The Business Value of Lumen SD-WAN

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Executive Summary

Organizations across the globe are increasingly focusing on the power of connectivity in driving their digital transformation efforts. As they do so, modern, secure, and scalable networking solutions are becoming invaluable for enabling secure, high-quality connectivity experiences for a range of users, devices, and applications. One of the key technologies that accelerate organizations' digital and network transformation goals is software-defined wide area networking (SD-WAN). Organizations are continuing to realize significant benefits from working with a managed service provider partner, which can help accelerate the time to value for SD-WAN solutions.

Lumen SD-WAN provides centralized, streamlined cloud management for security, networking, and application control to help reduce operational costs and improve resource usage for multisite deployments. Through a series of in-depth interviews, IDC conducted research that explored the value and benefits for organizations using Lumen SD-WAN to reduce the complexity of network transformation while increasing agility and operational resiliency.

Based on this data and using a specialized Business Value methodology, IDC calculates that these customers will achieve benefits worth an annual average of $9.7 million and a 174% three-year ROI by:

- Cost-effectively improving the overall effectiveness of network security and management operations by boosting staff productivity

- Minimizing the impacts of security threats and disruptions that can potentially affect the productivity of end users and customers

- Improving application development, application performance for end users, and the timely delivery of applications

- Increasing business revenue and results through better performance and these combined benefits

This IDC research outlines the key capabilities of Lumen SD-WAN and provides detailed analysis of the business value of the Lumen SD-WAN portfolio.

Business Value Highlights

Click the highlights below to navigate to content within this document.

174%
three-year ROI

14.1-month
payback period

$9.7 million
average annual benefit

37%
more efficient network management

47%
less time required to deploy branch or remote offices

$3.2 million
saved in network cost avoidances

49%
more efficient network security operations teams

36%
fewer impactful network security events annually

Situation Overview

Organizations across the globe are operating in the era of the hyper-distributed enterprise. The hyper-distributed enterprise, defined as organizations supporting distributed users accessing distributed applications, is causing significant transformations of network and security architectures.

The era of the hyper-distributed enterprise has been more than a decade in the making, with organizations steadily increasing their reliance on hosted and cloud-based applications for business-critical workloads across IaaS and SaaS platforms. Meanwhile, since the global COVID-19 pandemic, the users and devices accessing these distributed applications have become distributed themselves. Hence organizations must support secure, high-quality connectivity from distributed users, devices, sites, and locations to distributed applications that can be hosted in multiple cloud-based platforms. SD-WAN is a key technology for helping ensure secure, high-quality connectivity in the era of the hyper-distributed enterprise.

Key motivations for enterprises in building out a connectivity strategy include business agility, improved networking economics, better security, and the ability to modernize legacy processes. These driving forces are well aligned with a technology agenda representing the convergence of software-defined networking, security services, and edge computing.

Fundamentally, SD-WAN infrastructure helps enterprises improve their branch and remote user connectivity by providing cost savings compared with traditional WAN architectures. SD-WAN infrastructure helps organizations optimize their WAN connectivity and ensure access to cloud platforms while enforcing robust security policies. SD-WAN is a compelling technology for any organization looking to improve WAN reliability and cost, optimize network performance, and enhance user experiences for applications accessed via the WAN.

A key driver for SD-WAN continues to be the significant advantages the technology enables. These include centralized, policy-based management of hybrid WAN connections; dynamic path selection of application traffic between enterprise datacenters, clouds, and other branch offices; and increased levels of programmability, security, visibility, and analytics of all WAN traffic independent of the types of transport links used.

Business Value Highlights (continued)

Click the highlights below to navigate to content within this document.

⬇ **22%** fewer instances of performance degradation

⬇ **20%** lower application latency

⬇ **16%** less time required to deploy applications or features

⬆ **11%** greater developer productivity

SD-WAN vendors continue to add features in the areas of security, visibility, analytics, optimized cloud and multicloud access, automation, and enhanced routing functionality. Vendors are also continuing to build stronger integrations between their SD-WAN technology and networking platforms in the datacenter and enterprise campus and are extending SD-WAN to mobile users, IoT, and work-from-home scenarios.

Meanwhile, organizations get increased value from working with a trusted partner as part of a managed SD-WAN offering. Increasingly, these managed SD-WAN offerings are evolving toward an integrated networking and security architectural framework commonly referred to as secure access service edge (SASE). SASE builds on the most offered managed SD-WAN use case, which combines networking with an advanced firewall and a secure cloud access. SASE integrates a more comprehensive set of security services, including zero trust or zero trust network access, cloud access security broker, and secure web gateway).

Finally, many organizations are increasingly interested in more cloudlike consumption models for network and security managed services. These services are broadly being offered under the umbrella of network as a service (NaaS), which can enable increased cost stability, faster access to new features, and improved time to value for managed SD-WAN and SASE deployments.

The era of the hyper-distributed enterprise — where workers can be anywhere and applications are everywhere — is causing organizations across the globe to rethink their network and security strategies. Managed SD-WAN technology is a key technology for helping transform edge networking by enabling simplified operations, enhanced security, and optimized end-user experiences.

