Empowering Transformation and Growth

Top Tech Trends Shaping the Future of Midsize Businesses





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Executive summary

Technology and the world have transformed radically in just a few short years. Thanks to a global pandemic that disrupted virtually every business in every industry, organizations have learned they can never stop experimenting with new ways to serve customers, fulfill unmet market needs and improve productivity.

Midsize businesses face unique challenges when implementing and leveraging technology to stay competitive and drive growth. With limited resources and a need to balance operational efficiency with innovation, it is crucial for these organizations to understand the current technology trends shaping the business landscape.

To shed light on these trends, we surveyed IT decision-makers (ITDMs) representing a diverse range of midsize companies in various industries across North America, Europe, Asia Pacific and Latin America. This report highlights the most disruptive technological shifts impacting these organizations and provides insights into how they can navigate and harness these trends to their advantage.

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What we learned

Midsize businesses are embracing digital transformation initiatives to streamline their operations, improve customer engagement strategies and drive sustainable growth. Like large enterprises, they are racing to take advantage of new opportunities to differentiate themselves and grow revenue made possible by artificial intelligence (AI), machine learning (ML), virtual and augmented reality (VR/AR) and the Internet of Things (IoT).

To accommodate evolving technology environments and adapt seamlessly to future disruptions, the IT leaders polled say their businesses require new, agile models. For example:

• 87% say application security is their top concern

Recognizing the ever-evolving threat landscape, midsize businesses are prioritizing investments in cybersecurity measures to safeguard sensitive data, maintain customer trust and help ensure uninterrupted business operations. At the same time, they need to secure access to applications and provide data connectivity at any time, from virtually anywhere, and with any app.

• 92% believe fiber is essential to connect to a distributed cloud network

The adoption of cloud computing continues to rise among midsize businesses as it offers greater flexibility, scalability and cost-effectiveness. Cloud-based services are now seen as essential for driving innovation and fostering growth. A lack of reliable, modern infrastructure can make it difficult (if not impossible) to keep remote employees productive, offer satisfying customer experiences and realize the full value of emerging technologies

 87% say today's app demands require something other than a centralized cloud model Companies require solutions that deliver networking, security and edge capabilities as an integrated, consumption-based experience—enabling businesses to create and grow revenue and adopt new technologies quickly and with confidence.

The midsize business decision-makers we surveyed almost unanimously agree that modern network infrastructure is necessary to drive their investment in next-gen apps and critical growth initiatives. But all-in-one providers must offer managed services and global network resources, along with simple, easily integrated solutions available through digital marketplaces.

Overall, our research underscores the importance of midsize businesses staying informed about these technology trends to remain competitive and seize new opportunities. By keeping pace with the ever-evolving technological landscape, midsize businesses can unlock significant growth potential and achieve long-term success.



Top technology trends

Over the past two years, the adoption of digital technologies and their strategic importance accelerated dramatically. Now businesses, and even entire industries, have an opportunity to reimagine and revitalize themselves by using cutting-edge tools to boost performance, shape new business models and drive growth.

So how can midmarket businesses make the most of these advancements? Three core trends emerged from our research, underscoring the tremendous impact of emerging technologies on midsize organizations around the world and the importance of investing in IT infrastructure designed to support them.

Trend 1: Securing and scaling key applications remains a challenge

Businesses thrive on their ability to differentiate themselves in the marketplace and connect to customers, partners, suppliers and stakeholders anywhere in the world faster than their competitors. As companies acquire information, create actionable insights and deliver improved products, services and experiences, managing the data and applications that make these advancements possible continues to be one of their biggest obstacles.

Nearly 9 in 10 (87%) midsize businesses cited application and data security as their number one IT concern (Figure 1).

This challenge is compounded by the fact that data volumes continue to grow exponentially. **More than half (57%)** of midsize businesses surveyed have seen data workloads double in the past two years; 33% have seen workloads quadruple or greater (Figure 2).

