IDC TOPLINE

DIGITAL TRANSFORMATION REQUIRES NETWORK TRANSFORMATION

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Digital Transformation Requires Network Transformation

Digital Transformation Puts the Network to the Test

In a world where change is the only constant and an abundance of technology is available to organizations, digital transformation (DX) has become a certainty on the corporate agenda. The focus of the debate is shifting increasingly from developing a strategy to delivering on it. This is underlined by IDC's FutureScape 2019 poll, which showed that 79% of European CEOs are under pressure to deliver a successful DX strategy.

Digital strategies thrive on data, but data is everywhere, as thousands of end points produce tons of information that need to be stored and processed in a variety of locations on premises, in the cloud, or at the edge, and should be accessible from anywhere at any time. And this is not just limited to the traditional IT domain. As the Internet of Things proliferates across industries, operational assets are increasingly connected, and organizations strive to drive the convergence of information technology (IT) and operational technology (OT), the network that underpins all this only becomes more mission critical.

The performance of many applications depends on the quality of the network. A good example are collaborative applications such as Teams, Webex, and Zoom, for which a dropped packet or small delay can lead to distorted voice or video. This makes it very visible, or audible, how the network impacts the user experience for an application, and ultimately the success of collaboration.

At the same time the consumerization of enterprises has seen the use of video-on-demand services and social media that are being accessed via the corporate network grow exponentially, driving vast bandwidth demands. The number of applications running on the network, and depending on it, is clearly growing, while traffic patterns are becoming more unpredictable. And many applications are being used concurrently, effectively competing for increasingly scarce network capacity. All this is jeopardizing application performance and user experience. But many organizations are unable to tell how many applications are being used and when, and they lack visibility into the performance of these applications and the underlying network.

This hyperconnected reality, in which cloud-first, hybrid cloud, and multicloud are becoming the norm, is driving network requirements to new heights, not just in terms of volumes and bandwidth, but also in terms of flexibility, agility, security, and cost. While many organizations have taken steps to upgrade their networks over the years, by adding bandwidth or implementing hybrid WAN architectures, they are now finding that the pace of change, the sheer scale of increase, and the complexity of managing this web of users, application, end points, locations, and changing traffic flows are starting to test the limits of their network resources. The fact that network budgets are typically not moving at the same pace is leaving those responsible with a continuous balancing act.

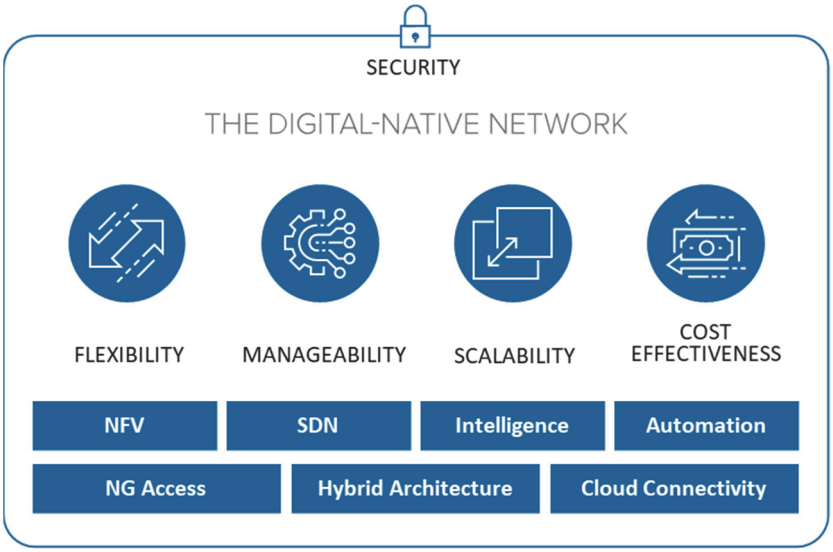
The Future Enterprise Needs a Digital-Native Network

The wide area network needs to change, and many organizations recognize that. In fact, in IDC's 2019 European Enterprise Communications Survey, 99% of respondents indicated that network changes were being made as a direct result of their use of new technologies (technologies specified in the survey were cloud/multicloud, Big Data/analytics/AI, IoT, video, and UC&C). Of these technologies, cloud/multicloud was perceived to have the biggest impact on the WAN strategy. At the same time, this transformation is a challenge for many. In the same survey, 43% of organizations highlighted network transformation as one of the biggest IT or network challenges for the next two years, second only to security threats.

