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SD-WAN: Setting the Standard for Services

Among the myriad benefits of MEF 3.0 SD-WAN standardization and certification are provider competence, buyer confidence and market acceleration.

By Buffy Naylor

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About the Author



BUFFY NAYLOR is managing editor of Channel Futures & Channel Partners. Prior to joining Informa (then VIRGO) in 2008, she was an award-winning copywriter and editor, then senior manager of corporate communications for an international leisure travel corporation and, before that, in charge of creative development and copywriting for a boutique marketing and public relations agency.

 [linkedin.com/in/buffynaylor](https://www.linkedin.com/in/buffynaylor)

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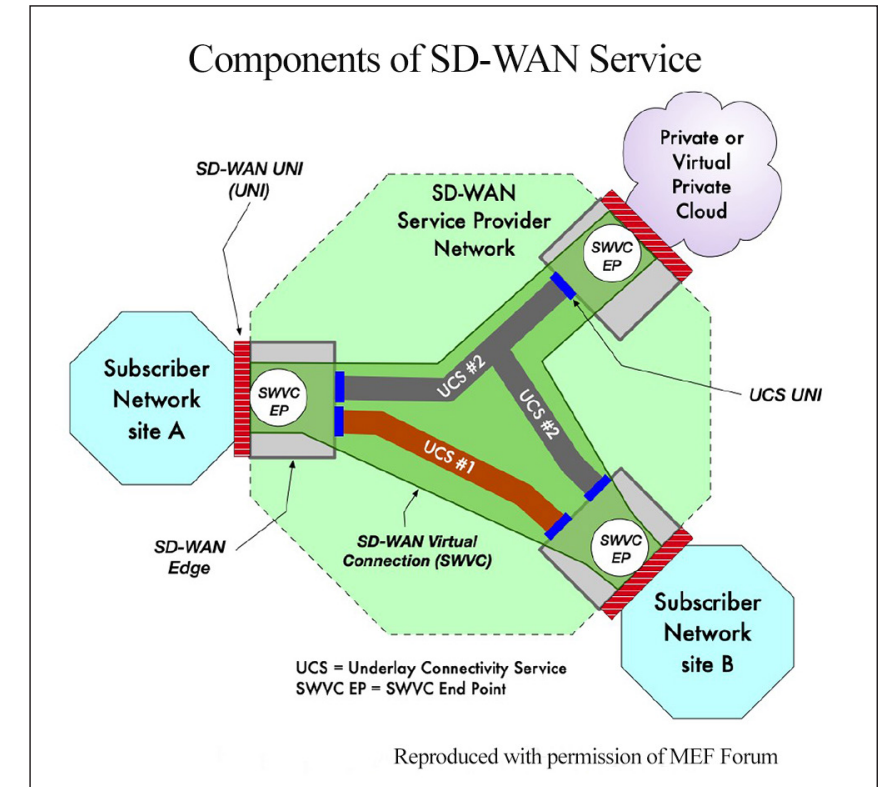
While the concept of cloud computing first appeared in the 1960s, it wasn't until the late 1990s (think [Salesforce](#)) and early 2000s ([Amazon](#) in 2002 and [Google Docs](#) and [Amazon Web Services](#) in 2006) that it gained popularity for business use. But as more and more applications migrated to the cloud, it became apparent that the traditional wide area network (WAN) was not up to the challenge. Most used routers that backhauled all traffic, cloud computing included, from all locations to a central processing site, typically a company's data center. This created delays that negatively impacted application performance, productivity and user experience, among other factors.

Then, in 2011, software-defined WAN (SD-WAN) was introduced. Using software and virtualization technologies to eliminate the need for proprietary hardware and fixed circuits, SD-WAN offered simplified management and operation of a WAN, as well as such additional benefits as reduced costs and improved flexibility. It also proved to be the powder to fuel the explosive growth in digital transformation.

The SD-WAN Global Market

Not too surprisingly, the SD-WAN market is one of the fastest growing sectors in the communications industry. Heavy Reading's [SD-WAN Strategies Survey Report](#) found that 94% of surveyed service provider professionals worldwide believe their employer will offer an SD-WAN service by the end of 2021, if they don't already.

