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Survey overview
Research objectives

Quantify the current state of the network, with respect to:

- Network readiness and maturity
- Network priorities and challenges
- Perceptions of the network as a critical enabler

- 2061 web-based surveys
- Global: 13 countries; 4 regions
- Approximately 15 minutes in length
- Data collection took place June–July 2019

Respondents engaged for the survey had to meet the following criteria:

- IT oversight and/or responsible for network strategy/roadmap:
  - IT leader director +
  - NW strategist manager
- Knowledgeable about the network
- Mix of verticals – excluding IT companies, service providers, IT retailers
- Company size – greater than 500 employees
Survey sampling design and plan

Survey overview

• 15-minute web survey
• Global
• Goal – n=2050

Survey sampling plan

• Quotas were set by geo and role.
• IT leader – “I have over all IT oversight (including the network), but I am not directly responsible for developing the specifics of the network architecture or network strategy.”
• NW strategist – “I am responsible, or part of a team that is responsible, for developing and defining the network strategy, roadmap, architecture, technology preferences, etc.”

<table>
<thead>
<tr>
<th>Geographies</th>
<th>Network strategist</th>
<th>IT leader</th>
<th>Total</th>
</tr>
</thead>
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<td>60</td>
</tr>
<tr>
<td>Total</td>
<td>1550</td>
<td>500</td>
<td>2050</td>
</tr>
</tbody>
</table>

76% 24% 100%
Firmographics overview

Number of employees

- 500–999: 48%
- 1000–4999: 41%
- 5000 or more: 11%

IT budgets

- $2.4 MM (mean)

Country

- Australia: 16%
- Brazil: 10%
- Canada: 7%
- China: 7%
- France: 6%
- Germany: 7%
- India: 7%
- Japan: 6%
- Korea: 3%
- Mexico: 7%
- Singapore: 7%
- UK: 10%
- US: 9%

Country

- Australia: 16%
- Brazil: 10%
- Canada: 7%
- China: 7%
- France: 6%
- Germany: 7%
- India: 7%
- Japan: 6%
- Korea: 3%
- Mexico: 7%
- Singapore: 7%
- UK: 10%
- US: 9%
Survey approach and topical areas

Cisco’s Digital Networking Readiness Model was used to assess where IT leaders and strategists believe their networks are today and where they plan to be in the next two years.

- Screener
- Alignment and Priorities (alignment between network priorities, strategy, and time)
- Advanced Networking (combining automation, SDN, analytics, AI, and security)
- Digital Networking Readiness Model
  - Network Architecture
  - Access Architecture
  - WAN Architecture
  - Data Center Network Architecture
  - Multicloud-enabled Network Architecture
  - IoT-enabled Network Architecture
  - Service Assurance
  - Network Security – Intent-Based

- Operational Readiness
- Talent Readiness
- Digital Transformation and Network Transformation
- Prediction
Cisco’s Digital Network Readiness Model provides a standard, five-stage maturity model that can be applied across multiple network readiness categories, such as architecture, access, WAN, assurance, network security, etc.
Alignment and priorities
Top network priorities cluster into two tiers

Top-tier priorities include IT business value, customer experience, employee productivity, simplification of IT operations, and security.

Q1. What are the Top networking priorities for your organization today? (% respondents)

2019 Global Networking Trends Survey; n=2061
Q1. What are the top networking priorities for your organization today? (% respondents)

**IT leaders n=505**

- Maximize IT’s business value: 39
- Simplify IT operations: 26
- Optimize customer experience: 24
- Enable business innovation: 23
- Maximize employee productivity: 23
- Achieve consistent app. service levels: 22
- Minimize operational expenses: 21
- Align the network with the business: 21
- Drive business transformation: 20
- Minimize security events: 20
- Ensure network compliance: 20
- Minimize network disruptions: 20

**NW strategists n=1556**

- Maximize IT’s business value: 29
- Optimize customer experience: 28
- Maximize employee productivity: 28
- Minimize security events: 28
- Enable business innovation: 27
- Minimize network disruptions: 24
- Ensure network compliance: 20
- Minimize operational expenses: 20
- Drive business transformation: 19
- Align the network with the business: 18
- Achieve consistent app. service levels: 16

IT leaders and NW strategists are largely aligned on top priorities.

