Addressing the SDN/NFV Skills Gap
for Network & Service Transformation

Webinar

06 February 2019

MEF

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Housekeeping

1. Submit questions at any time in the *Ask a Question* tab

2. Today's presentation can be downloaded in the *Attachments* tab.

3. A recording is available on-demand using the same link & login.

4. A short survey will be available when you close the BrightTalk viewer.

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Agenda

1. Addressing digital transformation & MEF 3.0

2. The skills gap challenge

3. MEF-SDN/NFV Professional Certification

4. Why take the MEF-SDN Certification Exam

5. Q&A

6. Industry commentary

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Digital transformation needs of enterprises

Challenges

- Pace of technology change is accelerating rapidly

- Impacting nearly every industry

- Under pressure to innovate & adapt

- Facing more complex networking requirements

Needs

- Cloud apps that deliver a high-quality, frictionless experience

- Dynamic, assured, and secure services seamlessly delivered to any location

- Granular visibility into service performance

Become a Digital Service Provider (DSP)
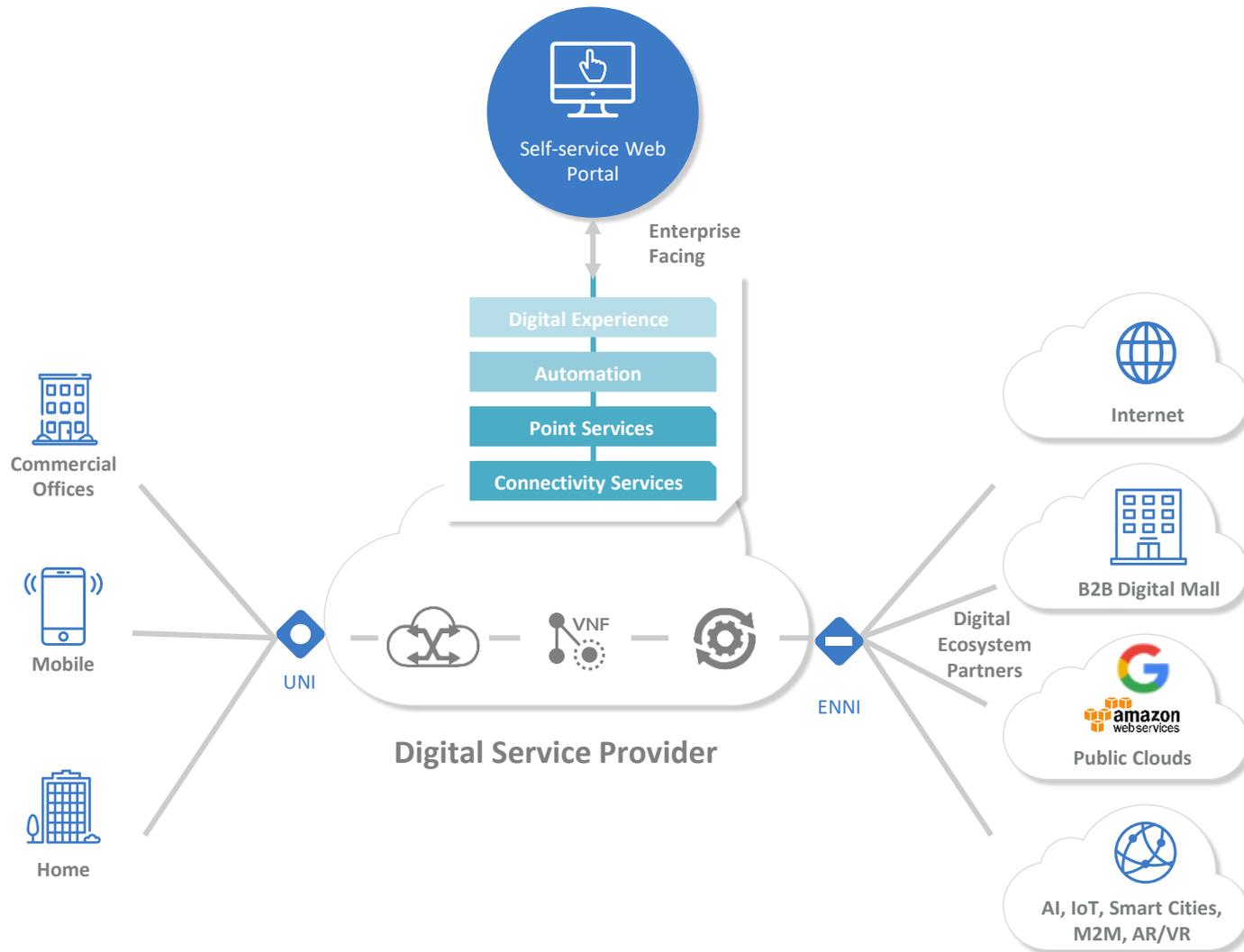
Examples

Connectivity and Managed Services
- connectivity services
- hybrid multi-cloud services
- security virtualized services

Partner services
- IoT analytics,
- IaaS/PaaS/SaaS clouds (O365, Salesforce, etc)
- AI neural networks (e.g. IBM Watson)

Distributed Clouds & Emerging Digital services
- Distributed cloud applications (e.g. Azure Stack)
- IoT, M2M, AR/VR, etc

