

## Solution Showcase

# Offload Complexity with On-premises Storage-as-a-service

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**Abstract:** As businesses seek to control costs while simultaneously enabling business growth, IT leaders often face a decision point with regard to the core competency of the organization. Ultimately, does architecting and managing IT infrastructure deliver a competitive advantage, or should the day-to-day maintenance be managed by a third party?

When deciding to procure enterprise storage-as-a-service, organizations have looked to public cloud services as a dominant option, but they are often an incomplete one. Multiple factors lead organizations to retain workloads and data sets on-premises. For these organizations, on-premises storage-as-a-service solutions deliver a necessary and transformational option.

## Overview

In an increasingly digital economy, companies are generating, collecting, analyzing, and accessing increasing volumes of data in an effort to create and extract even greater business value. In response, IT organizations must not only continue to efficiently deliver existing IT services, but now must also enable business growth and deliver new initiatives leveraging that data, such as the development of new digital products and services or the use of analytics to better understand the customer and become more efficient internally.

Faced with these increased demands, IT leaders must make a decision in regard to the core focus of their organization. Are IT resources best applied to architecting and managing every element of the infrastructure, or are they more effective when allocated elsewhere, such as supporting new business development initiatives? When faced with rapidly growing data capacities, the budget is not always available to do both.

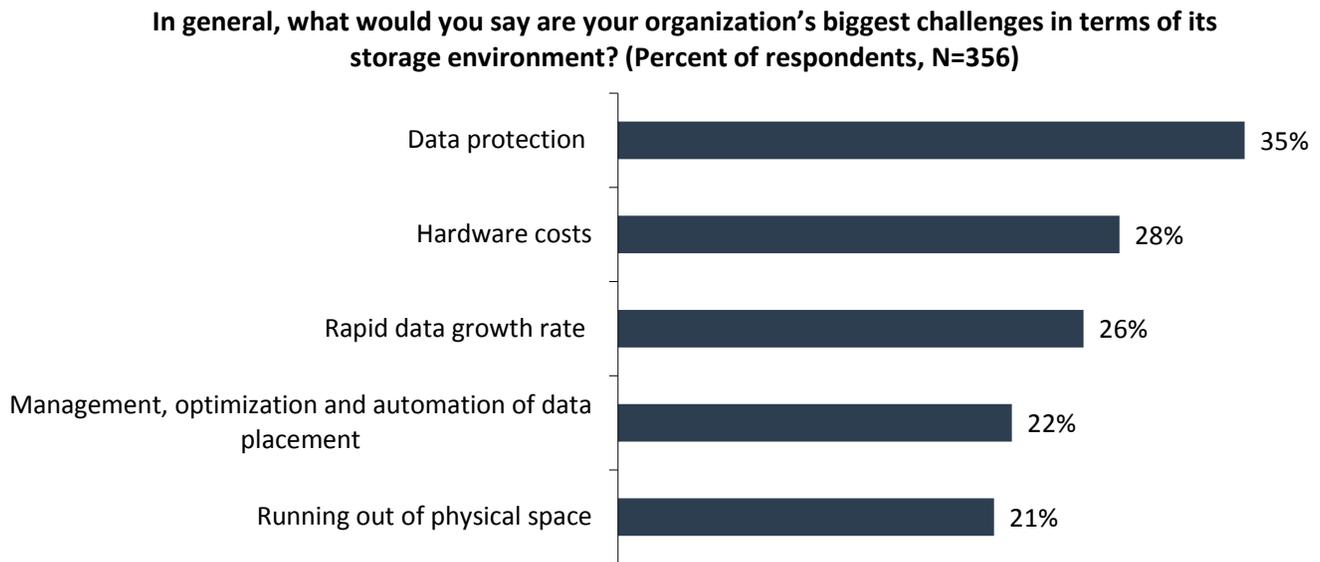
For organizations that decide to let someone else procure IT infrastructure and manage the day-to-day challenges, public cloud services have emerged as an option. One option, however, isn't enough. While the public cloud offers a number of benefits, it is not suited for certain workloads and data sets, whether for security, regulatory, performance, or other business-specific reasons.

