

WHITE PAPER

Empowering digital transformation

Enhancing customer experience and application performance with secure, integrated connectivity.

Overcome challenges and unlock potential with Lumen[®] Digital.

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Executive overview

This paper is a strategic compass for business leaders navigating the complex digital landscape. It underscores the imperative of integrating digital technologies to not only enhance customer experiences but also to drive overall business success. The digital transformation journey is marked by challenges such as skill gaps, budget constraints, and security threats, yet it is also paved with opportunities for growth and innovation.

Key challenges and opportunities

Organizations are contending with the intricacies of deploying digital infrastructure. The scarcity of skilled professionals poses a significant hurdle, as does the need to balance budgets while ensuring robust security measures. However, these challenges are counterbalanced by the promise of digital transformation to significantly enhance operational efficiency, agility, customer engagement, and innovation.

Insights from IDC Research

Lumen commissioned IDC Research to conduct a study of 823 IT and business leaders from eight industries in the U.S., representing a diverse range from midsize to large enterprise.* This paper amplifies the results of this research with a clear trend: organizations across the spectrum are embracing digital transformation with pronounced benefits. Investments are planned in business areas that bolster application performance, enrich customer experiences, and streamline communication. Investment in digital infrastructure is

driven by demand to improve productivity, enhance security, and enhance innovation.

Strategic importance of IT modernization

In an environment of evolving security threats and budget limitations, IT and network modernization emerge as strategic imperatives. The paper advocates for directing investments towards Artificial Intelligence (AI), hybrid cloud services, and data analytics to amplify operational efficiency, drive innovation, and enhance customer engagement.

The transformative force of AI

AI stands out as a transformative force, with many companies planning to harness its potential in customer engagement solutions and IT operations. The goal is to increase efficiency, enhance support, and provide valuable analytics, thereby revolutionizing the way businesses operate.

Key takeaways for business leaders

Digital transformation is a fundamental strategy for businesses aiming to maintain agility and competitiveness in a technology-driven market coupled with the importance of human capital, advocating for a culture of continuous learning and innovation. Cloud services are highlighted as essential, significantly improving application performance, customer satisfaction, and operational efficiency.

Navigating the digital frontier

As the digital transformation journey progresses, organizations find themselves at a pivotal juncture where the path ahead is laden with intensifying challenges. Despite the significant strides already made, these entities are now grappling with emerging complexities that test their adaptability and innovative capacities. The digital era, while brimming with potential, demands a recalibration of strategies to empower digital transformation and harness its full promise.

To better understand the impact of these advancements and challenges on business strategies and investments Lumen commissioned IDC Research to conduct a study of 823 IT and business decision makers from across eight sectors in the U.S. largely representing **organizations of 500 to 4,999 employees** and **5,000 employees or more**. This research revealed that **32% have fully integrated digital technology** into their operations with the **balance** in the planning, development, or early stages of undertaking specific digital projects.

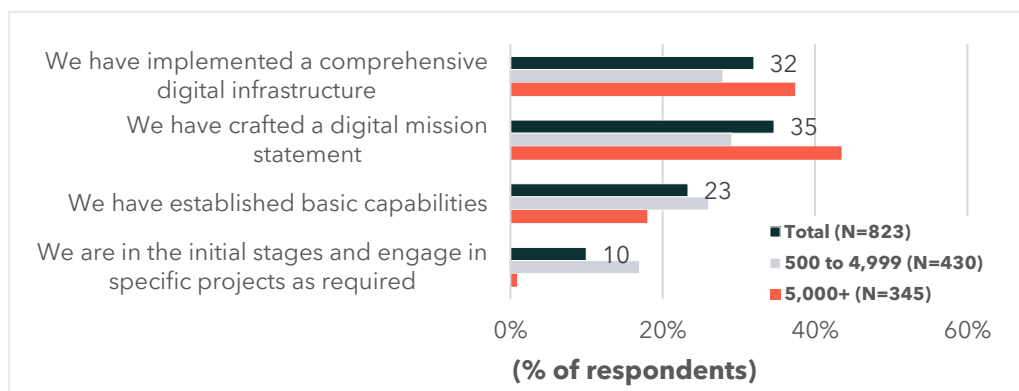
Digital transformation (DX) journey

For the frontrunners, digital transformation (DX) is an ongoing reality, enhancing their efficiency, agility, and innovation. For others, the journey is ambitious, but solutions are required to help overcome significant challenges.

1. **Digital progress:** While most are still planning their digital future, a notable few have begun their transformation, leading by example. Despite the complexities and uncertainties, they are moving towards a vision of a fully digital enterprise and organization, aiming for not just survival but success in the digital era.
2. **Planning phase:** The journey is just beginning for numerous organizations. They are crafting digital mission statements to guide their transformation. This represents firm commitments to embedding digital technology at their core.
3. **Early implementation:** Some organizations have started implementing digital strategies. They are building foundational digital capabilities, experimenting, and learning as they prepare for full-scale deployment.
4. **Strategy development:** Many businesses are developing a comprehensive digital strategy. They recognize that DX is a long-term endeavor and are focused on creating detailed plans that encompass the entire organization.
5. **Project-based approach:** Some are in the early stages, undertaking specific digital projects. These companies are proceeding with caution, starting with small-scale initiatives that can provide immediate benefits and insights.

Figure 1

Where is your organization on your digital transformation journey?



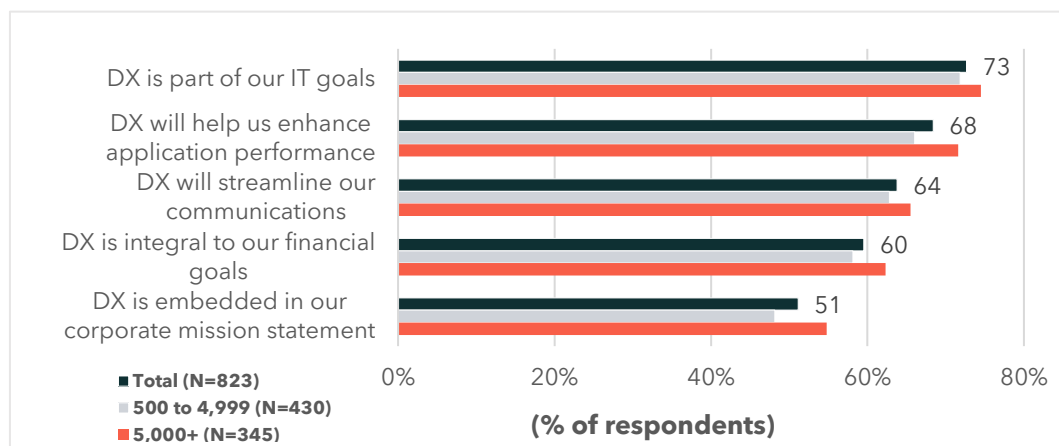
Scaling success: transformative strategy for every business

Digital transformation is reshaping business operations and competition. It benefits companies of all sizes. Organizations that adopt this change will lead in innovation and success. In the digital marketplace, strategic investments are enhancing application performance, customer experiences, and engagement.

