Enterprise Strategy Group™

WHITE PAPER

Maximizing Your Data Value With an Enterprise Data Cloud

A Modern Approach to Replace Storage Silos With Unified, Intelligent Data Control

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Data Is Everywhere, but There's No Unified Data Control

The data explosion over the last two decades has been a fundamental enabler of our digital lives, and it is now a given that digital data is the lifeblood of modern organizations. But another, more troubling reality exists: Organizations are not only drowning in data, but they are also losing control of it.

According to a recent Enterprise Strategy Group research study of senior IT decision-makers, 63% of the respondents said they regularly encounter visibility-related issues across their data environments.[1] Insufficient visibility can lead to ineffective/improper data governance. Additionally, in a world where the success of AI and other innovations is predicated on using data effectively, a lack of control over that data drives up costs, substantially increases risks, and ultimately limits the value that organizations gain.

Conversely, organizations that have control of their data operate efficiently. They move quickly to take advantage of new data-intensive technologies such as AI. They might better mitigate the risks associated with the constantly shifting cyberthreat landscape. And they could achieve compliance with industry and government regulations more effectively.

Although the data control problem has often been acknowledged, in the past it has also been viewed as too complex and costly to solve. Instead, organizations wrapped band-aids around the issue, often exacerbating it in the process. However, for two reasons, inaction or just taking a piecemeal, tactical approach to enterprise data management is no longer viable. First, the costs and risks of those limited approaches are high and will only get worse. Second, the benefits of embracing a modern data approach—such as an enterprise data cloud (EDC) that places control and understanding of data at its center—are increasingly apparent.

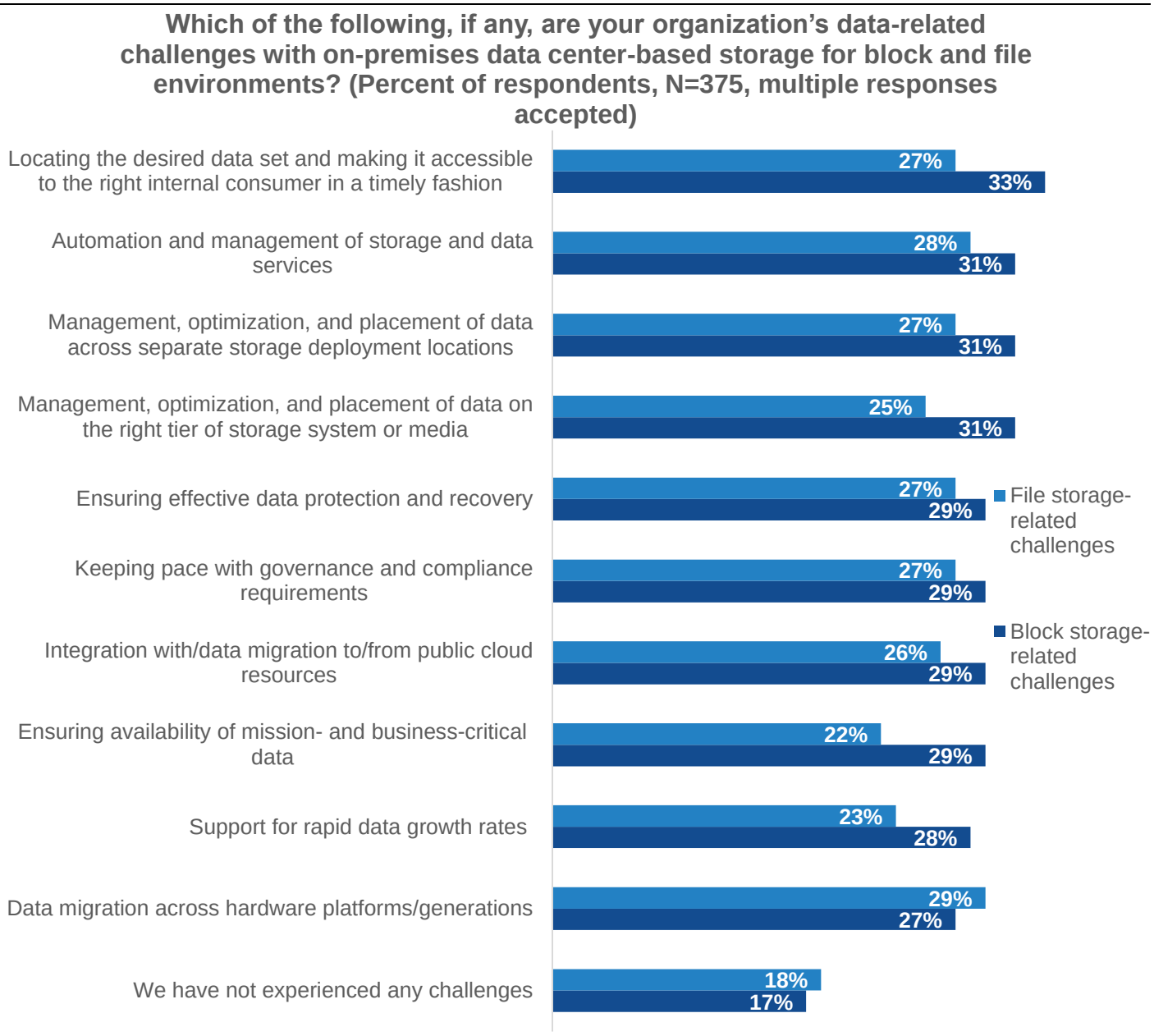
The typical approach to infrastructure needs to be challenged and re-examined at its most fundamental layer. The question for many IT decision-makers is where to start. A good first step is to become familiar with the underlying causes of data management challenges, including:

