

Storage as a service (STaaS) is a burgeoning market segment that aligns well with modern trends driving enterprise infrastructure purchases.

Five Factors Driving Enterprise Storage-as-a-Service Adoption in 2020

May 2020

Written by: Andrew Smith, Research Manager

Introduction

Trends in digital transformation are breaking down IT silos, and as a result, many enterprises are changing how they think about their IT infrastructure stacks. Software-defined, containerized, and cloud are just some of the technology paradigms enabling this shift. Each of these architectures has its own dynamics, but consistent among them is their ability to deliver infrastructure services in increasingly cost-efficient, scalable, and reliable means. This analysis focuses on these trends and their impact on enterprise storage. More specifically, we explore how the expectations of customers are shifting with regard to their enterprise storage requirements and discuss the impact this shift has on buyer behavior, the market landscape, and how vendors bring modern storage services and solutions to market.

Flexible, Consumption-Based Infrastructure Solutions and Services Are Slowly Changing the Economics of Enterprise Storage

IDC has found a marked increase in interest for consumption-based, flexible, on-premises infrastructure pricing. In fact, we predict that in 2021, demand for flexible consumption of on-premises infrastructure and infrastructure-as-a-service (IaaS) offerings will drive 10% of the use of low-cost, commodity-based offerings within datacenter infrastructure. This is driven partly by a desire to combine the benefits of public cloud with the security of on-premises infrastructure and partly by new SEC rules requiring some leased equipment to be placed on the balance sheets of publicly traded companies. The growth of consumption-based on-premises infrastructure and IaaS offerings is key to this entire analysis. This trend creates new opportunities for public cloud companies and traditional infrastructure suppliers to provide on-premises offerings that support a spectrum of infrastructure consumption choices.

AT A GLANCE

KEY TAKEAWAYS

- » STaaS offerings represent a key shift in enterprise storage, enabling scalable, flexible deployment of storage resources.
- » Enterprise data growth, complex compliance and regulatory requirements, growing demand for cloud-like services, and pricing are factors contributing to the aforementioned shift.
- » Storage platforms will become increasingly prevalent as enterprises seek to navigate the previously mentioned trends while maintaining efficient and cost-effective operations.

These choices range from traditional capex purchases to fully metered IaaS. Many of these new flexible consumption/IaaS offerings may become assets on suppliers' balance sheets instead of being fully transferred to the customer. This may place pressure on infrastructure suppliers to reduce the costs of these systems or, alternatively, add innovative services and functionality to make their platform deliver greater value. This analysis discusses this trend at length with a specific focus on enterprise storage and storage as a service (STaaS). Further, we discuss related services offered by Zadara, how the services fit into the context of this new infrastructure paradigm, and why IT leaders should care.

Benefits of Storage as a Service

The concept of enterprise STaaS is central to this document. STaaS spans deployment environments; it can be delivered both on-premises and in the cloud. The key aspect of a STaaS offering is the ability to deliver consumption-based (sometimes described as "utility" or "opex") storage capacity, along with a range of value-added services. Payments for STaaS can usually be recognized as opex on an enterprise's balance sheet, as opposed to more traditional storage solutions that require capex in the form of up-front hardware purchases and associated licensing and maintenance fees. The following list of important benefits of modern STaaS solutions is not exhaustive, but it should serve to illustrate some of the key differentiators:

- » **Reduced risk.** STaaS offerings typically offer the ability to increase or decrease capacity on demand as needed. Many enterprises struggle to efficiently manage or predict the "highs" and "lows" associated with their infrastructure and storage capacity usage. STaaS solutions allow enterprises to plan for this type of capacity bursting during limited periods without having to make additional purchases. Capacity elasticity also alleviates the financial and operational risk associated with long-term capacity planning as enterprises can add or decrease capacity depending on the workloads they take on.
- » **Ease of deployment.** Because of the services delivery model, STaaS solutions can typically be deployed much faster than traditional arrays, with minimal start-up tasks required in terms of storage provisioning, optimization, and management. This type of deployment model obviates sophisticated tuning operations such as short stroking, assigning different RAID levels, and carefully defining volume sizes. All these tasks are automated as part of the service delivery. As a result, storage managers can move to higher-level tasks at an accelerated pace.
- » **Data resilience.** STaaS solutions allow enterprises to leverage established datacenter assets of the provider to improve data resilience. Not all enterprises have the physical assets needed to support complex secondary storage workloads — for example, the remote facilities necessary for disaster recovery or offsite locations for backup and archive in the event of a ransomware attack. By extension, STaaS solutions give customers the ability to leverage third-party facilities, which can add another layer of resiliency to their infrastructure architecture.
- » **Flexibility.** Hardware-based storage solutions (i.e., those with bundled specialized software and proprietary hardware platforms) are a thing of the past. STaaS offerings generally support valuable capabilities such as the ability to apply data services on the fly, deploy self-driving storage that automatically adapts to varying workloads to meet defined service-level agreements (SLAs), migrate resources across on-premises and cloud environments, change storage media, and perform nondisruptive technology or capacity upgrades.

