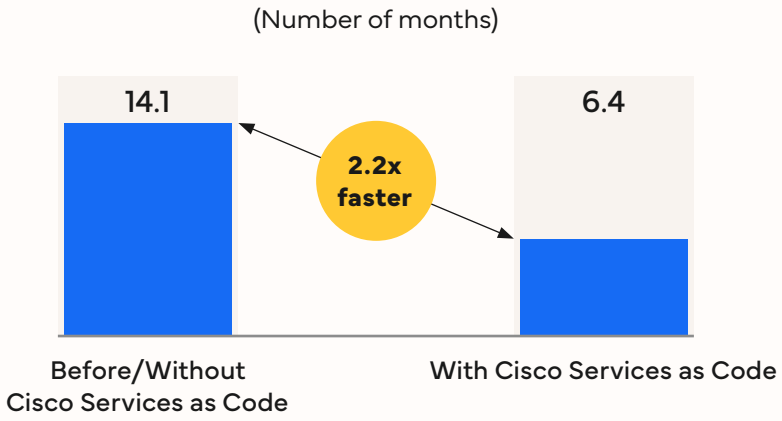


n = 9; Source: IDC Business Value In-Depth Interviews, May 2026

Study participants consistently cited network modernization, including upgrading hardware, migrating to new architectures, and deploying new capabilities across distributed device estates, as among the most resource-intensive and risk-prone activities their teams face. They described projects that previously required months of manual change windows, coordinating changes across hundreds of devices one by one through the CLI, with significant risk that errors in one phase would consume the gains from another. With Cisco Services as Code, the ability to define a desired end state once and deploy it consistently across thousands of devices through an automated, validated pipeline has compressed these timelines fundamentally. As **Figure 6 (below)** shows, study participants reported completing network modernization initiatives in 55% less time (2.2 times faster on average) with Cisco Services as Code, shaving an average of 7.7 months off the timeline for these significant initiatives.

Figure 6

Impact on Time Required for Network Modernization



n = 9; Source: IDC Business Value In-Depth Interviews, May 2026

The time compression in network modernization carries through to a corresponding reduction in the staff effort required to deliver equivalent modernization workloads. As **Table 3 (next page)** shows, study participants require 48% fewer FTEs for network modernization with Cisco Services as Code because the same scope of work is accomplished through automated pipelines rather than manual change processes, freeing up those resources for higher-value engineering work.

Table 3

Network Modernization Staff Efficiencies

Efficiencies	Before/Without Cisco Services as Code	With Cisco Services as Code	Difference	Benefit
FTEs required for equivalent workloads	65.7	34.4	31.3	48%
Value of staff time per year	$6.57M	$3.44M	$3.13M	48%

n = 9; Source: IDC Business Value In-Depth Interviews, May 2026

Ongoing Network and IT Staff Efficiencies

Beyond the gains from specific modernization projects, Cisco Services as Code delivers sustained and ongoing efficiency improvements for teams involved in network operations. By shifting routine changes from manual CLI execution to automated, template-driven pipelines, Cisco Services as Code significantly reduces the time required for network management. Study participants described teams that can cover significantly larger network estates without commensurate staffing growth and individual engineers performing complex fleet upgrades in hours that previously required months of manual change windows.

The efficiency gains extend beyond the core network management team to every function that depends on or is affected by the state of the network. Security teams benefit from a version-controlled, auditable network state that makes policy enforcement and compliance verification dramatically faster. Codified controls minimize manual verification work for compliance teams. Help desk teams experience lower ticket volumes and faster resolution times because misconfigurations are caught before they reach the network.

Study participants described these operational improvements and the impact on these teams:

Significant network team efficiencies (Financial Services, EMEA):

"For our networking team, which covers both the datacenter and the public cloud, we have ten team members who can manage all the infrastructure across the Americas and Europe, both on premises and in the cloud. Without this way of operating and Cisco's automation strategy, we would probably have needed 30 or more."

