CISCO

# Bridging the Innovation Gap:

Meeting enterprise customer expectations in a constantly evolving network services marketplace

# Contents

# 01.
# About
# this eBook

The race is on to establish processes and solutions for the era of the digital business. Exciting benefits are here. Future possibilities are looming. Competitiveness is at stake. So is market share. Maybe even the survival of some companies.

Consumers have embraced the ease and utility of e-commerce and mobile applications. Consumer network devices and services have redefined how we interact. They've changed how we buy and sell, are entertained, learn and play.

Businesses today have to offer competitive digital services. They have to rethink how they serve both customers and employees electronically.

Aging voice and data networks designed in another era are like land vehicles now being asked to fly.

Outdated technology can tarnish the reputation and prospects of today's business. That includes cumbersome website interfaces, inadequate protections for data and network downtime.

This eBook for service providers looks at the innovation gap between what services and features enterprise organizations want and what most providers can deliver. We explore barriers within provider environments that have slowed or limited innovation and new development.

Then we look at new technologies and architectures for programmable networking. The benefits include:

- On-demand services via self-service portals.
- Pricing based on consumption.
- Agile scale-up and scale-down services.

Finally, the concept of virtual managed services is presented. Find out how you can position your company to address the evolving service needs of the digital business today and tomorrow. Interested in the potential $156 billion ITaaS opportunity by 2020[1]?

Read on…

# 02.
## Consumer behaviors redefine business customer expectations

A great user experience has become a vital business requirement for organizations of all kinds and sizes. Businesses, non-profits and government organizations have all recognized that their network presence has come to define their brand. Poor network experiences can have a lasting effect.

A great experience can drive increased revenue, customer loyalty and referrals. A bad experience can adversely impact revenue and promote customer churn. Customers are used to easy ordering and returns and fast delivery with online shopping.

This easy shopping experience is available from a host of companies. And businesses want their employees and customers to enjoy consistent and reliable access from anywhere, on any device, at any time.

A 2015 study by AMI-Partners[2] based on interviews in 11 countries with 350 businesses found:

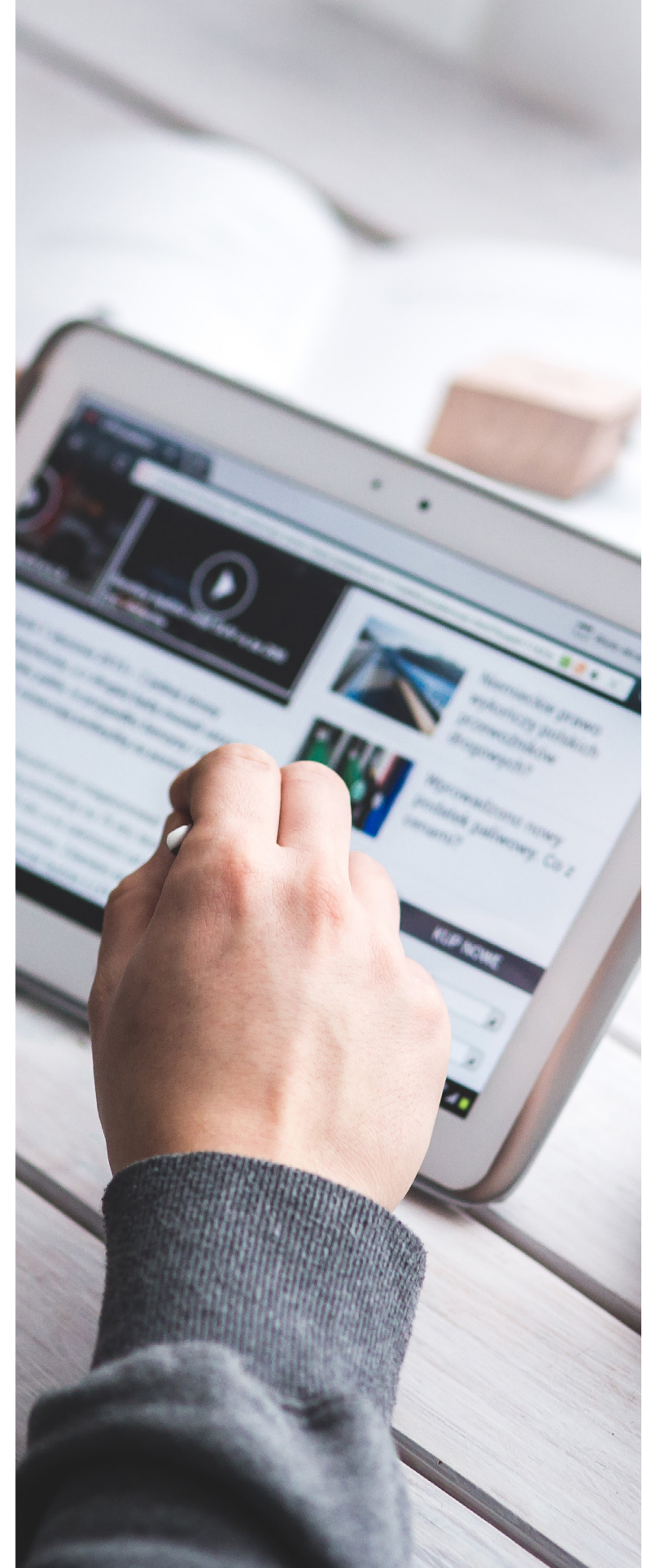**70%** of respondents want to be able to turn services on and off on-demand.