- » **Embedded data services.** Many STaaS offerings can also offer a range of integrated data services spanning backup, replication, archive, disaster recovery, antiransomware, and so forth. Because of the nature of these platforms, associated data services may be general or highly tailored to specific infrastructure or application needs (e.g., integrated Salesforce platform backup). These data services can typically be turned "on" or "off" as dictated by the customer, providing additional layers of service depending on the infrastructure environment.
- » **Shared interests.** STaaS providers will offer a range of service-level agreements (SLAs) regarding uptime, availability, and security. Because of the continued advancement and maturity of IaaS platforms and offerings, customers can scrutinize and assess provider SLAs while demanding a high level of service to ensure their provider is a valuable partner to the business. This relationship is unique to this model of services delivery, creating a level of shared interest between vendor and customer that is not present in traditional, capex-driven infrastructure transactions. The STaaS vendor must provide a consistent level of service and reliability or risk losing customers.

Market and Buyer Trends Driving Adoption of Storage as a Service

We have discussed some of the key technical and business benefits of STaaS offerings at length. This section focuses on the five key market trends and business drivers we believe will drive adoption of STaaS offerings in 2020.

1. Enterprise Data Sprawl

According to IDC's Global StorageSphere, the installed base of storage capacity is expected to grow at a 2018–2023 CAGR of 18.4%, resulting in an installed base of storage capacity of 11.7ZB in 2023, compared with 5.0ZB in 2018, more than doubling over the forecast period. The perception of stored data is shifting: Once viewed as a necessary evil with associated cost and risk, it is now perceived as an asset to help enable new insights for technological advancements, new products or services, revenue generation, productivity improvements, and cost optimization. The problem is this data is diverse and complex and in many cases requires advanced tools and skills to derive insights in a timely, cost-efficient manner. Services providers will increasingly offer solutions to help control enterprise data sprawl and derive insights from complex, dispersed sets of data. These services (including STaaS) may help enterprises establish the data visibility, access, and security they need to be confident they understand what data they are collecting, where the data resides, and how they can make the data actionable.

The perception of stored data is shifting: Once viewed as a necessary evil with associated cost and risk, it is now perceived as an asset.

2. Increasingly Complex Data Compliance Requirements

GDPR's implementation in 2018 was just the beginning. As additional legislation governing data and data privacy is put into law (e.g., California Consumer Privacy Act, January 1, 2020), organizations will need to move beyond achieving the minimum viable compliance to using compliance as a competitive differentiator to establish a digitally trusted brand. Organizations will invest in technologies and services that automate compliance as they realize that data governance and security are critical to executing on data commercialization strategies and delivering data-driven customer experiences. New regulations will create long-term opportunity for STaaS providers to help customers identify and understand their data management and compliance needs and build a business case for new infrastructure services.

3. Continued Growth of Cloud-Native Storage Services

As more storage capacity sits in the cloud, the value of system and array-based storage capabilities that can control only on-premises data has declined significantly over the past few years. By contrast, managed cloud services (both public and private) continue to expand at a rapid pace. According to IDC's *Worldwide Hybrid Cloud Infrastructure Services Forecast, 2019–2023*, on-premises private cloud infrastructure will grow at a 10% CAGR, off-premises private cloud solutions will grow at a 10% CAGR, and IaaS (public cloud) will grow at a 36% CAGR over the forecast period. Meanwhile, traditional IT consulting and integration services will decline at a 0.2% CAGR. This forecast growth of both on-premises and off-premises cloud storage indicates that storage managers are taking advantage of the economic benefits offered by flexible, low-cost cloud storage and infrastructure as a service, particularly with backup-, archive-, and disaster recovery-as-a-service solutions, which can offer improved performance for storage workloads at much lower costs. As a result, legacy array and systems-based storage management solutions will continue to decline in value, offering opportunity for displacement by new storage services.

