What Will You Do With All That Data?

Modern storage considerations for the cloud era

Insight

Overview

The very nature of data makes modern storage decisions a complex undertaking. It grows continuously and rapidly, it needs to be protected and secured, yet accessible to certain users and applications, and much of it is permanent.

Securing and managing your data is an undeniable challenge. You need data storage to be cost-effective, fast, reliable, and secure, as well as accommodating to future business transformation.

As new server workloads demand massive memory and faster storage, and Artificial Intelligence (AI) workloads impact storage and its relationship with other IT systems, the questions guiding storage decisions have multiplied. More organizations are looking for storage solutions that deliver automation, scalability, and integrity for building apps, implementing DevOps, and adopting software-based business tool sets.

And in a world where cloud adoption has skyrocketed, and hybrid cloud has become an increasingly popular strategy, IT leaders must answer the question of what to do with the storage layer while factoring several key considerations into the process.

This ebook provides an overview of some of the top considerations faced by IT leaders as storage strategies shift in response to growing data demands and evolving IT environments.

The difficulty of data relocation

During IT transformation, moving data can be extremely difficult. This principle is referred to as "data gravity," which encompasses three general truths about data:

1

It's cumbersome.

Data is difficult to move, regardless of location. Whether your data is stored on-premises in your own data centers or in the public cloud, moving it can be a time-consuming and risky process, thanks to the inaccessibility of your data during the move and the risk of data loss, as well as the internal resource drain such a process creates.

2

It can create cloud vendor lock-in.

The decision to create or relocate applications in the cloud is often coupled with the decision to maintain storage-related functions in the same cloud, ostensibly creating management, latency, and cost efficiencies. This decision comes with its own set of risks: data multiplies, cloud costs spiral, and moving data off the public cloud comes at a cost.

3

It grows quickly.

Data grows at a staggering rate. In 2021, internet users generate approximately **2.5 quintillion bytes** of data each day, which is roughly equal to the number of all the ants on the planet multiplied by 100.[1]