Lumen SD-WAN Overview

Lumen has a long history of offering managed SD-WAN services and has transformed its managed SD-WAN service to include SASE and NaaS. Lumen's managed SD-WAN and SASE offerings help enterprises transform from current IPVPN technologies to more modern software-defined architecture with integrated security services. Lumen works with partners such as VMware, Fortinet, Cisco (Catalyst and Meraki), and Versa among many other SD-WAN and SASE vendors.

Lumen's SASE portfolio includes:

- Software-defined wide area networking
- Next-generation firewall
- Secure web gateway
- Remote access/zero trust network access

- Cloud access security broker
- Firewall as a service
- Data loss prevention

Lumen's installed base is diverse, comprising large enterprises, the midmarket, and SMBs. Lumen provides SASE services for the retail, manufacturing, financial, healthcare, and public (federal, state, and local government) sectors. Lumen's strategy and approach to the service wrapper (self managed and pro managed) for SD-WAN solutions extend to a multitude of vendors. Lumen's operations team leverages a global footprint, with centers spread across the globe, to provide managed network services and will continue to expand global coverage.

Lumen's SASE services have transformed the design, quote, order, and deploy experience into a customer-facing digital engagement. In addition, a seller-led alternative is always offered based on customer need. The new deployment method includes zero-touch turnup, preconfigured templates and software-based upgrades, and the ability to add/change/remove services directly through the digital experience. For enterprise customers ordering products through Lumen's digital channel portals, Lumen's virtual assistant provides a single interactive experience across all customer engagement touch points. Targeted capabilities will drive insights to forecast order life-cycle health, proactively engage and inform customers, and initiate automation orchestration designed to ensure on-time delivery of services. Lumen's Rapid Threat Detection feature proactively defends SASE customers against unique and emerging threats by employing threat evaluation and scoring from Black Lotus Labs' intelligence to automatically block threats before they reach the customer's environment.

The Business Value of Lumen SD-WAN

Study Firmographics

IDC conducted research that explores the value and benefits for organizations using Lumen SD-WAN to reduce the complexity of network transformation while increasing agility and operational resiliency.

The project included interviews with eight organizations that use Lumen SD-WAN and had experience with and/or knowledge about the benefits and costs of using it. During the interviews, companies were asked a variety of quantitative and qualitative questions about the offering's impact on their network operations, core businesses, and costs.

Table 1 presents study demographics. The organizations that IDC interviewed had an average base of 63,200 employees and total average annual revenue of $10.8 billion. All companies were based in the United States. On average, these companies had IT teams of an average size of 3,423 engaged in supporting 45,263 employees. From a vertical standpoint, IDC's survey included organizations from the telecommunications, healthcare, financial services, hospitality, insurance, and construction sectors.

TABLE 1

Firmographics of Interviewed Organizations

	Average	Median	Range
Number of employees	63,200	5,000	700–270,000
Number of IT staff	3,423	88	15–26,200
Number of total employees using information systems for job	45,263	1,850	500–135,000
Number of external customers	374,906	30,000	250–1.6M
Number of total business applications	197	65	8–700
Total organizational revenue	$10.8B	$1.5B	$185.0M–$60.0B
Countries	United States (8)		
Industries	Telecommunications (2), healthcare (2), financial services, hospitality, insurance, and construction		

n = 8; Source: IDC Business Value In-Depth Interviews, September 2023

Choice and Use of Lumen SD-WAN

The organizations that IDC interviewed described the decision criteria for their selection of Lumen SD-WAN. Prior to their deployment of Lumen SD-WAN, interviewed organizations lacked an agile network that IT could scale up efficiently with the demand of their business.

In selecting Lumen SD-WAN, interviewees were focused on organizational growth that could be accomplished by transforming their cumbersome networks to be agile, resilient, and deployed at multiple sites and regions. It is important to note that in these organizations, IT departments were not growing with the same speed as the organization.

For this reason, in deploying Lumen SD-WAN, it was incredibly important that network management was simplistic and centralized. Study participants elaborated on their selection criteria:

Need for IT support to scale (construction organization):
"In 2017, we were an $800 million company; today, we're a $3 billion company, and we were just acquired. As we got larger, with more sites and projects, we needed more IT support. We needed the ability to scale as projects came and went, and Lumen SD-WAN was the best one we found."

Creation of simple and agile network (healthcare organization):
"My organization has a framework for how we're going to evolve and transform ourselves over the years. The IT transformation framework is very important as it relates to our networks and the congregation of the foundation that we have. It's important for us to evolve in this space and to create a simpler and more agile environment."

Simplification of network platforms (healthcare organization):
"My organization has multiple locations and platforms and wanted to create more efficiency. Our research team identified the Lumen SD-WAN platform. We wanted to enhance our connection with multiple locations in multiple states in our region. We wanted to improve what we had in place."

Centralized network management capabilities (telecommunications organization):
"My organization needs secured connectivity from a central cloud to several locations where we run our software, VMs, and appliances. We need not only security but seamless management through centralized control policies. Lumen is one of the key players in the industry providing a cost-effective solution."