4. Automation and Consolidation of Infrastructure Operations

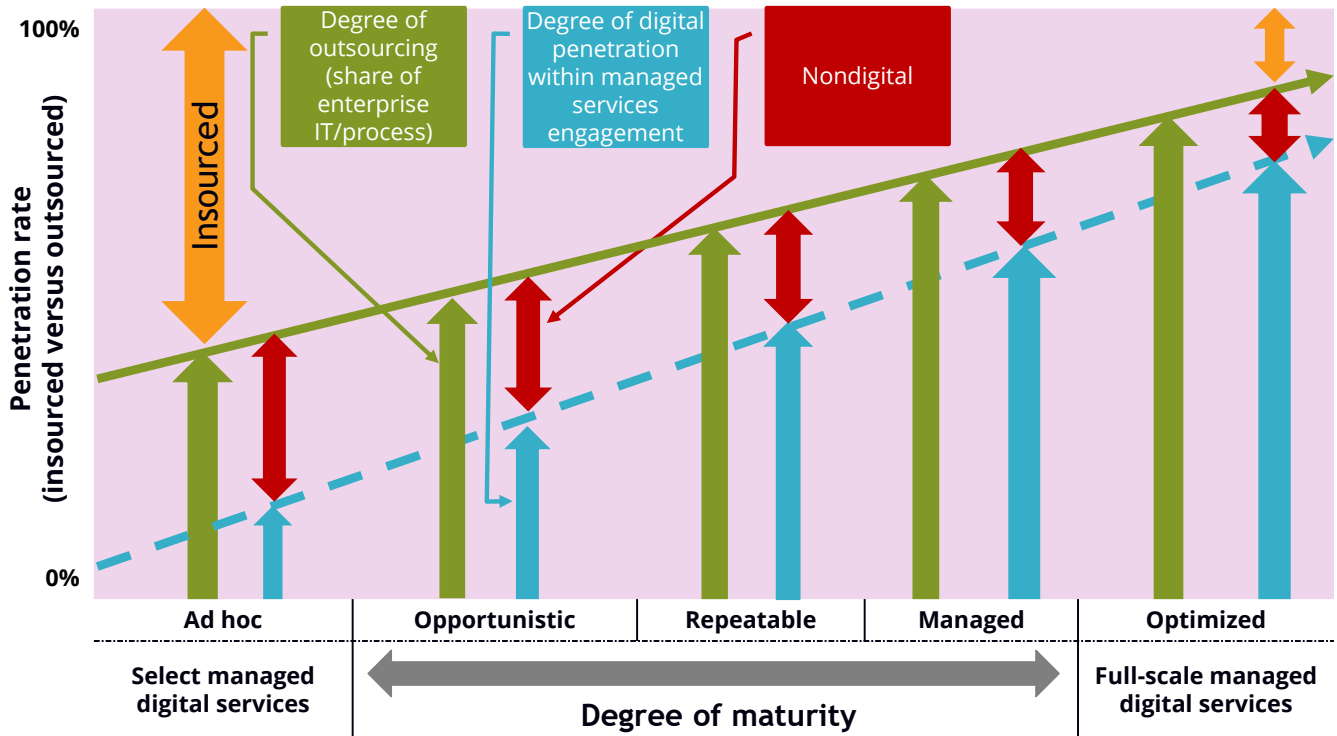
The lines between previously discrete IT activities are slowly eroding. Data protection is a clear case in point, where backup, disaster recovery, and high availability are evolving from disciplines to points on a continuum. This condition challenges organizations to develop an infrastructure strategy that increasingly converges storage, networking, and compute resources but can also be maintained by as few full-time employees as possible. Increasingly, these resource pools are managed by an IT generalist who has experience across all parts of enterprise IT infrastructure (e.g., virtualization, networking, compute, storage) and who relies on automation and analytics to manage a wide swath of resources. This evolution toward IT generalists, and the subsequent demands placed on IT managers and administrators, makes the adoption of infrastructure-related services such as STaaS increasingly necessary to perform all tasks in an efficient, timely manner.

5. The Managed Cloud Services "Substitution" Effect

From a buyer perspective, IDC believes managed cloud services, which are part of the family of managed digital services (e.g., cloud, analytics, mobile, social, and IoT), will become an ever-increasing share of a buyer's portfolio of outsourced managed services as the buyer evolves from the first stages of adoption for these services (ad hoc) to the fully mature stage of optimized, in which all the managed services that the buyer utilizes are cloud and digitally based (see Figure 1). From a market perspective, the increased buyer adoption of managed cloud services (such as STaaS) and the evolution to mature users of these services will translate to a substitution effect of managed cloud services that displace traditional outsourced managed services using legacy (noncloud) technologies.