Business value and consistent application-service levels are rated more highly for IT leaders, while minimizing security events is rated more highly for NW strategists.
For both IT leaders and NW strategists, today’s top network priorities are largely aligned with what organizations believe they should be in two years.

Q1. What are the top networking priorities for your organization today? (% respondents)
Q2. What should be your top networking priorities to best meet your organization’s needs in the future? (% respondents)

IT leaders today: n=505  
2019 Global Networking Trends Survey; n=2061  
NW strategists today: n=1556

Variance (today/should be)
NW strategists believe performance analytics, embedded security, multidomain management, and automation will help enable ideal network

Q3A. Which of the following technology actions would most enable your organization to achieve its vision of the 'Ideal' network? (% respondents)

- Increase use of analytics and AI for performance monitoring and troubleshooting and detection and response: 47%
- Improve embedded network security capabilities: 43%
- Achieve more consolidated and consistent management across disparate networking domains (campus, branch, WAN, data center, cloud): 42%
- Implement increased levels of network automation: 40%
- Implement a multicloud networking strategy: 36%
- Invest in new network infrastructure equipment: 34%
- Implement Intent-Based Networking (IBN) in various network domains: 27%

2019 Global Networking Trends Survey; Network Strategist n=1556
To better meet the needs of the org, IT Leaders vote for investment in new skills, tech, and staff, and increased coordination across LOB and Other IT Teams

Q3B. Which of the following management actions would most help your network team better meet the needs of the organization? (% respondents)

- Empower network team with new advanced technology skills: 36
- Build a business plan to justify new network technology and staff investments: 35
- Achieve better network coordination and integration with lines of business: 34
- Achieve better network coordination and integration with other IT teams (example, service management, SecOps, application development, cloud): 34
- Build a plan to refocus network resources on new value-add initiatives instead of just maintaining existing services: 32
- Bring in a partner or consultant to help develop a new network technology and/or business plan: 30
- Increase network budget: 29
- Empower network team with new business and soft skills: 26
- Hire more network staff: 21

2019 Global Networking Trends Survey; Network Strategist n=1556
Advanced networking
Q4. Which of the following best describes your organization’s overall strategic view of the network? (% respondents)

43% of IT leader respondents believe their network is business-enabling and business-enhancing.
The majority of IT leaders believe they will attain an advanced network in less than one year.

Q5. When do you think your organization will attain an advanced network that can continuously align to dynamic business needs by combining automation, SDN, analytics/AI, and security technologies across access, WAN, data center, and cloud network domains? (% Respondents)

- Have already done that: 24
- In less than 1 year: 36
- 2 to 3 years: 27
- In more than 5 years: 11
- 4 to 5 years: 2

60% of IT leader respondents believe they have already attained an advanced network, or will within the next year.
For IT leaders, main obstacles to achieving an advanced network are varied

Q6. What are/were the MAIN obstacles slowing down your organization’s transition to an advanced network (combining automation, SDN, analytics/AI, and security)? (% respondents)