Self-service Web Portal

Enterprise Facing

Digital Experience

Automation

Point Services

Connectivity Services

Commercial Offices

Mobile

Home

UNI

VNF

Digital Service Provider

ENNI

Digital Ecosystem Partners

Internet

B2B Digital Mall

Public Clouds

AI, IoT, Smart Cities, M2M, AR/VR

SDN is federating across multi-provider networks

Provider – Partner
LSO Sonata and
Interlude Open APIs
with telemetry data

Service
Provider LSO

Partner
LSO

LSO Open APIs

Proprietary APIs

SDN
Controller

NFV
MANO

VNF

SDN
Controller

NFV
MANO

VNF

VNF

VNF

Device

UNI

ENNI

UNI

Enterprise
Network

Service
Provider

Partner

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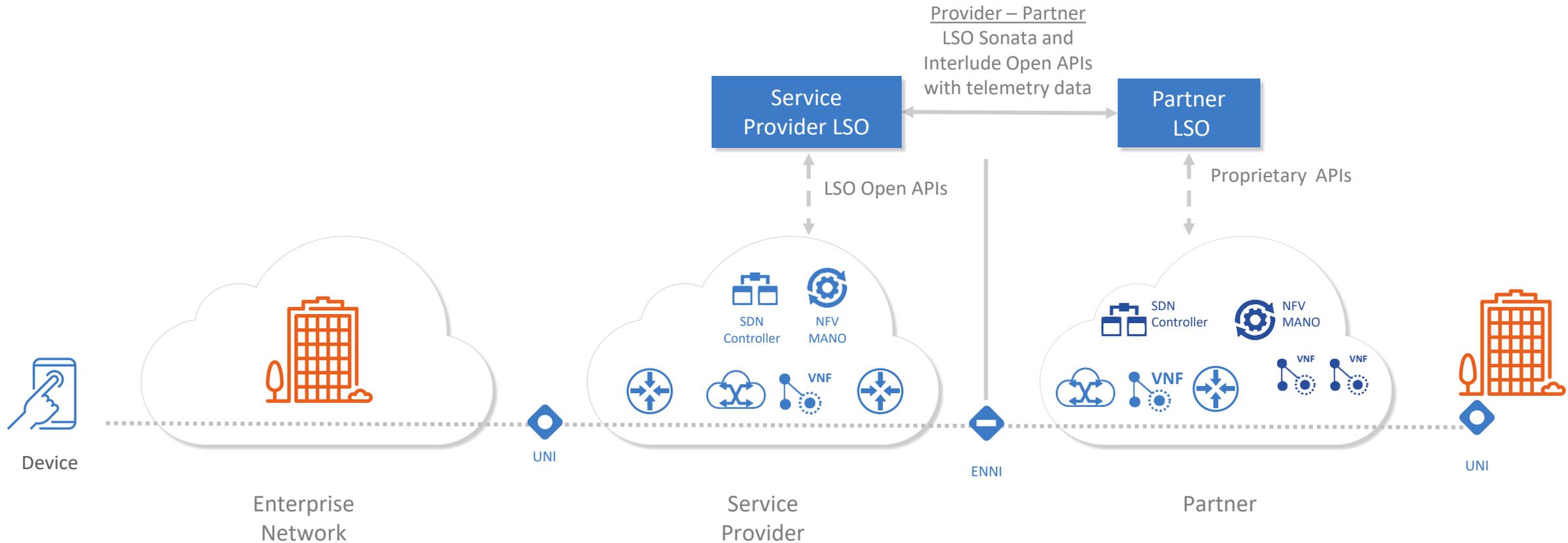
DSP – Network Automation and a BSS Digital Experience

Provide an integrated enterprise digital experience for data monetization

Add automation, APIs and analytics

Deliver virtualized point services

Enable programmable/consumable networks

Self-service Web Portal

Enterprise Facing

Digital Experience

Automation

Point Services

Connectivity Services

Commercial Offices

Mobile

Private Data Center

UNI

VNF

Digital Service Provider

ENNI

Digital Ecosystem Partners

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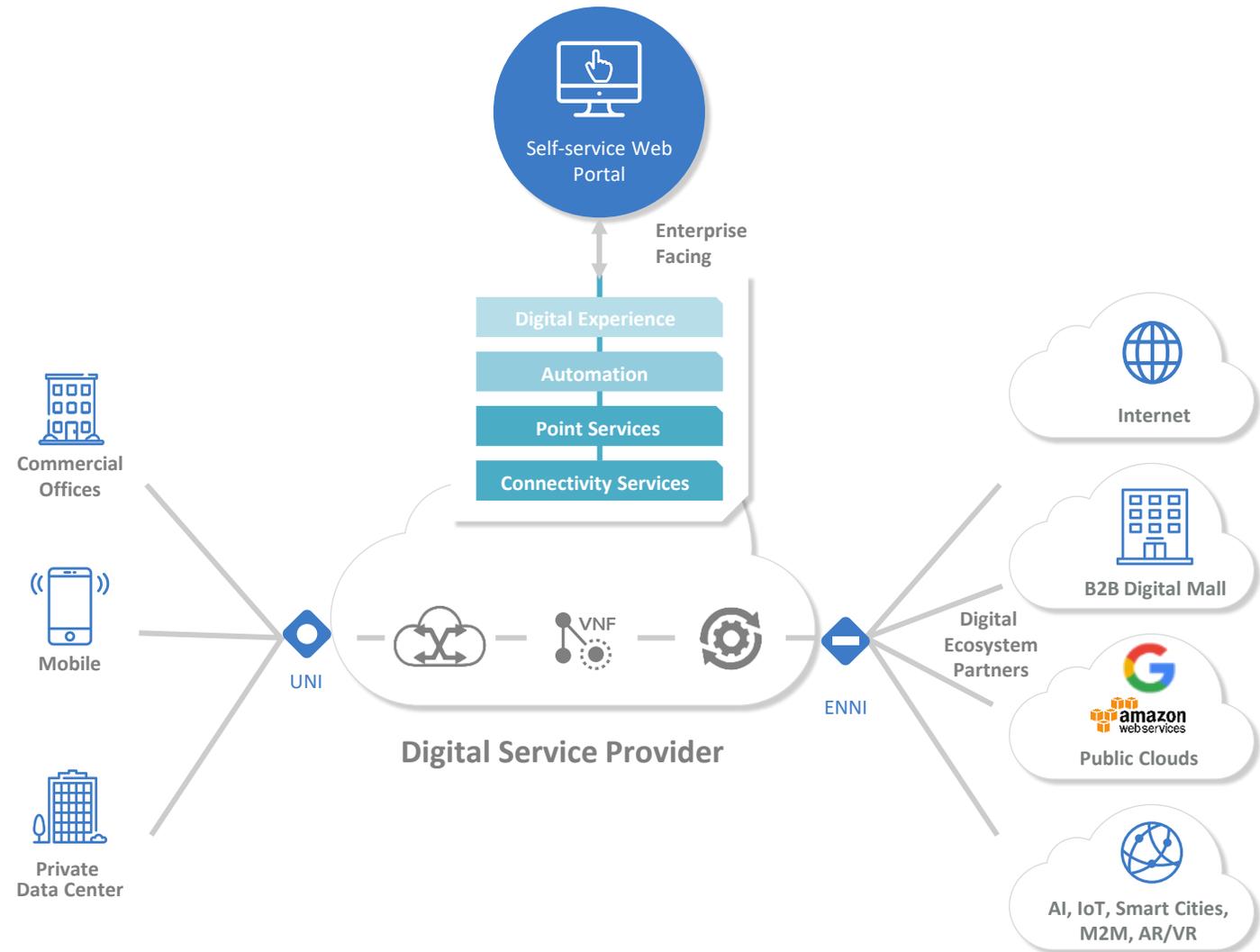
MEF 3.0 Global Services Framework – Using SDN & NFV

Assured
- Applications
- Security
- SD-WAN
- IP
- Carrier Ethernet
- Optical Transport

Automated
- Orchestration across multiple service providers
- Orchestration over multiple network technology domains
- Specifications and SDKs

Agile
- Cloud-based test & certification platform
- On-demand, user-initiated
- For both services & LSO APIs
- Plus **certified professionals**

Expanded
- MEF global membership
- MEF 3.0 Proof of Concepts
- MEF LSO Developer Community
- Open source projects & SDOs
- Enterprise Advisory Council
- Events, workshops, webinars

The Skills Gap Challenge

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# Engineering expertise has leaped to become the top business challenge for migrating to dynamic services

The no. 1 ranked challenge in 2018 was not even in the top 5 as of our 2016 survey!