IT leaders need on-premises options to deliver storage-as-a-service capability. On-premises storage-as-a-service solutions that offer public cloud-like benefits but with hosted on-premises infrastructure are starting to emerge. IT organizations can still offload the day-to-day complexities of storage infrastructure design and management, while achieving on-premises levels of performance, security, and technical flexibility. The end result allows high value IT personnel to focus on leveraging that data to grow the business rather than merely supporting the infrastructure.

## The Shifting Landscape Toward Storage-as-a-service

To better understand the enterprise storage market landscape, ESG recently surveyed 356 IT professionals responsible for evaluating, purchasing, and managing data storage technologies at midmarket (i.e., 100 to 999 employees) and enterprise (i.e., 1,000 or more employees) organizations in North America. As part of this study, storage decision maker respondents were asked to identify the top storage challenges in their organizations. The top five results appear in Figure 1. The top three most-identified storage challenges—data protection, hardware costs, and rapid data growth rate—have stayed in the top three from 2015 to 2017.<sup>1</sup>

**Figure 1. Top Five Data Storage Challenges**



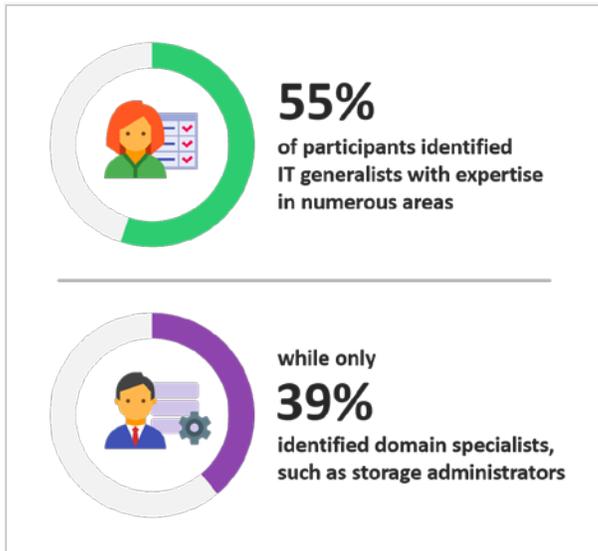
*Source: Enterprise Strategy Group, 2017*

In other words, the overarching issue driving data storage concerns is relatively unchanged—data growth is accelerating and the resulting infrastructure required to store and protect that data is costly and complex. Despite all the benefits of scale-out architectures, all-flash technology, software-defined storage (SDS), higher capacity hard drives, and higher capacity solid-state drives, the challenge of mounting data demands persists. Additionally, these new innovations may be adding to the complexity challenge, as 22% of storage decision makers identified the management, optimization, and automation of data placement as one of their storage challenges. Organizations have more options when it comes to storage technology, but this increase in variety adds complexity when making infrastructure design, procurement, and deployment decisions.

In response, IT organizations are investing in initiatives that transfer the complexity and responsibility of storage infrastructure design and management to a third party. In ESG’s research, storage decision makers were asked to identify which initiatives were expected to impact their on-premises storage spending over the next 12 to 18 months, and were given the opportunity to select up to seven responses. The most commonly identified response to this question was the use of public cloud services as a way to source storage capacity without buying new on-premises infrastructure (35%). As another indicator of this shift to procuring storage-as-a-service, organizations also have adjusted hiring practices. For example, in an effort to better understand IT hiring practices over the next 12 months, ESG asked decision makers to identify which description best described the majority of the positions they were looking to fill. Fifty-five percent of participants identified IT generalists with expertise in numerous areas, while only 39% identified domain specialists, such as

<sup>1</sup> Source: ESG Brief, [2017 Storage Trends: Challenges and Spending](#), August 2017. All ESG research references and charts in this solution showcase have been taken from this brief, unless otherwise noted.

storage administrators. This inclination toward IT generalists suggests a trend away from recruiting deep storage technical expertise.