The global SD-WAN market exceeded \$1 billion in 2019 and is expected to grow at a CAGR of more than 60% between 2020 and 2026, according to [Global Market Insights](#). They projected that the North America SD-WAN market will hold a revenue share of more than 45% by 2026. The increasing prevalence of smartphones, rapid adoption of cloud computing platforms



and significant investments in broadband infrastructure are all expected to contribute to the North American market growth. In addition, the growing trend of workforce mobility is driving the demand for a centralized network management solution that gives enterprises full control over their networks.

Due to COVID-19, increasing numbers of employees are working from home. Global Market Insights cited this as positively impacting the market

growth as SD-WAN is being leveraged to manage the growing network usage and traffic flow.

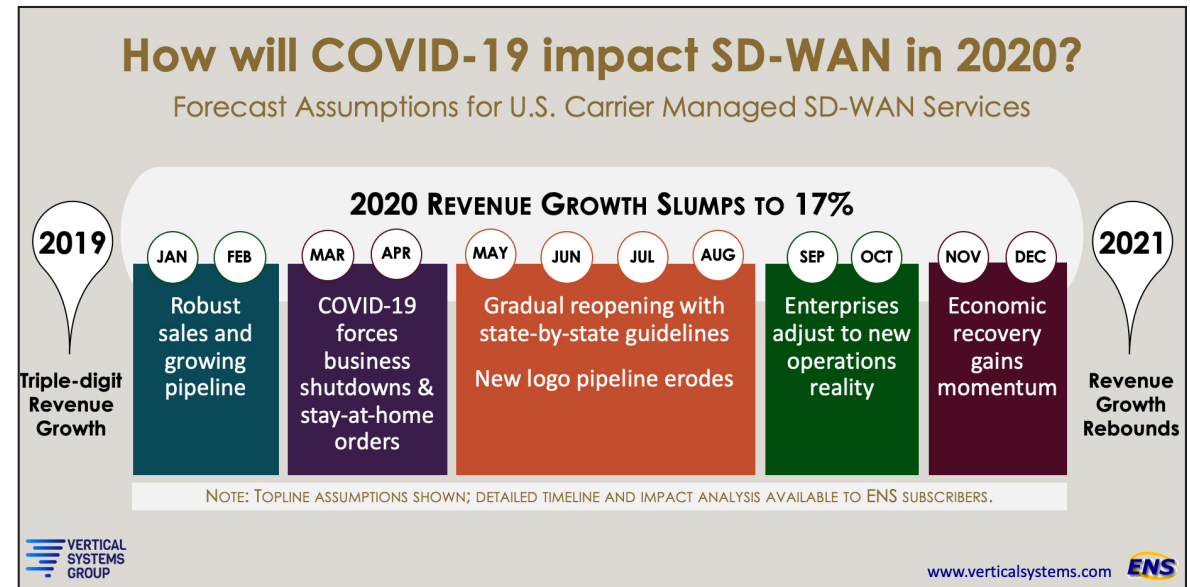
[Vertical Systems Group](#), meanwhile, adjusted its forecasted revenue growth for 2020 down a bit, to 17%. But in a [May 28 STATFlash](#), the research group was quick to assure readers that, “Despite this market dip, the forecast shows measurable economic recovery during Q4 of this year, and a revenue rebound starting in 2021 that extends through 2024.”

[IDC](#) estimates the global SD-WAN infrastructure market will reach \$5.3 billion by 2023.

The MEF 70

In August 2019, the [Metro Ethernet Forum](#) (MEF) industry association published the industry’s first global SD-WAN standard to help accelerate market growth. The [SD-WAN Service Attributes and Services \(MEF 70\)](#) standard “describes requirements for an application-aware, over-the-top WAN connectivity service that uses policies to determine how application flows are directed over multiple underlay networks irrespective of the underlay technologies or service providers who deliver them,” according to the MEF.

“MEF standardization creates an open marketplace and reduces confusion in a new market that is experiencing very rapid growth,” said Daniel Bar-Lev, vice president of strategic programs for MEF.