<table>
<thead>
<tr>
<th>Obstacle</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadequate services from IT/NW providers to help design and implement advanced automation and analytics systems</td>
<td>30%</td>
</tr>
<tr>
<td>Lack of budget or resources to implement automation and/or analytics-based architecture tools</td>
<td>30%</td>
</tr>
<tr>
<td>Difficulty Integrating automation tools and management functions into existing network environment</td>
<td>28%</td>
</tr>
<tr>
<td>Siloed design and operational approach across access, WAN, data center, cloud, and security domains</td>
<td>27%</td>
</tr>
<tr>
<td>Lack of necessary skills among staff to design, deploy, and operate automation and analytics controllers.</td>
<td>27%</td>
</tr>
<tr>
<td>Reactive operational mindset that doesn’t lend itself to systemwide network transformation strategy</td>
<td>25%</td>
</tr>
<tr>
<td>Reluctance of networking staff to introduce advanced automation and analytics/AI technologies</td>
<td>20%</td>
</tr>
<tr>
<td>Lack of maturity of network controllers for applying system-wide automation platforms</td>
<td>20%</td>
</tr>
<tr>
<td>Too busy maintaining current network to consider network transformation opportunities</td>
<td>19%</td>
</tr>
<tr>
<td>Lack of maturity of network analytics/AI technologies</td>
<td>18%</td>
</tr>
<tr>
<td>None of the above</td>
<td>4%</td>
</tr>
</tbody>
</table>

2019 Global Networking Trends Survey; IT Leaders n=505
Digital transformation
21% of IT leaders believe their organizations have advanced digital transformation strategies deployed while 62% have only deployed digital transformation in piecemeal form.

QDT1. Given this definition (see below), please indicate which statement best characterizes your organization’s approach to digital transformation? (% respondents)

- 100% respondents: Significant progress has been achieved in implementing our organization’s digital transformation strategy, and it is allowing us to create new business models, and/or ecosystems for our existing markets.
- 8% respondents: We have a strategy for digital transformation in place, and projects share a common governance construct (for example, a program office or center of excellence).
- 13% respondents: We have a strategy for digital transformation in place that includes some coordination, but mostly information sharing.
- 17% respondents: We have a strategy for digital transformation in place, but projects are still separate and not well coordinated.
- 28% respondents: We have implemented some projects that would support digital transformation, but they are not guided by an overall strategy.
37% of respondents believe their digital transformation and network strategies are highly aligned.

Relative to NW strategists, IT leaders report significantly higher levels of alignment: 47% vs. 34%.

QDT2. How closely does your organization align its Digital Transformation and network strategies? Please rate on scale of 1-10, where 10 is fully integrated. (% respondents)

<table>
<thead>
<tr>
<th>Alignment Level</th>
<th>Total Respondents (n=2016)</th>
<th>IT Leaders (n=505)</th>
<th>NW Strategists (n=1556)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>19</td>
<td>24</td>
<td>18</td>
</tr>
<tr>
<td>10</td>
<td>37</td>
<td>47</td>
<td>34</td>
</tr>
</tbody>
</table>

10 - fully Integrated: Our network transformation strategy and digital transformation strategy are fully aligned and integrated.

2019 Global Networking Trends Survey; n=2061
IT leaders believe their digital transformation and network strategies are more closely aligned compared to NW strategists.

QDT2. How closely does your organization align its digital transformation and network strategies? (% respondents)

1 - no Alignment: We do not have any formal or informal touch points between our network transformation strategy and digital transformation strategy.

<5
6
7
8
9
10 - fully Integrated: Our network transformation strategy and digital transformation strategy are fully aligned and integrated.

Total respondents (n=2061)  IT leaders (n=505)  NW strategists (n=1556)

2019 Global Networking Trends Survey; n=2061
Network readiness
Network readiness - Today

Network Architecture Approach was rated as most mature - with 28% of respondents claiming to be in stages 4 or 5, followed by Network-Enabled Service Assurance.

