

WHITE PAPER

Building the Business Case for the Next-Generation Data Center



As the business landscape continues to evolve, how organizations manage data needs to keep pace. The next-generation data center is up to the challenge.

Current rates of data growth show no signs of slowing. In 2025 the world will create and replicate 163ZB of data, representing a tenfold increase from the amount of data created in 2016 alone, according to IDC. Not only are the numbers staggering but they also signal a significant need for organizations to revisit data strategies.

More importantly, as the growth numbers compound, how an organization and its customers consume data is evolving as well. In a word, the ability to create, store, and ultimately leverage all this data is driving the new digital economy.

But the importance of data does not stop with the many digital upstarts (think Blue Apron and Zip Recruiter, among many others) that have become media darlings. According to IDC's report, "Digital Disruption: How Technology is Driving Market Dynamics," more than half of the businesses responding to its survey said they are well along in their journey to become digital enterprises capable of consistently turning data into an asset, whether that means optimizing existing operations and offerings or generating new revenue streams. This coincides with the 43% of the survey respondents who anticipate a budget increase in data management and analytics.

Simply put, as the number of data-centric businesses continues to multiply, there is a growing need for stable data availability. Of course, thriving—or simply surviving—within this environment means having the right IT infrastructure in place to support evolving organizational needs.

For many, this means that it's time to begin moving toward the next-generation data center (NGDC).

Finding a Definition

What exactly is the next-generation data center? The NGDC is an integration of IT technologies designed to work together, managed as one automated solution that's often provided as a service. Additionally, the NGDC is automated for provisions as well as management and offers organizations the flexibility needed to move from one to another as it evolves over time.

In its truest form, the NGDC is software-based and virtualized and has built-in data fabric capabilities that provide consistent and integrated data management. Data fabric is a software approach for data movement and management that provides a consistent set of capabilities and services that span a choice of endpoints and application ecosystems connected across the cloud and on-premises. Data fabric simplifies and integrates data management across all resources. It delivers consistent and integrated hybrid cloud data services for data visibility and insights, data access and control, and data protection and security.

Orchestration, DevOps enablement, analytics access, and many other services work together in the NGDC. Establishing an NGDC is an instrumental step as an organization moves toward offering an operational IT-as-a-service environment. However, the tiered architectures prevalent in many data centers are falling short as today's organizations rapidly invest in powerful new applications and data services. Instead, the answer is a much more modular approach to leveraging hybrid cloud environments.

Understanding the Driving Force

Although it's clear that ongoing digital transformation will have a lasting impact across industries, what is specifically driving action depends heavily on each organization's business strategy. Understanding which drivers are affecting your organization can play a pivotal role in determining whether it's the right time to transition to an NGDC environment. Important considerations include the following:

- **THE GROWING NEED TO ENABLE NEW CUSTOMER TOUCHPOINTS.** Understandably, as the marketplace has continued to evolve, customers have assumed a new position of control, with higher expectations than ever. The better an organization can empower customer engagement, the higher its likelihood of success.

As such, organizations have invested heavily in writing new applications to work natively within the cloud—often offering customers constant access. Understandably, app developers are looking for standard, open, API-driven commands as well as DevOps tools and capabilities that enable them to quickly address business needs. NGDCs unleash the creativity and power of developers without infrastructure worries, by providing them the self-service resources needed to effectively build and deliver what the business needs.

As the digital transformation stats predict, the customer-led trend is likely to intensify as lines of business turn to IT to help address how to better manage data. Fortunately, IT leaders recognize the opportunity—48% of the respondents to the IDG "State of the CIO 2017" survey said they have a more collaborative relationship with the CMO today than they did three years ago.

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- 1. Firm up organizational alignment** – it's rarely a matter of going from one system to another.
- 2. Find a scalable and open solution** – you may need to support hundreds of applications.
- 3. Look to the future** – remain flexible by steering clear of vendor lock-in.

Interestingly, as organizations work to address the need for new customer touchpoints, IDC predicts that by 2019, 5% of revenue will come through interaction with a customer's digital assistant or intelligent agent. These intelligent agents will create an array of conversational interaction points that need to be defined, maintained, and managed. Organizations will need to develop a new set of skills in their sales, marketing, and product departments to serve connected users. To support this intelligent agent environment, IT must enable seamless and predictable access to data on an on-demand basis—the type of access an NDGC enables.

■ **CREATING INNOVATIVE BUSINESS OPPORTUNITIES.** The continued growth of the “as-a-service cloud” model enables far more organizations to fully embrace and ultimately capitalize on the first-to-market innovation model. Although the applications are still important, being truly innovative means effectively managing the mountains of data that apps can access and effectively using that data for significant business advantage. This phase often works in tune with enabling new customer touchpoints.