Digital transformation represents a pivotal movement elevating businesses of all sizes. According to the IDC survey, **73% of organizations have commenced this journey, establishing it as a fundamental aspect of their IT objectives.**

Figure 2

What is the role of DX in your organization?



Application performance: For **68%** of organizations, digital transformation is key to improving application performance, a critical factor in achieving faster transaction processing, better data analysis, and enhanced customer experiences.

Communication efficiency: **64%** of organizations use digital transformation to enhance communications with partners and suppliers, fostering better coordination, fewer errors, and stronger business relationships.

Financial strategy: For **60%** of organizations, digital transformation is a strategic financial move, essential for increasing revenue, cutting costs, and boosting profitability through real-time financial tracking and informed decision-making.

Business investments: improving outcomes

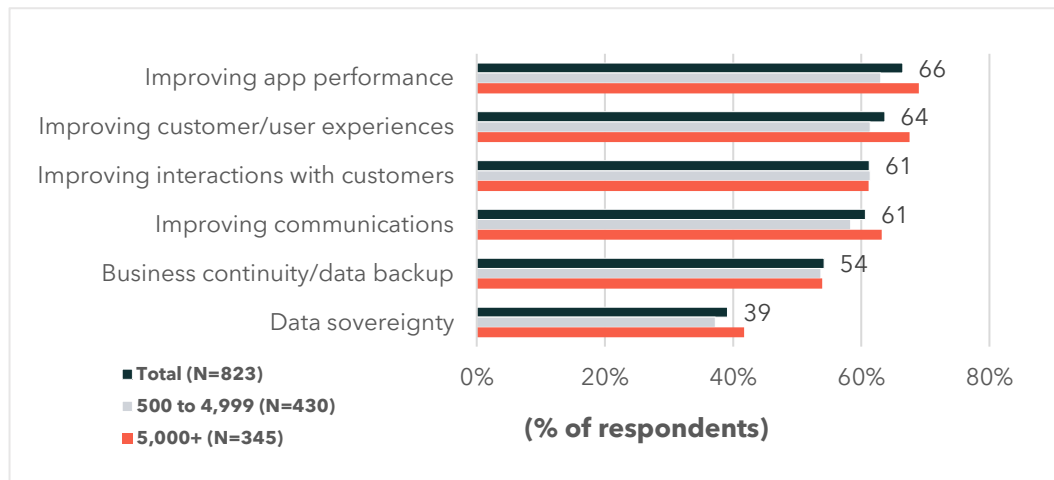
Organizations are increasingly recognizing the importance of digital transformation and customer-centric strategies. The top planned business investment areas reflect this trend, focusing on improving application performance, improving customer experiences, and improving engagement with customers and employees. In today's fast-paced digital world, users expect applications to be responsive, reliable, and efficient. Investing in application performance can lead to higher user satisfaction, increased productivity, and competitive advantage. Enhanced performance can also reduce operational costs by optimizing resource usage and minimizing downtime.

A superior customer experience (CX) is essential for building brand loyalty and trust. Companies that invest in CX can differentiate themselves from competitors, leading to increased customer retention and acquisition. Engaging with customers is not just about resolving queries; it's about building a relationship. Effective engagement strategies can lead to a deeper understanding of customer needs, preferences, and behaviors. This understanding can drive personalized experiences, product improvements, and targeted marketing efforts. Engaged customers are more likely to become repeat buyers and brand advocates.

Enhancing application performance: two-thirds of organizations are focusing on improving application performance, acknowledging that minimizing latency is essential. Investment in this domain is comparable to refining an instrument, ensuring clear resonance and contributing to the business's smooth functioning.

Figure 3

In which of the following business areas does your organization plan to invest over the next 2 years?



Elevating customer experiences: 64% of progressive organizations are strategically investing in customer experience. This indicates they recognize that every customer interaction shapes overall satisfaction. By focusing on user experience, they are not only improving service quality but also cultivating a loyal customer base.

Cultivating customer engagement: 61% of organizations are dedicated to enhancing customer interactions and engagement. They are actively creating channels of communication and nurturing relationships that promise to evolve into mutually advantageous partnerships.

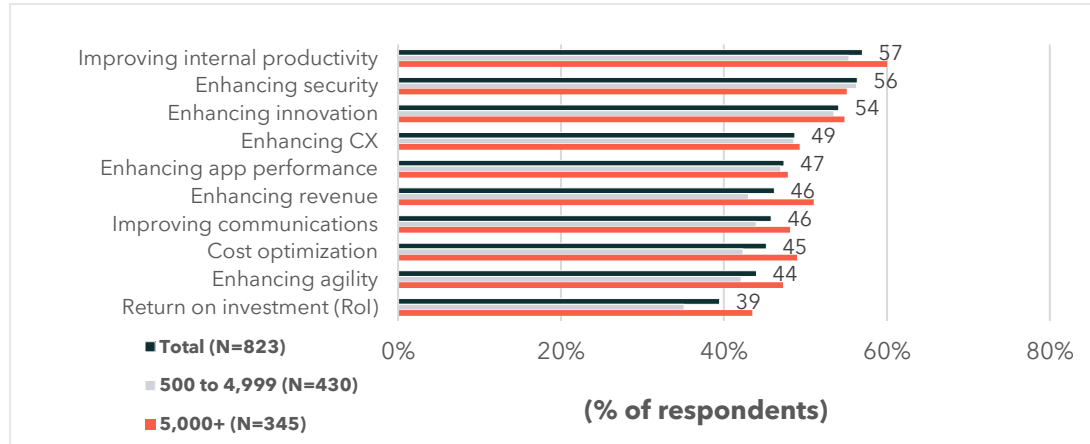
Strengthening people and unity: Similarly, **61%** of organizations recognize the importance of internal dynamics. By improving communications and collaboration among employees, they are weaving a stronger fabric of teamwork and unity. This internal investment is the keystone in the arch of business success, supporting and elevating the structure.