(QNNR1 TO QNNR10) Thinking about the current skill-sets and capabilities of your networking team, how would you rate the team’s readiness level to build and maintain a network that meets the future demands of your organization in each of the following areas? Today (% respondents)

<table>
<thead>
<tr>
<th>Area</th>
<th>Stages 1 + 2</th>
<th>Stage 3</th>
<th>Stages 4 + 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Architecture Approach</td>
<td>30%</td>
<td>42%</td>
<td>28%</td>
</tr>
<tr>
<td>Access Architecture Readiness</td>
<td>42%</td>
<td>40%</td>
<td>18%</td>
</tr>
<tr>
<td>WAN Architecture</td>
<td>42%</td>
<td>38%</td>
<td>20%</td>
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<tr>
<td>Data Center Networking</td>
<td>37%</td>
<td>40%</td>
<td>23%</td>
</tr>
<tr>
<td>Multicloud-Enabled Network Architecture</td>
<td>43%</td>
<td>37%</td>
<td>21%</td>
</tr>
<tr>
<td>IoT Application Assurance</td>
<td>42%</td>
<td>36%</td>
<td>22%</td>
</tr>
<tr>
<td>Network-Enabled Service Assurance Approach</td>
<td>33%</td>
<td>42%</td>
<td>25%</td>
</tr>
<tr>
<td>Network Security - Intent-Based</td>
<td>37%</td>
<td>39%</td>
<td>24%</td>
</tr>
<tr>
<td>Network Visibility and Threat Detection</td>
<td>37%</td>
<td>40%</td>
<td>23%</td>
</tr>
<tr>
<td>Performance Visibility and Analytics</td>
<td>35%</td>
<td>43%</td>
<td>23%</td>
</tr>
</tbody>
</table>

2019 Global Networking Trends Survey; Network Strategist n=1556
Secure access readiness

Question: which statement best describes your organization’s current approach to designing, deploying, and managing your WAN architecture?

Source: 2019 Global Networking Trends Survey n = 1556 network strategists

<table>
<thead>
<tr>
<th>Secure access readiness</th>
<th>Current</th>
<th>Planned</th>
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<tbody>
<tr>
<td>Information ERA</td>
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<td>15</td>
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<tr>
<td>Connectivity-driven</td>
<td>34</td>
<td>5</td>
</tr>
<tr>
<td>Controlled access</td>
<td>40</td>
<td>22</td>
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<tr>
<td>Software-defined access</td>
<td>15</td>
<td>45</td>
</tr>
<tr>
<td>Machine learning</td>
<td>3</td>
<td>27</td>
</tr>
</tbody>
</table>

Best effort
- Open access
  - Unchecked wired or wireless access
    - Provides users with unchecked wired or wireless access to campus and branch networks

Controlled access
- Authenticated users and devices access
  - Provides authenticated users and devices with unified wired and wireless access to authorized data and applications

Software-defined access
- SD policy automation
  - Provides software-defined policy automation for user and device access to application; integrated macro and micro-segmentation across the campus and branch for greatly reduced exposure

AI-enabled access
- Machine learning-enabled policy creation
  - Provides dynamic access and usage policy creation based on business needs, enabled through machine learning and software-defined automation

Intent-based access
- Automated cross-domain policy alignment
  - Continuously aligns AI-driven access policy to business intent between all users, devices, applications and services for maximum security consistently across multiple private and public network domains

Where organizations are now
- 82%

Where they plan to be in two years
- 18%
WAN multicloud readiness

Information ERA
Question: which statement best describes your organization’s current approach to designing, deploying, and managing your WAN architecture?
Source: 2019 Global Networking Trends Survey n = 1556 network strategists
Intent-based network security readiness

**Siloed network and security**
- **Perimeter control**: Perimeter control points with little integration into the network. Security appliances ride on top of the network as an overlay. (30%)

**Integrated network security**
- **Centralized visibility**: Users and devices are dynamically learned and placed into functional groups. (39%)

**where they plan to be in two years**
- **31%**

**Intent-based network security readiness**
<table>
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<th>7</th>
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<tbody>
<tr>
<td>1</td>
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<td>4</td>
<td>47</td>
</tr>
<tr>
<td>21</td>
<td>27</td>
</tr>
</tbody>
</table>

**Connectivity-driven**
- **Perimeter control points with little integration into the network. Security appliances ride on top of the network as an overlay.**

**Software-defined**
- **Centralized network security**: Unified policy-based segmentation. Automated end-to-end segmentation across multiple domains. End-to-end visibility into threats in data and applications. (74%)

**adaptive network security**
- **AI-enabled adaptive policy enforcement**: Security policies and threat detection capabilities continuously adapt to changing conditions based on advanced analytics and machine learning.