FIGURE 1: **Penetration Rates of Managed "Digital" Services**

Managed digital services will increasingly displace traditional outsourced managed services that use legacy technologies.



Note: Digital includes cloud, analytics, social, mobile, and IoT.

Source: IDC's Worldwide Managed Cloud Services Forecast, 2019–2023: An Extraction View of Technology Outsourcing Services Markets

Considering Zadara's Storage-as-a-Service Platform

Zadara delivers a mature STaaS platform and is well positioned to serve enterprise storage requirements both on-premises and in the cloud. Established in 2011, Zadara's services are architected to be enterprise grade, scalable, agile, and cost efficient. Zadara supports file-, block-, and object-based protocols and offers integration with a range of public cloud providers (e.g., AWS, Azure) as well as more traditional services provider clouds (e.g., Equinix, Cyxtera). Pricing is determined by the deployment type (NAS/SAN/object), capacity (TB), and term (hourly to multiannual).

Platform Technology and Core Capabilities

Zadara's enabling IP is the company's patented ability to partition and dedicate resources to one or many virtual private storage arrays (VPSAs), which can be located on-premises and/or in the cloud. Customers can then layer on a range of additional services as they require. The following are brief descriptions of some of the integrated data services and applications offered by Zadara Enterprise Data Cloud. These services are used to enable many of the following core use cases for the platform:

- » **AWS integration and extension.** Zadara VPSAs can be purchased directly through the AWS marketplace and integrated with a customer's existing AWS environment. Zadara VPSAs on AWS provide cloud-adjacent enterprise SAN, NAS and object storage with iSCSI and NFS/CIFS protocols, dual high-availability (HA) controllers, dedicated solid state drives (SSDs) and hard disk drives (HDDs), and associated storage features (snapshots, replication, thin provisioning, encryption, etc.) with Active Directory integration. These act as an extension of the user's environment while remaining integrated with existing user experience, billing, and services integration.
- » **Snapshots.** Zadara snapshots are instant, read-only, point-in-time, volume images that consume capacity only when the underlying volumes are modified. Snapshots may be created manually or automatically as frequently as once per minute. Zadara snapshots can be used as first-tier backups or to create reference data sets for analytics and testing. Restoring is instant as well, regardless of the size of the data.
- » **Remote mirroring.** Zadara uses asynchronous remote mirroring to replicate data across availability zones, virtual private clouds, datacenters (Equinix, Cxtera, and others), continents, and cloud providers including AWS, Microsoft Azure, and Google Cloud Platform. Zadara Remote Mirroring replicates change data only in order to maximize efficiency.
- » **Synchronous replication and high availability.** Zadara provisions VPSAs from resources that are distributed between different protection zones, located in separate physical facilities within the same metropolitan area. If one of the protection zones becomes unreachable (due to network, power failure, natural disaster, etc.), VPSA failover is initiated and the resources in the surviving protection zone take control and maintain access to data.
- » **Container integration.** Zadara leverages Docker container technology to enable users to run customer code (with dedicated CPU and memory) inside VPSAs. This provides the containers with direct, low-latency access to the associated SSDs and HDDs, resulting in high performance for applications running within the VPSA.
- » **Integrated antivirus.** Zadara integrates McAfee's virus scanning engine directly in VPSAs. Scans are performed locally to storage, lowering latency and associated network traffic without the need for users to manage licenses or additional infrastructure.

Go-to-Market and Differentiation

Zadara's model is unique in its focus on providing the most complete, fully managed storage services possible. Cloud services provider offerings span a wide range of capabilities from white glove services to bare-bones provisioning. Zadara goes to market with a model that is focused on providing full-service storage solutions all the way to the application layer. To do so, Zadara delivers the following key capabilities, which IDC believes differentiate Zadara from its competitors:

- » **Comprehensive support.** Zadara provides its own, first-party support services to all customers. These support teams are staffed by engineers who operate the storage and are dedicated to understanding each customer's unique deployment and specific requirements. Customers have near-direct access to these support teams, which operate 24 x 7.
- » **Worldwide coverage.** Many managed services providers focus on a specific geography to provide tailored services within a limited region or country. Zadara operates globally with approximately 250 datacenters dispersed across 6 continents. The vendor ships hardware to all customer premises and colocation facilities and maintains and upgrades these assets at the customer's request. This global, managed presence helps Zadara differentiate itself by meeting customer requirements for data sovereignty and multiregion support.
- » **Serving the services providers.** Zadara's architecture of managed storage services positions the company as a valuable partner for cloud services providers selling secondary storage solutions for disaster recovery, archive, and backup as a service. IDC tracks these segments closely in what we call the data protection-as-a-service (DPaaS) market. We forecast the DPaaS market will reach \$11.6 billion by 2023, representing a 14.4% CAGR from 2019 to 2023. STaaS offerings such as Zadara are essential enabling platforms to the success of the wider DPaaS market. DPaaS providers depend on a range of IaaS, upon which they layer specialized applications and services tailored to a specific client, industry vertical, workload, or region. Zadara's universal storage service solution and ability to provide multitenancy, along with data resiliency and advanced resource monitoring and usage-based billing, should be seen as a differentiated asset for DPaaS providers.