The 57-page MEF standard defines, among other things, service attributes that describe the externally visible behavior of an SD-WAN service as experienced by the subscriber, rules associated with how traffic is handled and key technical concepts such as an SD-WAN UNI, the SD-WAN Edge, SD-WAN Tunnel Virtual Connection End Points and Underlay Connectivity Services.

MEF calls itself “the world’s defining authority for standardized network services.” At MEF19 last November, Nan Chen, president of MEF, [explained](#) to Jennifer Clark, principal analyst

at Heavy Reading, that creating the SD-WAN standards was a “natural fit” for his organization.

“SD-WAN was initially delivered over Ethernet,” he said. “People realized that quality of service is really important and that ‘best effort’ just doesn’t cut it. The underlay technologies are almost as important as the overlay transport, such as SD-WAN, and the MEF had already defined the underlay technology, laying the foundation for a delivering a perfect SD-WAN service over a sure, dynamic and high-speed network.”

“It’s a perfect transition,” Chen said. “We’re

really happy to be the organization to define the standards for it.”

Almost as soon as MEF 70 was released, MEF was at work on the next phase of SD-WAN standardization, MEF 70.1. This extension will include definitions of service attributes for application flow and performance and business importance, SD-WAN service topology and connectivity, and underlay connectivity service requirements.

The MEF-SDCP Program

Creating global standards for SD-WAN was just the beginning for MEF. In November 2019 they announced the creation of the [SD-WAN Certified Professional \(MEF-SDCP\)](#) program. Based on the MEF 70 standard and other fundamentals of SD-WAN solutions, the certification is the industry’s only exam verifying knowledge, skills and abilities in the domains of SD-WAN. It’s designed for technically oriented SD-WAN professionals ranging from presales to network/service engineering and operational personnel in the service provider, technology vendor and enterprise communities.

“Today’s SD-WAN market shares similarities to the early days of the more than \$85 billion Carrier Ethernet market before standardization and services, technology and professional certification took hold,” said Kevin Vachon, COO for MEF. “Having skilled professionals who are well-versed in the emerging common language for SD-WAN will be key to enabling ecosystem stakeholders to capitalize on market opportunities.”

To ensure core competencies, the MEF-SDCP test covers:

- **Assessing, planning and designing** scenarios of size and scale, implementations, applications, strategy and business requirements
- **Implementation** of MEF 70 related to business requirements, application flow, policy, underlay services, characteristics and migration strategy
- **Lifecycle Service Orchestration (LSO)** for service-impacting issues, diagnostics, performance metrics and troubleshooting
- **Components and features** including fundamentals and characteristics

of SD-WAN solutions, service components and service attributes

“Carrier-managed SD-WAN is one of the fastest growing markets for service providers, MSPs and enterprises,” said Erin Dunne, director of research services for Vertical Systems. “It’s projected to reach \$4.5 billion in the U.S. alone by 2023, based on our latest research. “MEF’s standards development and professional certification program will go a long way toward ensuring that the service providers, vendors and enterprises can best monetize the benefits of SD-WAN to move their businesses forward.”

The MEF 3.0 SD-WAN Certification Program

Adjacent to their announcement of the MEF-SDCP program, MEF unveiled its [MEF 3.0 SD-WAN Certification Program](#). The MEF 3.0 SD-WAN Certification enables service and technology providers to validate that their SD-WAN services and products conform to the MEF standard. The certification will test the service attributes and their behaviors defined in the MEF 70 and described in detail in the 32-page draft MEF SD-WAN Certification Test Requirements ([MEF 90](#)) standard. Demonstration of conformity with the industry’s first SD-WAN services standard is a valuable reference baseline for users choosing a service supplier in the inevitable confusion of a fast-growing new market.

“There are expansive opportunities in the SD-WAN market,” said MEF’s Chen. “Tens of billions of dollars in revenue are at stake during the next five years, and many service providers are looking to quickly develop and advance their SD-WAN offerings to ensure they remain competitive. MEF 3.0 SD-WAN standardization and certification will play a vital role in accelerating SD-WAN market growth and facilitating creation of powerful new hybrid networking solutions optimized for digital transformation.”