**service-driven**
- **Adaptive network security**: Adapts to threat and business landscape. Automatically detects and contains emerging threats. Adapts to changing policies and regulations.

**Where organizations are now**
- **39%**

**Where they plan to be in two years**
- **47%**

**Question**: Which statement best describes your organization’s current approach to network security?
- 2019 Globle Networking Trends Survey n = 1556 network strategists

Digital ERA
Al-enabled assurance readiness

**Best effort**

Individual device visibility
- Ad hoc device monitoring
  - Limited point-in-time visibility into network device statistics
  - Disparate management tools
- Alarm-based device monitoring
  - Automated alarms based on pre-configured thresholds
  - Disparate management systems

35%

**Connectivity-driven**

Alarm-triggered devices-level insights
- Alarm-based monitoring
  - Automated alarms based on pre-configured thresholds
  - Disparate management systems

28%

**Software-defined**

Centralized operational insights
- Network-wide monitoring
  - Reporting related to pre-configured thresholds on users, applications, and network devices
  - Cross domain (campus, branch, WAN, data center, cloud)

43%

**Service-driven**

Adaptive predictive insights
- ML and MR-driven advanced monitoring
  - High accuracy alarms based on AI-driven adaptive thresholds
  - Centralized real-time monitoring of all user, application, and network device trends

72%

**Intent-based**

Automated prescriptive insights
- ML and MR-driven remediation
  - Prescriptive remediation using AI-driven analytics
  - Dynamically determine and apply service thresholds

22%

Question: which statement best describes your organization’s current approach to performance visibility and analytics?

Source: 2019 Globle Networking Trends Survey n = 1556 network strategists

<table>
<thead>
<tr>
<th>AI-enabled assurance readiness</th>
<th>Information ERA</th>
<th>Digital ERA</th>
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<tr>
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<td>4</td>
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<td>43</td>
</tr>
<tr>
<td>23</td>
<td>29</td>
<td>29</td>
</tr>
</tbody>
</table>

Where organizations are now

- 35% of respondents are using best effort approaches.

Where they plan to be in two years

- 72% plan to be using software-defined approaches.

Source: 2019 Global Networking Trends Survey n = 1556 network strategists

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On average, the vast majority (69%+) of respondents expect to be at stages 4 or 5 in the next two years in every network dimension measured.

(QNNR1 TO QNNR10) Thinking about the current skill-sets and capabilities of your networking team, how would you rate the team’s readiness level to build and maintain a network that meets the FUTURE demands of your organization in each of the following areas? In Two Years (% respondents)

- Network Architecture Approach: 81% Stages 4 + 5, 16% Stage 3, 4% Stages 1 + 2
- Access Architecture Readiness: 72% Stages 4 + 5, 22% Stage 3, 6% Stages 1 + 2
- WAN Architecture: 73% Stages 4 + 5, 21% Stage 3, 6% Stages 1 + 2
- Data Center Networking: 75% Stages 4 + 5, 22% Stage 3, 4% Stages 1 + 2
- Multicloud-Enabled Network Architecture: 69% Stages 4 + 5, 24% Stage 3, 6% Stages 1 + 2
- IoT Application Assurance: 70% Stages 4 + 5, 24% Stage 3, 6% Stages 1 + 2
- Network-Enabled Service Assurance Approach: 75% Stages 4 + 5, 20% Stage 3, 5% Stages 1 + 2
- Network Security - Intent-Based: 75% Stages 4 + 5, 21% Stage 3, 4% Stages 1 + 2
- Network Visibility and Threat Detection: 72% Stages 4 + 5, 23% Stage 3, 6% Stages 1 + 2
- Performance Visibility and Analytics: 72% Stages 4 + 5, 24% Stage 3, 4% Stages 1 + 2

2019 Global Networking Trends Survey; Network Strategist n=1556
Respondents expect to become significantly more capable in each of the 10 network dimensions over the next two years.