Tech investments: enabling competitive advantage

Investments in digital infrastructure are driven by demand to improve productivity, enhance security, and enhance innovation. Though lower on the list of importance, companies always look to drive return on their investment. These priorities form the foundation of digital strategies that aim to provide a competitive advantage.

Figure 4

Which of the following are driving your organization's investment in digital infrastructure?



Productivity: The universal pursuit of productivity is being revolutionized by digital tools that optimize workflows and foster creative work, improving both output quality and job satisfaction, as indicated by almost **57%** of respondents.

Security: In today's digital landscape, robust security protocols are critical to protect organizational data. Investments in cybersecurity are essential to prevent costly breaches and maintain customer trust, report **56%** of respondents.

Innovation: **54%** of respondents state that digital transformation is a catalyst for innovation, providing the necessary tools to develop new products and maintain market relevance.

Customer experience: Almost **half** say elevated customer expectations in the digital age demand seamless, personalized service, which in turn builds loyalty and advocacy.

Revenue growth: Digital enhancements are key to increasing revenue and market share, with improved efficiency and access to new markets as primary drivers, say more than **46%** of respondents.

Long-term financial goals: Digital investments today are strategic moves towards long-term growth and profitability, with a focus on improving communications, operational cost reduction and resource allocation for expansion, say almost **40%**.

Transformation objectives: Given the main goals of digital transformation are to boost productivity, enhance security, drive innovation, and enhance customer experiences, ROI is a key outcome for **40% or more** of respondents.

The digital advantage

Digital technology is revolutionizing business, offering key benefits crucial for success. It's not just an upgrade but a strategic overhaul that boosts **efficiency, agility, innovation, and customer experience**. It ensures operational adaptability, enables data-driven decision-making, and optimizes cost-efficiency. Ultimately, it arms businesses with the necessary tools to stay competitive in a dynamic market. These advantages are the pillars of digital transformation, essential for prospering in the digital age. Noteworthy are:

- **Efficiency:** Automation and data analytics significantly increase operational efficiency by increasing productivity by **23%**.
- **Agility:** Digital transformation allows businesses to quickly respond to market and customer changes.
- **Innovation:** New technologies lead to an increase in innovative products and services by **18%**.
- **Customer experience:** Enhancing the customer journey results in personalized, seamless interactions and a **19%** increase in customer satisfaction.
- **Operational flexibility:** Cloud and mobile solutions increase the agility to meet shifting demands by **17%**.
- **Data-driven strategy:** Real-time data informs strategic business decisions.
- **Cost management:** Digital tools help reduce costs by **15%** and increase profitability.
- **Market competitiveness:** Keeping up with digital trends is key to maintaining a market edge.

Digital transformation is a comprehensive, companywide strategy—not just an isolated tactic for certain functions or groups. It must integrate technology and people across the business and overcome certain challenges in its implementation.

Navigating the complexities of digital infrastructure deployment

More than **40%** of organizations encounter **critical challenges** due to a lack of skilled professionals and tight budgetary limits. These constraints pose considerable obstacles, potentially impeding progress in digital modernization efforts due to limited expertise and financial resources. See Table 1 below.

Table 1. What challenges is your organization facing in implementing digital infrastructure?

% of respondents

	Total	500 to 4,999 Employees	5,000+ Employees
Lack of external IT partners	47	51	44
Lack of internal skilled personnel	46	45	48
Lack of budget	39	40	38
Lack of support from the C Suite	34	36	31

The solution resides in **establishing partnerships with external IT experts**. These collaborators offer a trove of specialized expertise, addressing the skill gaps prevalent in the industry. They serve as adept guides, steering organizations through the intricate journey and complexities of digital transformation in a financially prudent manner that respects budgetary constraints.

Engagement with these specialists enables organizations to surmount obstacles inherent in digital transformation, positioning them at the forefront of the digital evolution. Such alliances transcend transactional interactions; they represent calculated strategic initiatives that harness the comprehensive capabilities of digital technologies to **foster innovation, operational efficiency, and organizational growth**.

Overcoming obstacles in digital evolution

Organizations encounter a variety of obstacles during digital transformation, ranging from the complexities of human behavior to the technical aspects of incorporating new technologies. This highlights the need to focus on the human elements of change management, which includes overcoming security challenges and their expensive repercussions, strategically allocating financial resources, adopting digital transformation, updating IT management practices, securing uninterrupted connectivity, and ensuring that IT objectives are in sync with the business strategy. Successfully navigating these challenges can transform them into opportunities for innovation and growth

Managing the human response to change is paramount. Employees often exhibit resistance to new technologies, preferring the familiarity of legacy systems. Addressing this challenge requires a comprehensive approach that includes training and fostering a culture of continuous learning to facilitate the transition.

Security in digital transformation has become increasingly challenging due to the complex nature and broader scope of potential threats that arise with greater cloud adoption and a workforce that is spread out geographically. Organizations are now more vulnerable to threats such as ransomware and malware, and they often find it difficult to maintain clear oversight of their cloud infrastructure. Additionally, there is a pronounced shortage of qualified cybersecurity professionals who are essential for overseeing digital environments. To tackle these security challenges, organizations need to adopt advanced application and data protection strategies, set up strong cyber recovery systems, and engage with trusted providers that offer connectivity-related solutions.

Financial constraints are a significant hurdle for IT departments. Leaders must strategically balance innovation with fiscal responsibility, ensuring that investments in technology are both efficient and effective, and align with the company's long-term goals.

Digital transformation is a business necessity. Companies must integrate new technologies such as cloud services, AI, and machine learning to stay competitive. This transformation involves overcoming integration challenges, upskilling employees, and ensuring continuity of service.

