BUILDING A MODERN DATA INFRASTRUCTURE

Building for Tomorrow

Driving data agility across the business.

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Contents

Introduction

For all its transformative power, the technology story over the past decade has been one of evolution not revolution. The global pandemic changed all that, exposing vulnerabilities in IT systems and driving the need for new and more agile approaches to data infrastructure. But there's a world of difference between talking about embedding agility into IT systems and doing it. Here we look at how to get it done.

Time For a Rethink?

Technology is the catalyst for business agility. It was ever thus. Today it's taken on a new level of importance. For decades, adaptability defined business success—the speed it could break new markets, pivot direction to address new audiences, create exciting new services and experiences for consumers, and more. The technology was an enabler and what it enabled was competitive advantage and growth.

When the pandemic hit, things changed. Agility was no longer a 'nice to have' but instead a fundamental requirement for survival. Suddenly, the speed at which a business could address dramatic shifts in supply and demand, support new ways of working, rebuild business models from the ground up mattered more than ever before—and the IT organisation felt the pain.

Moving from survival to revival, business agility is no less of a priority today – perhaps even more so. According to a recent 451 report , the pressure on IT organisations to be agile themselves, and to develop and implement new applications and business processes rapidly, is significant. Since applications and processes cannot exist without data, this cannot happen unless data infrastructures are also agile.

Question Is How To Get It Done

Let's Find Out

While this may not be breaking news - an overwhelming majority of CIOs (77%) say COVID-19 is accelerating the need for their organisation to completely overhaul its data infrastructure —it certainly presents a raft of challenges. Alongside the perennial issues of IT business alignment, data silos, inflexible processes and legacy infrastructure are all potential barriers to delivering this more agile environment. There are security implications too, of course.

Ultimately, this is not just a tweak or update, but a total rethink of approach. We see from the Pure Storage/Insight Avenue EMEA Research Insight Report that tech priorities have largely been re-evaluated in the wake of COVID-19 and that 59% would like to see a modernised data infrastructure within 12 months.

An ambitious timescale? Perhaps. However, with today's generation of data storage options, it's achievable. Certainly, the benefits of a modern data infrastructure are significant—from leveraging analytics and evolving AI/ML options to optimise online customer journeys and enhance the digital experiences of remote workers through to right-sizing storage costs and accelerating digital transformation.

[1] Without Agile Storage, There's No Agile IT, 451 Pathfinder Report, July 2021
[2] Rapid Agility, EMEA Research Report 2021, Insight Avenue/Pure Storage, July 2021

Creating a Modern Data Infrastructure

From a technology perspective, a modern data infrastructure is a sophisticated but simple combination of all flash arrays, elastic capacity, stateless controllers, modular components and so on. Ultimately however, it starts with an efficient storage environment that makes it easy to manage, access and analyse your operational and customer data from across your on-premise datacentres and hybrid cloud environments.

One route organisations have taken is to put in all in the cloud; to pick up server, compute, data and storage resource and migrate it all into a hyperscale world. Doubtless, the elasticity of cloud is fantastic from a compute perspective—giving you the option of scaling up and down your workloads on demand. Also, from a data perspective, public cloud can help break down those silos, while storage costs are relatively inexpensive. Which is great as far as it goes.

48%

Over the next two years 48% of organisations expect to see their use of storage-as-a-service increasing[3]

The challenge comes if one of the aims of your transformation is to interrogate your data, perform complex analytics, and drive insights from that data—which it typically is. There's something of a stealth cost here in that you're charged every time you touch the data. While the unit cost of a transaction may be tiny, running analytics at scale (as most organisations are starting to do), things become very costly, very quickly.

Far better to disaggregate the compute and data layers—and benefit from high performance, massively parallel flash storage devices that sit in the datacentre next to (rather than in) the cloud. This hybrid approach offers all the performance and security to deliver analytics at scale and build the foundational insights that are needed to accelerate transformation.