- **Network Architecture Approach**: Improved by 53%.
- **Access Architecture Readiness**: Improved by 53%.
- **WAN Architecture**: Improved by 53%.
- **Data Center Networking**: Improved by 52%.
- **Multicloud-Enabled Network Architecture**: Improved by 49%.
- **IoT Application Assurance**: Improved by 48%.
- **Network-Enabled Service Assurance Approach**: Improved by 49%.
- **Network Security - Intent-Based**: Improved by 51%.
- **Network Visibility and Threat Detection**: Improved by 49%.
- **Performance Visibility and Analytics**: Improved by 49%.

*2019 Global Networking Trends Survey; Network Strategist n=1556*
Operational readiness
Network operations readiness: Assurance management

**Reactive**
React to user-initiated service disruptions

- **Where organizations are now**: 38%
- **Where they plan to be in two years**: 29%

**Responsive**
Respond to network alerts to identify and resolve a majority of service-impacting issues

- **Where organizations are now**: 39%
- **Where they plan to be in two years**: 71%

**Proactive**
Service impact is identified and resolved via alerts
Proactive monitoring of network health, performance and capacity

**Predictive**
Predictive remediation of potential service impacting issues before they happen with use of analytics and automation technologies

- **Business-optimized**: Health and performance are dynamically managed based on business intent systems, analytics, and automation capabilities

**Question**: Which statement best describes your organization’s current approach to network operational readiness?

Source: 2019 Globle Networking Trends Survey n = 1556 network strategists
Network operations maturity is similar to network dimensions

23% of organizations rate themselves at stages 4+5 today; 71% of organizations expect to be at stages 4+5 in two years.

QNOR1. Which statement best describes your organization's current approach to NETWORK OPERATIONS? Today and In Two Years (% respondents)

Network operations:
- Today: 38% at Stage 1 + 2, 23% at Stage 3, 23% at Stages 4+5
- In Two Years: 23% at Stage 1 + 2, 71% at Stage 3

% respondents – Change in two years:
- Network operations: -32% to -16% to 48%

Five stages:
1. Reactive
2. Responsive
3. Proactive
4. Predictive
5. Business optimized

2019 Global Networking Trends Survey; n=2061; IT leaders n=505; NW strategists n=1556
The most time-consuming “status quo” tasks include troubleshooting, detecting/remediating, team interactions, and local and off-premises device management

QOR2. Which of the following day-to-day tasks for managing the status quo consume the most time and resources for your networking operations team? (% respondents)

- Identifying and troubleshooting network issues: 33
- Detecting and remediating security threats or attacks on the network: 30
- Interacting, consulting, coordinating with other IT teams (for example, IT services, SecOps, DevOps, cloud): 29
- Managing local network devices (for example, provisioning, image management, and configuration changes): 29
- Managing off-premises or remote networks, such as branches and clouds*: 29
- Translating line-of-business, business, and application needs to network and security policies and configurations: 24
- Staging and preproduction testing of new network releases and products: 23
- Getting visibility and analyzing application performance: 21
- Enabling/onboarding new applications: 21
- Maintaining application SLAs: 19
- Onboarding new users/devices/things: 18

2019 Global Networking Trends Survey; n=2061
Regarding time spent on “status quo” tasks, IT leaders and NW strategists are generally aligned

Exceptions include time spent managing off-premises networks, identifying and troubleshooting issues, and detecting and remediating security threats and attacks.