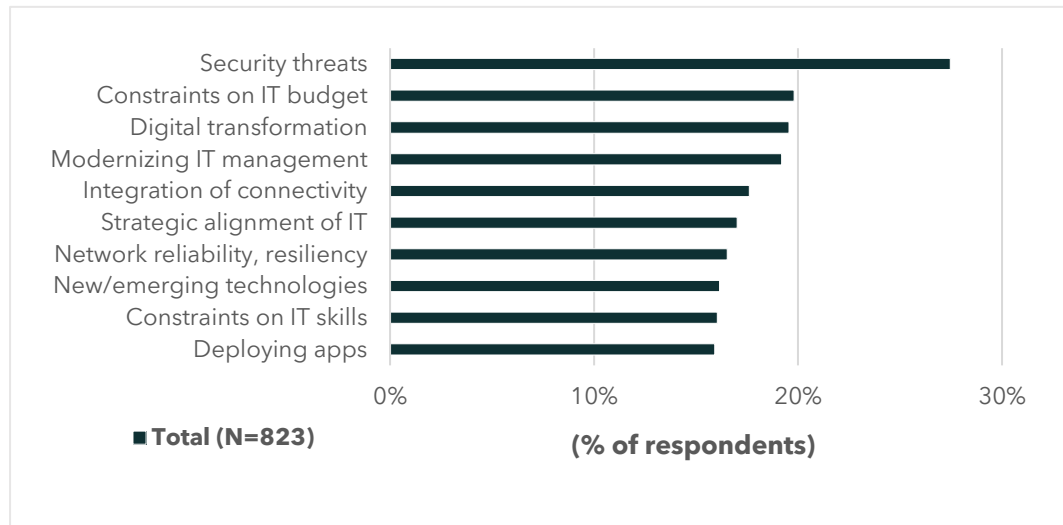
Modernizing IT management through automation is essential for operational efficiency. Implementing advanced management systems and automating routine tasks can free up IT resources for strategic initiatives, though selecting the right tools and integrating them into existing systems can be challenging.

Seamless connectivity between systems becomes crucial as reliance on enterprise software grows. A well-architected network is necessary to handle high-volume data transfer and real-time processing, ensuring data integrity and workflow efficiency.

Aligning IT with business objectives is critical. IT must become a strategic partner in driving business growth, aligning technology initiatives with the company's vision, and ensuring that technology investments lead to tangible business outcomes.

Figure 5

What do you expect to be the biggest IT or network challenges for your organization over the next 2 years? (Top 6 shown)



AI: unleashing potential

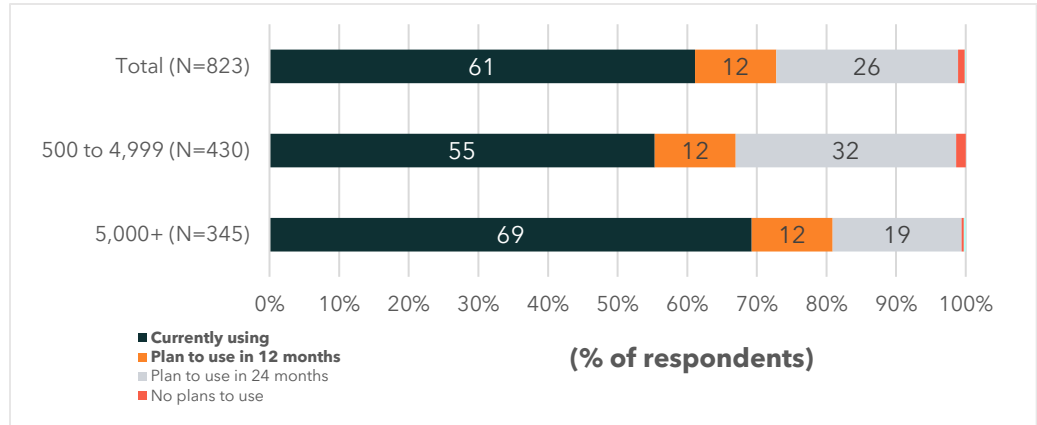
Artificial Intelligence (AI) is transforming business landscapes by streamlining strategies, boosting efficiency, and fostering innovation. Its influence extends to:

- **Strategic transformation:** AI reshapes business approaches, allowing for more efficient operations and informed, data-driven planning.
- **Operational efficiency:** Automation and analytics through AI lead to cost savings and enhanced business performance.
- **Innovation:** AI's data analysis capabilities enable the creation of novel products and services, positioning businesses as industry leaders.
- **Customer-centricity:** AI enhances customer service and relationships, key to business expansion.
- **Data-driven insights:** Real-time data access via AI supports swift adaptation to market and consumer shifts.

An AI roadmap is essential for businesses engaging in the digital market, with **73% of enterprises adopting or planning to implement AI** for customer engagement soon. This roadmap aligns AI and data analytics investments with business goals, speeding up digital transformation and enhancing competitiveness through personalized experiences and informed decisions.

Figure 6

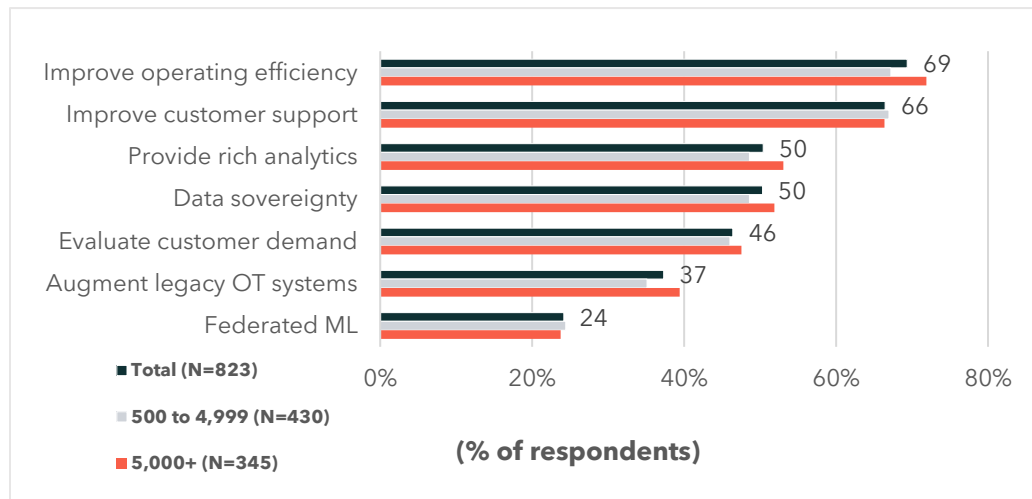
Is your organization using or does it plan to use Artificial Intelligence in its customer engagement solutions?



Approximately **70%** of organizations are leveraging AI and ML to **boost operational efficiency and drive innovation**. Meanwhile, **66%** expect AI and ML to **transform customer support** by personalizing services and streamlining processes. Integrating AI into IT solutions is anticipated to enhance automation, decision-making, and customer interactions, marking AI as a transformative element in business and customer engagement.