Many businesses have invested heavily in next-gen technologies and **80% of ITDMs** at midsize businesses say the nature of their applications is a key differentiator for their service and customer interactions. However, a substantial number are still not ready for emerging technology (Figure 3).

Meanwhile, ensuring the privacy and security of massive amounts of customer data generated by apps is top of mind for midmarket leaders. Application security is the top priority for their hosting environments, eclipsing application performance and availability in nearly every region surveyed.

The need to integrate infrastructure and applications while protecting customer data demands a new solution model that addresses networking and security holistically.



Behind the trend: Unified network access, security and management

Our world is increasingly made up of distributed enterprises with multiple branches and remote workers, powered by cloud-based applications and services that can be accessed from virtually anywhere, at any time. Most home or branch offices, retail stores and manufacturing sites lack the security and compliance required by modern organizations, necessitating a completely new approach to network architecture: the combination of networking and security into a single service controlled and managed in the cloud.

This convergence of technologies is known as SASE, short for Secure Access Service Edge. Comprised of five core networking and security technologies delivered as a service, the SASE framework is ultimately better suited to meet the challenges of modern enterprises than a patchwork of solutions. When all these components work together, they help deliver efficient application performance and secure access for any user from any device located virtually anywhere.



The SASE network and security framework unifies SD-WAN and security solutions into a cloud-delivered model that securely connects users, locations and devices to apps and resources.

82% of midmarket IT pros agree that implementing SASE is critical to their organization's long-term growth (Figure 4).

More than half of IT pros at midsize companies believe SASE will benefit their organization and keep it more secure, with most (54%) saying they have either already implemented SASE solutions or plan to within the next 12 months (Figure 4).

SASE is critical to how companies and their people work today. This new normal, defined by workforce flexibility and distributed apps and data, calls for a new way of thinking about networking and security.



Trend 2: Businesses need low-latency computing to power investments in next-gen tech

It is easy to see why so many innovation and growth initiatives now integrate AI, ML, AR/VR and other emerging technologies. These advances are empowering companies to scale processes on demand, improve resiliency, minimize infrastructure investments and deploy solutions rapidly, securely and cost-effectively—outcomes that are driving the bulk of many organizations' trending revenue.

Advanced technologies can also transform customer experiences. Today's customers desire fast, connected, personalized experiences wherever they go. And thanks to the shift from brick-and-mortar to digital interactions brought on by the global pandemic, companies that can't provide a simple, seamless, on-demand experience will lose business to competitors that can.

As emerging tech becomes more available and accessible, midsize companies are applying it to nearly every aspect of their operations, from the supply chain to marketing. Use cases include embedding advanced technologies into legacy products and services to boost performance while developing proprietary revenue-generating offerings aimed at attracting and retaining customers.

So, what are the next steps to creating these transformative experiences?

Behind the trend: Edge-first architecture

In just over two years, the edge has gone from an exciting concept to a must-have reality. Organizations that want to develop, deploy and take advantage of next-generation technologies such as AI, AR/VR and the IoT need access to low-latency computing. And this demand is driving them to adopt edge-first architectures to support their latency-sensitive, high-bandwidth apps.

Nearly 9 in 10 (88%) midsize business ITDMs say edge solutions are critical to the future growth of their organizations (Figure 5).

By processing data where people and devices interact, companies can gain real-time market insights, transform operations and products, speed innovation and accelerate the delivery of products, services and applications to market.

Businesses that succeed in these areas will enjoy a significant competitive advantage, as evidenced by the **88%** of organizations that plan to adopt edge solutions within the next three years (Figure 5). Compared to large enterprises, 9% fewer midmarket organizations have adopted edge computing. At the same time, more midsize businesses plan to adopt it in the next three years than their larger counterparts.

And when it comes to latency, less is more. Applications like robotics or autonomous vehicles don't have time to travel to the public cloud. **That's why significantly more IT decision makers (68%)** at midsize businesses require a latency time of 10 milliseconds or less today versus two years ago, with 29% requiring <5 milliseconds (Figure 6).

But addressing latency needs is possible only with the right network infrastructure.