- **Exploding data volumes.** This is not a new phenomenon for IT, and storage innovations have been driving down Flash, cloud, and hard disk drive storage media costs across the board. But data volumes are still becoming ever larger, and that means keeping track of the data is more challenging and costly. As storage costs fall, the cost of creating additional copies of data also continues to fall, ironically further exacerbating the problem. What's more, the potential of AI means that organizations are incentivized not only to keep creating more data, but also to retain it longer, since historical data can be used to train models. An Enterprise Strategy Group study found wide variance in data volumes/growth rates, although most respondents had at least one pebibyte (PiB) of data under management. Many organizations have substantially more. Similarly, data growth rates vary widely, though more than half of respondents reported growth rates of at least 20% annually, with one in five experiencing growth rates of 41% or more.[2]
- **Data sprawl/fragmentation/entropy.** Not only is there more data, but it's located in more places. IT has penetrated every part of the business; IT models now run off premises as well as on premises, and all locations are generating increasing amounts of data. Compounding this issue is the siloed, fragmented nature of enterprise storage systems. Each system is effective at storing, serving, and protecting data. But relatively little attention has been paid to managing the multitude of often incompatible storage arrays that most organizations now have scattered across their operations.

The negative effects of such issues on an organization can be several-fold, as illustrated in Figure 1.

[1] Source: Enterprise Strategy Group Complete Survey Results, *Navigating the Cloud and AI Revolution: The State of Enterprise Storage and HCI*, February 2024. All Enterprise Strategy Group research references and charts in this white paper are from this survey results set unless otherwise notes.
[2] Source: Enterprise Strategy Group Complete Survey Results, *Data Resilience Emerges: The Collision of Data Discovery, Protection, Security, and Governance*, August 2024.