Clearly, these three truths — or challenges — tie into one another, amplifying the effects of each over time. Mitigating these data gravity difficulties requires planning ahead for a flexible and scalable storage solution that can evolve with your needs over time.
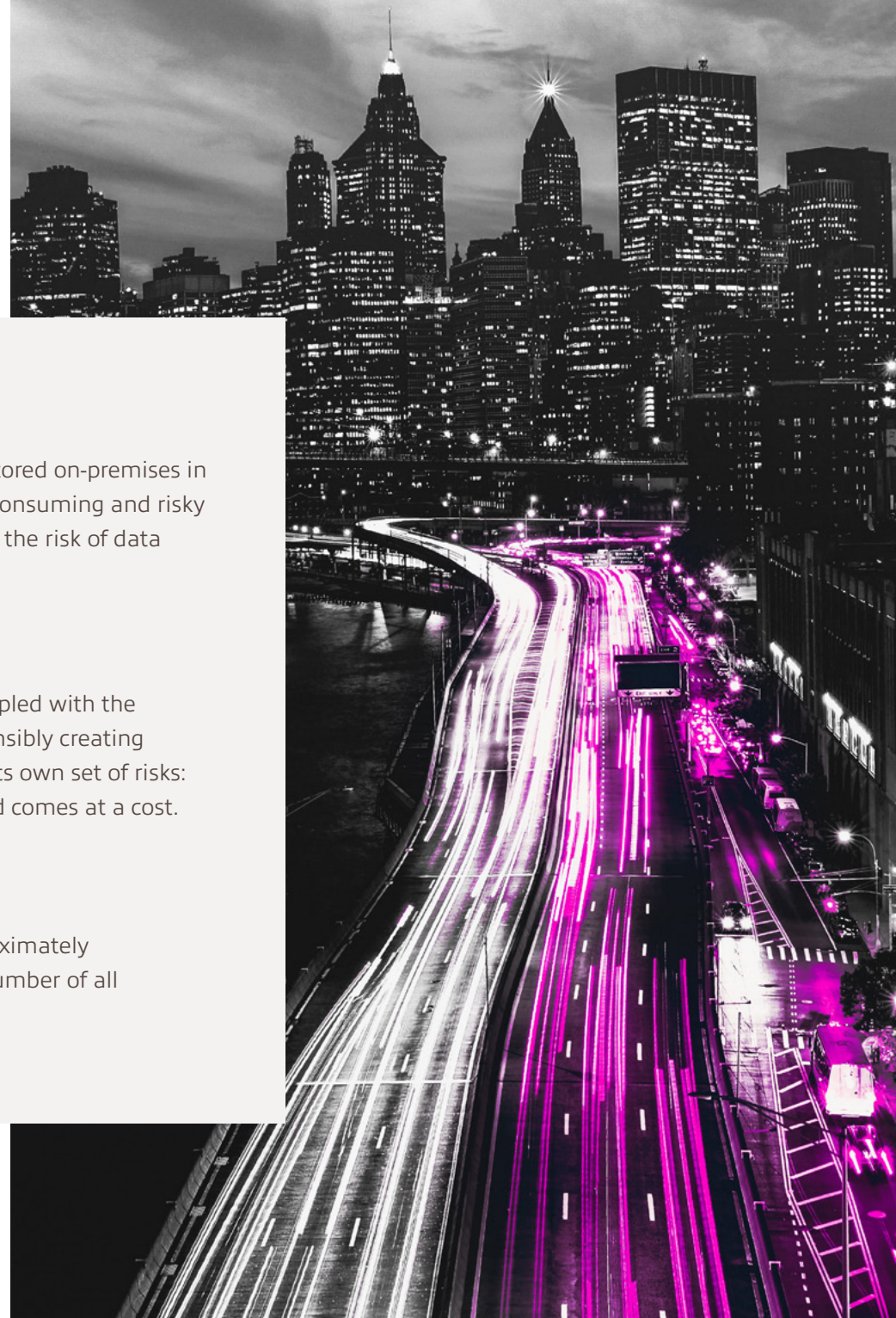
Communication breakdown: A worst-case scenario

An Insight client experienced a client-facing outage caused by a storage issue stemming from a communication breakdown. Without productive communication between the app development team and the storage team, issues arose that led to overconsumed storage volumes and a latency spike, resulting in the system being offline to clients for days. This scenario can be devastating for a business yet can be prevented through effective communication.

The cloud-native development-storage disconnect

Another issue IT leaders face is the challenge of utilizing cloud-native development in a model accustomed to legacy systems, where compute and storage existed primarily as one function. In cloud-native development, applications are built with compute and storage as separate components, creating a disconnect between the teams responsible for data generation and data storage.

When an app development team doesn't understand the storage requirements of the data, and the storage team doesn't understand how the application handles the data, you run into inefficiencies that, in some cases, can result in a breach of performance with significant business impact.

The solution to this is simple in theory, though it can be difficult to achieve in practice: bridge the gaps between teams. Create a cross-functional approach where every team is on track with the goals of the business, the goals of the application, and the resulting needs for storage and data protection.

For ongoing storage decisions, it's critical to factor in the makeup of your teams, the functions of your applications, and the purpose of your data in how it supports overarching business intelligence objectives, ensuring that all components are unified moving forward. Here are some of the questions you should be asking, and that everyone handling your data should know the answers to:

- How is the data created?
- What data do we keep?
- What is the data used for?
- How long should it be stored?
- Who has access to create and delete data?
- Does storage have to be available?

The options: On-premises, public cloud, or hybrid?

Up until the big push for cloud in the last decade, on-premises storage was the standard. On-premises data storage has always offered organizations the benefits of accessibility, security, control, and the up-front, reliable costs of a CapEx infrastructure model. And when flash storage came along, driving down latencies and setting new expectations for speed and storage efficiency, it revolutionized the way many organizations amassed and used their data.