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Trend 3: Network modernization is vital to efficiently support hybrid workforces

In the early days of the COVID-19 pandemic, many organizations rushed into remote work, prioritizing speed over efficiency or user experience. But as the world emerged from the pandemic and companies realized their distributed and hybrid workforces could boost productivity and efficiency, among other benefits, creating a better hybrid model is a top priority.

High-performance network capabilities are also essential for enterprises to realize the true business value of emerging applications and technologies. As businesses move closer to their customers, the need to effectively connect employees and systems to real-time information is vital—but some businesses lack the network capacity.

More than 4 in 5 (87%) midsize businesses agree today's application demands require something different than a centralized cloud model (Figure 7).

A true distributed enterprise—one that can include headquarters, branch locations, edge and IoT devices, multiple clouds and on-premises data centers, plus a remote workforce—is only as strong as the network it runs on. In fact, **7 in 10 IT pros** say their networks must accommodate dynamic events such as backups and application deployment, and **nearly two thirds (61%)** say application migration support is a must-have (Figure 8).

Many businesses are starting to recognize their networks as business enablers that can improve the experiences of employees and customers alike while maximizing the value of their investments in cloud, edge and IoT. Legacy networks lack the agility and intelligence to meet the demands of digital business, and organizations are making network modernization a priority.

Here are four technologies behind the trend that can deliver the flexibility, connectivity, power and performance businesses need today—with the ability to scale easily for future needs.





Unified collaboration tools keep hybrid workforces productive

With the widespread shift to hybrid work, unified communications and collaboration (UC&C) tools are vital to drive business growth and support effective internal employee and external customer experiences.

Two in 3 (67%) IT pros say productivity increased during the peak of the pandemic by combining collaboration tools with distributed work (Figure 9). Nearly 3 in 4 (72%) see robust collaboration solutions as vital to their productivity, with slightly more than 2 in 3 (68%) prioritizing business operations (Figure 10).

Collaboration solutions have also become a critical component of next-generation technology platforms, thanks to their ability to scale to meet workforce demands and integrate seamlessly with critical technology solutions such as office productivity suites and CRM tools.



Fiber internet—the backbone of modern business

As work environments adapt and the adoption of cloud and SaaS applications continues to grow in the wake of the pandemic, many companies are looking for ways to empower employees wherever they are—and fiber internet is the answer. **For 9 in 10 midsize business IDTMs** say fiber infrastructure is essential to connect to a distributed cloud network (Figure 11).

Offering fast, symmetrical speeds and high reliability, fiber-optic connections can bolster productivity and improve end-user experiences, especially for businesses looking to accommodate an evolving workforce. With collaboration-ready fiber internet, high-bandwidth services such as video conferencing can exist alongside tools such as instant messaging, VoIP and other services on the same network, providing remote workers with the same access to tools as their on-premises colleagues.

But fiber is more than just a high-speed connection. As companies modernize their networks to accommodate new bandwidth-intensive use cases, security is paramount. Fiber-optic connections are innately more secure than broadband because fiber cables are tougher for hackers to tamper with, and light pulses are more secure than electrical signals.

Dedicated Internet Access (DIA) takes fiber's reliability and security even further. An internet connection that goes directly to a business and is never shared with neighboring buildings or users, DIA delivers a consistently secure, high-performing symmetrical connection to public cloud applications, remote offices, data centers and more.





A modern network in minutes with Network-as-a-Service (NaaS)

In today's digital-driven world, businesses want a software-driven network that's fast, secure and can scale to accommodate changing business demands, and they want it supported by an on-demand, dynamic digital buying experience. Increasingly, today's businesses are turning to new models of networking by integrating hybrid cloud, SD-WAN, edge compute, SASE and the internet to power their applications across an increasingly distributed environment.

With NaaS, midsize organizations gain flexible network infrastructure that enables them to innovate faster, meet evolving business needs, and optimize network performance and user experiences. Because it is delivered via a cloud-like subscription model, NaaS can be deployed in minutes, unlike traditional network models that can take months to provision.