Figure 1. Data-related Challenges in Storage Environments



Source: Enterprise Strategy Group, now part of Omdia

Negative effects include:

- **Inefficiencies of data silos and sprawl.** Data spread across multiple disparate siloes in on- and off-premises environments creates inefficiencies, drives up complexity, and potentially introduces risks. Many organizations struggle to locate desired data sets and make them accessible to end users quickly. The complexity impacts are particularly real: 68% of respondents to an Enterprise Strategy Group survey said that the complexity of their infrastructure slows IT operations and digital initiatives.
- **Governance, security, and control risks.** Organizations struggling with data visibility risk losing track of where data resides, whether they are complying with regulations, how data is being used, or how it is being stored and protected. And, as ransomware attacks increasingly target backup copies, a lack of management and monitoring due to poor visibility can severely compromise an organization's ability to recover.

- **Manual operations and reactive management.** Many organizations still rely too much on manual tracking processes to deploy, provision, manage, and migrate data. Such efforts become increasingly time-intensive as data volumes explode. Also, a continued reliance on manual management increases the risk of human error. Among survey respondents, 74% said they are under pressure to accelerate IT infrastructure provisioning to better support lines of business.
- **A lack of agility and flexibility.** This is a time of potentially big shifts in the IT landscape, as organizations look to take advantage of AI and cloud-native application frameworks such as containers. However, the rate of growth of these new applications is often uncertain and might be extremely high. Organizations need an architecture that is capable of responding quickly and efficiently.

The wide-ranging business impacts of these challenges are evident. They come in the form of:

- Increased risk of security breaches
- Compliance gaps
- Rising costs due to duplicated, redundant data
- Inefficient operations
- Inflated infrastructure spending
- Operational complexity
- Slowed service delivery
- Burdened IT teams
- Delayed innovation

Overall, the inability to use data effectively slows insight, limits agility, and hinders business success.

Regaining Control of Data Through an Enterprise Data Cloud

What Is an EDC?

To successfully regain control of an enterprise data environment, IT leaders must think strategically about the data environment itself and their data-related objectives. This endeavor is less about scrutinizing individual point products or about managing hardware, and more about adopting an architectural approach that will enable the organization to achieve multiple strategic objectives around managing how, where, and why data is used—strategic objectives such as regaining control of their data, reducing risks and costs, and increasing their agility to respond more effectively to changing business demands. By adopting such an approach, IT teams will be empowered to unlock business value, rather than merely managing systems.

An EDC is one such architectural approach, providing the foundation and enabling capabilities that let IT leaders move from managing their data in a suboptimal piecemeal fashion to managing it much more holistically. At its core, an EDC creates a virtualized cloud of data and storage that spans every environment. Block, file, and object data are abstracted from the underlying infrastructure and managed as a single, integrated data fabric. That eliminates the silos, duplication, and complexity that slow teams down and create risk. Instead of managing storage system by system, IT operates with a unified view. Data is accessible, secure, and governed consistently.