**67%** want to scale the IT services they buy up or down as needed.

**65%** want to be able to easily order and self-provision their services.

**60%** like the idea of consumption-based billing.

## How do these capabilities translate to business processes in the real world?

Retailers or operators of sports and entertainment venues could scale up service capacity to meet seasonal or event demands. Then they could scale back down when demand recedes.

With consumption-based billing, customers are charged only for what resources are used when they are needed. They don't have to cover the costs of excess capacity in dedicated data center hardware year round.

Companies with multiple branches could order services quickly. They could have customer premises equipment (CPE) delivered to their headquarters and branch offices. Then they could start receiving the services right away for true plug-and-play functionality.

Business customers could order their services through a self-service portal with an interface resembling an e-commerce site. They could buy sophisticated services in a simplified, step-by-step shopping experience. It would be like purchasing an airline ticket or booking a hotel.

In the AMI-Partners study, businesses in various regions of the world said they would be willing to switch to providers that deliver this kind of simplified, personalized customer experience and would recommend such providers to their partners and peers (Figure 1).
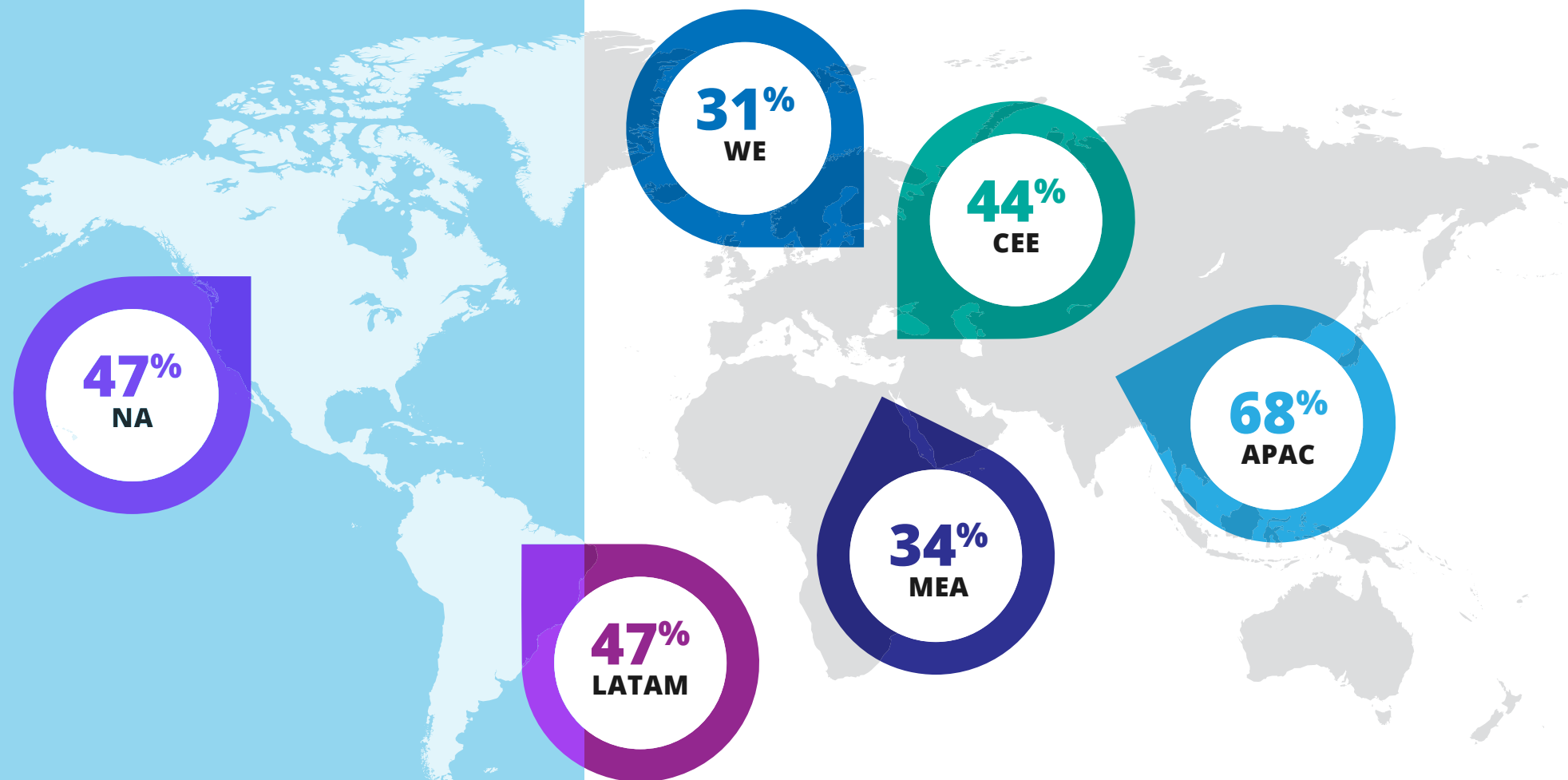
Figure 1. Would you switch to providers with simpler and more agile service ordering?
*Source: AMI-Partners 2015.*

Such a personalized, easy ordering experience for network services must of course include services that are secure. They must be backed with service-level agreements (SLAs) that guarantee reliable performance, uptime and data sovereignty.