Heavy Reading’s SD-WAN Strategies Survey Report found that 76% of surveyed service provider professionals worldwide believe that SD-WAN services certification is “critical” or “important” for accelerating SD-WAN market growth. Seventy-three percent of this same group indicated that

they believe SD-WAN technology certification is also critical or important for market growth.

And the Certification Goes to...

In January, the names of the [first three technology vendors certified](#) to support MEF 3.0 SD-WAN services were announced: [Nuage Networks](#) from Nokia, [Versa Networks](#) and [Infovista](#). This certification enables the trio to validate the conformance of their products to the MEF standard.

“SD-WAN is gaining incredible excitement and momentum for empowering digital transformation,” said MEF’s Chen. “We congratulate Nuage Networks, Versa Networks and Infovista for achieving MEF 3.0 certification and demonstrating that they are a standards-based partner for service providers developing SD-WAN services.”

In March, Comcast Business, PCCW Global, Spectrum Enterprise and Telia Company became the [first service providers certified](#) for MEF 3.0 SD-WAN services.

“MEF congratulates [Comcast Business](#), [PCCW Global](#), [Spectrum Enterprise](#) and [Telia Company](#) for achieving MEF 3.0 SD-WAN certification, which is an important

innovation milestone not only for each company but also for the industry at large,” said Chen. “We expect broad adoption of certified MEF 3.0 SD-WAN services and technologies will help fuel market growth and enable creation of powerful new hybrid networking solutions optimized for digital transformation.”

“These first MEF 3.0 SD-WAN certifications achieved by Comcast Business, PCCW Global, Spectrum Enterprise and Telia Company are very important,” said Rosemary Cochran, co-founder and principal of Vertical Systems Group. “This signifies

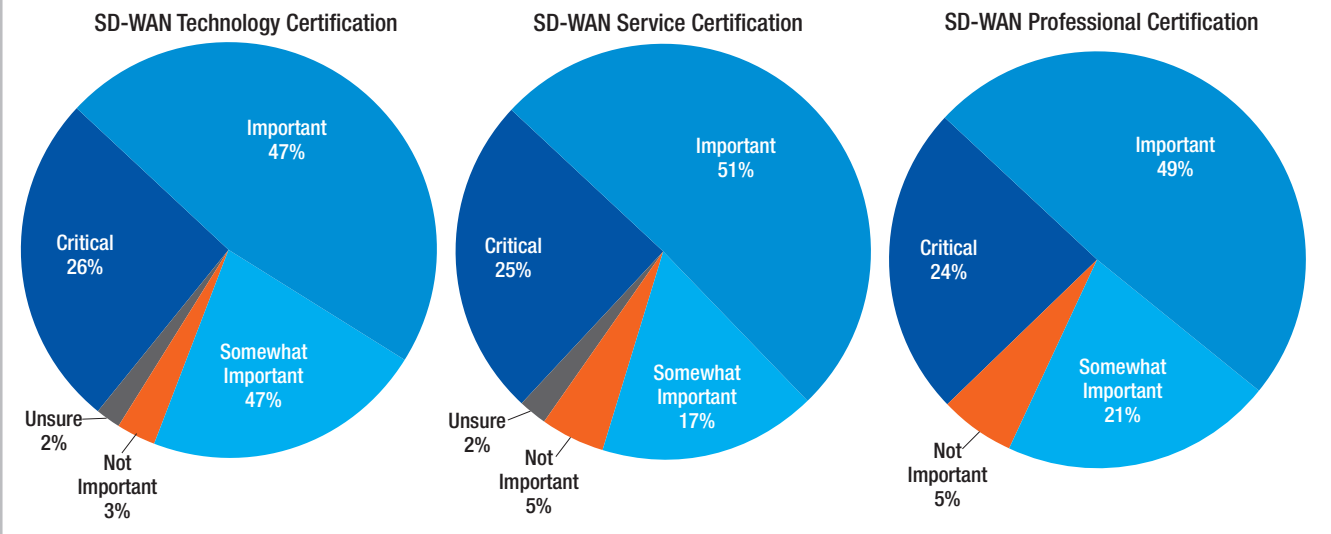
that MEF 3.0 certification is a new competitive differentiator for SD-WAN service providers, as well as the benchmark for assuring compliance with globally recognized SD-WAN specifications.”