Zero trust network (financial services organization):
"My organization has offices around the United States and Canada, and we had people on different versions of interconnectivity, which was creating kind of a lumpy fabric. We made a decision to nationalize and standardize all of the technologies in the branch offices. We went to Lumen SD-WAN because we wanted to introduce a zero trust network and they had strong customer service."

Table 2 (next page) provides a quantitative view on the organizational usage of Lumen SD-WAN across all companies at the time of interviews. Note that there was a substantial footprint across all companies, with an average of 13 regions and 1,308 sites being

supported by Lumen SD-WAN. In addition, Lumen SD-WAN was supporting 172 business applications, is affecting about 19,275 internal users and 77% of revenue. Additional metrics are presented.

TABLE 2

Organizational Usage of Lumen SD-WAN

	Average	Median
Number of regions connected to the Lumen SD-WAN	13	3
Number of total sites within the organization	1,308	43
Number of internal users supported	19,275	2,500
Number of business applications	172	65
Percentage of infrastructure in IaaS public clouds	61%	68%
Percentage of revenue supported by Lumen SD-WAN	77%	76%

n = 8; Source: IDC Business Value In-Depth Interviews, September 2023

Business Value and Quantified Benefits

IDC's Business Value research evaluates and quantifies the benefits for companies in adopting Lumen SD-WAN as a cost-effective way to boost the overall effectiveness of network security and network management operations by improving staff productivity and utilizing platform automation. After adoption, interviewed companies were able to enhance network performance and minimize the impacts of security threats and disruptions for end users and customers. In addition, they improved the application development process, application performance for end users and customers, and application delivery. All of these benefits combined to increase business revenue and improve results through better network performance and end-user productivity, including both internal teams and customers.

Study participants offered the following comments about Lumen SD-WAN's most significant benefits:

Centralized network management (telecommunications organization):
"The most significant benefits that we achieved with Lumen SD-WAN is centralized management that has given us the ability to optimize application performance and to prioritize mission-critical applications. We have also gained better visibility and ability to proactively identify issues. We are also able to very quickly adapt to how the network conditions change."

Robust security and lower costs (healthcare organization):
"Lumen SD-WAN has helped us achieve less downtime, higher efficiency, and lower total cost in the long run. It has given us greater throughput, stronger security, and better threat detection management."

One consolidated platform (healthcare organization):
"Lumen SD-WAN has integrated all the different networks and connectivity with all the IT networks we have in place. We were able to consolidate into one platform, where once we had several. It's a major benefit to us."

Operational simplicity (telecommunications organization):
"Lumen SD-WAN has helped us achieve operational simplicity. We don't have to worry about optimizing individual applications or underlying traffic — these are all taken care of through Lumen SD-WAN configuration."

Figure 1 (next page) presents IDC's calculations of cumulative customer benefits after adoption of Lumen SD-WAN. Average annual benefits were quantified at $9.7 million per organization (or $503,000 per 1,000 internal users).

This calculation is based on five major evaluation areas as shown:

- **Development benefits:**
  Developers had the network they needed to develop and deploy new applications and features. These benefits are worth about $3,009,048 per organization ($156,111 per 1,000 internal users).

- **IT cost avoidances:**
  IT organizations reported that they were able to reduce their network infrastructure–related costs by deploying Lumen SD-WAN. These cost savings are worth about $2,551,553 per organization ($132,376 per 1,000 internal users).

- **Network security and performance benefits:**
  Lumen SD-WAN gave organizations a more secure network and improved performance. Both of these combined contributed to reduced downtime issues for end users. These benefits are worth about $1,812,762 per organization ($94,047 per 1,000 internal users).

- **IT networking staff benefits:**
  IT teams were more efficient in how they manage their networks, even as their organizations grew in size and complexity. These benefits are worth about $1,171,044 per organization ($60,755 per 1,000 internal users).

- **Business enablement benefits:**
  Organizations can be more agile to business needs while seeing increased end-user productivity. These benefits are worth about $1,151,379 per organization ($59,734 per 1,000 internal users).