Figure 7

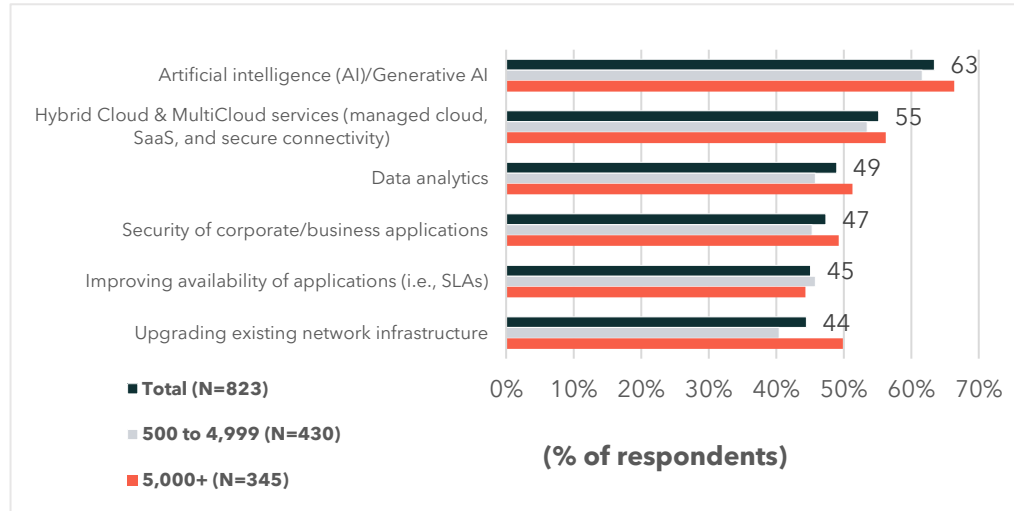
In which of the following ways do you expect AI/ML will support your IT solution(s) and target applications?



AI/GenAI, hybrid cloud, and data analytics are the primary investment areas for companies seeking innovation and a competitive edge. Although security and application performance are also key, they receive slightly less investment. This funding strategy underscores the critical role of **smart technologies and solid data infrastructure in today's business success**.

Figure 8

In which of the following technical areas does your organization plan to invest over the next 2 years?



AI roadmap as a strategic framework

More than 60% of respondents say using an AI roadmap as a strategic framework can guide their organization through the integration of AI into their processes, such as:

- **Strategic alignment:** For instance, a retail company might use an AI roadmap to align its AI initiatives with the goal of improving customer experience. This could involve implementing chatbots for customer service or using AI to personalize shopping recommendations.
- **Resource allocation:** A healthcare provider may allocate resources to develop AI algorithms that can predict patient risks based on historical data, ensuring that the most impactful projects are prioritized.
- **Risk management:** A financial institution could use the roadmap to anticipate and plan for potential security risks associated with AI, such as data breaches or biased decision-making.
- **Competitive advantage:** An automotive manufacturer might systematically plan AI adoption in its production lines to improve efficiency and quality control, staying ahead of competitors.
- **Innovation and growth:** A tech company could leverage AI to develop new products like an AI-powered virtual assistant, driving growth and opening up new market opportunities.
- **Efficiency and effectiveness:** A logistics company might use AI to optimize route planning for deliveries, ensuring that AI solutions are efficiently enhancing operational performance.

By outlining a clear path for AI adoption, these examples show how an AI roadmap can enhance operational efficiency and effectiveness, ensuring that AI solutions deliver tangible business value. It's a blueprint for success in the digital age,

helping enterprises navigate from the conceptual stages of AI strategy to the realization of its full potential in driving business success.

Energizing the digital core

In the digital ecosystem, **securing applications and valuable data** and **fast cloud connectivity are crucial say ~40% of organizations**. They significantly impact application performance, operational efficiency, and user satisfaction. Focusing on these empowers strong security and swift data transfer, enhancing application reliability and supporting a robust digital infrastructure in the modern business world. See Table 2 below for the use cases with the highest priority.

Table 2. Which of the following use cases have the highest priority in your organization?

% of respondents

	Total	500 to 4,999 Employees	5,000+ Employees
Securing applications & data (e.g., network protection, neutralizing threats, protecting data)	40	40	41
Very-high speed optical cloud interconnection (e.g., optical ecosystem to automate, scale and manage high-value, dedicated interconnects at low latency for capacity on-demand)	39	41	37
Managed and professional services with IT hands for implementations and operational management	32	34	30
Modernization of existing infrastructure	26	26	26
Maximizing application performance & availability	23	21	26
Enabling & scaling AI tools	23	22	23
Seasonality (i.e., rapidly activate secure internet connections on-demand, adapting bandwidth to match seasonal demands)	17	17	17

Securing applications & data: 40% of organizations want to fortify the digital landscape against cyber threats through network protection, threat neutralization, and data protection. For them, it's about creating a secure perimeter around

applications and data to ensure business continuity and compliance with regulations.

Very-high speed optical cloud interconnection: 39% of respondents want an optical ecosystem that enables automated, scalable, and manageable high-value interconnects. It must ensure low-latency, high-speed connections that can be adjusted on-demand to meet the dynamic needs of cloud services.

Managed and Professional Services with IT hands: Here, almost a **third** emphasize leveraging external expertise for the implementation and operational management of IT systems. These services provide them with the necessary support to manage complex IT environments effectively.

Modernization of existing infrastructure: More than a **quarter of respondents** say need to update and replace aging IT infrastructure with modern solutions to improve efficiency, security, and performance, thereby enabling them to meet current and future demands.

Maximizing application performance & availability: 23% of respondents feel it's crucial to ensure that applications are running at peak performance with minimal downtime. Strategies include low-latency infrastructure for real-time performance, resource optimization, and monitoring to maintain a seamless user experience.

Enabling & scaling AI tools: Another **23%** of respondents want to integrate AI technologies across the business to enhance processes and drive growth. They want to adopt MLOps for efficient AI development and deployment, ensuring AI systems are scalable and can adapt to their evolving business needs.

Seasonality: Digital transformation must account for seasonality. **17%** of respondents want to rapidly activate and scale internet connections to match seasonal demand fluctuations. This helps to ensure they can maintain performance during peak periods without over-investing in infrastructure during off-peak times.