This is where you can really separate your service from your competitors, traditional and new. You can carefully monitor performance and offer quality of service (QoS). And you can maintain security and data sovereignty with the latest technologies.

With a self-service portal and programmable network services in the cloud, you can add services from strategic partners to your own offerings. You can make it easy for your enterprise customers to purchase them through your services portal. This will broaden your appeal and add to your revenue.

# 03.
## Barriers to innovation in the service provider environment

Networking technology, architecture, products, and standards have evolved at dizzying speeds in the past few decades. What people think of as state-of-the-art one year can appear ancient the next. Staying current has been an expensive proposition.

Service providers have hardware and software infrastructure from multiple vendors. This diversity has added great complexity and time requirements to the services' lifecycle. A highly skilled, expensive workforce is required to perform research and development and to design, deploy, and operate new services.

For many service providers, it can take months to introduce a new service. Significant investments are required.

There is the network equipment, operations support systems (OSS), and the integration. As a result, you can't move as quickly as you would like to address your business customers' branch needs and other emerging market needs.

You also face high costs and risks when introducing new services, and there are long timelines to customize services for specific customers and vertical markets.

Additionally, existing managed services are often complex to order and configure. This limits your growth. It impedes the ability of smaller businesses to take advantage of these services.

Underuse of equipment is another challenge. The ability to distribute capacity for maximum efficiency is not possible in most provider networks today. Nor is the ability to power equipment up or down to match demand. This translates to unused capacity and excess costs for power and cooling.

Business customers have two options. They can build and maintain their own IT organization and services or they can find the right systems integrators to provide various services and capabilities.
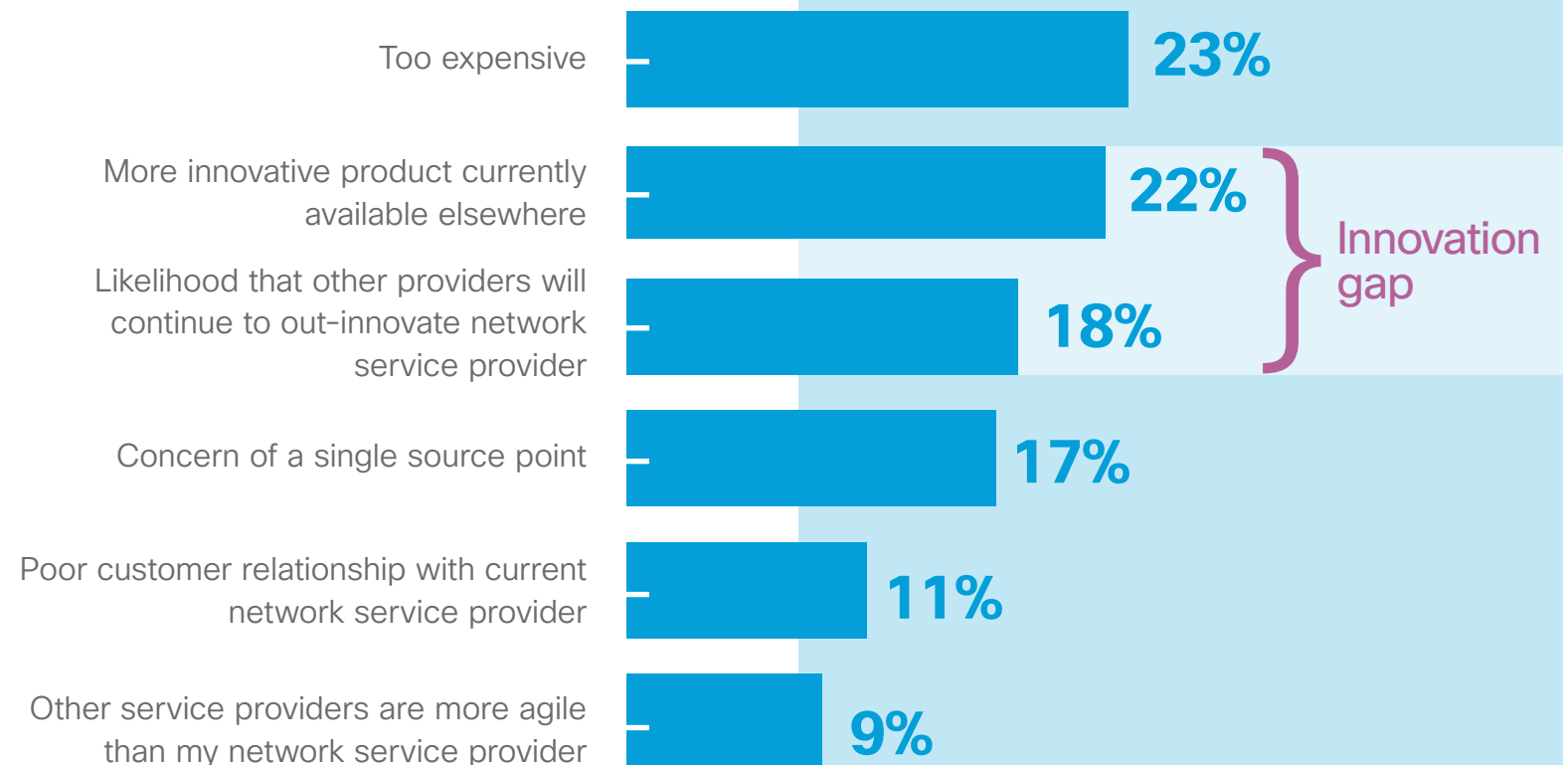
Similarly, you, the service provider, now have options. You can build services yourselves. This is an effort with inherent risk, complexity, time and expense. Or you can choose to outsource managed services to your customers via cloud providers. Or you can become a provider of managed services in the cloud yourself. Or you can do a combination of all three approaches.