The network is often an underexposed element of digital transformation initiatives, or disregarded altogether. However, to successfully transform itself digitally, and become what IDC calls a Future Enterprise, an organization will need a digital-native network. This is an application-centric network that supports the right end-user experience for each application and user. IDC has defined five key attributes of this network, as shown in Figure 1:

- **Flexibility:** enabling organizations to immediately respond to changing requirements, turning functions or locations on and off, or adjusting capacity up and down
- **Manageability:** reducing complexity and providing increased visibility into network and application performance; end users can take direct action via self-service tools
- **Scalability:** enabling the network to cope with changing network requirements over time
- **Cost effectiveness:** delivering the economic balance between growing requirements and much flatter budgets
- **Security:** keeping users, data, and applications safe from a growing range of threats, while ensuring compliance

FIGURE 1
The Digital-Native Network



Source: IDC, 2020

In IDC's view this network transformation will be based on a number of core elements. Virtualization technologies such as software-defined networking (SDN) will be at the heart of this shift by driving the automation, orchestration, and programmability of a network by decoupling the data and control planes. The growing use of network intelligence and automation tools will reduce complexity, increase visibility, and optimize network and application performance.

A growing number of organizations have implemented some form of hybrid WAN over the past few years and such architectures will form the foundation of the digital-native network. This will see a variety of next-generation fixed and mobile access technologies, such as fiber and 5G, provide access to a mix of public internet and private networks, enabling organizations to optimize cost and performance for each of their locations, users, and applications.

Cloud connectivity plays a specific role within this architecture as organizations look to balance the security and predictable performance of private networks with the ubiquity and cost-effectiveness of public internet as they move their more-mission-critical applications to the cloud.

SD-WAN Drives WAN Transformation

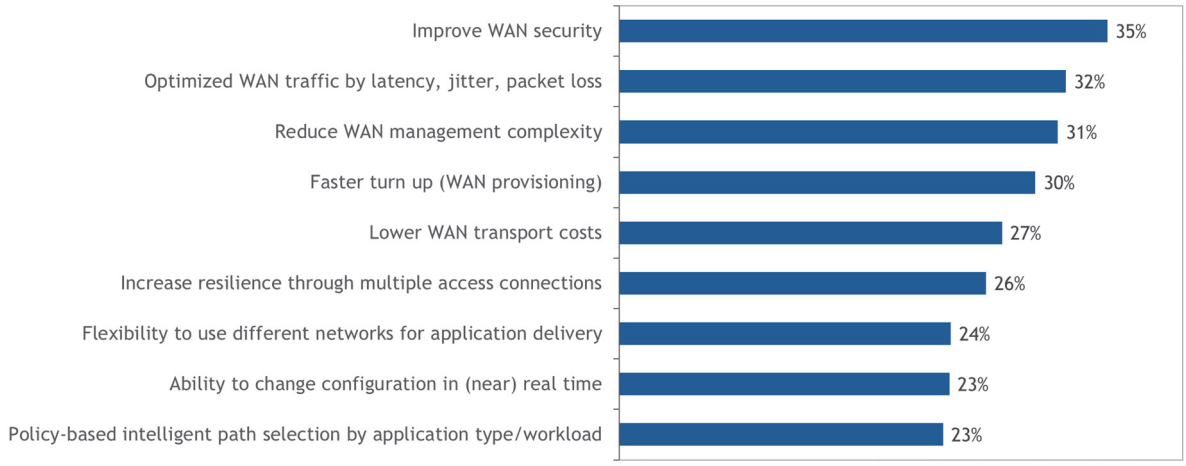
SD-WAN has become one of the hottest topics in the WAN market over the past few years. Building on all key elements of the digital-native network, it addresses the functional disconnect between private WAN infrastructure characteristics and the evolving needs of branch office connectivity in the cloud era. By decoupling the application from the underlying network transport, it provides the flexibility to run any application over any combination of transport networks, be it private networks or public internet.

