EXECUTIVE BRIEF

Big data, critical connections and the future of business

Spectrum ENTERPRISE®

Real-time analysis of big data uncovers insights that keep today's organizations competitive. That means flexible, secure connectivity is more critical than ever to collect and manage the data streams that shape countless business decisions and daily life.

180
zettabytes
amount of worldwide data by 2025.[1]
(1 zettabyte = 1 trillion GB)

Connecting companies, consumers and the cloud

Big data is not only expanding, it is more distributed and is coming from more sources, such as Internet of Things (IoT) connected devices. IoT includes mobile phones, connected vehicles, cameras, radio frequency ID technology in retail settings, sensors capturing industrial data and much more, with the number of IoT devices forecast to grow to more than 32.1 billion by 2030.[2]

This prolific information poses a set of challenges for organizations that want to capture its insights.

Volume

Data is only useful with sufficient capacity to store and process it. The economy relies on more and more servers as data sources expand. Business networks must grow and evolve to reliably access information and computing resources spread across diverse locations.

Velocity

Another challenge arises from data that is useful for only a short time. A connected factory, for example, might rely on vibration or heat sensors to predict equipment failure. That information needs to be analyzed and acted on immediately, which calls for automation technology that can process data as it's created. Across a range of industries, more computing and network resources must be available 24/7/365 to handle real-time information.

Variety

Big data has long fueled dashboards for managers to view their operations and business intelligence to uncover unseen correlations that inform decisions. But those tools traditionally relied on data already organized into defined categories that are easily compared. Making this data useful requires advances in machine learning and applications like natural language processing, as well as the infrastructure to support them.

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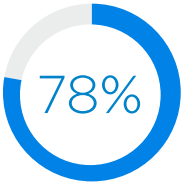

of executives say their organization does not have the in-house skills to fully achieve their cybersecurity objectives.[4]

Big data in the real world

Organizations that successfully confront the challenge of big data have transformed the way they make decisions.

Every link in the supply chain, for example, can benefit from insight into the highly dynamic relationships between businesses and their stakeholders. For instance, data analytics empowers supply chain professionals to make informed decisions, optimize routes, enhance inventory management and streamline operations, leading to increased efficiency and competitiveness.[3]

Another big data application is retail purchases, where online and offline experiences have begun to overlap. Successful omnichannel retail requires a grasp of consumers' preferences, store behavior, browsing patterns and customer service history. Retailers, who successfully combine all these data points into a customized experience, can increase store revenues.

At the same time, the rewards of big data come with risks. Data management can consume substantial staff resources without careful planning, and the costs of off-site storage and processing can escalate rapidly. The information within datasets can also pose significant security and privacy challenges. Different industries and locations face different standards for securing data storage and transmission, such as the Health Insurance Portability and Accountability Act for U.S. patient information and the General Data Protection Regulation overseeing personal data in the European Union. Regardless of its nature, all data traversing private networks, public infrastructure and the cloud needs to be secured from unauthorized access.

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Spectrum Enterprise scales big data opportunities

Big data demands solid, flexible connectivity. Spectrum Enterprise® empowers companies with solutions that make their networks fast, secure, scalable and reliably connected to the data that drives their decisions.

Dedicated Fiber Internet

Support changing business requirements with a fast, symmetrical service with speeds up to 100 Gbps that delivers a dedicated internet experience to keep up with the high demands of your network. The service is backed by a 100% uptime service-level agreement (SLA) guarantee all the way to the hand-off point at your location.

Ethernet Services

Meet ever-growing data needs by connecting locations with a fast, reliable wide area network (WAN) solution backed by a 100% uptime SLA guarantee and built on a dedicated fiber infrastructure. Bandwidth up to 100 Gbps is available.

Cloud Connect

Extend your network with fast, secure and dependable private connections to cloud service providers with a service backed by an SLA that guarantees 100% uptime all the way to the hand-off point at your location.