That's not to say that your agile storage infrastructure cannot take its lead from cloud-like consumption models. In fact, it most definitively should. Which is one reason why approximately half of CIOs are looking to take advantage of Storage-as-a-Service. The others, according to Pure Research, include the ability to boost agility, increase security, achieve dynamic scalability and only pay for what is used.

[3] Rapid Agility, EMEA Research Report 2021

Tackling the Legacy Problem

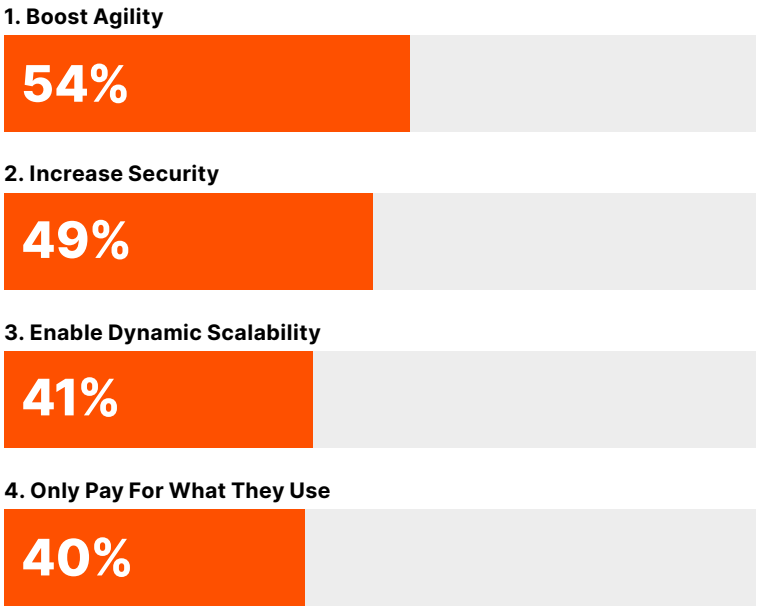
Typically, the expected life cycle for most traditional data-storage systems is, at most, five years. However, the majority of organisations deploying these legacy solutions get just over two years of actual value (on average) out of their five-year storage plans.

For most, the pain associated with refreshing legacy storage has been accepted as the status quo. Of course, every big capital refresh is expensive while buying three to five years capacity upfront, then watching it sit unused and depreciating for most of that time, is frustrating to say the least.

A subscription model lets you scale your storage without downtime, performance impact or expensive leases. It eliminates the rebuy cycles—so no more data migrations or major spikes in risk. It also means you don't have to own or manage your technical assets; something many firms are now looking to avoid. Not only that, a move to a more flexible operating and financial model allows you to have everything in a SaaS-like arrangement and only pay for what you actually use.

This approach then delivers capacity on tap to react to business changes while at the same time helping to optimise budgets. So you can put your capital to work on transformational initiatives and innovation.