But with more and more applications moving to public cloud, more and more data follows. Cloud-based data storage offers businesses the open-ended scalability to propagate data without physical storage constraints and the flexibility to create access from any location. Yet, despite the perks of scalability, many companies still have hesitations about storing data in the cloud and may feel some control over security is lost when data is off-premises.

While many applications are a perfect candidate for public cloud storage, many organizations are finding that, between growing data volumes and remote storage locations, achieving the same level of functionality as with on-premises architecture leaves them paying more than expected with increased consumption and latency issues. Hence, an increasing number of organizations are actively moving data off the public cloud and searching for a more stable solution.

Perhaps surprisingly, the need to shift workload cloud strategies is not a problem facing only recent cloud adoptees; according to research, **59% of organizations plan to focus on cloud migration in 2021, and the top challenge in cloud migration is understanding application dependencies**.[2] This cloud strategy shift is closely tied to the challenge of deciding the best workload placement in today's multicloud and hybrid cloud landscapes.

Whether you're creating new applications or moving legacy applications to cloud storage, it's critical to understand the functions of each component to determine which aspects move to cloud and which should remain on-premises. While many take the approach of a 1-for-1 move of applications to the cloud, you have to remember that public cloud wasn't built to host legacy applications, and the accommodations that have to be made to support it well can cost you.

In some cases, the best course of action may be a hybrid approach to storage, depending on need factors including volume, accessibility, security, and speed. In fact, according to **research from Forrester**, 90% of surveyed IT decision-makers "agree that on-premises infrastructure is a critical part of their firms' hybrid cloud strategies," and it is estimated that by 2022, "47% of data-intensive workloads will be run either on-premises or in an internal private cloud."[3]
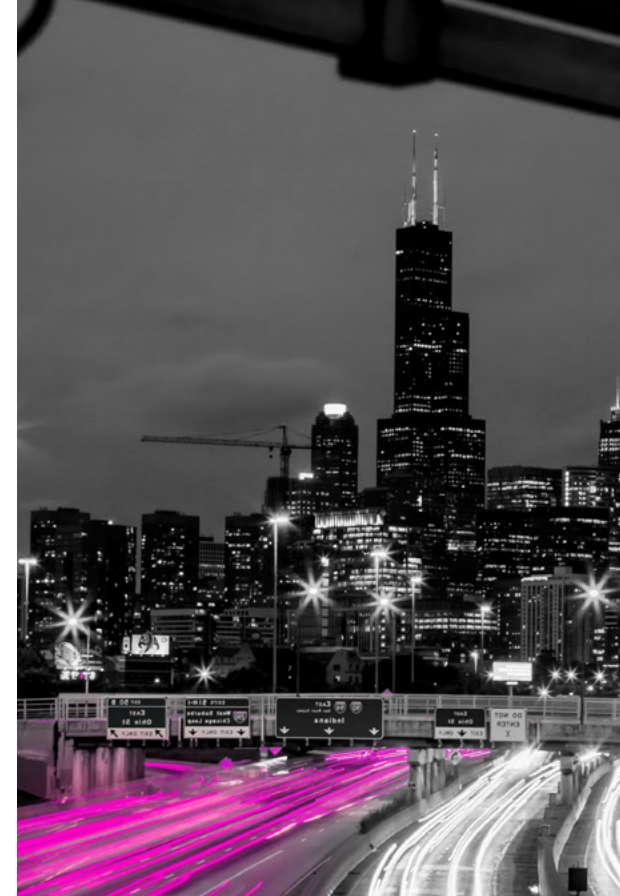
> Despite widespread adoption of cloud storage, fewer than one-third of companies feel as comfortable with the security of cloud storage as they do with on-premises solutions.[4]

The growth in As a Service solutions

Getting the outcomes you're looking for from public cloud storage can be challenging. Getting the storage outcomes you need while keeping a budget on target is even more challenging. The need to transform to support business objectives while mitigating risk is a common circumstance that delivers unexpected potential to adopt a new, more strategic approach.