What are your company's most significant business challenges for migration to new dynamic services?

Top 5 Business Challenges (% of Respondents)

90% | 1. Engineering expertise and technical resources

84% | 2. Orchestration across multiple provider networks

84% | 3. Orchestration across multiple technology domains within our company

81% | 4. Current OSS/BSS systems are inadequate to support new services

78% | 5. Integrating new services with legacy infrastructures

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VERTICAL SYSTEMS GROUP

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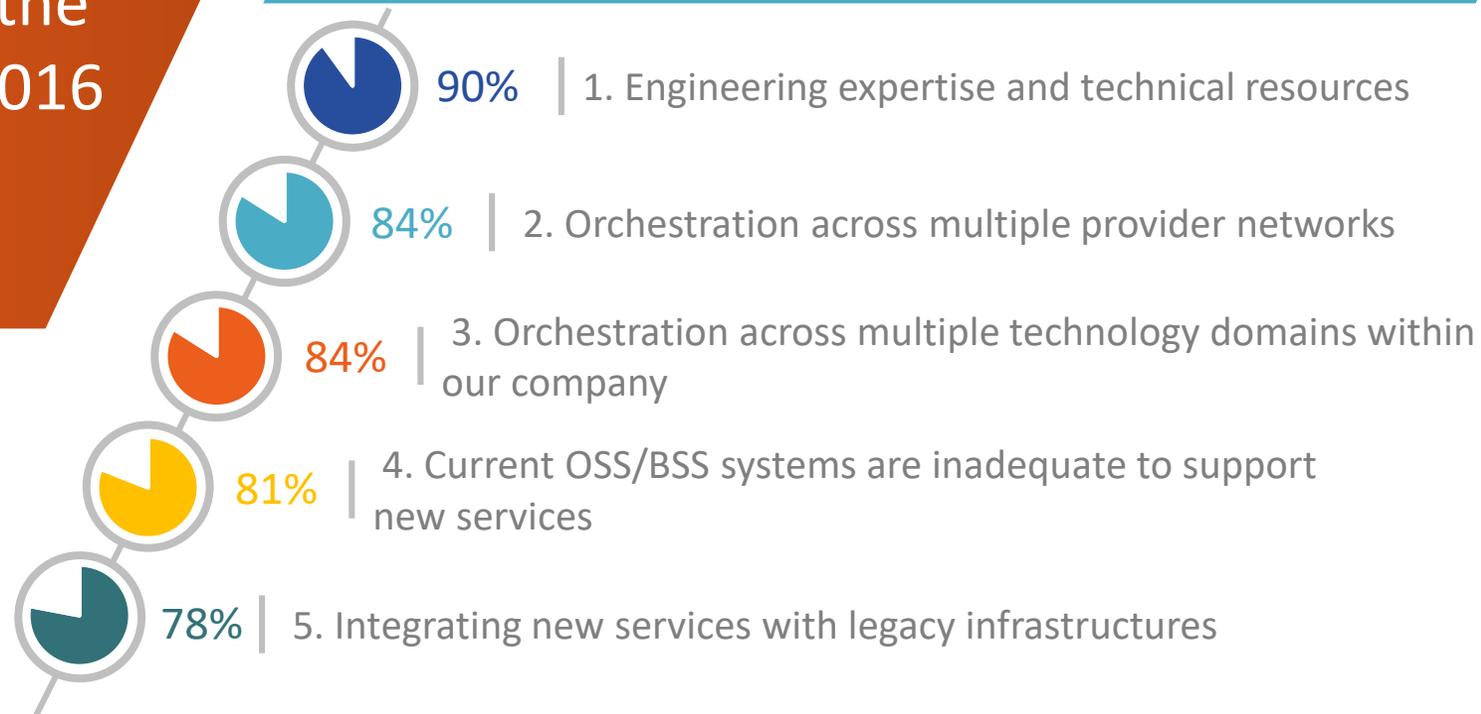
Lack of training / in-house talent is the biggest obstacle for deploying NFV

What challenges, barriers, or risks to you believe inhibit users from deploying NFV?

Category	Percentage
Lack of Training/In-house Talent	64%
Too Much Confusion	47%
Platform Immaturity	38%
Interoperability Issues	33%
Performance Issues	33%
Security Concerns	15%
Lacks Market Support	9%
Alternatives Exist	6%
Other	5%
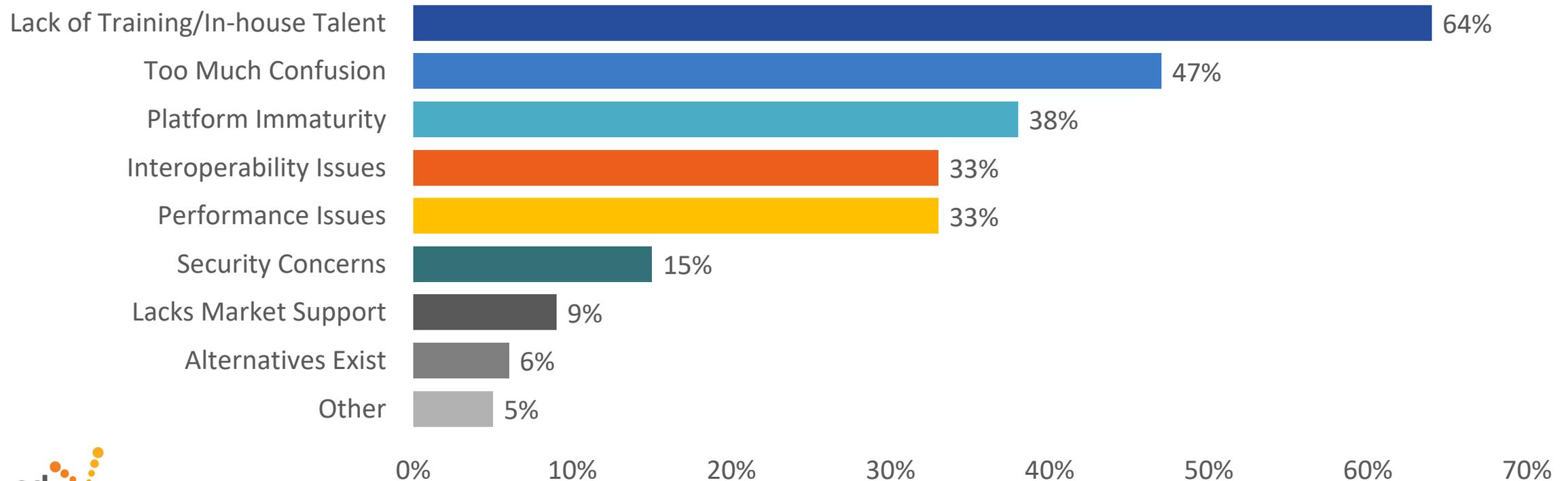
SDN/NFV migration is hindered by industry-wide skills gap