Challenges to Consider

Important challenges that Zadara must contend with include customer expectations and education around the cost of infrastructure services. Relatively speaking, customers don't expect to pay as much for a cloud service as they would for a fully featured enterprise storage array or purpose-built appliance. In fact, many customers turn to infrastructure services providers expecting an equal or greater amount of capabilities at a reduced cost. Despite the fact that the vendor is not focused on price leadership, its consumption-based billing and proximity to public cloud IaaS providers means Zadara will face pressure created by the constant race to the bottom on price seen across the wider IaaS market.

Some infrastructure buyers will take a "build" approach, adopting low-cost, bare-bones platforms upon which they can develop their own services. Others will take a "buy" approach, preferring fully managed, white-glove services. Many customers will sit in the wide range between these two extremes. Zadara's challenge is to continue to attract and educate customers at the "buy" end of the spectrum by conveying the benefits of managed infrastructure services — as opposed to the lower cost, more "do it yourself" alternatives readily available.

Conclusion

The key takeaways from this documents are summarized as follows:

1. Enterprise storage functions continue to consolidate, whether these solutions are deployed on-premises or in the cloud; previously discrete storage tasks (e.g., provisioning, tiering, migration) are merging into a single discipline, and buyers expect growing levels of automation of these tasks.
2. STaaS is an increasingly adopted delivery model among enterprises, and a wide range of "services" fall under this umbrella, from bare-bones platforms that provide access to capacity to fully managed services that offload almost all storage tasks to the vendor.
3. Zadara is an established player in the STaaS market, delivering fully managed storage services on-premises and in the cloud using a model designed to fulfill the needs of today's cloud-native infrastructure buyer who has expectations for metered billing, flexible capacity, automatic upgrades, and so forth.
4. Buyers should consider the themes and analysis presented in this document when deciding future infrastructure purchases. IDC sees STaaS as a burgeoning market segment that aligns well with modern trends driving enterprise infrastructure purchases. The workloads, industry vertical, company size, and use cases of the buyer will create variability, but the flexibility of STaaS solutions and levels of services available from different vendors should be able to address most customer requirements.

About the Analyst



Andrew Smith, Research Analyst

Andrew Smith is a Research Manager within IDC's Enterprise Infrastructure Practice, covering a broad range of storage research with a primary focus on archiving and data management software and services.

MESSAGE FROM THE SPONSOR

About Zadara

Founded in 2011, Zadara has changed how enterprise data is stored and managed by offering enterprise data storage as a fully managed service. With solutions available on-premises, in the cloud, and via colocation providers, Zadara's proprietary software, combined with its pay-only-for-what-you-use model, helps companies be more agile without sacrificing the features and functionality that enterprises demand. Zadara operates worldwide, including hundreds of datacenters at public- and private-cloud partners, with an expert team that provides services and support 24/7. Zadara is headquartered in Irvine, CA, with locations in London, Yokneam, and Tokyo.

To learn more, visit www.zadara.com.



The content in this paper was adapted from existing IDC research published on www.idc.com.

IDC Research, Inc.
5 Speen Street
Framingham, MA 01701, USA
T 508.872.8200
F 508.935.4015
Twitter @IDC
idc-insights-community.com
www.idc.com

This publication was produced by IDC Custom Solutions. The opinion, analysis, and research results presented herein are drawn from more detailed research and analysis independently conducted and published by IDC, unless specific vendor sponsorship is noted. IDC Custom Solutions makes IDC content available in a wide range of formats for distribution by various companies. A license to distribute IDC content does not imply endorsement of or opinion about the licensee.

External Publication of IDC Information and Data — Any IDC information that is to be used in advertising, press releases, or promotional materials requires prior written approval from the appropriate IDC Vice President or Country Manager. A draft of the proposed document should accompany any such request. IDC reserves the right to deny approval of external usage for any reason.

Copyright 2020 IDC. Reproduction without written permission is completely forbidden.