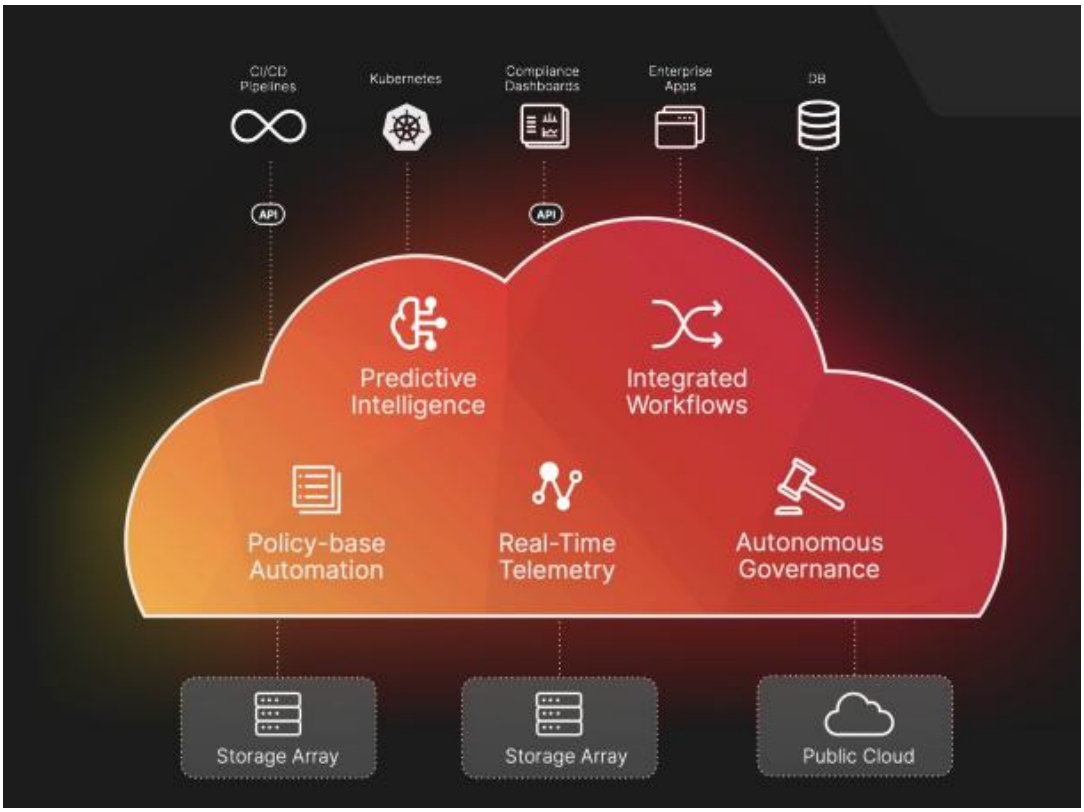
An EDC's unified control planes enable intelligent, autonomous data management and governance across the entire environment, both on premises and in the cloud. Incompatible storage silos, fragmented data sprawl, and inconsistent management are replaced with streamlined operations that reduce complexity, improve resilience, and accelerate innovation.

Key Capabilities of an EDC

An EDC produces a virtualized cloud of data across all environments, from on-premises locations to the public cloud, for global data access. It enables autonomous data management for consistent governance across the entire estate. Cyber resilience is built in. This is a scalable, service-level agreement-driven infrastructure that operates without disruption and is delivered as a service. Specific features and capabilities include:

- An intelligent control plane that enables predictive intelligence, integrated workflows, policy-based automation, real-time telemetry, and autonomous governance (see Figure 2). It can be fully utilized through APIs and self-service, as with most as-a-service platforms.
- A unified data plane across all environments. An EDC breaks down silos by creating a virtualized cloud of data that spans on-premises, public cloud, and hybrid environments. IT teams can manage and govern all data sets consistently, regardless of where they reside, to gain control across the environment.
- Autonomous data management for estate-wide governance. Policy-based automation enforces governance across the estate, reducing manual efforts, minimizing errors, and ensuring data consistency.
- Built-in cyber resilience. Security policies are applied automatically to protect data at creation, maintain compliance, and minimize vulnerabilities by default.
- Global data accessibility. AI and analytics applications can directly access live production data, eliminating the delay and cost associated with copying data to data lakes. This accelerates insights while cutting storage costs and complexity.
- Scalable, SLA-driven infrastructure without disruption. Capacity and performance scale dynamically without downtime or forklift upgrades, shifting IT from hardware management to service-level outcomes.

Figure 2. What Is an Enterprise Data Cloud?