Operators need to invest more in staff to manage NFV/SDN infrastructure

Category	Value
Agree	80%
Neutral	17%
Disagree	1%
Don't know	2%
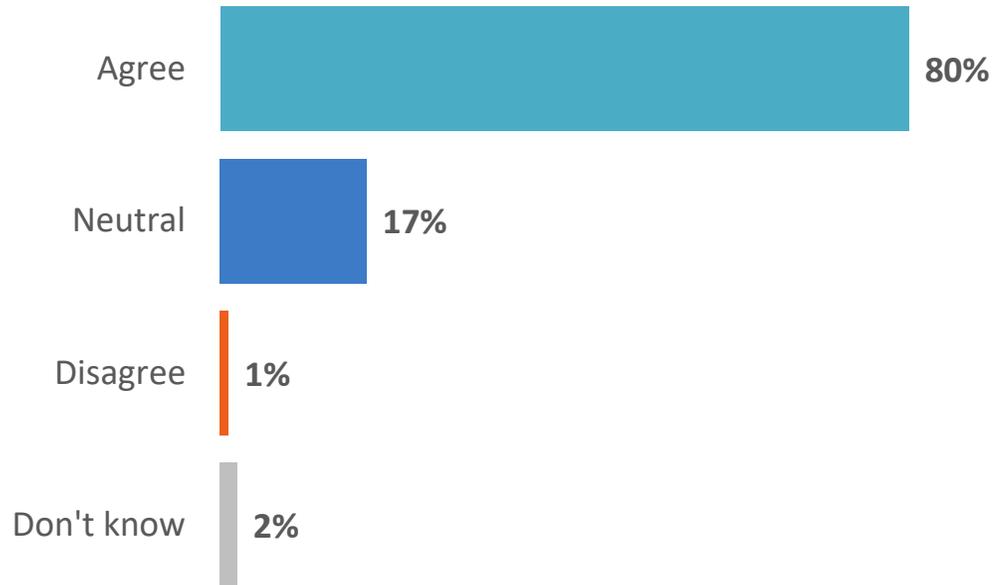
There needs to be a fundamental change in company culture to benefit from network virtualization

Category	Value
Agree	69%
Neutral	17%
Disagree	12%
Don't know	2%

Cartesian®

MEF
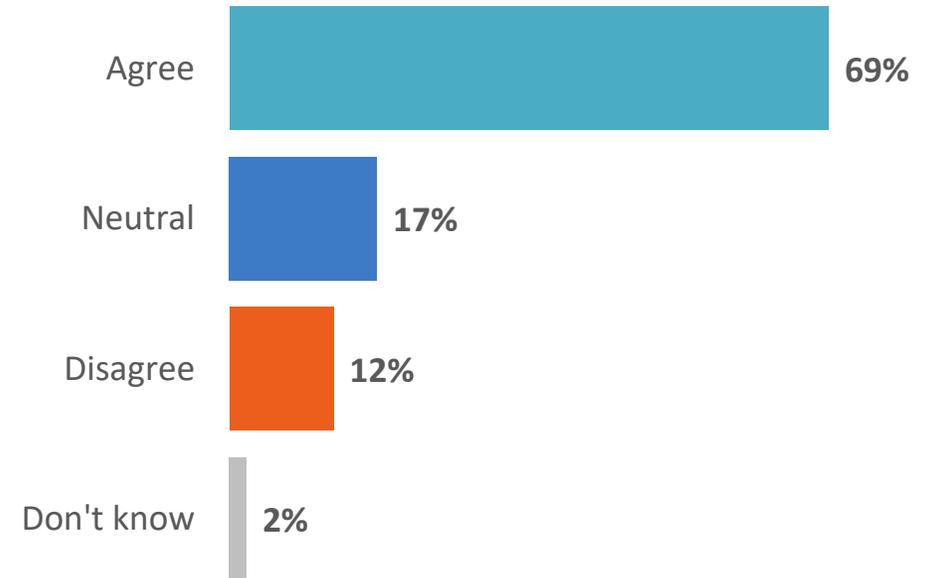
IT managers see value in professional certifications

IT managers who believe their staff is more effective after completing certification

- **>50%** of IT managers estimate the annual economic benefit of a certified employee exceeds $10,000.
- **Key benefits include:**
  - Close organizational skills gaps
  - Boost productivity
  - Complete projects more quickly
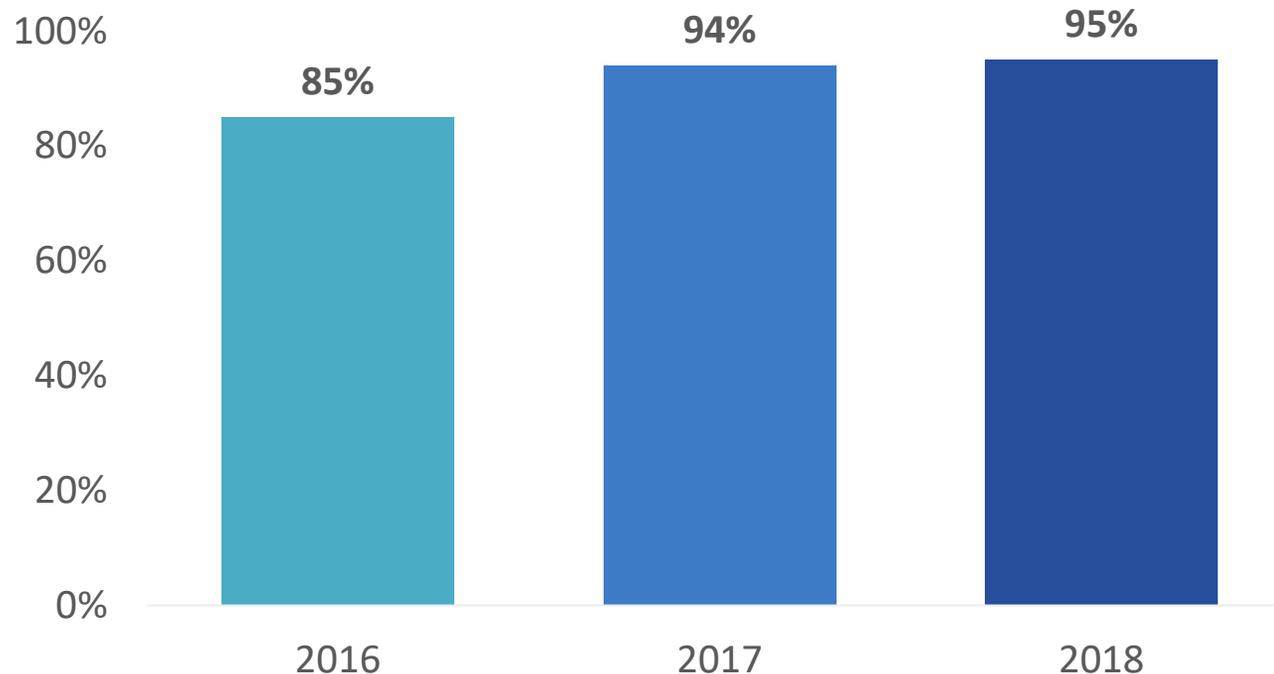
Global Knowledge®