QOR2. Which of the following day-to-day tasks for managing the status quo consume the most time and resources for your networking operations team? (% respondents)

<table>
<thead>
<tr>
<th>Task</th>
<th>IT Leader</th>
<th>Network Strategist</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managing off-premises or remote networks, such as branches and clouds*</td>
<td>37</td>
<td>29</td>
<td>31</td>
</tr>
<tr>
<td>Managing local network devices (for example, provisioning, image management, and configuration changes)</td>
<td>30</td>
<td>27</td>
<td>31</td>
</tr>
<tr>
<td>Interacting, consulting, coordinating with other IT teams (for example, IT services, SecOps, DevOps, cloud)</td>
<td>26</td>
<td>26</td>
<td>30</td>
</tr>
<tr>
<td>Identifying and troubleshooting network issues</td>
<td>26</td>
<td>25</td>
<td>30</td>
</tr>
<tr>
<td>Getting visibility and analyzing application performance</td>
<td>25</td>
<td>24</td>
<td>30</td>
</tr>
<tr>
<td>Staging and preproduction testing of new network releases and products</td>
<td>24</td>
<td>22</td>
<td>30</td>
</tr>
<tr>
<td>Translating line-of-business, business, and application needs to network, and security policies, and configurations</td>
<td>24</td>
<td>23</td>
<td>26</td>
</tr>
<tr>
<td>Detecting and remediating security threats or attacks on the network</td>
<td>23</td>
<td>23</td>
<td>26</td>
</tr>
<tr>
<td>Onboarding new users/devices/things</td>
<td>23</td>
<td>22</td>
<td>26</td>
</tr>
<tr>
<td>Enabling/onboarding new applications</td>
<td>20</td>
<td>19</td>
<td>22</td>
</tr>
<tr>
<td>Maintaining application SLAs</td>
<td>18</td>
<td>18</td>
<td>20</td>
</tr>
<tr>
<td>Detecting and remediating security threats or attacks on the network</td>
<td>18</td>
<td>18</td>
<td>20</td>
</tr>
</tbody>
</table>

2019 Global Networking Trends Survey; n=2061; IT leaders n=505; NW strategists n=1556
NW strategists expect time spent on value-added activities will increase in the next two years, while IT leaders expect the status quo

QOR3AB1-2. Please estimate the percent of time your networking organization spends on maintaining the status quo vs. creating value-added services? Today; In Two Years

<table>
<thead>
<tr>
<th></th>
<th>Total respondents</th>
<th>IT leaders</th>
<th>Network strategists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintaining the status quo</td>
<td>56%</td>
<td>55%</td>
<td>56%</td>
</tr>
<tr>
<td>Creating value-added services</td>
<td>44%</td>
<td>48%</td>
<td>47%</td>
</tr>
</tbody>
</table>

2019 Global Networking Trends Survey; n=2061; IT leaders n=505; NW strategists n=1556
Regarding value-added services, IT leaders seek to focus more on multicloud optimization, process improvements, network protection, and improved collaboration with LoB

QOR4. If you were able to reduce the time spent on maintaining status-quo activities, on which of the following value-added services would you put more focus? (% respondents)

- Better supporting deployment of multicloud environments (public IaaS or SaaS) - 36%
- Developing network operations process improvements to accelerate application deployments and reduce costs - 36%
- Better protecting the organization’s network, applications, and data - 33%
- Collaborating with Lines of Business (LoB) to develop network-enabled business innovations - 31%
- Integrated/automated process workflows with other IT systems (for example, SecOps, ITSM) - 29%
- Integrated multidomain network policy enforcement and assurance - 27%
- Building network DevOps capabilities - 26%
- API-based programmable network alignment to business and application needs - 26%
- Providing network analytics and insights for enabling innovation in the business - 23%

2019 Global Networking Trends Survey; n=2061; IT Leaders n=505
Talent readiness
Respondents rated their talent readiness using a five-point scale

At a total worldwide level, there is little variation in readiness across the 16 dimensions asked.