FIGURE 1

Average Annual Benefits Per Organization

($ per year per organization)
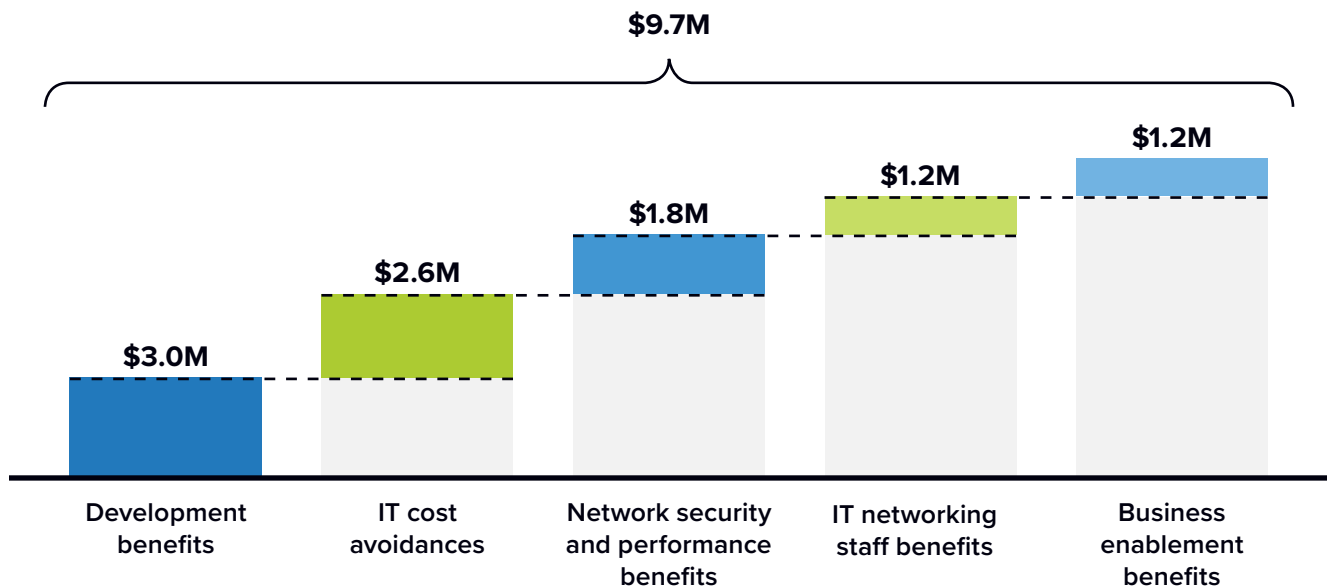
n = 8; Source: IDC Business Value In-Depth Interviews, September 2023

For an accessible version of the data in this figure, see Figure 1 Supplemental Data in Appendix 2.

Network Cost Avoidance Benefits

Interviewed organizations emphasized that Lumen SD-WAN significantly decreased network costs by enabling better management of bandwidth, network spikes, and software expenditures. As one study participant working in financial services noted: *"Lumen SD-WAN is about 25% less than our prior solution. From time to time, our business makes acquisitions. With SD-WAN, it allows us to provision the circuit and start configuring them. We do have to wait for Lumen to eventually provide them, but you can do everything else yourself. It just*

shortens that time frame, and it allows technology to appear more responsive to business needs. It just provides so much more flexibility." IDC calculated total annual IT-related network cost avoidance benefits at $3,174,286 (see **Table 3**, next page).

TABLE 3

IT Cost Avoidances

	Annual
IT-related network cost avoidance	$3.2M

Note: Network cost avoidance includes bandwidth, network spikes, and hardware/software costs.

n = 8; Source: IDC Business Value In-Depth Interviews, September 2023

IT Network Administration and Management Benefits

Lumen SD-WAN is designed to help customers meet connectivity challenges by providing a platform that helps them secure and automate workloads to scale intelligently and minimize the complexity and risks of network transformation. The platform secures and coordinates workloads across the full range of connectivity types with centralized visibility and control.

Study participants discussed various operational benefits of their Lumen SD-WAN deployments. They appreciated how the platform conferred more speed and control for their network operations while making it easier to provision connectivity. Also called out was the platform's automation benefits and ways that the platform made the process of branch and remote office site deployment easier.

Study participants elaborated on the following benefits:

Faster, complete network (financial services organization):
"Lumen SD-WAN is faster; we have a more complete network, and we have more control over the network. It's much easier for us to provision circuits because we have control over the SD-WAN. With the SD-WAN from Lumen, we do all the configurations. That helps the staff build experience, but it also helps us manage our environment more closely."

Usage of automation (telecommunications organization):
"Lumen SD-WAN has enabled our IT network team to be more effective because we built in a lot of automation. It's a lot easier than our previous solution; newer, less skilled staff are trained on it."

Easier site deployment (construction organization):

"The most significant benefit of Lumen SD-WAN is the ease of site deployment. It used to take us at least two weeks to set up a new site, and now, we can do it in two days."

Single-pane-of-glass consolidation (hospitality organization):

"Lumen SD-WAN has helped us gain consolidated reporting and understanding of the infrastructure being used. Consolidation really is the most significant benefit."

To provide a full and accurate picture of post-adoption experiences with Lumen SD-WAN, IDC evaluated a variety of impacts, beginning with overall network management efficiency. Interviewed organizations reported that Lumen SD-WAN provided network consolidation, workflow simplification, robust automation, and the ability to roll out new branch and remote office sites with speed and agility. **Table 4** quantifies these benefits. As shown, network management teams needed 12.0 fewer FTEs to manage their network environment than their previous solutions. This enabled interviewed organizations to refocus these individuals to innovate on more complex projects. In addition, they also avoided hiring 2.6 additional FTEs with Lumen SD-WAN. In total, this amounted to an annualized efficiency gain of 37%, which was valued at $1.5 million.