Source: 2018 IT Skills and Salary Report, Global Knowledge

The industry is recognizing a significant impediment to their digital transformation – skills

Engineering expertise is the **no. 1** ranked challenge in 2018 for migration to new dynamic services.

50⁺% of IT managers estimate economic benefit of a certified employee exceeds $10,000/year!

**95%** Believe staff is more effective after completing certification.
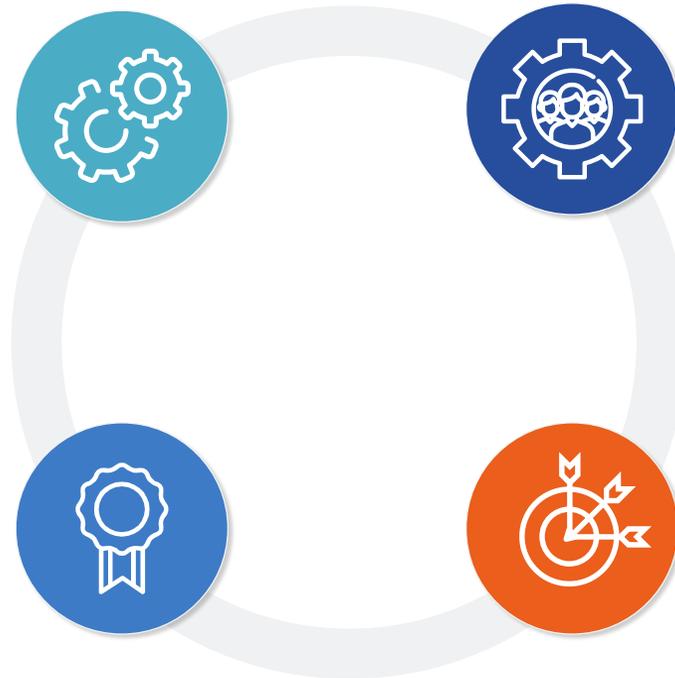
80% agree - Operators need to invest more in staff to manage NFV/SDN infrastructure

1% disagree

Top ranked barriers, inhibiting users from deploying NFV

= Lack of training / In-house talent

MEF-SDN/NFV Professional Certification

MEF

# MEF's SDN/NFV certification is part of the MEF 3.0 professional certification framework

MEF certification enabled the $80B global CE market

GLOBAL CE SERVICES MARKET

(Chart: $US Billion, 2013–2020)

- 2013: ~35
- 2014: ~40
- 2015: ~41
- 2016: ~45
- 2017: ~52
- 2018: ~60
- 2019: ~66
- 2020: ~74

MEF CERTIFIED PROFESSIONALS

(Chart: 2013–2018)

- 2013: ~1500
- 2014: ~2900
- 2015: ~4000
- 2016: ~5000
- 2017: ~6100
- 2018: ~6900
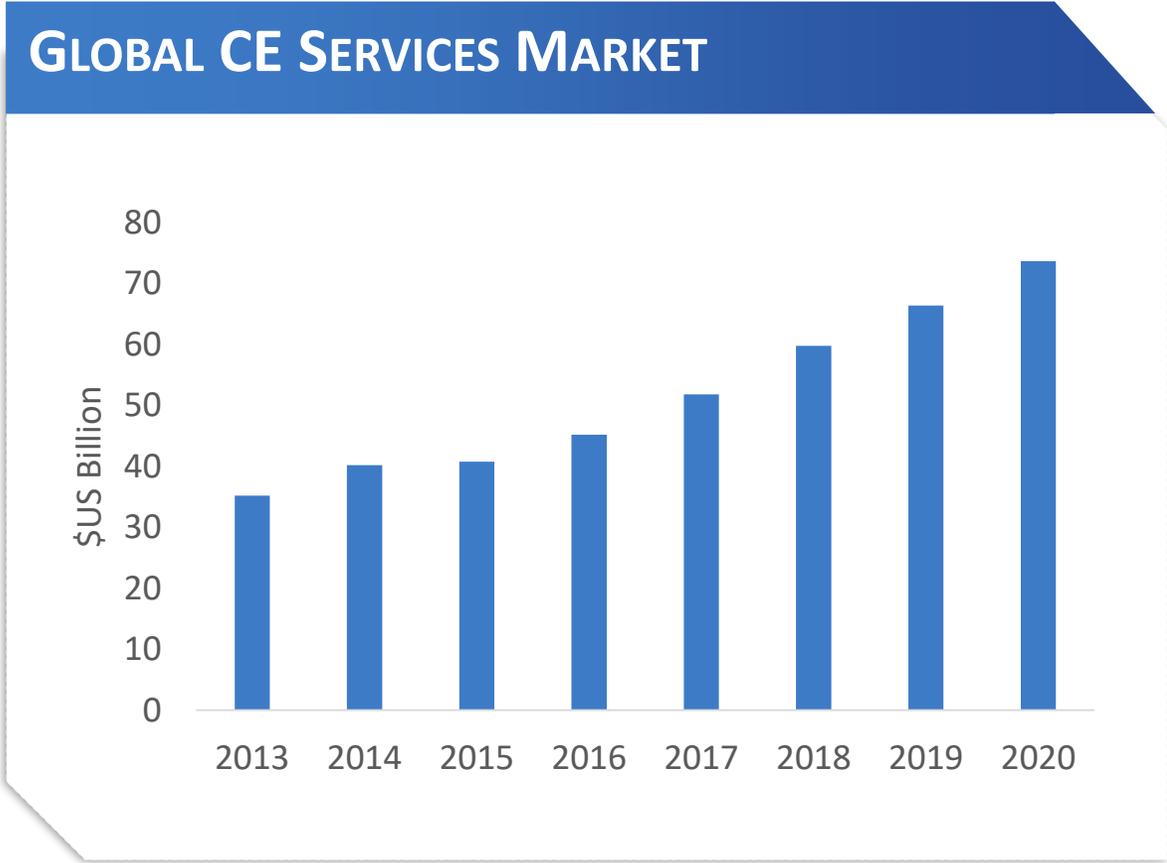
Sources: Ovum, 2017; MEF, 2019.