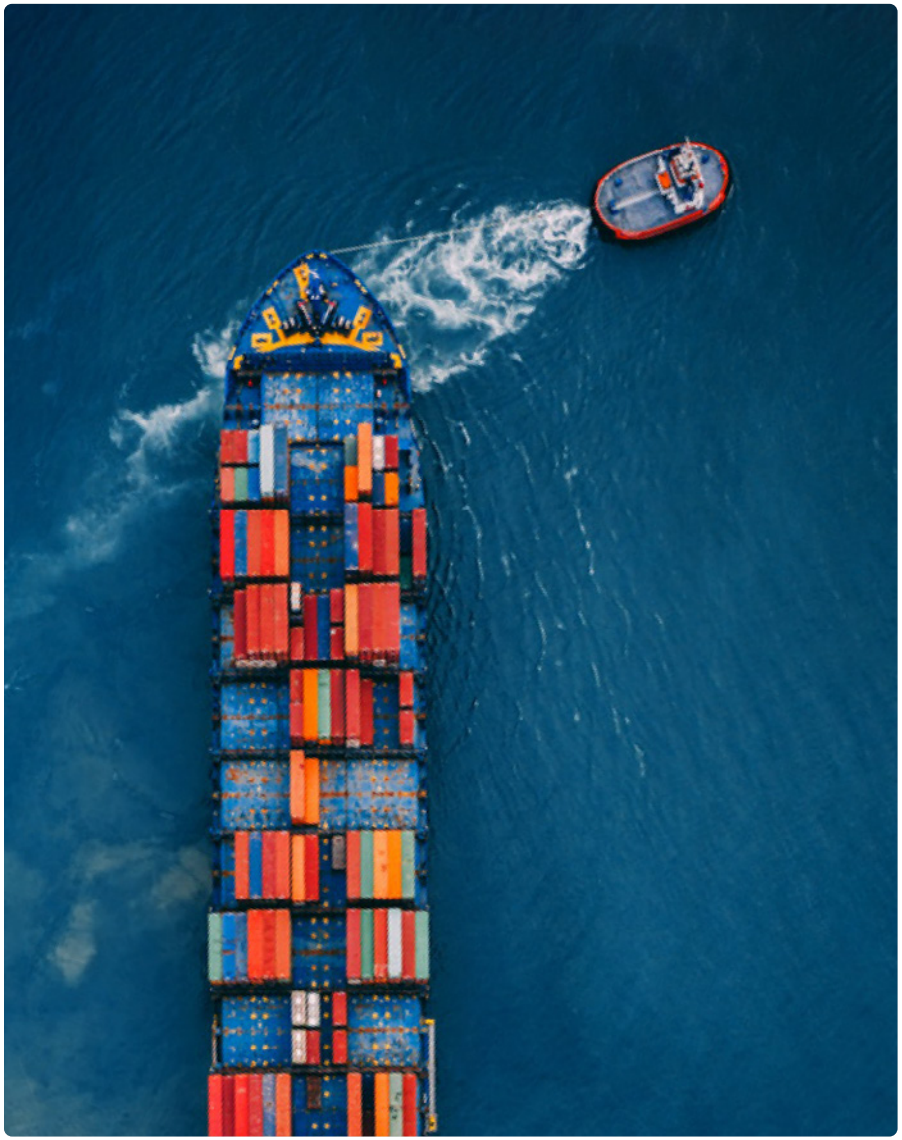
Top Four Reasons Why CIOs Are Choosing Storage as a Service



Download the 'Rapid Agility' Report

Five Data Steps To Take To Simplify Rapid Agility

1. **Uncouple the organisation from legacy data infrastructures**.
   Look for solutions that have longevity rather than obsolescence built in, and that provide multi-generational upgrades without disruption
2. **Protect your organisation**.
   Not just from ransomware and cyberattack, but from threats to data resilience and the ability to scale to meet business demands. Slow data access will impact your bottom line.
3. **Ensure constant access to innovation**.
   Business as usual is a moving target and your data infrastructure must be capable of constantly evolving to adapt to change.
4. **Move to a pay-as-you-go XaaS model**.
   Traditional data storage technologies are expensive and require 3-4 refresh cycles. An as-a-Service model offers flexibility and on-demand capacity on tap.
5. **Manage through simplicity**.
   Choose data technologies that don't need specialist skills, can be deployed remotely and are easy to set up and manage.



Securing the Agile Organisation

There's another critical dimension to a modern data storage environment—protection. Cyberattacks are nothing new but they are growing in sophistication and intensity. Ensuring agility and uptime demands these threats are answered. Today, ransomware protection is top of most organisation's security to do list. And with good reason.

According to the UK's National Cyber Security Centre NCSC), the scale and impact of ransomware attacks is growing and the risk ever more significant . Last year, the cyber watchdog responded to three times as many ransomware incidents than the previous year. With experts predicting a new ransomware attack on businesses every 11 seconds by the end of 2021 , this is a significant and growing problem.

As we move through beyond 2021, attacks are expected to grow in sophistication and impact. Cybersecurity Ventures estimates that the cost of cybercrime will increase by 15 percent per year over the next five years, reaching $10.5 trillion USD annually by 2025 . While the stats vary, one thing is clear: a single perimeter security policy will not be sufficient to protect sensitive data and organisations would be wise to employ multiple security strategies to defend in depth.