All certified MEF 3.0 service providers are listed in the [MEF Services Certification Registry](#).

The Value of Certification

To attain MEF 3.0 SD-WAN certification, technology vendors and service providers must undergo rigorous testing of the service attributes

How Important are Certification Programs for Accelerating SD-WAN Market Growth?



Source: Heavy Reading, SD-WAN Services Strategies, November 2019. Based on survey responses from 125 service provider professionals from around the world.

and requirements defined in MEF 70 and described in detail in MEF 90. Is it worth it? Absolutely, according to industry experts.

Certification is important to buyers. They have come to expect it in goods and services from meat and electrical products to doctors and plumbers. They want the same from their technology vendors and service providers.

Jennifer Pigg Clark, principal analyst with Heavy Reading, said that service providers offering SD-WAN have been supportive of MEF’s standardization efforts as the operators are looking for a “yardstick” to ensure they comply with what constitutes an SD-WAN service. Clark’s comments appeared in an [article](#) on Light Reading, a sister publication of Channel Partners.

In that same article, Vertical Systems’ Cochran notes that SD-WAN service certification is a competitive differentiator. It offers enterprise customers the assurance that service providers have a “seal of approval” and are on top of industry standards

As MEF points out, their SD-WAN certification enables communication service and technology providers to validate that their solutions comply with the highest industry standards for performance, assurance and agility. Certification also facilitates the creation of federated networks by streamlining interprovider interconnection with a common understanding of well-defined service attributes and orchestration processes. In addition,

presence on MEF’s Certification Registry provides global visibility for certified services and products.

In a [blog](#) on the company website, Nuage Networks’ Sunit Chauhan, senior director of product development, wrote, “Through this fluid and crowded SD-WAN market it is essential that standardization is adopted to drive consistency of behavior and operation as the SD-WAN market matures and evolves. MEF 3.0 certification is a needed step allowing the vendor and service provider communities to collaborate to standardize and ratify this technology.” Certification results in consistency that produces a tremendous time and cost savings.

“As many IT decision-makers know, a standard is particularly helpful for buying decisions as they try to sort through the roughly 70 separate SD-WAN options available,” Jeff Lewis, Comcast Business’ vice president of product management wrote in a [blog](#) on the company’s Comcast Business Community website. “Now enterprises have a reference to help and determine if a product or service meets their networking use cases and service resiliency requirements.” Certification helps simplify the buying process.

“Demand for SD-WAN is growing rapidly in all

market segments and geographies, and there is strong momentum for it to be delivered as a managed service,” said Sunil Khandekar, head of Nuage Networks. “The availability of the MEF 3.0 SD-WAN technology vendor certification is an important step in providing enterprises an industry benchmark for vendor selection.” Certification provides decision-makers with a valuable tool for the buying process.

When Vertical Systems published its [2019 US Carrier Managed SD-WAN Services Leaderboard](#) in April, Comcast Business had moved up from eighth to seventh place. It was also the only company on the leaderboard that had attained the MEF 3.0 SD-WAN Services certification. In comments to [Light Reading](#), Vertical Systems’ Dunne noted Comcast’s past ascension in the Ethernet market, noting that “If history serves and

if they do the same with SD-WAN [as with Ethernet], that MEF certification will be very valuable to [them].”

“Our research shows a direct relationship between a commitment to MEF certification and the business success of market leading companies,” Vertical Systems’ Cochran [told Channel Partners](#) in March. “We anticipate similar results for MEF 3.0 SD-WAN certification.”

VERTICAL SYSTEMS GROUP		LEADERBOARD	
YEAR-END 2019		U.S. Carrier Managed SD-WAN Services	
RANK	SD-WAN PROVIDERS		
1	AT&T		
2	Hughes		
3	Verizon		
4	CenturyLink		
5	Windstream		
6	Aryaka		
7	Comcast		
CHALLENGE TIER (in alphabetical order)			
Fusion GTT Masergy Meriplex TPx			
Rankings based on installed and billable U.S. Managed SD-WAN sites at year-end 2019			
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