Source: Pure Storage

Only Pure Storage Can Deliver the EDC Vision Today

Key Outcomes of the Pure Storage EDC Architecture

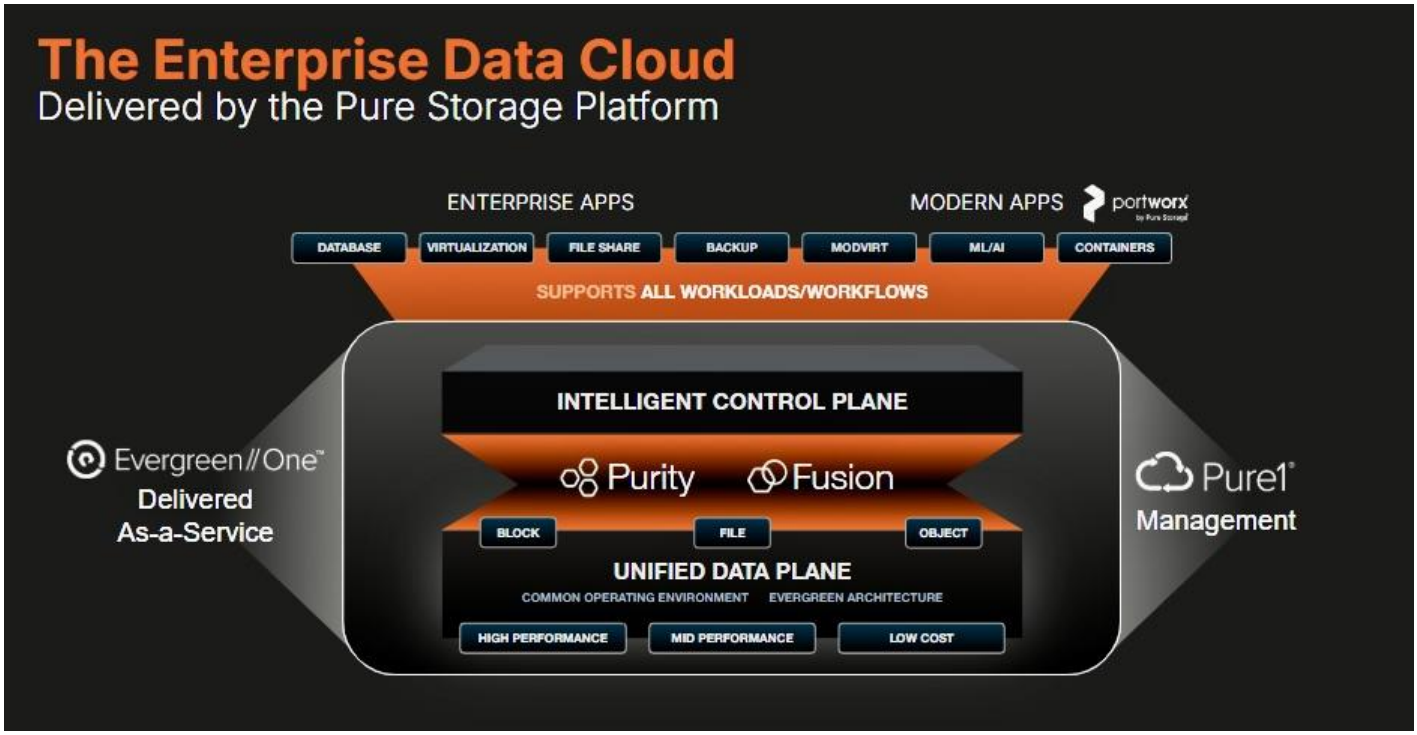
Over the last two decades, Pure Storage has built a comprehensive set of data storage and management capabilities that have transformed the way enterprises store, manage, and consume their data. The company is now taking this one step further with its vision of an Enterprise Data Cloud, an architecture that enables organizations to take back control of their entire data environment, both today and in the future.