WHO

Product management

Sales engineering

Product development

Network engineering

Network architecture

Product support

Network operations

WHAT

1. Vendor neutral certification.

2. The most up-to-date industry certification on SDN & NFV domains.

3. The only certification covering NFV.

WHY

Closing the skills-gap!

- Accelerate time to market for SDN/NFV enabled products.

- Grow revenue, optimize operations.

- Attract & retain talent

WHY ME?

Career growth

Industry recognition

Professional networking

Increased performance

Job opportunity

MEF SDN/NFV
SOFTWARE DEFINED NETWORKS / NETWORK FUNCTIONS VIRTUALIZATION
CERTIFIED PROFESSIONAL

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The MEF SDN/NFV Certified Professional (MEF-SDN/NFV) exam

Exam Details: 80 questions in 120 minutes

Language: English

Learning Topics Covered:

- Operator-level understanding of SDN and NFV, sufficient to demonstrate mastery of the design, installation/deployment and management of complex SDN and NFV networks.

- The breadth of SDN and NFV skills necessary to address all the facets of advanced networking, vendor-neutral information that an IT technical professional needs to know (networking, virtualization in many forms), as well as the knowledge to plan, install, and operate advanced SDN and NFV networks) across a wide variety of network architectures.

- Domains include Planning, Building, and Operating SDN and NFV networks, with knowledge of architecture, testing, solution design, security, as well as metrics and management of a deployed SDN/NFV solution.

Cost: US$420
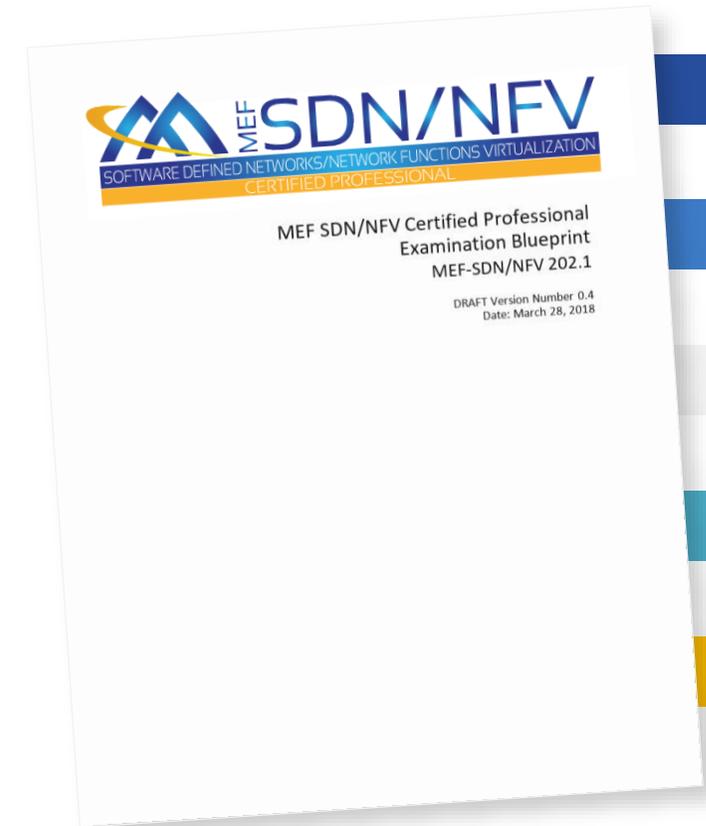
MEF SDN/NFV Certified Professional
Examination Blueprint
MEF-SDN/NFV 202.1

DRAFT Version Number 0.4
Date: March 28, 2018

Comparing industry SDN & NFV certifications

	FUNDAMENTAL CERTIFICATION	ADVANCED CERTIFICATION
	OCSA	**MEF SDN/NFV**
Release Date	AUG 2015	JUN 2018
Version	1.0	A
Latest Update	OCT 2015	JUN 2018
Exam Level	Easy	Challenging

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Comparing industry SDN & NFV certifications

	FUNDAMENTAL CERTIFICATION	ADVANCED CERTIFICATION
	OCSA	MEF SDN/NFV
Networking	✓	✗
SDN	✓	✓
NFV	✗	✓
Controllers	✓	✓
Orchestration/LSO	✗	✗
Security	✗	✓
Ecosystem	✓	✗

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Why Take the MEF-SDN/NFV Certification Exam

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Why did you decide to take the MEF SDN/NFV certification exam?

Source: MEF SDN/NFV Professional Certification Survey, January 2019
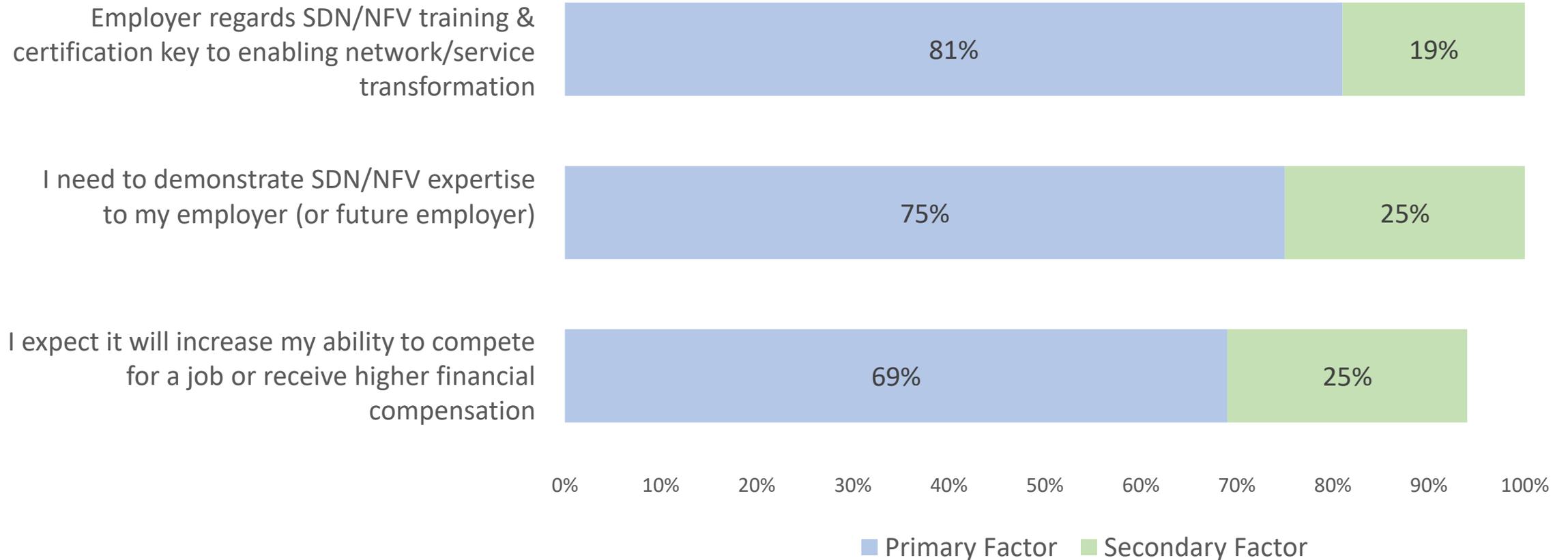
What do you regard as the key benefits of SDN/NFV certification?

