

THE RAPID GROWTH OF DATA AND WHAT IT MEANS TO THE ENTERPRISE



ORGANIZATIONS TODAY ARE GENERATING, ANALYZING, SHARING, AND STORING UNPRECEDENTED VOLUMES OF DATA. Contributing to the explosion of information are the rise of cloud services, increased use of analytics tools, the launch of big data initiatives, growing deployment of mobile devices and apps in the workplace, and the emergence of social media as a marketing and customer engagement platform.

This rapid growth of data opens up huge opportunities for companies. They can better provide knowledge workers with the resources they need to do their jobs, enhance services to customers by having more granular information about their behaviors and preferences, and analyze information to make quicker enhancements in products and improve processes and workflows.

As enterprises look to leverage information assets like never before, they are increasingly transforming into more digital organizations. The emerging priority of building a digital business amidst the big data movement is widely reflected in industry research.

[A November 2015 report by International Data Corp. \(IDC\)](#) estimates that the market for big data technology and services will grow at a compound annual growth rate (CAGR) of 23 percent between 2014 and 2019, with annual spending reaching \$48.6 billion in 2019. All three major big data submarkets—infrastructure, software, and services—are expected to expand over the forecast period.

This rise in demand for big data resources is not surprising, given that many business units in virtually every industry are asking for more analytics capabilities so that they can leverage incoming data. The increased use of analytics then fosters ever more demand for data that can provide business value and help managers make informed decisions.

Also contributing greatly to the data explosion is the ongoing growth of mobile devices and apps in the workplace, which generates large amounts of information. The [Radicati Group reported](#) that in 2015 the number of worldwide mobile users, including both business and consumers, was more than 5.8 billion. By the end of 2019, the number of worldwide mobile users is expected to increase to more than 6.7 billion and mobile devices in use will grow to more than 14.8 billion.

Other, emerging technologies also add to the growing data supply. These include wearable devices, virtual and augmented reality systems, medical devices, and mobile payment platforms. And of course, the Internet of Things (IoT) is generating numerous new sources of data.

[Gartner Inc. estimates](#) that 5.5 new “things” are getting connected every day. According to the research firm, 6.4 billion connected things will be in use this year, up 30 percent from 2015, and the total number of connected objects will reach 20.8 billion by 2020.

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The growing use of social media as an information source is also a major contributor. As new social networking platforms emerge and user bases continue to grow, enterprises rake in vast volumes of data that can prove useful in product planning and customer service.

It's clear that the growth in data volume will not likely slow down anytime soon. And it's putting enormous strain on IT infrastructures at a time when organizations are facing a number of key data center challenges.

DATA CENTERS STRUGGLE TO KEEP UP

This is a time of transformation for many data centers. The traditional IT facilities that were dominated by physical servers and storage systems have shifted primarily to virtualized and software-defined environments. In many cases, on-premise data centers run in conjunction with private and public cloud services that form a hybrid IT infrastructure to serve the business.



BUSINESS USERS NEED TO BE ABLE TO GET TO APPLICATIONS AND DATA AROUND THE CLOCK, AND THEY EXPECT UNINTERRUPTED ACCESS TO IT RESOURCES FOR EMPLOYEES, CUSTOMERS, AND PARTNERS.

The data center transformation trends are coming at a good time, because enterprises are under pressure to keep IT costs relatively flat, energy usage down, and operate more efficient servers, storage systems, and networks. According to a report from independent research firm [Computer Economics](#), IT organizations in North America plan to increase operational budgets by a marginal 2 percent at the median in 2016 as they continue to shift operations into the cloud. Budget growth rate, while remaining positive, indicates the pace of recovery is slowing considerably. This is primarily evident among large organizations, which are planning for no growth in IT operational spending.

Data centers also need to meet the demands of a constantly changing business; they need to incorporate highly flexible platforms that are designed to handle a variety of on-premise and cloud applications, including some that support critical workloads.

The dynamic business environment in which companies operate today demands IT agility. Data centers must reflect this and must also be easily and affordably scalable to account for ongoing growth in data volumes, as well as the number of users.