Business priorities: focus on network modernization

Higher customer satisfaction, increased revenue, and improved operational efficiency are the top three ranked business priorities for network transformation. Organizations are looking to restructure their network infrastructure to optimize performance, reliability and scalability, enable seamless connectivity, integrate customer-focused applications, and enhance user experiences. They need to leverage advanced analytics and monitoring tools that offer deeper insights into network performance and customer behavior—enabling data-driven decision-making. To them, an efficient network means reduced downtime, improved employee productivity and enhanced customer interactions. See Table 3 below.

Table 3. What are your organization’s top 3 business priorities of network transformation?

% of respondents

	Total	500 to 4,999 Employees	5,000+ Employees
Higher customer satisfaction	28	28	27
Increase revenue	27	29	25
Improve operational efficiency	26	27	23

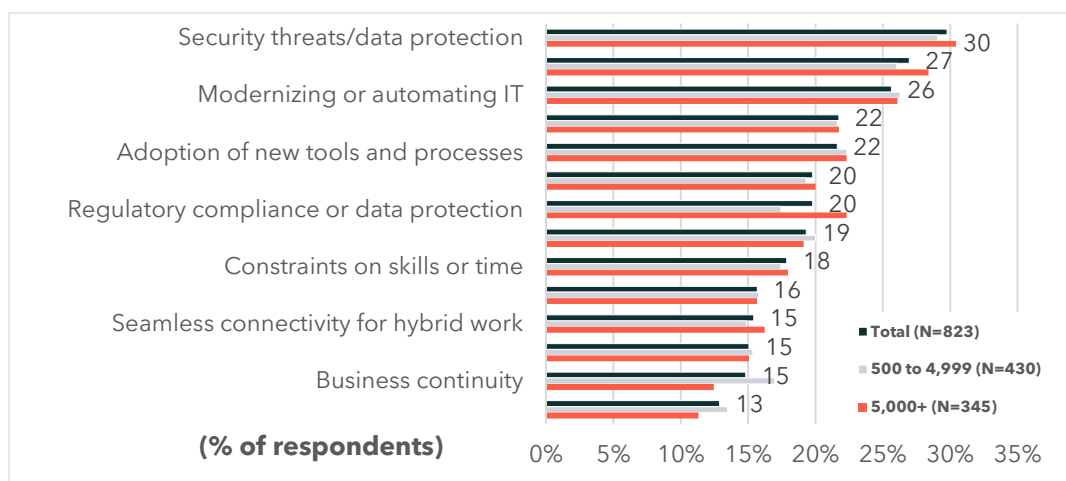
Breaking through the bottlenecks of network modernization

Digital network transformation is challenging, with **security risks and the need for flexible, modern systems** against a backdrop of budget constraints.

Organizations must strategically balance security with network modernization to remain resilient and competitive.

Figure 9

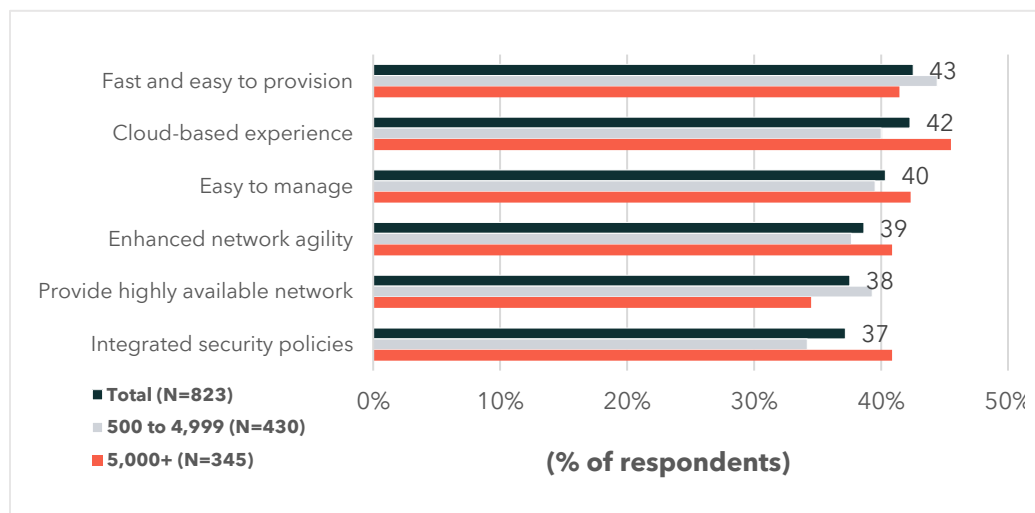
What are your organization’s biggest challenges to digitally transforming your network?



For digital transformation, **swift provisioning, a seamless cloud experience, and simplified network management** are crucial. They underpin agile operations, allowing for quick service deployment and efficient cloud interaction. Over **40%** of IDC Survey respondents consider these factors essential for achieving their digital transformation objectives, to help ensure enterprise agility and competitiveness in a tech-driven market.

Figure 10

In what ways must your network evolve to meet your organization’s Digital Transformation goals? (Top 6 shown)



Empowering growth: the human foundation of innovation

Digital transformation is revolutionizing the way companies address the pervasive challenge of skills gaps within their workforce. **Placing people at the core of this transformation is essential in ensuring that growth and innovation are built upon the talents, needs, and contributions of individuals.** Valuing and investing in people first, a more robust and effective organization can be transformed alongside technologies.

The journey of **learning and development is further personalized through AI**, which crafts individualized learning paths that cater to each employee's pace and style. **Collaborative digital environments foster a community** where employees can learn from one another, share knowledge, and collaborate effectively. The introduction of gamification injects a motivational aspect into learning, making the process more engaging. To sustain these efforts, companies are cultivating a continuous learning culture, recognizing achievements with digital badges, certifications, and incentives. They are preparing themselves for the evolving demands of the modern business landscape.

Elevating innovation: the pivotal role of cloud infrastructure

Cloud services are revolutionizing business operations, significantly boosting efficiency and application performance. They play a key role in improving customer satisfaction by providing fluid and responsive services. The cloud fosters innovation and enhances business agility, facilitating quick adaptation to evolving market demands. The standout benefits of cloud adoption lie in its ability to optimize application functionality and elevate customer experiences, making it a fundamental element of contemporary business strategies.

Using cloud solutions, companies can improve efficiency, drive business agility, and respond to security issues more quickly. See Table 4 below for the percentage improvements experienced over the past 12 months.

Table 4. What percentage of improvement did your organization experience in each of the following over the past 12 months as a result of using cloud?