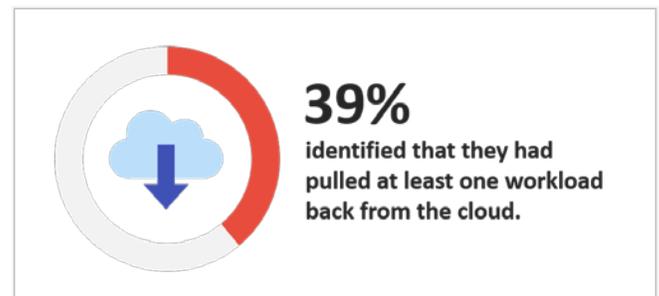
While popular, the public cloud is not an ideal option for every workload and data type. Among storage decision makers who identified their organization as one that had or is currently leveraging public cloud services, 39% identified that they had pulled at least one workload back from the cloud. Public cloud services offer benefits, but can also cause concerns within organizations, such as those related to security, reliability/exposure to outages, regulatory issues, performance impacts, and unpredictable pricing models. The likely optimal answer is a hybrid strategy utilizing both off- and on-premises clouds based on the workload data requirement. To this end, on-premises storage-as-a-service technologies can deliver the best of both worlds: the agility and the abstraction of the public cloud, as well as the security, resiliency, and performance expected from on-premises storage infrastructure.

## Understanding On-premises Storage-as-a-service Technology

On-premises storage-as-a-service solutions should deliver what the name outlines: enterprise storage capabilities delivered as a service with the infrastructure housed on-premises. To deliver the “storage” element of storage-as-a-service, the solution must provide a level of storage performance, resiliency, high availability, and other enterprise-level capabilities necessary for it to replace traditional enterprise storage for both file and block workloads. While somewhat obvious, it is important to clarify that if the end solution is unable to deliver enterprise storage capability, it is a non-starter.

The second fundamental portion of the definition is the “as-a-service” element. One concept inherent in as-a-service solutions is the ability to pay only for the resources currently being used. This eliminates the need to prepay for infrastructure (e.g., capacity or performance) that sits idle in hopes that it will be utilized after the organization has undergone some further growth. Switching payment plans to a leasing model or a pay-per-capacity plan, however, is not enough; as-a-service solutions also must be fully managed. To truly deliver storage, or any capability, as a service, a solution must provide enough efficiency to reallocate IT personnel. In other words, if you still need the same level of storage IT personnel, then the benefit of switching to an as-a-service solution is severely reduced. For a technology to deliver value as a service, it needs to eliminate the responsibility from internal personnel and free up those resources for other tasks

Ultimately, if these elements are delivered correctly, storage-as-a-service can free your organization from the burden of designing, implementing, and maintaining an ever-growing data storage infrastructure. While these concepts can be applied to both on- and off-premises storage-as-a-service solutions, the benefits can be even more impactful when the solution is offered on-premises. With an on-premises option, IT leaders are no longer forced to make decisions about which workloads or data sets must stay on-premises or move to the cloud. Cloud-like benefits can be applied to all workloads.



## What to Look for in Storage-as-a-service

While delivering storage-as-a-service sounds straightforward, it is the more nuanced capabilities that will likely determine how much value the solution delivers over the long term. For example, how open and flexible is the architecture? When a new technology, such as NVMe or 3D XPoint becomes available, will the solution be able to integrate these technologies, and deliver the benefits? Or will you be locked into five-year-old technology five years from now? These questions provide perspective that all solutions are not created equal. When evaluating these solutions, there are several capabilities to look for, including:

- **A Trusted Partner:** This could be filed under obvious, but leveraging any storage-as-a-service solution (whether on- or off-premises) means that you trust this vendor to store, secure, and deliver your business's data more efficiently than can be done internally. It is still your business's data, so you want to leverage a partner with a proven and lengthy history of innovation in the storage industry, one that is well positioned to access emerging technologies, such as NVMe or 3D XPoint. Can you trust the vendor to understand these new technologies and utilize them appropriately? Misunderstanding the impacts of new technologies like NVMe distracts resources. For example, claiming a technology is "NVMe ready" is different from trusting the vendor to leverage NVMe technology in the most effective manner. Additionally, look for a vendor with a strong services division, since the delivery of services is key to effective delivery of the storage capability. Building the storage solution is only one part of the as-a-service offering.
- **Public Cloud Expertise:** In the ideal environment, look for an on-premises storage-as-a-service vendor that is also experienced in public cloud. Vendors that offer both on- and off-premises solutions can leverage best practices from each mode to achieve further optimization. Additionally, these providers can offer the ability to extend the on-premises storage-as-a-service solution to leverage public cloud infrastructure, delivering a hybrid cloud solution if desired.
- **Infrastructure Freedom:** The terms that are associated with "as-a-service" agreements can vary depending on the vendor. Ideally, you want a partner that offers the greatest level of freedom to procure storage capabilities and terminate the use of those capabilities, if necessary. In other words, look for a partner that does not require a long-term contract, and that offers a way to easily get your data out if you decide to switch vendors in the future. Another consideration is the cost of data egress. The added cost of moving data can make some solutions truly prohibitive. Additionally, if the partner requires commitments from you for future capacity growth or expenditures, you should consider that partner a non-starter. The vendor, not your business, should own the risk of supporting future data growth.
- **Predictable Finances:** Public cloud services changed storage cost dynamics by adding charges for data egress. Solutions that eliminate these difficult-to-predict factors and focus on measures that are more easily understood and forecasted, such as capacity usage, deliver considerable benefits, allowing the business to more accurately budget for future demands.
- **Location Flexibility:** The ability to deploy infrastructure on-premises is key to the solution, but the flexibility to also deploy it off-premises for disaster recovery or backup, whether in a dedicated, private, or hosted co-location data center, offers greater flexibility for infrastructure solution deployments. Look for a vendor that offers multiple deployment options with the ability to adjust workloads and capacities across multiple sites as needs evolve.
- **Speed to Provision:** A key benefit of public cloud services is the ability to deploy new capacity quickly. New infrastructure deployment should not slow down IT initiatives. Storage-as-a-service solutions that can deliver new capacity in weeks rather than months provide public cloud-like business benefits.

- **Immediate and Tailored Access to Innovation:** New storage technologies continue to emerge, increasing capacity scale and dramatically reducing access latencies. Vendors that possess strong technical leadership, such as the ability to effectively optimize flash storage, allow you to ensure that the storage-as-a-service infrastructure will be continually optimized to reduce the cost of capacity and performance, while delivering the necessary performance scale to support application growth.

Ultimately, it is these more nuanced elements that will likely determine the success of any storage-as-a-service deployment. More so than traditional storage deployments, procuring storage-as-a-service commits your organizations to an ongoing relationship, which, as noted, makes it important to leverage solutions that make it easier to terminate the relationship and extract your data. In addition, it is important to understand the organizational impacts of shifting strategies away from storage-as-a-service back to a traditional storage management model, if your organization may decide to do so in the future. For example, it is likely that you would have reallocated your staff away from on-premises storage infrastructure after leveraging storage-as-a-service, and thus have fewer resources left to manage it again manually if you wanted to shift back to a traditional storage model. In other words, it is crucial to not only find the right partner, but also to identify the right workload subset to begin and essentially evaluate a storage-as-a-service relationship prior to making a larger infrastructure overhaul. Selecting a storage-as-a-service partner is a long-term business relationship, where the technology is only one small piece of the solution's value. If done correctly, though, it can transform your business for the better.

## The Bigger Truth

No business can do everything all the time and do it well. Ultimately, you have to ask whether your business's ability to design and manage IT storage infrastructure delivers a differentiable advantage. If the answer is no, then you must calculate the opportunity cost. What else could your business do with those resources? Could you develop new digital products or services and take them to market sooner? Would you finally be able to begin those analytics-based projects to better understand your customers' buying behavior or improve employee efficiency? The bottom line is that there is likely something else that those often highly educated personnel resources could be doing rather than diagnosing performance issues or replacing hard drives.

When considering a storage-as-a-service solution, understand that the public cloud may not be ideal for every workload, either. Multiple considerations, related to performance, security, or regulatory compliance, have led organizations to leave workloads on-premises or in some cases pull them back from the public cloud. As much as it might make sense to offload the storage management and design tasks, the responsibility for your business's data still remains with you and your business. Ensuring that your business's data is secure, protected, and available is central to the on-premises storage-as-a-service value proposition. Offload the design and management tasks to an expert third party, but keep your data in-house. These solutions provide the potential to extend the benefits that many only associate with the public cloud to a wider variety of workloads in the data center. With your storage infrastructure taken care of by an expert technology partner, your business is free to redeploy its highly educated resources to creating value rather than maintaining hardware.

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