# 04.
# What enterprise customers want

Cisco conducted a study in 2015 (see right) looking at attitudes by businesses to managed network services. A key question was what reasons would influence a business not to choose their current network service provider for virtual managed services (VMS).

The top reason was expense. The second and third reasons point to the innovation gap between enterprise customer needs and what providers can deliver.

Too expensive **23%**

More innovative product currently available elsewhere **22%**

Likelihood that other providers will continue to out-innovate network service provider **18%**

> Innovation gap

Concern of a single source point **17%**

Poor customer relationship with current network service provider **11%**

Other service providers are more agile than my network service provider **9%**

Reasons customers would prefer not to source from a network service provider

— Source: Cisco GSP-SPTG Study, December 2015. Based on interviews with over 2000 decision makers in the U.S., U.K., Canada, Mexico, Australia and Japan.
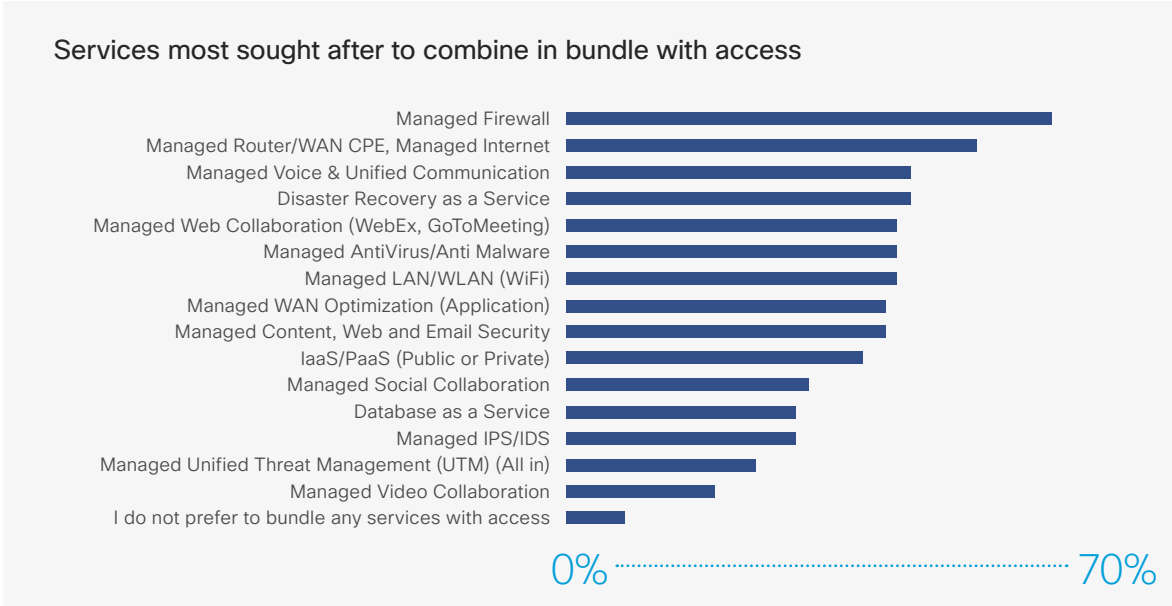
In the study, the businesses were given a description of virtual managed services. They were told that these services "involve the placement of customer premises equipment (CPE) on your site".

Some capabilities could be delivered with premise equipment. Some could be delivered from the cloud. Some could be delivered by a combination of the two.
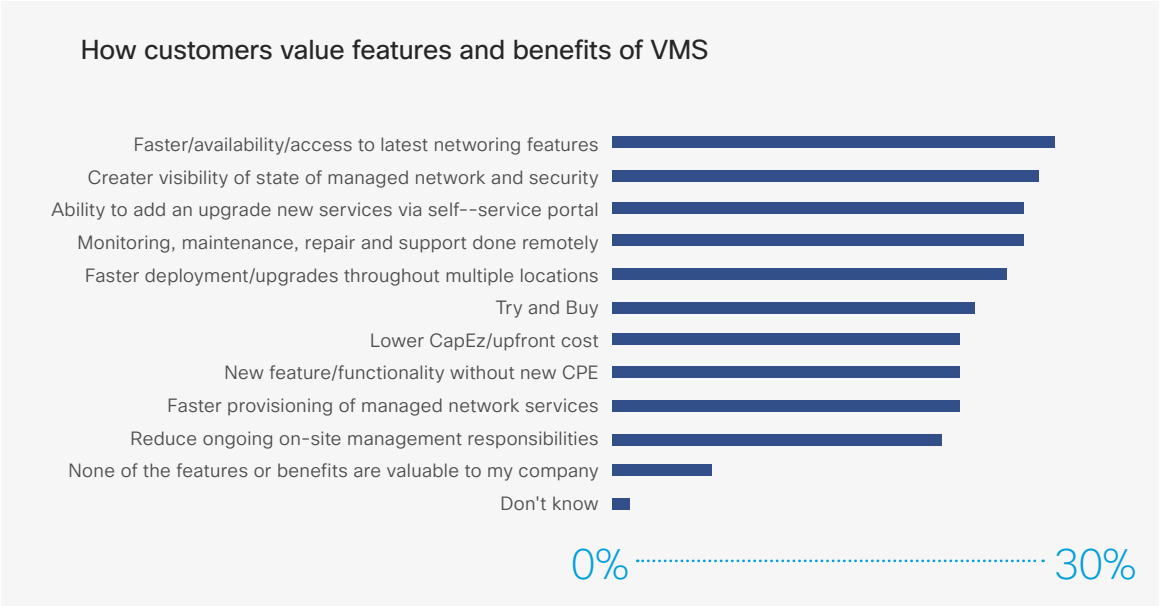
They were also told that this "new approach provides significantly enhanced flexibility for businesses and the providers of such services".