This is evident in the stats presented as part of the IDG Digital Disruption report. According to [IDC predictions](#), 40% of IT projects will create new digital services and revenue streams that monetize data by 2019—meaning that IT will have to drive data and analytical strategies for companies.

Although many digital upstarts have been born—and have thrived—by capitalizing on innovative use of data, many traditional organizations have also shown the ability to create new data-centric opportunities. The key is understanding how data use can provide customers services they value.

■ **OPTIMIZING OPERATIONS.** As businesses continue to view IT as a revenue enabler, there's a growing need to refocus key efforts on empowering business-critical apps. Having the infrastructure in place to enable as-a-service, on-demand capabilities plays a pivotal role in meeting this goal. Organizations cannot afford to wait for IT as it continues to refine settings.

This is often where web startups thrive—and can serve as case studies for traditional enterprises. Rather than tying up funds to build traditional infrastructures, digital upstarts are using operating funds to run applications via cloud service providers. This not only puts less capital at risk but also enables the new company to focus on its product offering, not the undifferentiated infrastructure.

According to the IDG Digital Disruption report, 45% of CIOs will shift their primary focus from physical to digital by 2018 and move away from business process management and optimization to deliver scale, predictability, and speed. This shift demonstrates that IT leaders understand the significance of modular, scalable, heavily automated on-demand technologies. Having the ability to leverage digital technologies, new business models, and entrepreneurial cultures is mandatory for success. Every organization of every size risks fundamental disruption because of new technology, new players, and new ways of conducting business.

Although over 65% of the respondents in the IDG report described themselves as being in the “early stages of adoption” (so-called digital explorers/players), only 14% characterized themselves as digital “resisters,” or enterprises that have yet to establish any significant digital capabilities or adopt digital solutions systematically.

As survey results demonstrate, a key part of achieving success rests with having the right technology in place. As such, 76% plan to implement converged infrastructure and 72% have plans to implement hyperconverged infrastructure. This ongoing move toward heavily automated converged and hyperconverged environments is an instrumental component of the NGDC journey, as it enables organizations to consolidate mixed workloads, leverage predictable performance, and benefit from granular control at the VM level when needed.

An NGDC configuration based on a software-based data fabric will enable consistent and integrated data management capabilities.

Making the Move to the NGDC

As with any meaningful change, moving away from traditional IT infrastructure toward the NGDC is a process—and the actual path will vary by organization and industry. However, recognizing when the time is right is a matter of determining whether the driving force has become a leading objective within the enterprise. Below are a few proven steps to help kick off a successful transition:

- **STEP 1: FIND ORGANIZATIONAL ALIGNMENT.** Understanding organizational goals and objectives is probably the most significant step before making the move. It is rarely a matter of going from one system to another: Evolving to an NGDC is essentially a journey toward utilizing the efficiencies of public and private clouds. In recent years, organizations have focused on consolidating and virtualizing. Embracing an automated infrastructure, or a service provider model where everything is as-a-service, is the next step as organizations evolve.

Success in the digital era means taking advantage of architecture that is scalable, automated, and predictable. Likewise, newer companies are focused on building out the true digital infrastructure from day 1. However, if the goal is to implement infrastructure that is slightly cheaper and slightly faster, a move to an NGDC is not necessarily the right step.

- **STEP 2: SEEK SCALABILITY AND OPENNESS.** The days of building an infrastructure for a single application are over. Instead, organizations need an infrastructure capable of supporting dozens (even hundreds) of applications—some of which they do not even know about now.

Understandably, most enterprises have a range of infrastructure still within its usable life. This does not need to be a deterrent to embarking on the NGDC journey. Regardless of the current consumption model (as-a-service, converged, purpose-built, or software-defined), an NGDC configuration based on a software-based data fabric will enable consistent and integrated data management capabilities.

- **STEP 3: REMAIN FUTURE-READY.** A true NGDC configuration should not only help eliminate reliance on traditional infrastructure but should also help avoid vendor lock-in. The key here is to find solutions that are truly software-based and automation-centric.

The NGDC infrastructure needs to enable agility for development teams and deliver on-demand data services. As a result, IT needs to focus on empowering people to find innovative ways of using data instead of continually building out infrastructure.

The Bottom Line

Organizations need to act to succeed in the new digital economy. This means strategically investing in how the enterprise gathers, manages, and leverages data in its quest to remain innovative and competitive. Unfortunately, traditional infrastructure approaches are only holding enterprises back. The time for the next-generation data center is now.

About NetApp

As a developer of data solutions, NetApp is focused on empowering organizations to accelerate digital transformation by simplifying and integrating data management across cloud and on-premises environments. NetApp provides a full range of hybrid cloud data services to help global organizations unleash the full potential of their data in order to expand customer touch-points, foster greater innovation, and optimize operations.

Ready to start the journey? Visit <http://www.netapp.com> to learn more about the next-generation data center and how it can help your organization realize its data-based goals.