Managed Network Edge

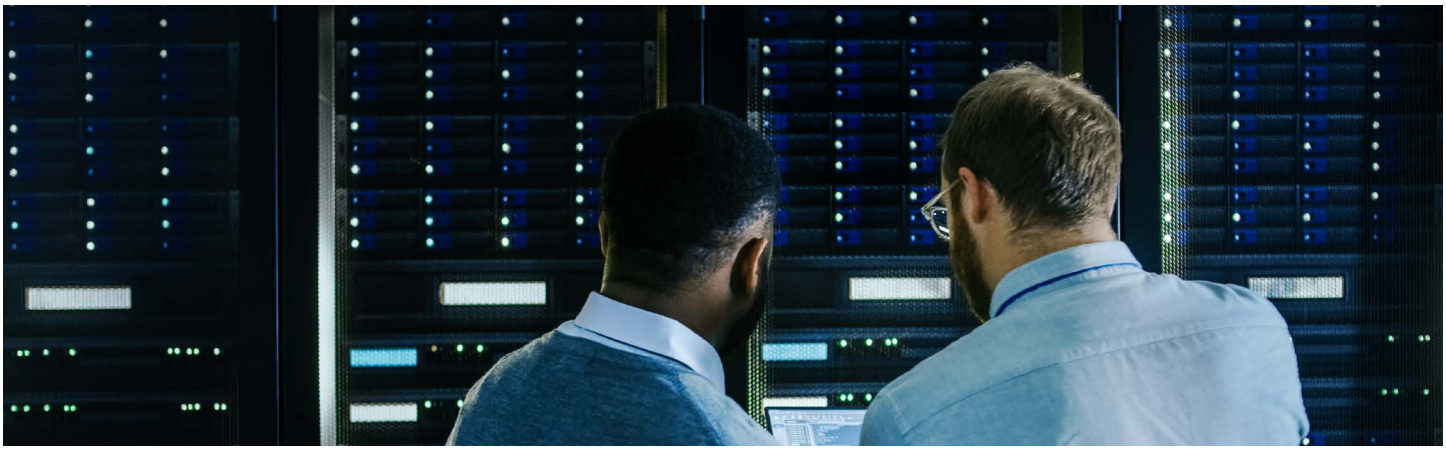
Simplify the deployment and management of your network with this modular, all-in-one solution. Delivered over the Cisco Meraki platform, Managed Network Edge offers security features, routing, SD-WAN, WiFi, switching, smart cameras and environmental sensors. Achieve flexibility, scalability with connectivity, equipment and network management from a single partner.

Enterprise Network Edge

Improve the network experience for your teams with an enterprise-grade managed solution that brings together connectivity, equipment and network management to support both hybrid networks and workforces. Powered by Fortinet, the solution simplifies IT operations by providing networking with security features and optional integrated WiFi and switching in a multi-cloud-ready platform.

Wavelength Services

Support your most demanding application needs with high-speed, dedicated WAN connectivity with bandwidth up to 100 Gbps.



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Key questions to consider when developing a big data strategy

- Is your IT infrastructure flexible enough to meet growing demands for data storage and processing?
- Do you have the right security solutions in place to protect data in the cloud and on-premises at your dispersed locations?
- Can you count on 100%, 24/7/365 U.S.-based support for business-critical services?
- Can you scale your bandwidth needs as data collection and project goals expand?

Build the foundation for your big data future with Spectrum Enterprise

Big data is only getting bigger. The influx of information from customers, business systems, sensors and a growing list of other sources can be an advantage when you have the ability to manage it.

Gain greater network efficiency, increased bandwidth, proactive cybersecurity protection and more with our comprehensive network modernization solutions. Each is customizable to your business, so you have the tools and support you need to grow.

Learn more

1. Sriram Subramanian, "From 5MB Hard Drives To 180 Zettabytes: The Data Migration Challenge," Forbes, March 4, 2024.
2. Lionel Sujay Vailshery, "Number of Internet of Things (IoT) connected devices worldwide from 2022 to 2023, with forecasts from 2024 to 2033," Statista, June 12, 2024.
3. Charan Lalwani, "Unlocking the Future: The Empowering Role of Data Analytics and AI," Supply & Demand Chain Executive, October 17, 2023.
4. "Global Cybersecurity Outlook 2024," World Economic Forum, January 2024.

About Spectrum Enterprise

Spectrum Enterprise, a part of Charter Communications, Inc., is a national provider of scalable, fiber technology solutions serving many of America's largest businesses and communications service providers. The broad Spectrum Enterprise portfolio includes networking and managed services solutions: Internet access, Ethernet access and networks, Voice and TV solutions. The Spectrum Enterprise team of experts works closely with clients to achieve greater business success by providing solutions designed to meet their evolving needs. For more information, visit enterprise.spectrum.com.

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