Configuration compliance at 99% (Financial Services, North America):
"Configuration compliance is now at 99% with Cisco Services as Code. Prior to that, we were around the upper 30% to 40%. This ties directly to the risk and compliance requirements of being a bank. Security teams are no longer logging into devices to check compliance; they're looking at the GitHub repo, which is in sync with the device."

Opportunity to move away from routine, repetitive tasks (Financial Services, APAC):
"One of my colleagues in fulfillment wanted to move out of the team. She's a new hire, Gen Z, and she wanted to advance her career faster and do more meaningful work rather than repeating routine changes. After moving to the engineering team that uses Cisco Services as Code, she feels that she's realizing her potential."

Better results, increased staff engagement (Financial Services, APAC):
"We aim for faster, more frequent change and a high-quality, reduced incident rate with Cisco Services as Code. Also, as we shift more toward engineering, coding, and developing more innovative work, this makes staff engagement higher as they shift focus from previously handling repeated routine requests."

As **Table 4 (next page)** shows, Cisco Services as Code improves IT network infrastructure team efficiency by an average of 37%, reflecting the shift from manual, device-by-device configuration to codified, automated operations. **Further, network infrastructure teams deliver more value to their organizations by requiring 51% less time (two times faster on average) to deploy new network resources** and 47% less time to deploy other new infrastructure resources. The value of these efficiencies reflects networking teams that previously spent much of their time on routine CLI-based tasks being freed up to take on higher-value engineering work while managing more network infrastructure with the same or even fewer staff resources.

Table 4

Impact on Network Infrastructure Team Efficiencies

Efficiencies	Before/Without Cisco Services as Code	With Cisco Services as Code	Difference	Benefit
FTEs required for equivalent workloads	67.6	42.9	24.7	37%
Hours per network device per year	2.6	1.7	1.0	37%
Value of staff time per year	$6.76M	$4.29M	$2.47M	37%

n = 9; Source: IDC Business Value In-Depth Interviews, May 2026

The operational improvements Cisco Services as Code drives extend beyond the network management team to the broader IT infrastructure organization because a faster, more reliable, and better-documented network reduces the overhead that other IT teams absorb when managing dependencies on network state. As **Table 5 (below)** shows, other IT infrastructure teams realize 20% improvements in efficiency on average with Cisco Services as Code because reduced incident volumes, faster provisioning, and lower coordination overhead free up IT staff for more productive activities.

Table 5

Impact on Other IT Team Efficiencies

Efficiencies	Before/Without Cisco Services as Code	With Cisco Services as Code	Difference	Benefit
FTEs required for equivalent workloads	12.4	9.9	2.5	20%
Value of staff time per year	$1.24M	$994,400	$248,700	20%

n = 9; Source: IDC Business Value In-Depth Interviews, May 2026

Network security teams also realize significant efficiency gains from Cisco Services as Code because version-controlled network state, codified security policies, and automated compliance validation minimize the manual inspection and remediation work that previously consumed security team capacity. As **Table 6 (below)** shows, security teams are 30% more efficient on average with Cisco Services as Code, reflecting both faster policy enforcement and the reduction in security incidents that result from fewer manual configuration errors entering the network.

Table 6

Impact on Network Security Team Efficiencies

Efficiencies	Before/Without Cisco Services as Code	With Cisco Services as Code	Difference	Benefit
FTEs required for equivalent workloads	35.3	24.7	10.6	**30%**
Value of staff time per year	$3.53M	$2.47M	$1.06M	**30%**

n = 9; Source: IDC Business Value In-Depth Interviews, May 2026

Agility and Development Benefits

Cisco Services as Code delivers meaningful productivity benefits for development teams in addition to the networking and infrastructure functions it most directly enables. When managing networks through stable, version-controlled pipelines with predictable change quality, the infrastructure friction that study participants' development teams experience, such as waiting for manual network changes, dealing with inconsistent environments, and managing delays from network incidents, diminishes significantly. As a result, development engineers spend less time blocked by network dependencies and more time delivering software.