Cost reduction is still at the heart of much of the public discourse about the business case for SD-WAN. In practice this is not necessarily about a reduction in total cost of ownership (TCO) compared to the existing network, but rather about enabling a more cost-effective use of connectivity resources. It is an equation where incremental investment in SD-WAN technology enables an organization to optimize the cost and performance of the underlay by leveraging a mix of public internet and private connectivity. In this context it is important to consider that SD-WAN does not do away with the limitations of the underlay network. At the end of the day, performance will still be subject to the quality of the underlying connectivity, which means low-cost, best-effort internet access is not necessarily fit for purpose.

In IDC's view the appeal of SD-WAN is not just tied to cost, or any single reason. Instead it is driven by a much broader set of benefits that are ultimately linked to business outcomes and end-user experience. This was confirmed by IDC's 2019 European Enterprise Communications Survey. Figure 2 shows that organizations have a wide range of reasons for adopting SD-WAN. Improving security, optimizing traffic, reducing complexity, and faster provisioning are the key reasons, ahead of cost.

FIGURE 2

Reasons for Choosing SD-WAN



Source: IDC's European Enterprise Communications Survey, 2019 (n = 882, organizations using/planning SD-WAN)

Demand for SD-WAN solutions has accelerated quickly in recent years, and the need for transformation and the wide range of benefits enabled by SD-WAN will ensure strong growth in the years ahead. For all the benefits and control that SD-WAN brings, organizations will need to have the adequate level of resources and expertise to manage a network amidst growing requirements and rapidly changing demands. IDC expects demand for managed service models to significantly outpace that for infrastructure, as most organizations will prefer to outsource the complexity of managing the WAN to a partner, so that they can focus on application performance and end-user performance and, ultimately, on running their core business.

Essential Guidance

Digital transformation puts the network to the test. The evolution to a Future Enterprise calls for a digital-native network: an application-centric network that supports the right end-user experience through improved flexibility, manageability, scalability, cost-effectiveness, and security. Too often the network is considered as a mere cost center, while being invisible to large parts of the organization, including senior management. Instead the network should be positioned as a driver of digital transformation and the business case for network transformation should be built on that premise.

SD-WAN will play an important role in many transformations, but organizations should be wary of focusing on SD-WAN on a standalone basis. A successful WAN transformation starts with business outcomes and application performance. It takes a holistic approach that encompasses SD-WAN, hybrid architectures, and cloud connectivity, and security should be an integral part of the WAN design. The business increasingly depends on the network, so organizations should carefully consider the migration plan. The path from the current architecture to the desired network of the future should be seamless and risk-averse.

Many aspects play a role when evaluating potential suppliers, but at the end of the day an organization needs to find the partner that best addresses its needs. IDC recommends considering the following criteria:

- **Portfolio.** This is not limited to the features and functions of the WAN solution per se, but extends to capabilities in adjacent markets like cloud, application management, and security. How can products and services be mixed to accommodate the needs of different sites, users, and applications, and how easy is it to change configuration?
- **Partner ecosystem.** Who is a network provider working with? How open is the ecosystem, and what adjacent network functionality can be provided?
- **Deployment model.** Does an organization have the capabilities to self-manage, or does it outsource complexity to a managed service partner? The range of models is growing, and the choice needs to be aligned with in-house resources and expertise, as well as capex/opex preferences.
- **Sourcing strategy.** This is a trade-off between a single point of contact and accountability of an end-to-end solution or the freedom of choice of a multisourcing strategy. An organization will need to have the resources to manage the wider range of relationships that come with a multisourcing strategy.
- **Execution power.** How well does a potential provider fit the specific profile and requirements of an organization for the longer term? A trusted partner will be able to provide the proof points that they have been serving similar clients successfully and have the vision, resources, and commitment to support the WAN transformation now and in the future.

About the Analyst

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Jan Hein Bakkers is a research director in IDC's European Tech Solutions and Ecosystems team, based in the Netherlands, with responsibility for research in the European enterprise communications and collaborations domain. His personal areas of expertise include internet access and WAN services, such as private IP and Ethernet. His work has a particular focus on WAN transformation, and the role that high-growth areas like network virtualization (such as SD-WAN) and cloud connectivity play within that.

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