QTR1. Thinking about the current skill-sets and capabilities of your networking team, how would you rate the team’s readiness level to build and maintain a network that meets the FUTURE demands of your organization in each of the following areas? (% respondents)

- Programming: 76%
- Network and security compliance: 75%
- Business skills: 74%
- Cloud-networking expertise: 74%
- Network provider management: 74%
- SecOpsNetwork security: 73%
- Routing and switching technologies and operations: 72%
- Network strategy and architecture: 72%
- Application development: 71%
- Network DevOps: 71%
- Wireless and mobility technologies and operations: 70%
- Internet of Things - IT/OT integration: 69%
- Automation skills (days 1, 2, and 3): 69%
- Multidomain integration: 68%
- Analytics, AI, and machine-learning expertise: 66%
- IT process re-engineering and integration: 66%
- Cloud-networking expertise: 66%
- Application development: 66%
- Network strategy and architecture: 66%

2019 Global Networking Trends Survey; n=2061
To address talent gaps, 56% of IT leaders vote to reskill, expand the talent pool, and rebalance resources.

QTR2. What is the main approach your organization’s IT leadership should prioritize to address the current gaps in the talent needed to plan, deploy, and maintain your future networking needs? (% respondents)

- **Reskill**: Increase investing in training, continuing education, certifications (22%)
- **Expand**: Hire to expand internal team talent pool (17%)
- **Rebalance**: Invest in automating network operations to transition resources to more strategic projects (17%)
- **Augment**: Temporarily augment internal team with outsourced services (13%)
- **Outsource**: Replace internal team resources with external services for emerging network roles and functions (8%)
- **Replace**: Hire new talent to replace existing staff (8%)
- **Culture**: Change team culture to one of continuous learning (4%)
- **No action**: Already have the talent required (2%)

IT leaders n=505

2019 Global Networking Trends Survey; n=2061; IT leaders n=505
With respect to reskilling, IT leaders are most concerned with the talent gap, retention, and resistance

QTR3. As you consider any plans to reskill your organization’s network team to better build and support a more advanced network, what concerns you most? (% respondents)

<table>
<thead>
<tr>
<th>Concern</th>
<th>% Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talent gap:</td>
<td>22</td>
</tr>
<tr>
<td>Retention:</td>
<td>22</td>
</tr>
<tr>
<td>Resistance:</td>
<td>17</td>
</tr>
<tr>
<td>Timing:</td>
<td>15</td>
</tr>
<tr>
<td>Obsolescence:</td>
<td>13</td>
</tr>
<tr>
<td>Culture:</td>
<td>11</td>
</tr>
</tbody>
</table>

Talent gap: The new skill-sets required may be too big a leap for my current team members.

Retention: As we invest in reskilling our team, how will we be able to retain their new high-in-demand talents?

Resistance: The team members are concerned about what a transition to automation will mean for their jobs in the long term.

Timing: We won’t be able to reskill the current team fast enough to keep up with the needs of the business.

Obsolescence: With technology changing so fast, how can I be sure the reskilling investment in time and cost will pay off?

Culture: Many team members are not culturally in tune with the need to change.
Prediction
IT leaders expect 5G, AIOps, and IoT to have the biggest impact on their network strategy and design in the next five years

QPR1. Thinking of the following emerging technologies, which do you think will have the biggest impact on your network strategy and design in the next five years? (% respondents)

- 5G: 35%
- AI-enabled operations (AIOps): 29%
- IoT or IT/OT convergence: 29%
- AI-enabled threat detection and remediation: 26%
- Network automation: 25%
- Software-Defined Networking (SDN): 23%
- Microservices-based application development (for example, Kubernetes): 21%
- 400G Ethernet: 19%
- Intent-Based Networking (IBN): 17%
- Wi-Fi 6: 16%
- Multicloud: 15%

2019 Global Networking Trends Survey; n=2061; IT leaders n=505