The broader cultural change that Cisco Services as Code drives amplifies this shift. As network engineers develop software engineering skills that include writing code, managing repositories, and building automation pipelines, the boundary between network operations and software development narrows. Study participants described development teams gaining faster access to network resources, more reliable environments for testing and deployment, and a more collaborative relationship with networking teams that share a common code-based vocabulary.

Study participants noted:

Improved ability to control risk and ensure stability during changes (Retail, APAC):
"Production changes were a key concern, along with the need to adopt safer software practices. We introduced an abstraction layer with Cisco Services as Code to better manage change and limit the blast radius. For example, when deploying changes across 1,300 sites, we needed the ability to roll them out gradually and securely, rather than applying them all at once, so we could control risk and ensure stability throughout the process."

Increased speed, lower error rate (Financial Services, North America):
"Going from an operation that used to take two to three months to one that takes four hours with Cisco Services as Code is a big deal. It impacts our metrics as a business and keeps us out of the news for bad press around outages. After going to the infrastructure as code environment, we've decreased our error rate by around 90%."

Foundation for self-service model (Financial Services, APAC):
"Network as code with Cisco is an enabler for developing our network service catalog. That service catalog, which is end user–facing, is going to be a big benefit; it will be exposed to our network end users, so they can raise network change requests themselves through self-service."

As **Table 7 (below)** shows, IDC finds that development teams realize 29% higher productivity with Cisco Services as Code. These productivity gains reflect the compound effect of more stable infrastructure, faster change cycles, and reduced overhead from network dependencies.

Table 7

Development Team Productivity Gains

Gains	Before/Without Cisco Services as Code	With Cisco Services as Code	Difference	Benefit
Equivalent productivity, FTEs	45.2	58.3	13.2	29%
Value of equivalent productivity	$4.52M	$5.83M	$1.32M	29%

n = 9; Source: IDC Business Value In-Depth Interviews, May 2026

Business Benefits

The operational improvements Cisco Services as Code delivers translate into direct and measurable business outcomes, both through the reduction of revenue-impacting outages and the enhanced ability to deliver new products, services, and capabilities to market faster and more reliably. Study participants described how the predictability, consistency, and quality of a code-driven network operating model change the risk calculus for the business: With automated validation preventing misconfigurations before they reach the network and the ability to diagnose and rollback issues faster when they do occur, the frequency and duration of network-related business disruptions fall significantly.

For client-facing organizations, the performance improvements Cisco Services as Code enables, which include faster network provisioning, more reliable connectivity, and faster response times, translate directly into better customer experience. Several study participants described customers who notice and value the speed and reliability improvements and highlighted specific examples of outage elimination and dramatic incident-rate reductions as business-level outcomes their organizations track and report.

Study participants described the impact:

Improved performance, better customer experience (Insurance, North America):
"We've seen speedy, reliable connectivity and improved response time with Cisco Services as Code, which has resulted in improved customer experience and support. Customers no longer have to wait while processing transactions or operations. Overall, it has improved both speed and response time."

Minimized compliance-related risk (Financial Services, APAC):
"Now that we have everything on code, our compliance is almost 100%. All best practices are written into the code logic, and there is no gray area anymore. The chance of someone being able to work around those controls is zero with Cisco Services as Code."

Faster and more consistent release and change execution (Retail, APAC):
"The performance benefit for us of Cisco Services as Code is about our ability to get consistency around change deployment and release cycles. Because of the size of our network, rolling out a new feature or enabling a new technology across the edge would traditionally take a considerable amount of time."

As **Table 8 (below)** shows, study participants attributed substantial revenue gains to their use of Cisco Services as Code, both by reducing revenue losses associated with poor network performance and from business enablement through enhanced network agility and reach. On average, IDC calculates that study participants will benefit from $8.53 million in reduced revenue loss from avoided outages per organization annually, and $29.81 million in higher revenue from business enablement per organization annually, demonstrating the consequential business impact of Cisco Services as Code for interviewed Cisco customers.