Customers in the study were intrigued. When asked what individual services they were most interested in, respondents cited the services below.

Then they were asked what features in a virtual managed service they would most value. The top features cited were the speed of delivering new offerings, greater visibility into security metrics, and a self-service ordering portal.

### Services most sought after to combine in bundle with access

| | |
|---|---|
| Managed Firewall | |
| Managed Router/WAN CPE, Managed Internet | |
| Managed Voice & Unified Communication | |
| Disaster Recovery as a Service | |
| Managed Web Collaboration (WebEx, GoToMeeting) | |
| Managed AntiVirus/Anti Malware | |
| Managed LAN/WLAN (WiFi) | |
| Managed WAN Optimization (Application) | |
| Managed Content, Web and Email Security | |
| IaaS/PaaS (Public or Private) | |
| Managed Social Collaboration | |
| Database as a Service | |
| Managed IPS/IDS | |
| Managed Unified Threat Management (UTM) (All in) | |
| Managed Video Collaboration | |
| I do not prefer to bundle any services with access | |

0% ............................................ 70%

*— Source: Cisco GSP-SPTG Study, December 2015.*

### How customers value features and benefits of VMS

| | |
|---|---|
| Faster/availability/access to latest networing features | |
| Creater visibility of state of managed network and security | |
| Ability to add an upgrade new services via self--service portal | |
| Monitoring, maintenance, repair and support done remotely | |
| Faster deployment/upgrades throughout multiple locations | |
| Try and Buy | |
| Lower CapEz/upfront cost | |
| New feature/functionality without new CPE | |
| Faster provisioning of managed network services | |
| Reduce ongoing on-site management responsibilities | |
| None of the features or benefits are valuable to my company | |
| Don't know | |

0% ............................................ 30%

*— Source: Cisco GSP-SPTG Study, December 2015.*

So, to compete for your share of the cloud managed services market opportunity, you must be able to:

- Deploy highly secure and personalized managed services at web speed and on demand.

- Create innovative new services faster.

- Accelerate time-to-revenue by delivering new services in days, or even minutes, instead of months.

- Reduce operational costs by simplifying and automating service delivery.

- Expand into new vertical markets and customer segments without large upfront capital investments.

- Allow customers to connect over flexible transport and network access options to virtual services from the cloud.

As providers, you are unique among vendors in the cloud marketplace. You alone can deliver the carrier-class managed service solutions businesses need.

Currently available point solutions don't have features such as intelligent hybrid wide-area-network (WAN) traffic control and granular application security. They can't chain multiple cloud services and guarantee performance.

## 05.

# Why programmable networking is a good fit for the digital business

Programmable functions in networks were introduced in the early mid-1990s[3]. But the innovations that contributed to Software-Defined Networking (SDN) standards didn't fully come together until 2010.

Today these advances have come together in widely accepted architectures and solutions validated by the industry.

## Flexibility and savings with service, application and data abstraction

SDN architecture separates the control and data planes and lets you more easily manage services end to end. Network functions virtualization (NFV) instantiates network functions in software and lets you build a more flexible and agile network. SDN and NFV support abstraction of services, applications and data in programmable networks.

You can swap out infrastructure as needed. Change services as required. The internet uses a data forwarding plane that works whether services are running over copper, fiber or Wi-Fi.

In a similar way, programmable networks let you translate a service model into a flexible network equipment model. You're no longer tied to the infrastructure and old ways of doing things in your data center or central office or other point of presence.

