Why Today’s Network Won’t Support Tomorrow’s Enterprise
A Guide for Business Leaders Rethinking Their Core Networks

Powering clients to a future shaped by growth

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INTRODUCTION

As businesses hurtle into the digital era, the key to success is agility. Organizations are revamping every aspect of their businesses—their cultures, processes, and technology—to respond faster and more effectively to shifting market conditions that have placed traditional corporate networks under stress.

Almost overnight, organizations of all sizes were forced to replace face-to-face interactions with network-based activities. Many companies are still struggling to maintain productivity and safely deliver critical applications and data to home-based workers, partners, and customers.

Foundational to effectively navigating this transformation is the enterprise network, the connective tissue that enables modern organizations to conduct business operations securely and effectively today and pivot without pause as needs and demands change tomorrow. In the digital era, you can’t afford to be anchored to physical locations (e.g., corporate headquarters or branches); your critical applications and data must be accessible to users anywhere, at any time.

The next-generation network provides more than connectivity. Unlike traditional enterprise networks, it is better understood as a fabric that enables all business workloads and transactions. In such an environment, the network configuration is shaped by the needs of the applications—dynamically and automatically. With the network “aware” of the application needs and able to automatically adapt based on policies, enterprises will simply deploy any workload and be confident that it will work as intended.

As with all next-generation technologies, the modern network leverages policy-driven automation to minimize time-consuming and error-prone manual efforts. It relies on software-defined technologies rather than cumbersome hardware, where possible. And it embraces templates and application programming interfaces (APIs), rather than custom integration, to speed and simplify deployments.

Such an application-aware network is essential not only to success in the future but today.
TOP DRIVERS TO IT MODERNIZATION: WHY THE NETWORK IS INTEGRAL TO ACHIEVING GOALS

To compete in the digital era, businesses are redefining their business operations. Across all domains, they are introducing self-servicing functionality, integrating once disparate services, and leveraging shared data pools for business insight. To support an agile business, IT leaders are creating developer-friendly environments that enable applications and services to be developed, delivered, and updated with speed and consistency as business needs change. This includes implementing flexible IT models, such as cloud services; productivity-enhancing technologies such as automation and analytics; and efficient architectures such as edge computing and Internet of Things (IoT).

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However, IT infrastructure, software, and services alone are insufficient to meet their goals without consideration of the important network foundation. According to the 2019 Frost & Sullivan Global Cloud User Survey\(^1\), the top drivers of IT modernization (along with network dependencies) are:

- **Improve application availability and consistency** (cited by 80% of IT decision-makers worldwide): Modern applications rely on microservices, pre-built code, APIs, platform-based functionality, and disparate data sets, with the components hosted in any number of clouds and private data centers. That means nearly every application traverses multiple networks before it arrives at the user: on-premises local area network; access to cloud via broadband internet, mobile networks, and/or the corporate virtual private network; and cloud-to-cloud or intra-cloud networking. Ensuring a consistent end-user experience requires automated, policy-driven configurations, as well as end-to-end visibility and control across all networks and IT environments.

- **Leverage next-gen technologies** (cited by 76%): New technologies and digital business models require flexible network architecture. For example:
  - **IoT** – Massive amounts of data being collected, minimally processed, and forwarded to the cloud. The network must consistently ensure data integrity and protection.
  - **Data-intensive applications** – Apps that leverage advanced analytics, such as Artificial Intelligence and Machine Learning, are often deployed in a hybrid arrangement, with massive on-premises databases accessing cloud-based analytics functionality. The right network configuration can mitigate performance-impacting latency through automated scaling of bandwidth.
  - **Serverless** – Modern app development and deployment frameworks rely on snippets of pre-designed code that is deployed only when triggered. Use cases such as location-based marketing programs require near-real-time coordination of edge devices (e.g., smartphone or smart car), IT infrastructure (local and cloud) and multiple network links (e.g., Wi-Fi, 5G/LTE, access to cloud) to support data collection, transfer, analytics, processing, and app delivery.

\(^1\) The 2019 Frost & Sullivan Global Cloud Survey was conducted in April 2019 via the web, with responses garnered from 1,266 IT decision-makers representing a range of countries, geographical regions, industries, and company sizes.
• **Increase business agility** (cited by 75%): As noted, businesses must respond quickly to changing market conditions. IT (compute and storage) has quickly adopted the cloud model because it allows IT to avoid term and volume commitments and leverage the more flexible operating budget, rather than requiring capital investments. For maximum flexibility, businesses should take advantage of software-defined networking technologies—such as SD-WAN and SD-LAN—and scalable, on-demand bandwidth options that allow network capacity and technology to scale as needed to support applications.

• **Support backup & recovery** (cited by 78%): Fast-paced, data-centric businesses require ever-changing applications and data sets to be always available, even in the face of an unanticipated disruption. This requires a network-based solution that can ensure large volumes of data and application code can failover to another cloud or premises data center without disrupting business operations.