Table 8

Higher Revenue

Revenue Gains	Per Organization	Per 5,000 Devices
Unplanned downtime		
Higher revenue per year	$8.53M	$889,000
Operating margin	15%	15%
Higher net revenue per year	$1.28M	$133,500
Business enablement		
Higher revenue per year	$29.81M	$3.11M
Operating margin	15%	15%
Higher net revenue per year	$4.47M	$466,000

n = 9; Source: IDC Business Value In-Depth Interviews, May 2026

In addition to the revenue and business performance outcomes described above, Cisco Services as Code delivers a direct and measurable benefit for compliance teams because codified controls and a version-controlled network state transform compliance verification from a labor-intensive, manual audit activity into an automated, continuous process. Study participants in regulated industries described how Cisco Services as Code enables near-100% configuration compliance by embedding best practices and access controls directly into the code logic, eliminating the gray areas that manual configuration inevitably creates and making it straightforward to demonstrate compliance to auditors and regulators. As **Table 9 (below)** shows, study participants reported that their compliance teams are 19% more efficient with Cisco Services as Code.

Table 9
Impact on Compliance Team Efficiencies

Efficiencies	Before/Without Cisco Services as Code	With Cisco Services as Code	Difference	Benefit
FTEs required for equivalent workloads	31.4	25.3	6.1	19%
Value of staff time per year	$2.20M	$1.77M	$425,800	19%

n = 9; Source: IDC Business Value In-Depth Interviews, May 2026

ROI Analysis

Table 10 (below) presents IDC's findings on the benefits and investment costs for study participants using Cisco Services as Code. IDC projects that interviewed organizations will achieve three-year discounted benefits worth $24.18 million per organization ($2.52 million per 5,000 devices), compared with three-year discounted investment costs of $6.76 million per organization ($720,000 per 5,000 devices). These benefits and costs result in an average three-year ROI of 258% and a payback period of 12 months, demonstrating strong absolute value and time to value for organizations that invest in Cisco Services as Code as part of their network automation strategy.

Table 10
ROI Analysis

Three-Year ROI Analysis	Per Organization	Per 5,000 Devices
Discounted benefits	$24.18M	$2.52M
Discounted investment costs	$6.76M	$0.72M
Net present value	$17.42M	$1.82M
Return on investment	258%	258%
Payback	12 months	12 months
Discount factor	12%	12%

n = 9; Source: IDC Business Value In-Depth Interviews, May 2026

Challenges/Opportunities

Adoption of a Services as Code model requires organizations to navigate meaningful skill gaps, such as accelerating software engineering competencies (e.g., version control, CI/CD/CT pipelines, declarative configuration), that represent a fundamentally different working model. Teams that underinvest in enablement risk slow uptake, continued shadow CLI usage, and erosion of the consistency that makes automation valuable in the first place. Included as part of the Services as Code subscription, organizations will have access to resources and experts to support knowledge transfer and the adoption of new skills.

Legacy infrastructure and tooling fragmentation compound the challenge for large enterprises. Older devices lacking modern API support can create gaps in automation coverage, requiring significant upfront rationalization before the full Services as Code model can be applied consistently at scale. Organizations operating heterogeneous environments, spanning multiple Cisco architectures, third-party vendors, and cloud platforms, face additional integration complexity and governance overhead around pipeline security, secrets management, and configuration drift detection. While Cisco Professional Services helps mitigate these risks, it also creates a degree of external dependency that organizations must plan to progressively internalize. With the solution set up and continuous integration capabilities with Services as Code, organizations can methodically address heterogeneous environments and complexity.