One of the ways many organizations are handling these challenges is by adopting As a Service solutions for a public cloud-like experience on-premises. As a Service solutions offer **simpler management, pay-as-you-go pricing models, and faster deployment**.[5] In fact, the As a Service approach has gained so much traction in recent years that Infrastructure as a Service (IaaS) — which includes data storage functions — became the fastest-growing category of cloud spending in 2019, and the second largest overall category of public cloud spending, next to Platform as a Service (PaaS). And, of the IaaS and PaaS spending in recent years, data management and data analytics ranked as two of the top three spending categories.[6]

The future of As a Service is looking bright, due to the desire to combine the flexibility of public cloud with the reliability of on-premises infrastructure. According to IDC, there's been a notable increase in interest for IaaS models with consumption-based, on-premises infrastructure pricing. Additionally, **Software as a Service (SaaS) workloads are expected to top out at 380 million in 2021**.[7]

Storage as a Service (STaaS) delivers a **wide range of benefits**, with options including service-based pricing as well as configuration-based pricing. Both options allow you to control your costs, scale as needed, and streamline management.

5

A note on decision-making

There's no single right way to modernize aging infrastructure. The best thing you can do is consider all your available options, weighing the considerations we've outlined with your knowledge of your own data and architecture, and make a choice.

When you've reached that decision-making stage, here are two more things to keep in mind.

Cost considerations

Probably your first concern: cost. Make sure, whatever you choose, that you're supporting what it takes to keep the lights on. Additionally, run a cost analysis to predict your current and future data costs. Support is an often-overlooked cost, so also try to factor support costs into your budget. Realize that storage can be an expensive purchase, but your goal is not to spend, rather it's to weigh the value of your purchase over time to minimize debt and maximize cost-efficiency overall.

To look at value over time, you need to be aware of where you plan to take your business and your IT infrastructure in the next few years.