TABLE 4

IT Network Administration/Management Efficiency Gain

	Before/ Without Lumen SD-WAN	With Lumen SD-WAN	Difference	Benefit
FTE count	37.1	25.2	12.0	32%
Hiring avoidance	2.6	n/a	n/a	n/a
Total FTE count	39.7	25.2	14.6	37%
Value of staff time per year	$4.0M	$2.5M	$1.5M	37%

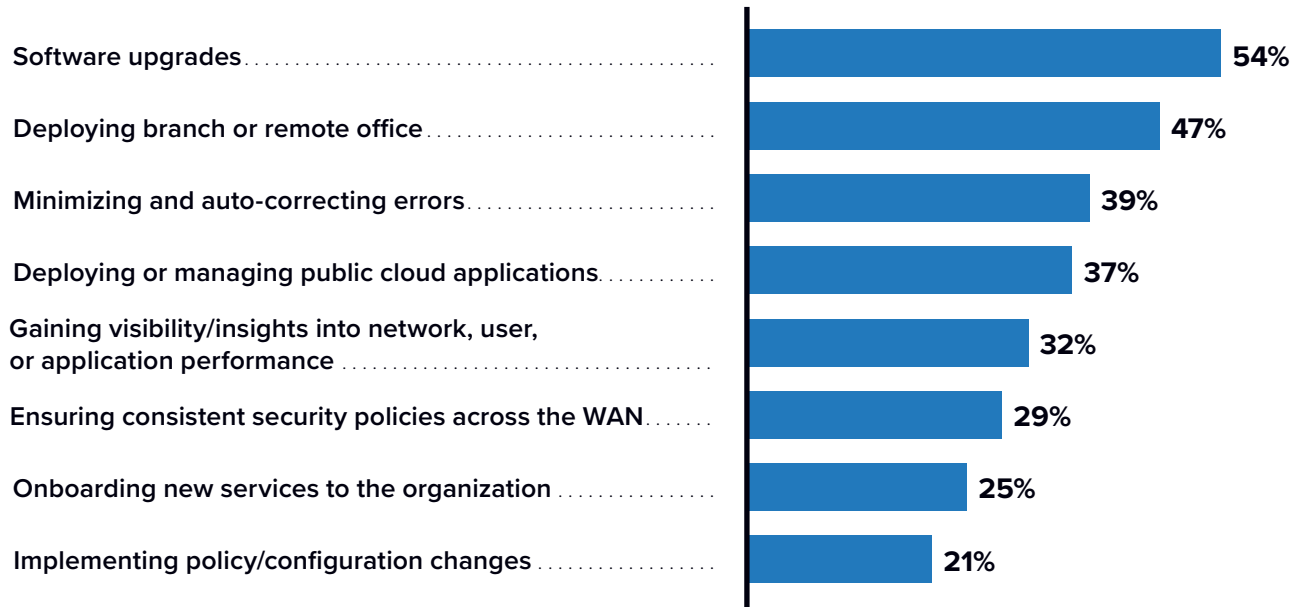n = 8; Source: IDC Business Value In-Depth Interviews, September 2023

Further illustrating network efficiency, interviewed companies reported significant impacts of Lumen SD-WAN on their overall network agility. As reported in **Figure 2** (next page), the greatest improvements in agility were seen in software upgrades (54%), deploying branch or remote offices (47%), and minimizing and autocorrecting errors (39%).

FIGURE 2

Impact of Lumen SD-WAN on Network Agility

(% improvement)

Software upgrades	54%
Deploying branch or remote office	47%
Minimizing and auto-correcting errors	39%
Deploying or managing public cloud applications	37%
Gaining visibility/insights into network, user, or application performance	32%
Ensuring consistent security policies across the WAN	29%
Onboarding new services to the organization	25%
Implementing policy/configuration changes	21%

n = 8; Source: IDC Business Value In-Depth Interviews, September 2023

Network Security and Performance Benefits

In their conversations with IDC, study participants pointed out specific Lumen SD-WAN benefits associated with their network security and performance. Participants were quick to state that a large benefit of Lumen SD-WAN was the consolidated view of their network operations. As networks grew larger and more disparate, having a single, centralized source to view performance data enabled them to pinpoint latency issues and security risk with greater ease. As a result, costly issues were avoided with greater frequency. Interviewed participants also stated that risk was further reduced because they benefited from enhanced built-in network security functionality, such as encryption and firewall.

Participants explained these benefits in greater detail:

Better security posture (insurance organization):
"Latency has gone down, and security has improved. Lumen SD-WAN helps my organization feel like we're protected from an IT and a security perspective."

Enhanced security features (telecommunications organization):
"With Lumen, we can get enhanced security features like encryption or firewall capabilities. It has also helped us improve communication between our enterprise and the cloud. We are integrating these features on the security side because we have so many security products in the enterprise. Based on data and machine learning, they seem to be integrating well."

Robust analytics and reporting (hospitality organization):
"The analytics and the reporting provided by Lumen SD-WAN help my organization isolate problems quicker, be more efficient, and be nimbler. We can avoid costly issues. It helps us pinpoint issues much faster."

Consolidated view of full operational metrics (telecommunications organization):
"The central control plane software provided by Lumen SD-WAN has well-set-up analytics showing the full operational metrics, including those related to security. It does help for our operations team to keep an eye on that and ensure that there is no abnormal behavior."