	Primary Benefit	Secondary Benefit
Help close an organizational skills gap	89%	11%
Improve ability to meet customer needs / increase credibility with customer	83%	11%
Improve personal ability to keep pace with technology change	83%	6%

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

■ Primary Benefit   ■ Secondary Benefit
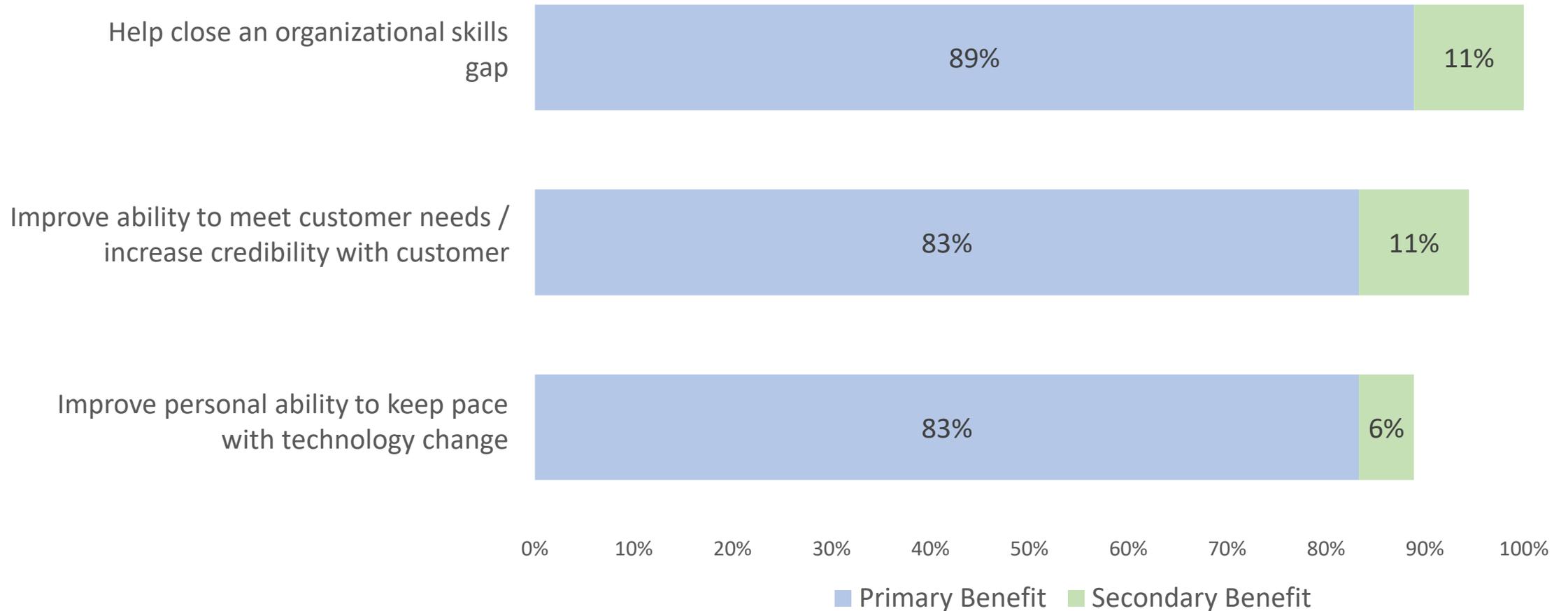
Why did you get SDN/NFV certification from MEF vs. SDN- or NFV-related certification from a vendor or other cert. body?

Source: MEF SDN/NFV Professional Certification Survey, January 2019
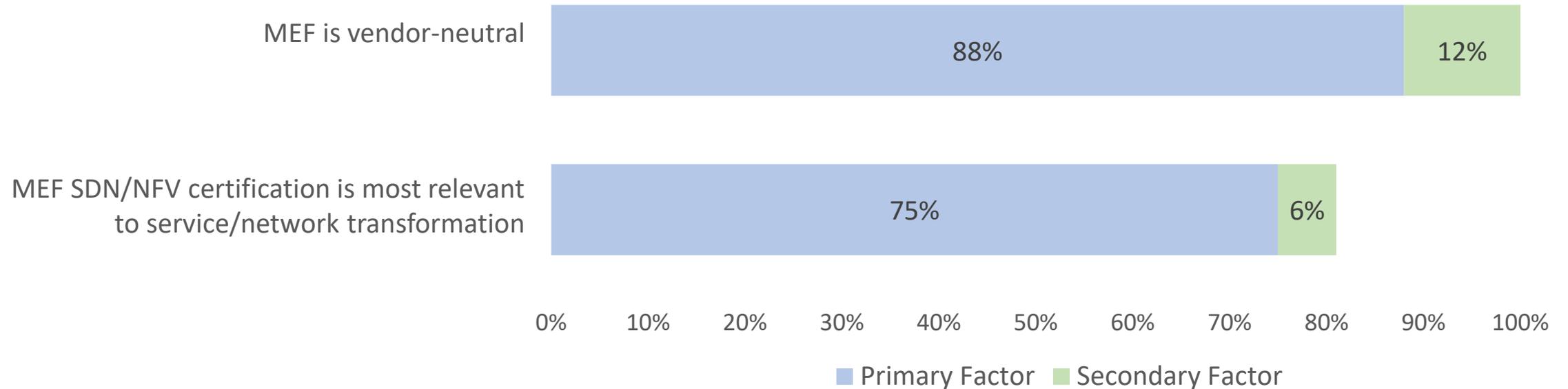
Resources for getting certified

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There are many study options for preparing for MEF's professional certification.