Conclusion

As network environments grow in scale and complexity, the limitations of manual and CLI-driven operations have become increasingly untenable. Configuration drift, human error, slow change cycles, and mounting compliance requirements are pushing organizations to rethink how networks are built and managed. This is especially acute as new frontier AI models are deployed that introduce new and rapidly evolving security risks, requiring the ability to implement network changes quickly and frequently as threats are identified. To help address these challenges, Cisco offers Services as Code, a managed subscription professional service that applies NetDevOps principles and CI/CD/CT automation to network provisioning, configuration, testing, and deployment across Cisco's full architecture portfolio.

Organizations that have made this shift report transformational results. Networking teams execute changes in half the time with a 34% higher success rate, modernization initiatives that previously consumed months are completed in a fraction of the time, and security, compliance, and development teams all benefit from a more reliable and better-documented network. Study participants described a fundamental evolution in how their teams work, moving from reactive, device-by-device operators to engineers managing infrastructure through code.

Based on IDC's interviews with nine large enterprises, Cisco Services as Code delivers average annual benefits of $1.07 million per 5,000 devices, a three-year ROI of 258%, a net present value of $17.42 million per organization, and a payback period of 12 months.

Appendix A: IDC Business Value Methodology

IDC utilized its standard Business Value/ROI methodology for this project, gathering data from organizations currently using Cisco Services as Code.

Based on interviews with nine organizations, IDC performed a three-step process to calculate the ROI and payback period:

- Measure the benefits from IT networking and other IT team time savings and productivity gains, network-related cost savings, and higher revenue.
- Ascertain the investment made in implementing and using Cisco Services as Code.
- Project the costs and benefits over a three-year period and calculate the ROI and breakeven time for the use of Cisco Services as Code.

IDC bases the payback period and ROI calculations on the following standard assumptions:

- Multiplying time values by burdened salary quantifies efficiency and productivity savings. For this study, IDC used its standard salary assumptions of an average fully loaded IT salary of $100,000 per year and a user salary of $70,000 per year.
- IDC applied a 15% margin assumption in calculating the net value of end-user productivity gains that were included in the financial model.
- IDC calculated the net present value of the three-year savings by subtracting the amount that organizations would have realized by investing the original sum in an instrument yielding a 12% return to allow for the missed opportunity cost. This accounts for both the assumed cost of money and the assumed rate of return.
- Because IT solutions require a deployment period, the full benefits of the solution are not available during deployment. To capture this reality, IDC prorates the benefits on a monthly basis and then subtracts the deployment time from the first-year savings.

Note: All numbers in this document may not be exact due to rounding.

Appendix B: Summary of Financial Benefits

Table 11 (below) provides a detailed overview of the financial benefits that study participants reported achieving through their use of Cisco Services as Code. As the table shows, IDC calculates that they will realize total annual benefits worth an average of $10.23 million per organization ($1.07 million per 5,000 devices).

Table 11

Summary of Financial Benefits

Category of Value	Average Quantitative Benefit	Calculated Average Annual Value per Organization	Calculated Average Annual Value per 5,000 Devices
Annualized infrastructure cost savings	$137,900 in savings per organization per year	$108,900	$11,500
Network management team efficiencies	37% efficiency, worth 24.7 FTEs; $100,000 salary	$1.95M	$203,500
Network modernization team efficiencies	48% less staff time, worth one-time 31.3 FTEs; $100,000 salary	$1.04M	$109,000
IT infrastructure team efficiencies	20% efficiency, worth 2.5 FTEs; $100,000 salary	$196,400	$20,500
Network security team efficiencies	30% efficiency, worth 10.6 FTEs; $100,000 salary	$835,600	$87,000
Help desk team efficiencies	11% efficiency, worth 1.8 FTEs; $70,000 salary	$98,500	$10,500
Development team productivity gains	29% higher productivity, worth 13.2 FTEs; $100,000 salary	$1.04M	$108,500
Compliance team efficiencies	19% efficiency, worth 6.1 FTEs; $70,000 salary	$336,300	$35,000