Along with this new level of flexibility, SDN and NFV technologies can reduce costs. Some research estimates claim that deploying services lowers OpEx by a massive 78 per cent[4].Those savings open up your business model to a broader array of potential customers.
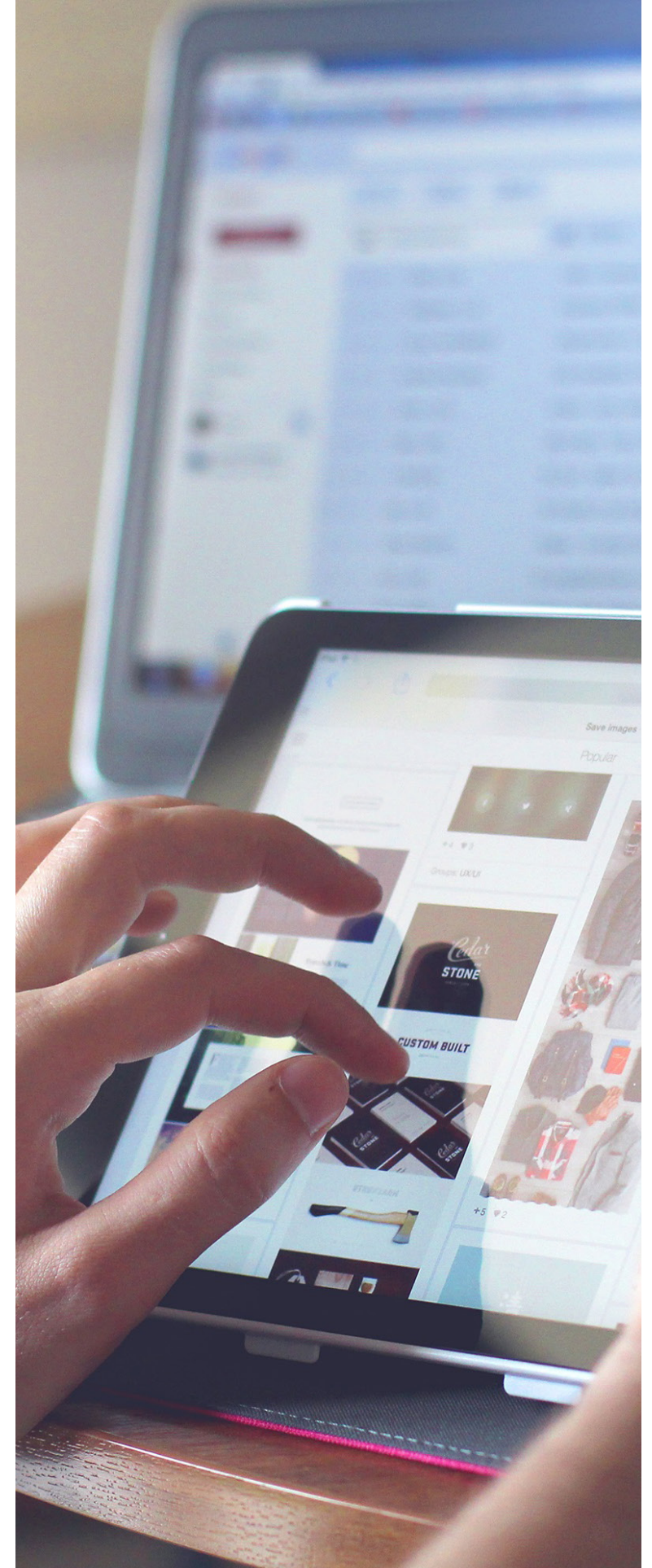
## Agility and ease of management with automation and orchestration

An orchestration system is a key part of the lean, agile, programmable network environment. It automates the processes required by the network to adapt in real–time or near real–time to rising and falling network demands.

Like a brain regulating an organism, the orchestrator simplifies the current complexity of your operations. It works with great efficiency when it has visibility and control across the data center and WAN. Orchestrators view activity from application to end user.

Other attributes for effective orchestration include service profiles, service catalogs, virtual network functions, and control of business and operational objectives.

Among other things, automated management tools and processes oversee:

- Policies.
- Service levels.
- Workflows.
- Network functions.
- Platforms.
- Multidomain provisioning.
- Billing.
- Metering.
- Change management.

These features further reduce manual effort, and support reliability and speed.
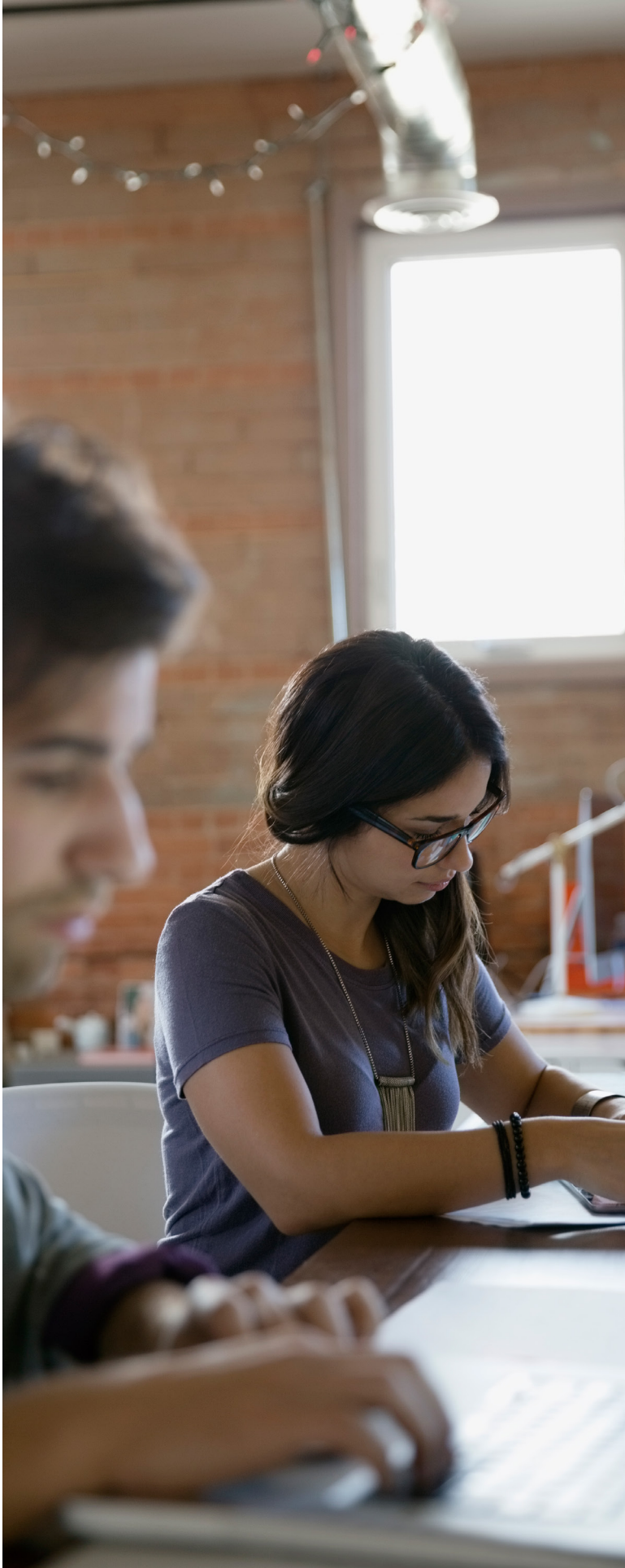
# More efficient operations and development with open source