Contributing to this flexibility is the NaaS consumption-based billing model. Rather than paying for peak bandwidth pricing during non-peak times, enterprises pay only for the bandwidth they need, when they need it, so they can easily scale up or down with fair and flexible pricing as business needs change.

NaaS providers already have the infrastructure and expertise behind their solutions, so getting a digital strategy off the ground with this model does not require a large capital investment—enabling lower upfront costs, faster ramp-up and greater agility to respond to changing business demands.

Now it's time to find out how you can capitalize on emerging applications and the data powering modern business.



Enable next-gen opportunities with an all-in-one IT environment

Today, businesses have virtually unlimited ways to innovate and grow thanks to the emergence of new technologies. And their ability to harness the power of these advancements is dependent on modern IT systems designed to securely deliver and orchestrate distributed applications and data. Yet many current IT infrastructures are not prepared to support coming increases in users, data volumes and application performance needs—and **8 in 10 midsize businesses** are dedicating more resources to securing distributed applications in response to increases in remote work and latency-sensitive technologies (Figure 12).

Platforms play a vital role in modern IT environments and are essentiall for businesses that want to leverage all the advancements made possible by emerging technologies. Nearly every application today depends on a platform to connect it to people and systems, as well as management and orchestration—and **almost all midsize IT decision makers (88%)** have already adopted or soon plan to adopt a platform to drive their next-gen apps and critical growth initiatives (Figure 13).

But achieving differentiation and competitive advantage takes more than simply adopting a network architecture. The IT professionals we polled also demand an IT environment that delivers:

• Simple solutions designed to meet the bulk of business needs

Many of these needs can be fulfilled through robust digital marketplaces, which have become a core expectation among IT leaders. **More than 9 in 10 ITDMs** say the capabilities and solution available from an all-in-one provider's digital marketplace impact their purchasing decisions (95%), and that clear and upfront pricing is important (Figure 14). And **60% of decision makers** prefer self-service solutions rather than traditional sales from a point of contact (Figure 15).

Managed support for the successful deployment of advanced applications Not every business has the IT staff or expertise to support networking, edge or security services and many want their technical teams to focus on more strategic work. For 89% of IT executives say their purchasing decisions depend on the expertise of providers offering managed services should they not have internal resources of their own (Figure 16).

A global network to support anywhere business

Respondents almost unanimously agree (94%) that a technology provider with global network capabilities is crucial to their future success (Figure 17). In a digital economy, reliable, consistent, worldwide network connectivity is a must-have to reach offices, data centers and stakeholders in a variety of locations—including sites outside of major metro areas—as well as anywhere cloud providers have points of presence (PoPs).

Seamless integration for high performance

Businesses running next-gen technologies are characterized by a plethora of intricately connected processes. Seamless integration of all these processes, and the applications powering them, helps eliminate silos, drive overall operational efficiency and optimize IT resources.

In addition to these critical requirements, IT leaders named network protection and edge computing services among the most in-demand capabilities they look for when choosing an all-in-one-platform provider (Figure 18).



Lumen securely connects people, data and applications

Midsize businesses need to find a better way to effectively manage high-performance, low-latency applications and maximize real-time engagement.

This demands a new kind of architecture—one that is inherently equipped with four unified IT layers of next-generation technology:

- Software-defined networks
- Hybrid and edge cloud diversity
- Managed orchestration
- Integrated security

But just having all four layers separately isn't enough. To deploy the right apps and services to the right places quickly and securely, all four must be rooted in a strong, physical infrastructure.

Lumen provides a robust environment to support and simplify all your current and future technology needs. Underpinning our solutions and services is the #1 peered global network¹, with dynamic connections to more than 2,200 public and private data centers, offering low-latency performance via global edge compute nodes, all delivering applications and data when and where they're needed.

With this extensive infrastructure as a foundation, we combine core IT elements into a unified application delivery solution powered by ~400,000 global route miles of fiber and low-latency connectivity.