Keeping in mind the benefits stated previously, **Table 5** illustrates the efficiency that network security operations have achieved resulting from the deployment of Lumen SD-WAN. This team needed 6.6 fewer FTEs to securely manage their network environment than their previous solution. This enabled them to shift highly skilled individuals to focus on other risk-related projects within the organization. In addition, they avoided hiring 3.6 additional FTEs with Lumen SD-WAN. In total, this amounted to an efficiency gain of 49%, which IDC valued at just over $1 million annually.

TABLE 5

Network Security Operations Efficiency Gain

	Before/ Without Lumen SD-WAN	With Lumen SD-WAN	Difference	Benefit
FTE count	17.0	10.5	6.6	39%
Hiring avoidance	3.6	n/a	n/a	n/a
Total FTE count	20.6	10.5	10.1	49%
Value of staff time per year	$2.1M	$1.0M	$1.0M	49%

n = 8; Source: IDC Business Value In-Depth Interviews, September 2023

Interviewed organizations noted that Lumen SD-WAN helped improve network security by providing deeper network visibility and detailed data, thereby supporting a more proactive approach to network security and potential threats. This notable change in network security management approach resulted in 36% fewer impactful security events per year (see **Table 6**). With the average impactful event costing interviewed organizations $400,000, IDC calculated that interviewed organizations achieved an average annual impactful event cost avoidance of over $1.2 million.

TABLE 6

Impactful Network Security Event Frequency — Annual Cost Avoidance

	Before/ Without Lumen SD-WAN	With Lumen SD-WAN	Difference	Benefit
Number of impactful events per year	8.7	5.6	3.1	36%
Average cost per event	$400,000	$400,000		
Annual cost avoidance	$3.5M	$2.2M	$1.2M	36%

n = 8; Source: IDC Business Value In-Depth Interviews, September 2023

IDC then examined overall network performance impacts by identifying and measuring key performance indicators typical of network operations. Lumen SD-WAN provided robust performance data and greater network visibility, enabling interviewed organizations to proactively manage the performance of their network.

As a result, interviewed organizations recognized the following network performance–related benefits:

- 22% fewer instances of performance degradation

- 20% lower application latency

- 13% higher network availability

- 8% higher network utilization

Developer Impact Benefits

IDC noted that Lumen's benefits also extended to application development. Interviewed organizations stated that with less latency, greater visibility, and increased ability to collaborate, Lumen SD-WAN enabled their application developers to deploy applications and features 16% quicker. As one study participant working in the telecommunications sector noted: *"Lumen SD-WAN helped our developers collaborate to run application development and testing faster."*

Table 7 shows the full set of calculated benefits. After adoption, interviewed companies saw an 11% productivity boost in developers. To put it differently, these teams of 332.8 developers can now work with the equivalent productivity level of 37.4 additional FTEs. This resulted in an annual productivity-based business value of $3,743,438 for each organization.

TABLE 7

Developer Productivity Gain

	Before/ Without Lumen SD-WAN	With Lumen SD-WAN	Difference	Benefit
Equivalent productivity level, FTEs	332.8	370.2	37.4	11%
Value of staff time per year	$33.3M	$37.0M	$3.7M	11%

n = 8; Source: IDC Business Value In-Depth Interviews, September 2023

Business Enablement Benefits

Last, IDC found that these improvements had measurable impacts on the business results of interviewed organizations. This was because Lumen SD-WAN served as a cost-effective way to boost the overall effectiveness of network security and management operations through the array of benefits cited previously.

Interviewed companies realized higher revenue by better addressing business opportunities by improving business agility and enabling improved line-of-business (LOB) user productivity gains through improved network performance:

Increased effectiveness in supporting customers (healthcare organization):
"Lumen SD-WAN is a central hub for clients' data and gives us a reporting opportunity to run different analytics. We're a health system, so having patient information all in one secure location and the speed with which we're able to assess that information is a big benefit. We have one major location and 15 satellites, so at any of those locations, the speed and access to information is seamless. That's a huge benefit for us."

Improved staff productivity (telecommunications organization):
"Lumen SD-WAN has provided my organization with secure, reliable connectivity between all our locations and underlying applications. As a result, employee productivity has significantly improved."

Less downtime while increasing revenue (insurance organization):
"Lumen SD-WAN has enabled my organization to operate day to day without downtime. Our business has continued to increase, meaning we're generating more revenue year over year. The point of Lumen is to keep the bad guys from hurting us so that we can keep selling insurance!"

Quick site setup (construction organization):
"With Lumen SD-WAN, my organization can get a site up quickly and it costs less! This benefits us in that folks no longer have to try to do stuff on cell phones, laptops, hotspots, and so forth."

The much-improved network performance provided by Lumen SD-WAN helped organizations better support customer needs and requirements. This was the cumulative result of having better-performing applications, centralized data, quicker builds for remote and branch office sites, and improved services.