• **Contain costs** (cited by 77%): Organizations are looking to drive costs out of the business so they can invest in strategic initiatives. As they implement their modern hybrid IT environments, organizations must ensure their networks are cost-optimized as well, with features such as:
  
  • **Application-aware routing** – Sending apps to the lowest-cost available network that meets specified performance criteria.
  
  • **On-demand network capacity** – Decreasing fixed costs per location with flexible and scalable bandwidth solutions.
  
  • **Choice of technologies** – Allowing you to use equipment you already have on-site or upgrade to any vendor.
TIPS FOR BUILDING YOUR HYBRID CLOUD ENVIRONMENT ON A NEXT-GENERATION NETWORK

In designing their network architectures, even the most technology-savvy firms sometimes fall back on old ways of thinking; for example, considering the network as a separate component to be appended onto the IT and cloud environments, which can lead to disappointing results for the overall IT modernization initiative.

To ensure you implement a next-generation network that supports your strategic business goals, focus on the following priorities:

- **Fully automated**: Ongoing optimization of application performance and cost requires intelligent automation. Ensure your network solutions use next-gen technologies and delivery models to automatically manage application traffic, based on your rules.

- **Fully orchestrated**: To optimize application delivery, it’s not enough to hand off bytes from the cloud to the network to the end device. For end-to-end performance assurance, you need deep integration of network and IT components at the infrastructure, platform, and software layers.

- **API-driven**: Fast, error-free and reliable app deployment calls for software-based APIs, rather than time-consuming custom integration.

- **Application-aware**: Application requirements should drive automated network changes, bypassing manual service requests.

- **Easily controllable**: Managing a modern IT environment requires visibility across all components—data center, cloud, and network—with control via a simple user interface. Look for a solution that offers single-pane-of-glass visibility into end-to-end performance.

- **Highly secure**: Valuable corporate software assets must be secured in transit and at rest, in primary and backup locations. The right networking solution should support the security profile of all applications and data.
CHOOSING A PARTNER FOR YOUR INTEGRATED HYBRID CLOUD NETWORKING SOLUTION

For most businesses, implementing and managing a hybrid cloud is challenging, with nearly 60% saying they don’t have sufficient knowledge on staff to do it right. Their greatest struggles relate to integrating multiple infrastructures and deployment options (cited as a major hurdle by 62%), managing costs (cited by 61%), and maintaining application security profiles (cited by 59%).

Because of the struggles, more businesses are turning to an expert service provider for assistance in designing, implementing, and managing their hybrid cloud. According to the Frost & Sullivan survey, 35% of businesses worldwide currently use a managed IT services provider; an additional 43% say they plan to implement managed IT services by 2021.

However, not all managed services providers are alike, nor do they offer the same integrated services. A provider focused on hosting or cloud services may not be able to deliver the application-aware networking you need to deliver your hybrid cloud apps. A provider that has built its business on custom integration work may not be positioned to introduce next-generation functionality, such as programmability, automation, and policy-based routing, into your network environment.

As you research services providers for your network-integrated hybrid cloud solution, look for a provider that offers: 

1. A strong partnership with a leading network services provider to ensure continual access to next-generation technologies and best-in-class services.

2. A comprehensive management platform, offering visibility into the IT infrastructure, cloud, and network via a single pane of glass.

3. Network integration of leading business apps (e.g., Oracle, SAP, Microsoft Dynamics, ServiceNow, Workday) to ensure optimal end-to-end performance for your most critical workloads.

4. Familiarity with important use cases, enabling the provider to design optimal IT and network architectures for your enterprise scenarios (for example, remote workers/branch, IoT/edge, mobile users).

5. Security expertise to ensure end-to-end protection of your data and applications.

6. Technology-agnostic solutions, integrating with a range of customer premises equipment and access technologies.
THE LAST WORD

Corporate networks are under stress. It is time for a new, network-centric way of thinking about how apps are deployed and accessed across your entire enterprise technology stack. To support agility and maximize business value, organizations must implement a next-generation network, one that relies on automation, orchestration, and APIs to quickly and easily deliver apps as needed to users.

But designing, implementing, and maintaining the optimal network-enabled hybrid environment can be a challenge, requiring expertise and insight beyond the current capabilities of most organizations. As such, many businesses are turning to expert IT services providers whose deep relationships with leading network providers enable them to deliver an optimal experience.

As you modernize your IT environment for the digital future, be sure to start building a next-generation network. Your business success depends on it.
NEXT STEPS

- Schedule a meeting with our global team to experience our thought leadership and to integrate your ideas, opportunities and challenges into the discussion.

- Interested in learning more about the topics covered in this white paper? Call us at 877.GoFrost and reference the paper you’re interested in. We’ll have an analyst get in touch with you.

- Visit our Digital Transformation web page.

- Attend one of our Growth Innovation & Leadership (GIL) events to unearth hidden growth opportunities.

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