All these capabilities are backed by 30+ years of network management experience and expertise, ensuring we are ready to deliver what your business needs now, while understanding what it takes to grow tomorrow.



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Next steps: Becoming a digital-first enterprise

If your midsize company wants to enjoy the competitive advantages offered by new and emerging technologies, you need a strategy that involves not only technologies but people, systems and processes from across the enterprise.

Here are six concrete steps to consider as you determine which technologies will have the greatest impact on your business. These recommendations are intended as a starting point and should be adapted to address the unique needs of your organization.

- 1. Embolden your leadership to make people the core of your transformation.
- 2. Develop goals, measurable objectives and a plan to formalize your aspirations.
 - Know your competition and pinpoint your technology competitiveness
 - Understand your capabilities, strengths, weaknesses and opportunities to improve
- **3. Determine the flow of your business operation.** Make sure your employees are engaged in managing the flow to ensure that current processes, tools, systems and data are ready for the race.
- 4. Educate the team on technologies that support your transformation plan. Understand how technology can differentiate or disrupt the industry.
- 5. Activate a five-year financial plan. Your plan should include Capex projections, and alternative what-if acquisition models of target technologies.
- 6. Seek out best-fit processes and technologies for moving forward with emerging tech.

By forming a plan and engaging the right people, you will set the appropriate pace for your digital transformation, so you can be ready to seize new opportunities when they come along.

A partner who is well-versed in transformation will bring the tools, experience and expertise that next-gen technologies demand. Lumen can seamlessly harness the capabilities of cloud and edge computing to orchestrate apps, data and infrastructure, while also offering integrated security and collaboration opportunities, plus managed services to bring it all together for you.





Choose a network provider as your strategy partner

In a progressively digitized world, the benefits of a digital business are clear. But choosing the right physical infrastructure, migrating apps to the cloud, switching internet service providers, and buying and managing software to run it all can seem daunting.

When implementing a digital-first strategy, a growing number of businesses are turning to network providers as strategic technology partners. Network providers can supply a readiness roadmap that includes integration of edge-to-cloud operations, facilitating the development of low-latency use cases—with integrated security across the whole stack to keep the process safer.

Working with a comprehensive network provider over multiple individual solution providers can offer many advantages, including:

- Real-time visibility into network events as the first line of defense against intrusion and other potential cyber threats
- Simplified management of multi-cloud and geographically distributed networks
- Managed services designed to reduce costs and personnel resources
- Best-in-class partners offering the most advanced technology with no vendor lock-in

Lumen can seamlessly harness the capabilities of cloud and edge computing to orchestrate apps, data and infrastructure, while also offering integrated security and collaboration opportunities, plus managed services to bring it all together for you.



Our survey methodology

Quadrant Strategies uses custom market research to help the world's most prominent companies build world-class brands and navigate their most pressing challenges.

In August and September 2022, Quadrant Strategies conducted an online quantitative survey with 171 IT decision-makers around the globe. These individuals have the title of Senior Manager or higher, sole or shared decision-making authority over purchasing decisions for at least a part of the business and were selected from companies with between 100 and 499 employees.

About Lumen

The Lumen mission is igniting business growth by connecting connect people, data and applications—quickly, securely and effortlessly. We aim to democratize complex and cutting-edge technologies and deliver simple solutions, so our customers can focus on innovation, not their IT.

In support of this purpose, our mission is to digitally connect people, data and applications—quickly, securely and effortlessly.

Our philosophy of continuous improvement means we tirelessly pursue exceptional outcomes for our customers and partners. And we do all this while boldly embracing change with a daring spirit to excite and inspire our customers to imagine new possibilities.

Learn how your business can thrive in a world powered by emerging applications and data at lumen.com

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¹The Center for Applied Data Analysis (CAIDA), AS Rank, April 2023.