IDC quantified these revenue gains (see **Table 8**, next page). On a per organization basis, IDC's calculations for financial gains from better addressing business opportunities amounted to $8,017,500 in total additional annual revenue for each organization. In addition, IDC's financial model applies a 15% operating margin assumption, resulting in net revenue gains of an average of $1,202,625 per interviewed organization.

TABLE 8

Business Enablement — Higher Revenue

	Lumen SD-WAN Impact	Per 1,000 Supported Internal Users
Total additional gross revenue per year	$8.0M	$415,953
Assumed operating margin	15%	15%
Total additional net revenue, IDC model	$1.2M	$62,393

n = 8; Source: IDC Business Value In-Depth Interviews, September 2023

Drilling down further, study participants reported that their network end users could be more productive through business-critical applications that, after adoption, were able to perform with greater speed, agility, and reliability. This improvement included internal users in finance, operations, customer service, and other key business areas.

Table 9 provides metrics for business enablement in terms of end-user productivity. After adoption, interviewed companies saw a 1.4% adjusted productivity boost, which means 228 LOB FTEs could now work at the same productivity level of 232 FTEs, which essentially means adding the productivity of an additional 3.3 FTEs without having to actually hire them. This resulted in an annual productivity-based business value of $229,760 for each organization.

TABLE 9

Business Enablement — End-User Productivity Gain

	Before/ Without Lumen SD-WAN	With Lumen SD-WAN	Difference	Benefit
Equivalent productivity level, FTEs per organization	228.0	250.0	21.9	10.00%
Equivalent net productivity level, FTEs per organization	228.0	232.0	3.3	1.40%
Calculated value of productivity	$16.0M	$16.2M	$229,760	1.40%

n = 8; Source: IDC Business Value In-Depth Interviews, September 2023

ROI Summary

Summing up Business Value benefits, Table 10 presents IDC's ROI analysis for study participants' use of Lumen SD-WAN. As shown, IDC projects that these companies will achieve three-year discounted benefits worth an average of $22,632,800 per organization ($1,174,205 for 1,000 supported internal users) through better network security, related staff efficiencies, and improved business performance. These benefits compare with total three-year discounted investment costs of $8,256,800 per organization ($428,368 for 1,000 supported internal users). These levels of benefits and investment costs are projected to result in an average three-year ROI of 174% and a break-even point in their investment occurring in 14 months.

TABLE 10

Three-Year ROI Analysis

	Per Organization	Per 1,000 Supported Internal Users
Discounted benefits	$22.6M	$1.2M
Discounted investment	$8.2M	$428,368
Net present value	$14.4M	$745,837
ROI	174%	174%
Payback	14.1 months	14.1 months
Discount factor	12%	12%

n = 8; Source: IDC Business Value In-Depth Interviews, September 2023

Challenges/Opportunities

As organizations embark on digital and network transformation journeys, they will face
a variety of challenges and opportunities.

Challenges

Ensure correlation of technology investments to overall business goals.
For many IT and network investments, technology is the easy part. The hard part is ensuring
that investment will accelerate your organization's broader business goals. Focus on what
these goals are, and then consider what technology — and networking — investments are
needed to accelerate achievement of these goals. Doing so will ensure IT and its strategic
partners are an enabler of — rather than a roadblock to — digital transformation initiatives.

Limit complexity.
In the era of the hyper-distributed enterprise, complexity reigns. Managed SD-WAN and
SASE are an opportunity to simplify operations while improving performance and creating
cost efficiencies. Look for ways to limit the complexity of the deployment though, or else,
tool sprawl, vendor hype and implementation, and ongoing management challenges will
undoubtedly creep in.

Balance current capabilities with future road maps.
The current capabilities of managed SD-WAN are powerful today. Vendors, including Lumen,
have a strong and compelling road map for future innovations too. It's important for end
users to balance the current capabilities that are most important to their organization
rather than getting hung up on future capabilities. Focusing on current capabilities will
ensure that projects provide value to your organization today.

Opportunities

Consider the security capabilities of any solution.
In today's age, network and security have never been more closely linked. Networking
providers and practitioners inherently need to also be security defenders. Intrinsic to this is
exploring any natively available security capabilities of network and/or connectivity solutions
as well as evaluating integrations with third-party security tools.

Focus on optimizations that improve both cost and performance.
Tools like SD-WAN have a unique ability to reduce operating costs while improving network
and application performance. Ensuring these benefits requires a carefully designed and
executed solution.

Work with strategic, trusted partners.
To the previous point about complexity, one way to tame complexity is to find and nurture relationships with strategic, trusted technology partners. Managed SD-WAN communication service providers are in a unique position to provide a range of connectivity, network infrastructure, and security tools in an integrated offering and to be a reliable and trusted partner for organizational digital initiatives.

Conclusion

This paper makes the case that organizations using Lumen SD-WAN will accrue significant and material benefits that reduce the complexity of network transformation while increasing agility and operational resiliency.