Classroom Training – Onsite & remote options

Self-study

E-Learning

MEF Accredited Training Providers

~90% of MEF certified professionals used a MEF-ATP

They provide certified curriculum & instructors

And consistent quality

Aragami Tech & Digital
Technical Training Made Simple

CARRIER ETHERNET ACADEMY
CEA

CRITERION NETWORKS

ECI
THE ELASTIC NETWORK

FUJITSU

Perpetual Solutions
Delivering Knowledge

TECH 2000

TELEFOCAL ASIA

Visit MEF ProCert for more information.
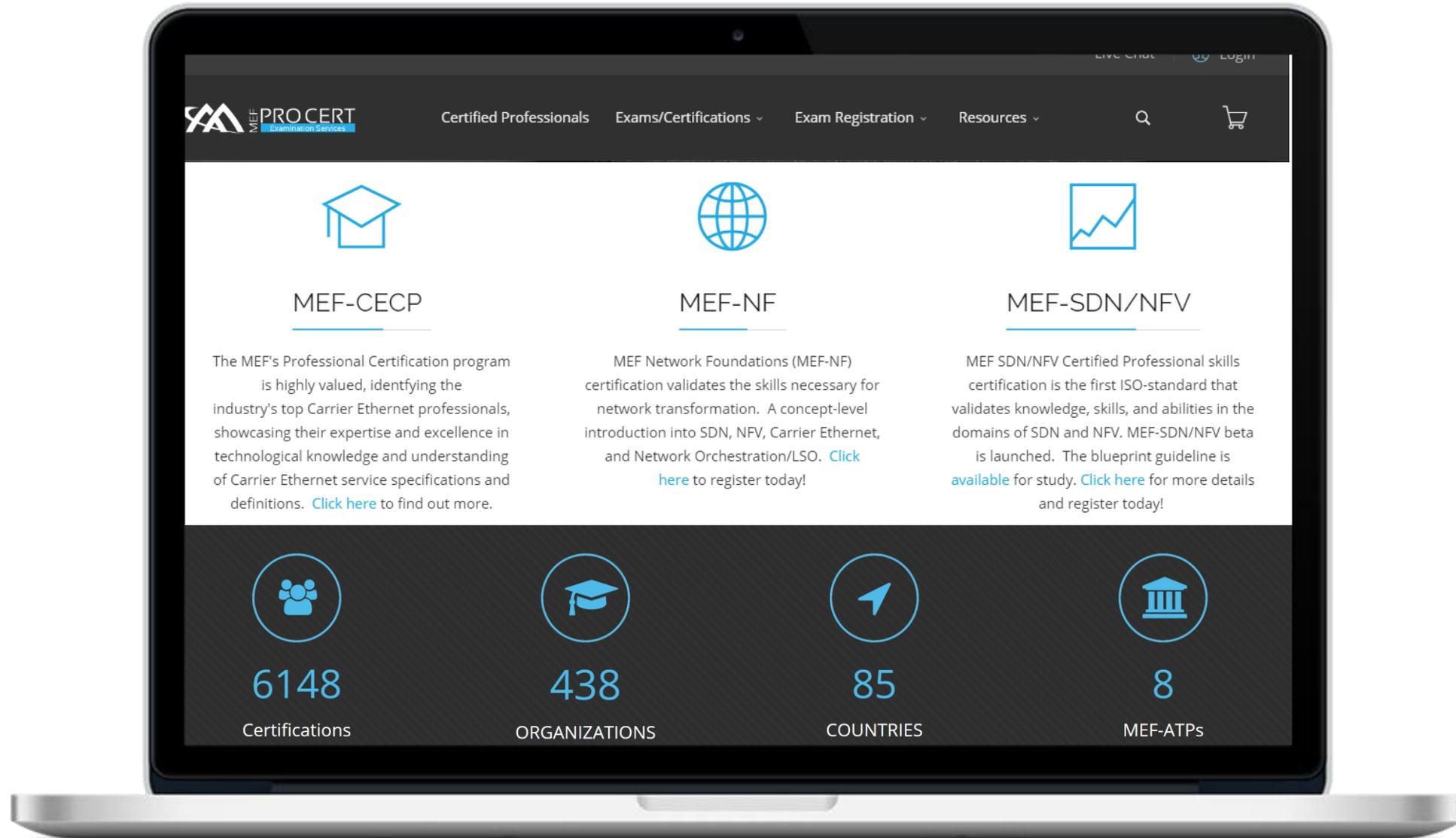
mefprocert.com

Join the new generation of MEF certified professionals!

SDN/NFV
MEF
SOFTWARE DEFINED NETWORKS/NETWORK FUNCTIONS VIRTUALIZATION
CERTIFIED PROFESSIONAL

Organizations
Close the skills gap!

Individuals

- Improved job opportunities & earning potential
- Deeper understanding of technology
- Credibility and confidence to solve challenges in todays digital economy

1. Accelerate time to market for SDN/NFV enabled products.
2. Grow revenue, optimize operations.
3. Attract & retain talent

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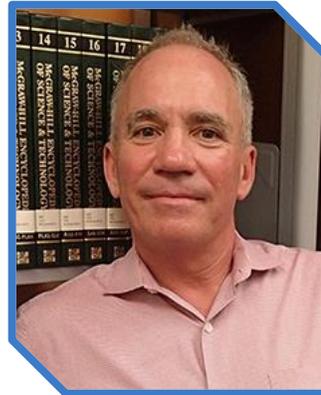
Q&A

Industry Commentary

Service Providers Comment on the Skills Challenge

Click for video

"There are some significant challenges as well. Engineering expertise. We're all feeling the pain right now. **It's hard to get good engineering expertise especially in these next-gen services. MEF 3.0 certification is helpful**. We're starting to send a lot of our people through 3.0 certification."

- Satya Parimi, Group VP, Data Products

Click for video

"**[Softwarization] is not a trivial exercise** because, in my experience so far, it's not so much about a network transformation being a technology challenge, but it's a management challenge. The **network transformation follows business transformation, follows organizational transformation**…**Injecting software type thinking** and working into a static network type legacy environment **is particularly challenging**…**Technology is the least of our worries. It's about how do we manage the transition from an organization standpoint.**

- Bart Oskam, CTO, Eurofiber

Service Providers Comment on the Skills Challenge

PCCW Global

Click for video

"**[Softwarization] really comes back to the organization challenges…**change the mindset. Because as you work more in a cloud-native mode, the way you define products becomes a little bit different, what the products actually are are a little bit different…you have to always be looking for disruption points…that leads to a lot of confusion potentially inside of an organization…**So what we did internally is adopt an agile mindset…The cloud mindset is trickling down into all the processes and transforming us culturally and organizationally**….**You really need to focus on the existing resources and support them, mentor them, get them training**…."

- David Hughes, VP of Engineering, PCCW Global

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