Appendix: Quadrant Strategies Poll Data



Midsize Data (N=171)

87% of Midsized ITDMs agree that application security is their #1 IT concern, and half "strongly agree"



Midsize Data (N=171)

Nearly all Midsized ITDMs say that their data workloads have at least doubled in the last two years

More than half of Midsized ITDMs have seen workloads double; 1 in 3 ITDMs have seen workloads quadruple or areater



Midsize Data (N=171)

4 in 5 Midsized ITDMs say their applications are a key differentiator for their service and customer interactions



F3 Source: Quadrant Strategies, October 2023

F2 Source: Quadrant Strategies, October 2023

F1

Source:

Quadrant Strategies,

October 2023

F4

Source: Quadrant Strategies, October 2023

Midsize Data (N=171)

Most Midsized ITDMs say they have either already implemented SASE solutions or plan to within the next 12 months

4 in 5 Midsized ITDMs say SASE solutions are critical to their organization's long-term growth



Midsize Data (N=171)

Midsized ITDMs universally say edge solutions are essential for the future growth of their businesses

Almost 9 in 10 ITDMs are currently using or plan to adopt edge solutions in the next three years as the majority deem it critical to future growth



QUADRANT STRATEGIES

Tracking

Midsize Data (N=171)

8

68% of Midsized ITDMs require a latency time of 10 milliseconds or under for their applications

The need for lower latency has increased significantly since 2020



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F5 Source: Quadrant Strategies, October 2023

F6

Source: Quadrant Strategies, October 2023

Midsize Data (N=171)

Midsized ITDMs overwhelmingly agree that today's application demands require something different than a centralized cloud model



Midsize Data (N=171)

Midsized IT leaders say that their networks must be capable of handling multiple tasks including backups and app deployment and migration

Unexpected data bursts are seen as a much bigger problem two years from now; ITDMs' current concern is centered on handling backups and application deployment



Midsize Data (N=171)

Midsized IT leaders agree that distributed work combined with collaboration tools has been successful in boosting productivity

Midsized ITDMs also universally say UCC solutions enable productivity for remote and hybrid work



12

F8

F7

Source:

Quadrant Strategies,

October 2023

Source: Quadrant Strategies, October 2023

F9

Source: Quadrant Strategies, October 2023

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Midsized ITDMs say strong collaboration tools are fundamental for their organization's productivity and business operations



Midsize Data (N=171)

9 in 10 Midsized ITDMs say Fiber infrastructure is essential for distributed cloud environments

The belief that Fiber Infrastructure is essential has increased significantly since 2020



Midsize Data (N=171)

8 in 10 ITDMs at midsized businesses say there was an increase in resources dedicated to securing distributed applications

Additionally, only half believe they way they secure their organization's data will become easier in the



Source:

F11

F10

Source:

Quadrant Strategies,

October 2023

Quadrant Strategies, October 2023

F12

Source: Quadrant Strategies, October 2023

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Tracking

F13

F14

Source:

Quadrant Strategies,

October 2023

Source: Quadrant Strategies, October 2023

Midsize Data (N=171)

Almost all Midsized ITDMs have already adopted or soon plan to adopt an application platform to drive their next-gen apps and critical growth initiatives



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QUADRANT STRATEGIES

Midsize Data (N=171)

Midsized ITDMs overwhelmingly say capabilities availability on a platform provider's digital marketplace impacts their purchasing decisions; clear and upfront pricing is important too



Midsize Data (N=171)

3 in 5 ITDMs at midsized businesses say they prefer self-service solutions rather than traditional sales from a point-of-contact



F15

Source: Quadrant Strategies, October 2023

Midsize Data (N=171)

9 in 10 ITDMs at midsized businesses say their purchasing decisions depend on the expertise of platform providers offering managed services should they not have internal resources



Midsize Data (N=171)

Midsized ITDMs almost unanimously say working with a technology provider with global network capabilities is crucial to their success moving forward

Tracking

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Midsize Data (N=171)

ITDMs at midsized businesses say network protection, edge computing services, and managed services are the most important capabilities when choosing a platform provider



F18

22

F16

Source:

F17

Source:

Quadrant Strategies,

October 2023

Quadrant Strategies,

October 2023

Source: Quadrant Strategies, October 2023