Table 11 continued next page

Table 11 continued from previous page

Category of Value	Average Quantitative Benefit	Calculated Average Annual Value per Organization	Calculated Average Annual Value per 5,000 Devices
Compliance cost savings	$93,100 in savings per organization per year	$73,500	$7,500
Reduced net revenue loss, downtime*	$8.53M in reduced revenue loss per year	$1.01M	$105,500
Higher net revenue, performance*	$29.81M in higher revenue per year	$3.53M	$368,000
Total average annual benefits	**$10.23M per organization/$1.07M per 5,000 devices**		

Note: includes 7.6 months of deployment time in year 1

* 15% margin assumption applied

n = 9; Source: IDC Business Value In-Depth Interviews, May 2026

Appendix C: Accessible Data Table

This appendix provides an accessible version of the data for any complex figures in this document. Click "Return to figure" to get back to the original figure.

Figure 3 accessible data

Impact on Network Documentation and Automation

Impact	Extent of Network Documentation	Extent of Network Automation
Before/Without Cisco Services as Code	45%	21%
With Cisco Services as Code	70%	56%
Difference	**55% higher**	**172% higher**

n = 9; Source: IDC Business Value In-Depth Interviews, May 2026

Return to figure

About the IDC Analysts

Leslie Rosenberg

Research Vice President,
Network Life-Cycle Services and Infrastructure Services, IDC

Leslie Rosenberg is research vice president for IDC's Network Life-Cycle Services and Infrastructure Services programs, examining professional services trends and market dynamics for the enterprise. Rosenberg's research coverage spans life-cycle services portfolio development across network, server, and storage infrastructure technologies, encompassing the dynamics of software-defined infrastructure, automation, service delivery platforms, new consumption models, and the evolution of services impacting people, processes, tools, and methodologies around the globe. Rosenberg's research evaluates services that technology manufacturers, global systems integrators, and telcos deliver as they look to compete more effectively in the enterprise market.

More about Leslie Rosenberg →

Matthew Marden

Research Vice President,
Business Value Strategy Practice, IDC

Matthew Marden is responsible for carrying out custom business value research engagements and consulting projects for clients in several technology areas, focusing on determining the return on investment of their use of enterprise technologies. Marden's research often analyzes how organizations are leveraging investment in digital technology solutions and initiatives to create value through efficiencies and business enablement.

More about Matthew Marden →

Message from the Sponsor

Cisco Services as Code is a subscription professional service that applies NetDevOps and Infrastructure as Code principles to network management.

Organizations define the intent for their desired infrastructure and network states using YAML or standard text, automate deployments through CI/CD/CT pipelines, and treat all network elements as software that can be versioned and managed at scale.

Delivered through Cisco Professional Services and backed by 24x7 technical support, the offering includes a readiness assessment, people, process, and solution enablement, solution setup and continuous integration, automated deployment, and release management. Services as Code is available across most Cisco architectures, including ACI, SD-WAN, NDFC, ISE, Catalyst Center, Meraki, Unified Branch, IOS-XE, IOS-XR, and NX-OS and is augmented by the Cisco AI Assistant for Services as Code.

To learn more, explore Cisco Services as Code or contact your account representative or authorized Cisco partner.

Explore Cisco Services as Code

IDC Custom Solutions

IDC Custom Solutions produced this publication. The opinion, analysis, and research results presented herein are drawn from more detailed research and analysis that IDC independently conducted and published, unless specific vendor sponsorship is noted. IDC Custom Solutions makes IDC content available in a wide range of formats for distribution by various companies.

This IDC material is licensed for external use and in no way does the use or publication of IDC research indicate IDC's endorsement of the sponsor's or licensee's products or strategies.

IDC.com | IDC on LinkedIn | IDC Blog

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications, and consumer technology markets. With more than 1,300 analysts worldwide, IDC offers global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries. IDC's analysis and insight help IT professionals, business executives, and the investment community make fact-based technology decisions and achieve their key business objectives.