While the operational impacts are considerable—with 2020 data putting average IT system recovery time at 19 days (up 54% on the previous year)—the financial costs of unlocking or decrypting data can be significant. With eCrime groups increasingly stealing data (as well as encrypting and/or deleting it), European-based organisations also face the potential of fines under GDPR regulation and the rather less quantifiable costs of damaged reputations.

While millions may be spent annually to guard entry points, the real threat is to your databases and backup environments so it's critical to defend your storage systems in depth.

The key here is to bring all the disparate silos (data lakes, backup appliances, etc.) together in one place, then create read only snapshots of the data. These are then placed into a safe mode so they can't be eradicated (deleted), modified or encrypted by any ransomware. In practice, this is an automated process and independent of administrator control—which also means the snapshots can't be deleted by accident or by rogue employees.

> There's a lot of artificial intelligence, analytics and testing involved in this approach. However, because it's highly automated, it vastly simplifies the process and requires very limited human involvement.

[4] https://www.ncsc.gov.uk/news/annual-review-2020
[5] https://sensorstechforum.com/ransomware-hit-businesses-11-seconds-2021/
[6] https://1c7fab3im83f5gqiow2qqs2k-wpengine.netdna-ssl.com/wp-content/uploads/2021/01/Cyberwarfare-2021-Report.pdf

What to Look For In Agile Storage

Selecting a storage platform that meets today's needs and is agile enough to grow and expand and stay current over time is one of the most daunting tasks an IT organisation can face. Whatever route you take, there are two important considerations: upgradable architecture and a flexible ownership programme.

Upgradeable Architecture

Agile storage grows with your needs. Hardware and software components should allow for simple,seamless upgrades and expansion. From hot swappable controller modules to increase performance and capacity limits to non-disruptive hardware and software that can be upgraded without downtime or a performance hit.

Also, look for interoperability. One of the 'gotchas' of legacy storage technology is that while upgraded controller hardware may be promised, it doesn't always work with flash already in the system. Likewise, new, faster and more performant flash media doesn't always mix with older flash environments. Added to this, consider how to consolidate flash to avoid your storage footprint growing exponentially.

Flexible Ownership Programme

As we've touched on previously, architecture isn't the only limiting factor. The ownership model is critical in enabling an agile data environment. You can avoid costly repurchasing of both storage components or the entire system with included upgrades and transparent trade-in programs—and so protect your storage investments. If you don't have to keep finding new budget when you need to upgrade, you'll have a much more agile environment. The Storage-as-a-Service model is one approach, but it's not the only one and it can take many forms. Whatever the subscription model, also consider whether regular or any-time controller upgrades are included and whether you get credits for flash consolidation.

Evergreen Storage—The Last Refresh You'll Ever Need

Taking the Storage-as-a-Service concept further, Pure Storage offers an 'evergreen' approach everything that ensures everything is always up-to-date: all key components (like controllers) are modular and upgraded to next generation products over time. Which means the sophistication and capabilities of your data storage keep building. Costs are also predictable. Subscription fees are flat and fair, and ESG analysis puts the TCO of our Evergreen service at 45% lower than legacy storage approaches.

Find out more about Evergreen Storage and see if the business case stacks up here.

Conclusion

With a modern data infrastructure the foundation of both an agile IT organisation and an agile business, the need to rethink storage is clear. The status quo of three-to-five-year hardwareupgrade cycles and regular data migrations not only creates considerable financial and operational risks, the planning and project time causes disruption and impacts overall agility. And it's outdated. There are other (better) models that reduce cost, eliminate resource burdens across the IT organisation and offer everyone the ability to more effectively leverage the data that drives transformation.

COVID-19 may have had a seismic impact on business operations for 18 months or more. And while it was an unprecedented global health crisis, it was hardly the only disruption that businesses have had to contend with over the last decade or will have to do so in the next.

An Agile Data Infrastructure In Place Today Will Ensure You Continue To Thrive Tomorrow.

Learn more about Pure Storage and our Modern Data Infrastructure

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