The conducted interviews, conducted by IDC, conclude that these customers will achieve benefits worth an annual average of $9.7 million and a 174% three-year ROI by

- Cost-effectively improving the overall effectiveness of network security and management operations by boosting staff productivity

- Minimizing the impacts of security threats and disruptions that can potentially affect the productivity of end users and customers

- Improving application development and, application performance for end users and the timely delivery of applications

Appendix 1: Methodology

IDC's standard ROI methodology was utilized for this project (see **Table 11**, next page). This methodology is based on gathering data from current users of Lumen SD-WAN as the foundation for the model.

Based on interviews with organizations using Lumen SD-WAN, IDC performed a three-step process to calculate the ROI and payback period:

1. **Gathered quantitative benefit information during the interviews using a before-and-after assessment of the impact of Lumen SD-WAN.** In this study, the benefits included IT cost reductions and avoidances, staff time savings and productivity benefits, and revenue gains.

2. **Created a complete investment (three-year total cost analysis) profile based on the interviews.** Investments go beyond the initial and annual costs of using Lumen SD-WAN and can include additional costs related to migrations, planning, consulting, and staff or user training.

3. **Calculated the ROI and payback period.** IDC conducted a depreciated cash flow analysis of the benefits and investments for the organizations' use of Lumen SD-WAN over a three-year period. ROI is the ratio of the net present value and the discounted investment. The payback period is the point at which cumulative benefits equal the initial investment.

IDC bases the payback period and ROI calculations on a number of assumptions, which are summarized as follows:

- Time values are multiplied by burdened salary (salary + 28% for benefits and overhead) to quantify efficiency and productivity savings. For the purposes of this analysis, IDC has used assumptions of an average fully loaded salary of $100,000 per year for IT staff members and an average fully loaded salary of $70,000 per year for non-IT staff members. IDC assumes that employees work 1,880 hours per year (47 weeks x 40 hours).

- The net present value of the three-year savings is calculated by subtracting the amount that would have been realized by investing the original sum in an instrument yielding a 12% return to allow for the missed opportunity cost. This accounts for both the assumed cost of money and the assumed rate of return.

- Further, because Lumen SD-WAN requires a deployment period, the full benefits of the solution are not available during deployment. To capture this reality, IDC prorates the benefits on a monthly basis and then subtracts the deployment time from the first-year savings.

Note: All numbers in this document may not be exact due to rounding.

TABLE 11

Specific Calculations — Benefits from Use of Lumen SD-WAN

Category of Value	Average Quantitative Benefit	15% Margin Applied	Calculated Average Annual Value*
Network cost avoidance (i.e., bandwidth, network spikes, and hardware/software costs)	$3.17M annual network cost avoidance	No	$2.6M
IT network administration/ management efficiency gain	37% more efficient worth 14.6 FTEs — $100,000 salary	No	$1.2M
Network security operations efficiency gain	49% more efficient worth 10.1 FTEs — $100,000 salary	No	$812,874
Impactful network security event frequency — annual cost avoidance	$1.2M annual impactful security event cost avoidance	No	$999,888
Developer productivity gain	11% higher productivity worth 37.4 FTEs — $100,000 salary	No	$3.0M
Business enablement — higher revenue	$8.0M annual higher revenue recognized	Yes	$966,693
Business enablement — end-user productivity gains	10% higher productivity worth 21.9 FTEs — $70,000 salary	Yes	$184,686

* Includes 7 months deployment time in year 1

n = 8; Source: IDC Business Value In-Depth Interviews, September 2023

Appendix 2: Supplemental Data

This appendix provides an accessible version of the data for the complex figure in this document. Click "Return to original figure" below the table to get back to the original data figure.

FIGURE 1 SUPPLEMENTAL DATA

Average Annual Benefits Per Organization

	Amount
Development benefits	$3.0M
IT cost avoidances	$2.6M
Network security and performance benefits	$1.8M
IT networking staff benefits	$1.2M
Business enablement benefits	$1.2M
Total	**$9.7M**

n = 8; Source: IDC Business Value In-Depth Interviews, September 2023

Return to original figure

About the IDC Analysts

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Megan Szurley is a senior research analyst for the Business Value Strategy Practice, responsible for creating custom business value research that determines the ROI and cost savings for enterprise technology products. Megan's research focuses on the financial and operational impact of these products for organizations once deployed and in production. Prior to joining the Business Value Strategy Practice, Megan was a consulting manager within IDC's Custom Solutions division, delivering consultative support across every stage of the business life cycle: business planning and budgeting, sales and marketing, and performance measurement. In her position, Megan partners with IDC analyst teams to support deliverables that focus on thought leadership, business value, custom analytics, buyer behavior, and content marketing. These customized deliverables are often derived from primary research and yield content marketing, market models, and customer insights.

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Brandon Butler is a research manager with IDC's Network Infrastructure group, covering enterprise networks. His research focuses on market and technology trends, forecasts, and competitive analysis in enterprise campus and branch networks. His coverage includes technologies used in local and wide area networking such as Ethernet switching, routing/ SD-WAN, wireless LAN, and enterprise network management platforms. While contributing to ongoing forecast and market share updates, he also assists in end-user surveys, interviews, and advisory services and contributes to custom projects for IDC's Consulting and Go-To-Market Services practices.

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