In addition, organizations need to ensure data protection and privacy in the data center. The number and sophistication of data breaches are on the rise, and companies need to be on guard against threats and vulnerabilities such as distributed denial of service (DDoS), Web application, ransomware, and other attacks.

In today's competitive environment, having data center access unavailable for even a brief period can be extremely costly for organizations. Business users need to be able to get to applications and data around the clock, and they expect uninterrupted access to IT resources for employees, customers, and partners. Uptime must be consistent and application performance must be at a high level at all times; otherwise, productivity declines along with business results.

Finally, enterprises that are upgrading their data centers need to deploy solutions that support an open standards-based approach that enables easy integration and interoperability with the existing environment. They also need to provide simplified IT management. Having an open standards approach to hardware and software helps organizations avoid the problem of vendor lock-in while also enabling easier integration with third-party applications.

In today's fiercely competitive business environment and the ever-increasing volumes of data, legacy data centers no longer cut it. Organizations need to continue to transform their IT infrastructures to meet the growing demands of business and provide excellent technology services to employees, partners, and customers.

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Customers receive more value from server vendors with broad software partner ecosystems



Server vendors with broad ecosystems of software partners are best-positioned to meet customers' unique IT requirements. While some vendors bundle their software products along with server sales, vendors that partner for software capabilities provide strong value by enabling customers to choose the software that best fits their needs, regardless of the supplier.

Lenovo demonstrates its open and flexible data center strategy with its software-agnostic approach to infrastructure management software. As a result, the company focuses software development efforts on products that enable its servers to integrate well with customers' environments. This lack of a proprietary, locked-in software approach allows Lenovo to deliver a strong value proposition to customers that want to use their software assets or software from Lenovo's partner network.

— Lenovo servers provide an open and flexible foundation for data center initiatives, December 2015, Technology Business Research, Inc.

Lenovo is helping drive the next generation data center by focusing in three key areas: **reducing costs, simplifying IT infrastructure, and accelerating time to value.**

UNMATCHED PRODUCT VALUE ACROSS THE ENTIRE LIFE CYCLE

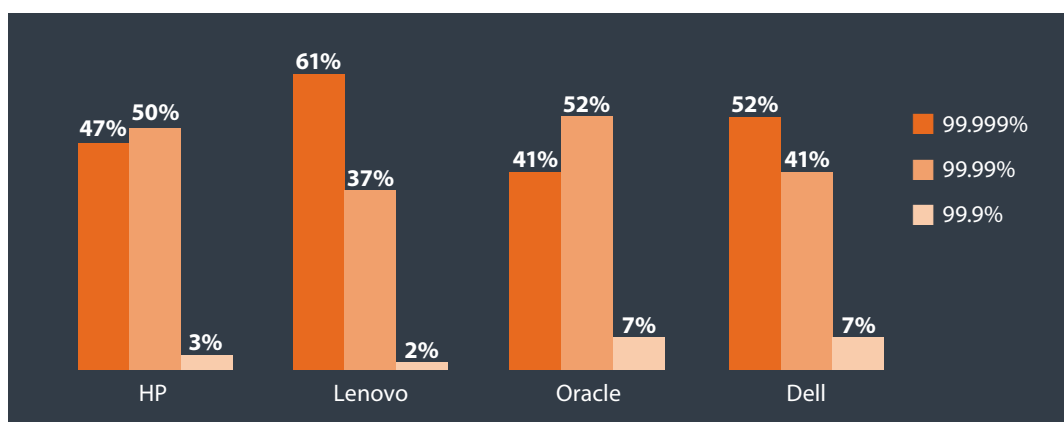
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- Innovation to avoid costly downtime
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[Technology Business Research, Inc.] believes Lenovo is well-positioned to address customers' pain points around IT agility and complexity through portfolio investments in products such as XClarity™ that enable the vendor's server hardware to be easily integrated, as well as its partner-centric software strategy to provide greater choices for customers. Furthermore, Lenovo's efforts around open standards, interoperability, security, and RAS will also help the company solve customers' IT pain points by reducing complexity and easing integration for its servers.

— Lenovo servers provide an open and flexible foundation for data center initiatives, December 2015, Technology Business Research, Inc.

For more information on Lenovo Data Center products and services, visit <http://solutions.lenovo.com/heart-of-the-datacenter>.