Through the Pure Storage Platform, organizations can build and deploy their own EDC. Pure Storage brings together several innovations that place it uniquely in the market, enabling organizations to virtualize, automate, and govern their data assets in a way that simply is not possible using solutions from any other vendor. At a high level, the Pure Storage EDC architecture offers the following capabilities:

- **Unified control and a consistent experience across the entire storage fleet.** The Pure Storage Platform delivers a unified, virtualized cloud of storage across on-premises, cloud, and hybrid environments, with centralized policy management, fleet-level visibility, and consistent SLAs across the entire data estate. This is a foundation for managing data, not storage.
- **Performance at any scale with a range of platform options.** Options include all-flash, on-premises, and cloud deployments—with the ability to scale up or out as needed. Pure offers consistent, enterprise-grade performance, density, and efficiency across any environment.
- **Intelligent insights and fleet-wide optimization.** The Pure Storage EDC architecture offers unmatched telemetry across the entire fleet, delivering proactive, intelligent insights that help organizations understand how data is used, not just where it lives. This is the basis for intelligent data placement, automated lifecycle management, and faster troubleshooting in a highly automated environment.
- **Dynamic infrastructure balancing.** The Pure Storage EDC architecture automatically balances performance and capacity across the environment, with SLA-driven resource management to eliminate hotspots and ensure consistent service, even as demands change.
- **End-to-end automation from the application to the infrastructure.** Workflows—provisioning, scaling, protection, and governance—are fully automated and policy driven. EDC delivers full-stack storage automation, from provisioning to workload and CI/CD integration.
- **Data set management with built-in compliance, governance, and cyber resilience.** It automatically tracks data movement, copies, and lineage. Security governance and compliance are embedded, enabling audit-ready reporting, automated remediation, and consistent enforcement to reduce risk and strengthen resilience.
- **Storage-as-a-service with guaranteed SLAs covering all aspects of the storage.** Pure Storage Evergreen//One ensures that the infrastructure evolves non-disruptively, with Pure Storage Evergreen//One upgrades and migrations. Pure Storage continues to offer the industry's strongest SLA guarantees for performance, availability, and efficiency.

The Pure Storage EDC architecture (see Figure 3) is designed to run *all* of an organization's data, not just certain applications or data types. So, whether it's high-performance databases, analytics and AI, modern virtualized and core enterprise applications, or cloud-native apps, EDC covers all of it. And EDC operates across hybrid and public clouds, ensuring all applications and data—primary data, cyber-resiliency data, and backup/recovery and archive environments—are within one sphere of control.

Figure 3. The EDC Architecture Delivered by the Pure Storage Platform



Source: Pure Storage

How to Build an Enterprise Data Cloud With the Pure Storage Platform

Pure Storage understands that moving from legacy approaches for storage and data management to an EDC might not happen overnight. Hence, the Pure Storage EDC architecture has been designed to enable organizations to move at their own pace, growing in sophistication over time as required. It's easy to get started quickly with a few arrays and a first workload such as a virtualized database. Organizations can build a data cloud as the first step, and they'll see an immediate impact on operations. In other words, it is not necessary to overhaul everything.

Conclusion

As data volumes rise and business demands shift relentlessly, traditional storage models create fragmentation, silos, and data sprawl. IT teams are forced to move and copy data manually, and those copies then spread across the environment, exposed to cyberthreats. This is not a storage problem; it is a data management problem.

Pure Storage has built its reputation on delivering a foundation for continuous innovation without disruption. It is progressing further on that path with the Pure Storage Enterprise Data Cloud—a fully managed, outcome-based service, backed by guaranteed performance, availability, and efficient SLAs.

Organizations that implement an EDC with Pure Storage are consuming a platform carefully aligned to the organization's business needs. They get the full power of the Pure Storage Platform—with its built-in resilience, predictability, and scale—without having to own or run the storage hardware, while paying only for the capacity they use. The experience is delivered wherever an organization needs it—on premises or across hybrid environments.

This is what the cloud should feel like. Infrastructure fades into the background, and the platform just works, delivering consistent outcomes with enterprise-grade control. EDC solves for the operational mess of today, while helping organizations move to a data set management mindset.

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Enterprise Strategy Group, now part of Omdia, provides focused and actionable market intelligence, demand-side research, analyst advisory services, GTM strategy guidance, solution validations, and custom content supporting enterprise technology buying and selling.

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