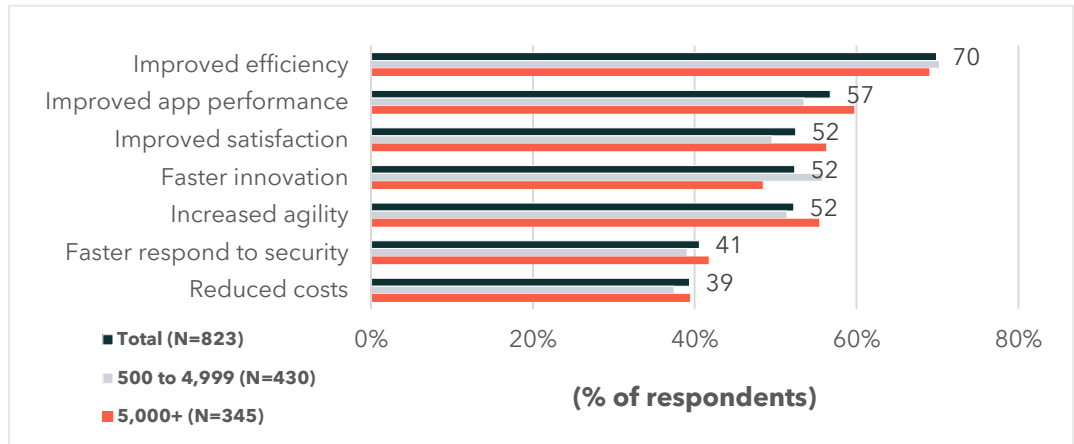
% of improvement experienced

	Total	500 to 4,999 Employees	5,000+ Employees
Improved application performance & availability	20	20	19
Improved customer satisfaction	19	20	18
Improved efficiency	18	19	18
Faster innovation	18	18	18
Increased agility	17	18	17
Respond to security issues more quickly	17	18	17

The impact of cloud services on the key metrics of digital transformation has been profound and multifaceted. By enhancing **efficiency** and **application performance**, these services have set a new standard for operational excellence. They have been instrumental in **improving customer satisfaction**, fostering a culture of **rapid innovation**, and providing the **agility** with **double-digit improvements over the past 12 months**, needed to navigate the complexities of the digital age. As businesses continue to leverage the cloud, these key metrics not only reflect the current state of digital transformation but also shape the trajectory of future growth and success in the digital domain.

Figure 11

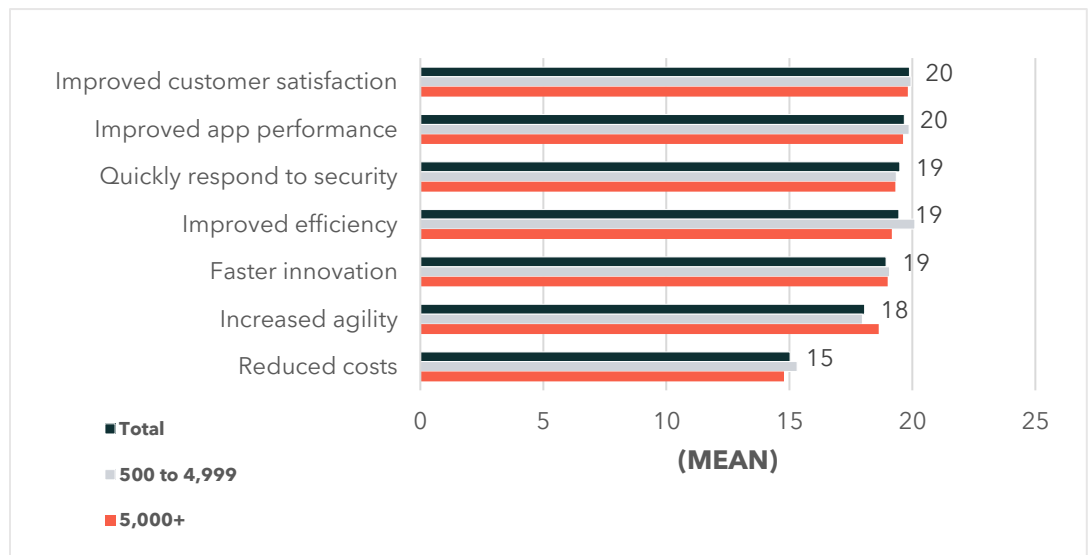
How did cloud impact the key metrics related to your organization's digital transformation goals over the past 12 months?



Organizations expect to see the **largest, double-digit improvements in customer satisfaction, improved application performance and responsiveness to security issues by using cloud services in the next 2 years** which motivates them to leverage these services to meet their digital transformation goals. % of improvement expected

Figure 12

What percentage of improvement do you expect your organization to experience in each of the following areas as a result of using cloud over the next two years?



Elevating revenue: the dual impact of customer satisfaction and application performance

In the digital era, customer satisfaction and application performance are key to business growth, driving a cycle of continuous improvement. **Satisfied customers boost revenue, foster loyalty, and offer competitive differentiation**, while **efficient applications enhance productivity and innovation**. Optimizing these elements through digital transformation (DX) leads to better security, deployment ease, and cost savings. Integrated services from a single trusted service provider can address these needs, aiding businesses in managing transformation challenges and ensuring DX exceeds customer expectations for ongoing success.

Customer satisfaction:

- **Increased revenue:** Satisfied customers are more likely to return and spend more, directly boosting revenue. By investing in human capital and leveraging AI to personalize employee development, companies can ensure that their workforce is adept at meeting customer needs, leading to increased satisfaction and revenue. This approach is not just about filling immediate skill gaps but preparing for the evolving demands of the modern business landscape, which directly contributes to customer satisfaction and financial performance.
- **Brand loyalty:** A positive experience builds loyalty, ensuring a stable customer base and reducing the likelihood of customers switching to competitors. Collaborative digital environments and a continuous learning culture can enhance the quality of customer service, fostering brand loyalty through every interaction. Recognizing employee achievements with digital badges and certifications can also motivate staff to provide exceptional service, further strengthening customer loyalty.
- **Competitive advantage:** High customer satisfaction can set a company apart, offering a unique selling proposition in crowded markets. By valuing and investing in people first, organizations can transform alongside technologies, ensuring that growth and innovation are built upon the talents, needs, and contributions of individuals. This human-centric approach to digital transformation gives companies a competitive edge as they leverage technology to enhance human interactions and experiences.