Open-source application programming interfaces (APIs) defined by the networking industry enable applications in programmable networks to interact more easily. Developers can quickly design applications using APIs and open-source software. How? Data and software are abstracted from the underlying network infrastructure.

Keeping the data model and APIs simple and open in your SDN environment is vital. They support a vibrant, fast-moving, lucrative software ecosystem. It is the foundation for the rapid innovation and creation of services. Coupled with orchestration and automation, you can in turn drive dramatic reductions in operational costs.

The open-source model helps transform the service provider network. Instead of an access pipe, it becomes a dynamic, creative, agile services development platform.

Management and operations are simpler. Developers can spend more time creating valuable new services instead of handling maintenance.

# 06.
## Virtual managed services

Imagine offering personalized and highly secure new services for your enterprise business customers. The services can be deployed in minutes instead of months.
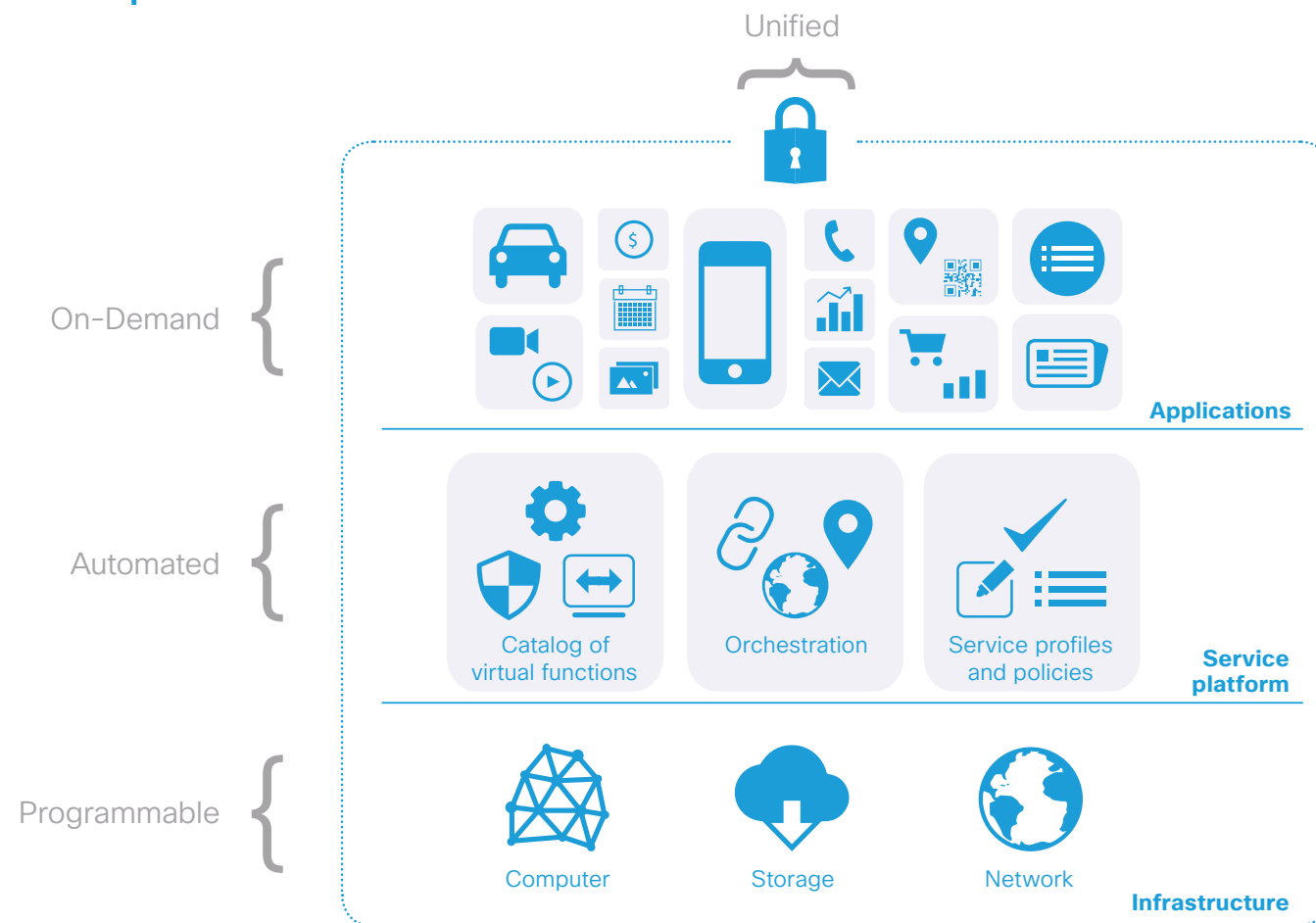
They can be ordered through self-service, easy-to-use portals. Your customers connect to these virtual services with zero-touch provisioning using CPE. This provides lower-cost rollouts with less business risk.