Planning for the future

A decision made for the present is often proven less than ideal down the road. Plan for the future of your business, your infrastructure, and even your applications. Business transformation is an iterative process that requires strategic investments in infrastructure and services to align with future growth and create efficiencies. It also requires alignment of your people and processes for comprehensive, collaborative evolution.
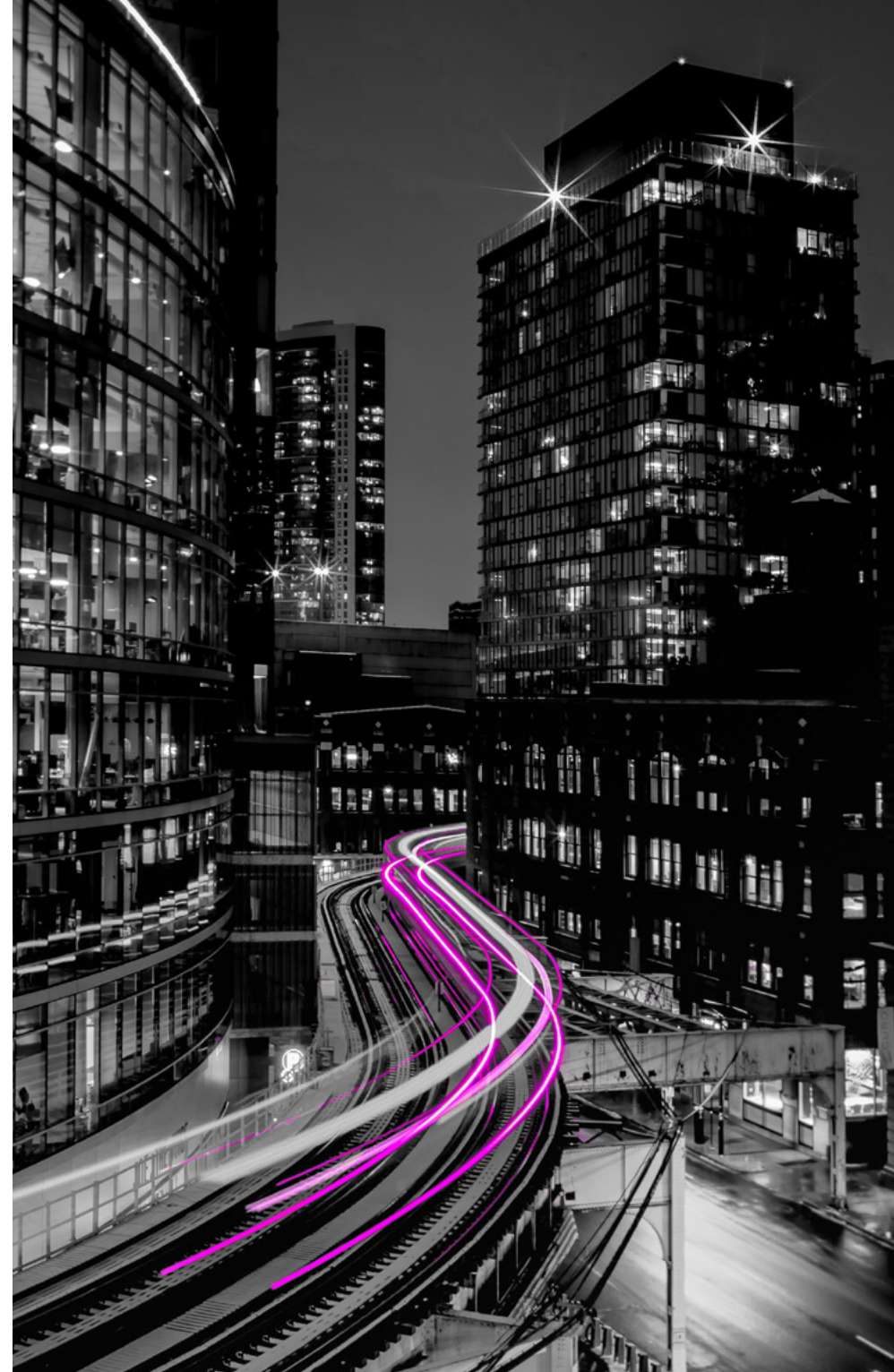
Conclusion

It's been estimated that businesses collectively intend to increase their IT budgets in 2021, largely due to the need to replace aging infrastructure; research from IDC indicates that cloud compute and storage spending by service providers will reach **$74.7 billion** in 2021, and **grow more than 11% year over year**.[8]

As you approach the storage decision and all the considerations it entails, you don't have to know it all or do it all on your own. Insight has been a leader in the data storage industry for more than 25 years, and our data experts have the depth and breadth of understanding to answer your questions and help you effectively navigate your data storage decisions.

We know storage. And we are ready to share what we know with you. When you're ready to make a decision, you can rely on our understanding of flash, cloud, converged infrastructure, software-defined, and the storage landscape as a whole to guide your process and support your goals.

To learn more about how we can help you transform your data solutions, **contact us**.
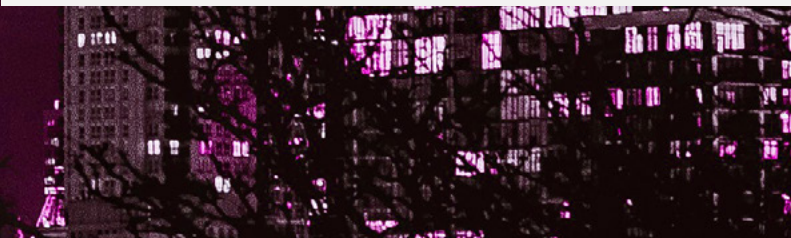
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