Application performance:

- **Improved customer experience:** Digital transformation revolves around customer-centric strategies. Applications that perform optimally are key to this, as they ensure a smooth and responsive interaction with customers. This seamless experience is vital for customer satisfaction as it reflects the company's commitment to quality and efficiency. When applications are user-friendly and reliable, customers are more likely to engage positively with the brand, leading to repeat business and referrals.

- **Innovation:** At the heart of digital transformation is the ability to innovate. High-performing applications provide a solid foundation for experimenting with new business models and services. They enable companies to quickly adapt to market changes and customer preferences. By leveraging data analytics and AI, businesses can use insights gained from application performance to drive innovation, creating solutions that meet the evolving needs of their customers.
- **Operational excellence:** Enhanced application performance is a clear indicator of operational excellence. It suggests that the company's internal processes are optimized and run efficiently. In the digital age, operational excellence is achieved through the integration of advanced technologies that automate and refine business processes. This leads to reduced errors, lower costs, and improved overall performance. Companies that achieve operational excellence can deliver consistent value to customers, which is a key component of a successful digital transformation strategy.

Strategic imperative for growth

Digital and network transformation is essential for achieving superior business outcomes in a dynamic market. It significantly influences market dynamics, customer satisfaction, and organizational longevity.

Market dynamics: Digital transformation enhances adaptability, allowing businesses to quickly adjust to market shifts and introduce innovative products, potentially leading to market leadership.

Market growth: Leveraging integrated connectivity and technology services facilitates entry into new markets, fostering business expansion.

Customer centricity: Prioritizing customer satisfaction, gauged by CSAT and Net Promoter Score, digital transformation enriches customer experiences and loyalty.

Operational flexibility: It provides the agility to refine operations, maintaining efficiency and responsiveness.

Innovation and competitive edge: Embracing digital transformation encourages market redefinition and a competitive advantage through early technology adoption.

Long-term success: Adopting innovative strategies helps ensure businesses stay relevant and prosper in a digital future.

Digital transformation is a comprehensive strategy impacting all business facets, establishing the foundation for agile, innovative, and competitive enterprises in a constantly evolving digital arena.

Unifying IT

Integrating network connectivity and technology services offers a strategic advantage by creating a cohesive and streamlined IT environment. A key reason to pursue this integration is the **operational efficiency** it brings. By consolidating services under a single provider, businesses can simplify management, which translates to **reduced complexity and lower operational costs**. This integration often leads to **enhanced security** across the network, as a unified service provider can offer comprehensive and consistent security measures. Moreover, integrated services can improve **end-to-end reliability**, ensuring that all parts of the business are interconnected with minimal downtime. See Table 5, below, for the business benefits organizations listed when choosing an integrated connectivity and technology services from a single Communications Service Provider.

54% of respondents said improved security is a paramount benefit of choosing integrated connectivity and technology services from a single Communications Service Provider (CSP). CSPs can offer comprehensive protection across the network, safeguarding data and applications with advanced security measures.

37% said the ease of deployment and management is significantly enhanced, which allows businesses to quickly set up and efficiently manage their network infrastructure with minimal complexity. This integration often results in **operational cost savings say 35%**, as it eliminates the need for multiple vendors and reduces the administrative overhead associated with managing disparate services. An equal percentage of respondents, **35% reported end-to-end reliability** that helps ensure that businesses experience consistent and uninterrupted service, which is crucial for maintaining productivity and customer satisfaction.

Altogether, opting for integrated connectivity solutions from a single CSP simplifies the technological landscape for businesses, allowing them to focus on core activities while enjoying the peace of mind that comes with a secure, reliable, and efficiently managed network. See Table 5 below for business benefits of choosing an integrated connectivity and technology services from a single Communications Service Provider.

Table 5. What are the business benefits of choosing an integrated connectivity and technology services from a single Communications Service Provider?

% of respondents

	Total	500 to 4,999 Employees	5,000+ Employees
Improved security	54	53	54
Easier to deploy and manage	37	38	34
Operational cost savings	35	35	35
End-to-end reliability	35	36	34

Unlocking potential with Lumen® Digital

IT leaders continuously face the challenge of finding new ways to drive growth, struggling with complex legacy technologies that fail to deliver speed and ease of use for their users. Lumen empowers organizations with an effortless digital experience that makes it easy for customers to do business with us. Everything we do at Lumen takes advantage of our network strength. We specialize in delivering **flexible, high-speed connectivity** and **advanced cybersecurity solutions** to help businesses transform and thrive. Our services include:

- **Network-as-a-service:** Network functions and services that have all the benefits of the cloud with Lumen® Network-as-a-Service (NaaS)—delivered on-demand with agile bandwidth, low latency, edge computing, scale, redundancy, and a self-service reconfigurable fabric.
- **High-speed cloud connectivity:** Robust connections that support large-scale cloud operations with a premier digital ecosystem that empowers customers to activate high-performance, dedicated cloud solutions in mere minutes—a revolutionary approach for network connections.
- **Cybersecurity:** Doubling down on security with Lumen DefenderSM that leverages network data to proactively block threats at the network level. With 200 billion NetFlow sessions and 2 million threats blocked daily, the digital world is indeed safer.

Partnering with Lumen offers robust security, efficient management, cost savings, reliability, and thorough monitoring—foundational elements for businesses to thrive in the future. As digital boundaries extend, Lumen is poised to navigate enterprises through transformation, providing enhanced connectivity, agility, and security. Unlock your potential to drive growth and innovation for your organization. Learn more at [Lumen.com](https://www.lumen.com).

Lumen Technologies (NYSE: LUMN) is a global integrated network solutions provider that unleashes the world's digital potential. We connect people, data, and applications - quickly, securely, and effortlessly - via one of the largest fiber networks in the world. In the age of AI and digital transformation, companies need access to an increasing amount of data and the ability to customize that access to match ever-changing needs. We use digital services, data and analytics to accelerate our customers' success and empower them to achieve their goals faster.

- 350,000 Global Fiber Route Miles
- 170,000 On-Net Fiber Buildings
- 450+ Tbps Global Backbone Capacity
- 2,200+ Data Center Connections
- 3.7m Quantum Fiber Locations in 16 states

*IDC Research, *U.S. Lumen Digital Survey*, April 2024 and IDC InfoBrief Doc. ID: US52378224, July 2024

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Why Lumen?

Lumen empowers organizations with an effortless digital experience that makes it easy for customers to do business with us. Everything we do at Lumen takes advantage of our network strength. From metro connectivity to long-haul data transport to our edge cloud, security, and managed service capabilities, we meet our customers' needs today and as they build for tomorrow.

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