These cloud-based services are available today. They use prepackaged, cloud-based software. And you can host them in your data center, your central office, or in a cloud vendor's data center.

Virtual managed services let you shorten time-to-revenue. You reduce operational costs. And you are more valuable to your customers as they pursue digitization goals.

# An open network architecture for service providers



Unified

On-Demand

Automated

Programmable

Applications

Catalog of virtual functions

Orchestration

Service profiles and policies

**Service platform**

Computer

Storage

Network

**Infrastructure**

## Virtual managed services in the cloud include:

- A portal: Customers can select, create and customize service requirements from an optional self-service portal. They can activate new managed services with the click of a mouse.

- Software service packages: You can provide businesses with the most popular services from the cloud. Expand your portfolio with specialized service offerings from third-party developers.

- APIs: Open and easy-to-use APIs allow integration with your branded portal or other existing systems and services.

- Orchestration: Simplified and automated service provisioning is done through orchestration of NFV infrastructure and software resources.

- Virtual network functions: Scalable and high-performance VNFs let you deliver the right mix of services and capabilities in a customizable, fully automated deployment.

- Zero-touch provisioning: Customer premise equipment is plug-and-play. You eliminate complexity and truck rolls.

These services in the cloud are based on an open-standards infrastructure and software. The cloud environment that hosts them uses orchestration, SDN and NFV technologies. This approach helps automate the delivery of tailored services that are in high demand from businesses today.

Virtual managed services are scalable and multi-tenant. You can sell services to multiple enterprise customers using the same infrastructure. Implement the services platform yourself or purchase it for your customers as a service that you brand.

Give your customers an array of choices. Mobility services. Virtual video. Vertical market applications.

# 07.
## Summary:
## Challenges and benefits

How can you bridge the innovation gap between what your enterprise customers expect and what you can deliver today? By offering virtual managed services.

## The cloud managed services opportunity

**Why You Should Care**

**By 2020**

**83%** of global data center traffic from cloud services/app[1]

**$350 Billion+**[2] cloud network services opportunity

**$24 Billion** cloud collaboration opportunity

**55%** are growth customers[3]

*Sources: 1.Cisco Global Cloud Index. 2. Cisco MOI, 2015. 3. Cisco Consulting, 2015. 4. Combined Research including Frost & Sullivan, DMG, Gartner, Infonetics, Synergy, Wainhouse, Cisco.*

## $2 Trillion
### SP Value at Stake 2015-2024[4]

- Employee Productivity, $680B
- Innovation, $530B
- Asset Utilization, $460B
- Customer Experience, $220B
- Supply Chain & Logistics, $60B
- Sustainability, $40B

## Benefits checklist:
## Virtual managed services in the cloud.

- Grow revenues with a 200 per cent increase in ROI over five years[5]. Expand reach into new markets and customer segments.

- Bring service delivery times down from weeks to minutes by automating and orchestrating the entire service lifecycle.

- Drive down OpEx by up to 78 per cent[6]. You do this by automating service delivery end to end using simplified, plug-and-play CPE devices that can address the full range of end-customer use cases.

- Simplify operations with a self-service user experience for service ordering and monitoring.

- Increase business agility by scaling network and data center infrastructure capacity in response to customer needs.

- Reinforce the value of your network by delivering advanced capabilities that your competitors can't match.

- Refocus your business approach to enterprise customers by shifting your emphasis from increasingly mere connectivity to value-added cloud-managed services.

- Retain broad flexibility with a solution built on open-source software, open standards, and open APIs. You can support multiple vendors and technologies. Create new services that are right for each one of your business customers.

- Gain greater peace of mind with built-in solution-level technical support. Teams of experts help plan, deploy and implement cloud-based services.

- Capitalize on the $156 billion ITaaS opportunity[7] for managed services forecast by 2018 with virtual managed services in the cloud.

## 08.

## Next steps

Find out more about virtual managed services delivered in the cloud at: http://www.cisco.com/go/vms.

Sources:

[1] Cisco AMI and Cisco MOI research, 2016.

[2] AMI-Partners study, March 2015.

[3] "The Road to SDN: An Intellectual History of Programmable Networks," acmqueue, December 2013.

[4] ACG Research report, 2015.

[5] Cisco, 2015.

[6] ACG Research report, 2015.

[7] MarketsandMarkets Research report, 2015.

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