

RR

BUILD AN OPTIMIZED AND RELIABLE INFRASTRUCTURE FOR COLLECTING DATA THROUGH HYBRID DATA REPLICATION

September 2021

Jim Rapoza
VP & Principal Analyst, IT

[LinkedIn](#), [Twitter](#)

In this report, we'll look at how enterprises are optimizing their data infrastructures with cutting-edge replication capabilities and how leading organizations put in place the right hybrid-based capabilities and agile technologies to achieve best-in-class synchronization, avoid downtime, lower costs, and improve results across the board.

Today, data infrastructures are rapidly changing within most organizations. And as businesses move to more distributed and innovative architectures, they are seeing increased needs for more powerful and flexible data replication solutions.

Enterprises today are facing huge transformations in how data is utilized and managed. The move to multicloud and hybrid cloud infrastructures, along with increased demand for real-time access to data and optimized decision making, are pushing enterprises to adopt more flexible, reliable, and instantaneous data systems.

Aberdeen Strategy and Research has found that leading enterprises overcome these challenges by adopting replication solutions that provide low latency synchronization across clouds, between customer data centers and public clouds, and within data centers. And that support any end points while limiting impact on source environments. This enables real-time analytics, easy migration, high availability, and strong integration with modern applications and big data analytics environments.

With flexible data replication capabilities in place at the core of their data architecture, businesses are more innovative when it comes to key technologies like big data and containers. They are also more agile and accurate with data analytics, gaining valuable insights to react to data events as they happen and they see gains across their organization, including optimizing availability and costs, lowering management headaches, and boosting performance.

Overcoming Challenges and Leveraging the Opportunities that Modern Infrastructures Bring to Data

When businesses build their data infrastructure following the older, business-as-usual model, they run into many challenges, especially if

The Aberdeen maturity class framework is comprised of three groups of survey respondents. This data is used to determine overall company performance. Classified by their self-reported performance across several key metrics, each respondent falls into one of three categories:

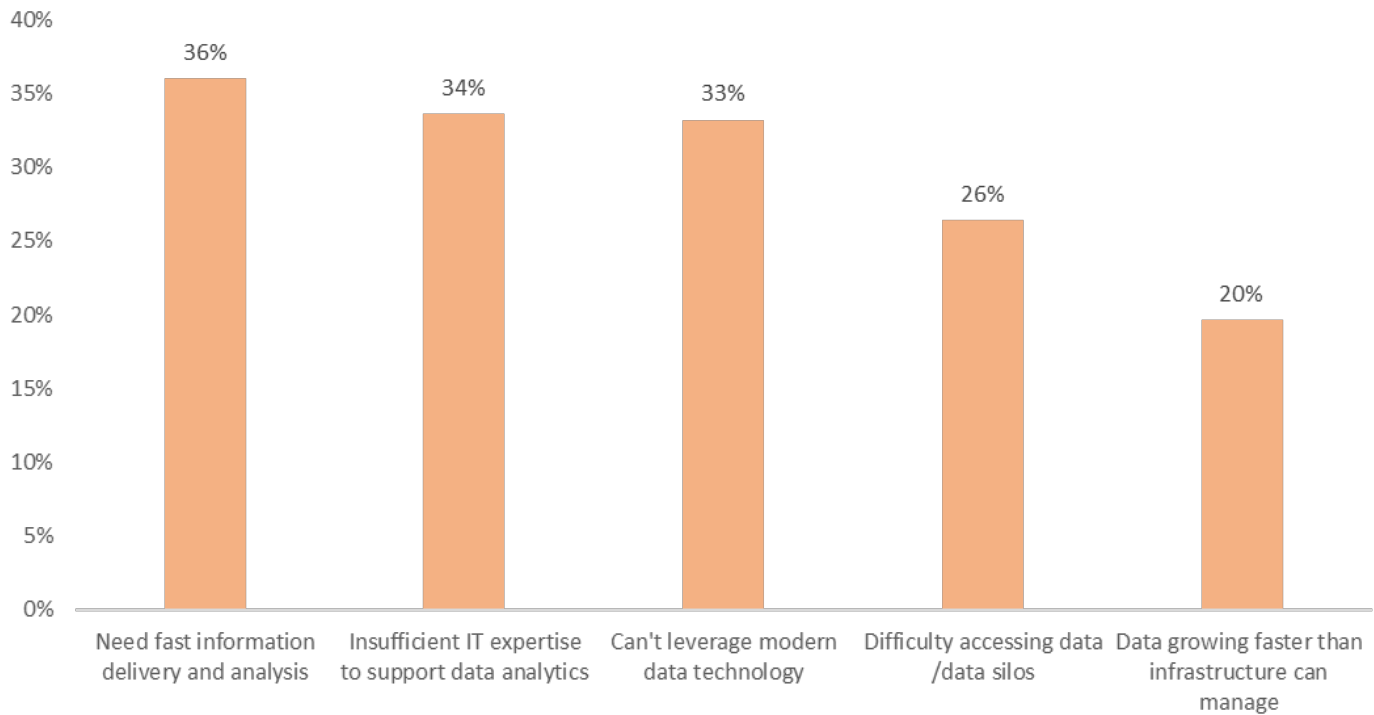
- ▶ Best-in-Class: Top 20% of respondents based on performance
- ▶ Industry Average: Middle 50% of respondents based on performance
- ▶ Laggard: Bottom 30% of respondents based on performance

Sometimes we refer to a fourth category, All Others, which is Industry Average and Laggard combined.

they require real time access to data. Older, traditional batch-style data architectures limit flexibility, putting hurdles in the way of organizations that need agile analytics, the ability to utilize the quickly growing amount of data, and the ability to easily take advantage of source data.

For these enterprises, limitations in their data infrastructure aren't just an inconvenience, they are barriers to their ability to get the most out of their data, grow their business, and be agile and innovative. To understand these pain points, Aberdeen Strategy & Research surveyed organizations about the key hurdles that they currently face in their data architectures, as shown in Figure 1.

Figure 1: Top Data Architecture Challenges



Source: Aberdeen Strategy & Research 2021 n=250

The number one challenge, which is no surprise, is the need for fast data analytics. Getting the right information in real-time is vital for business agility and success. In fact, Aberdeen has found that 27% of businesses say that they need to have actionable data available in minutes or less.

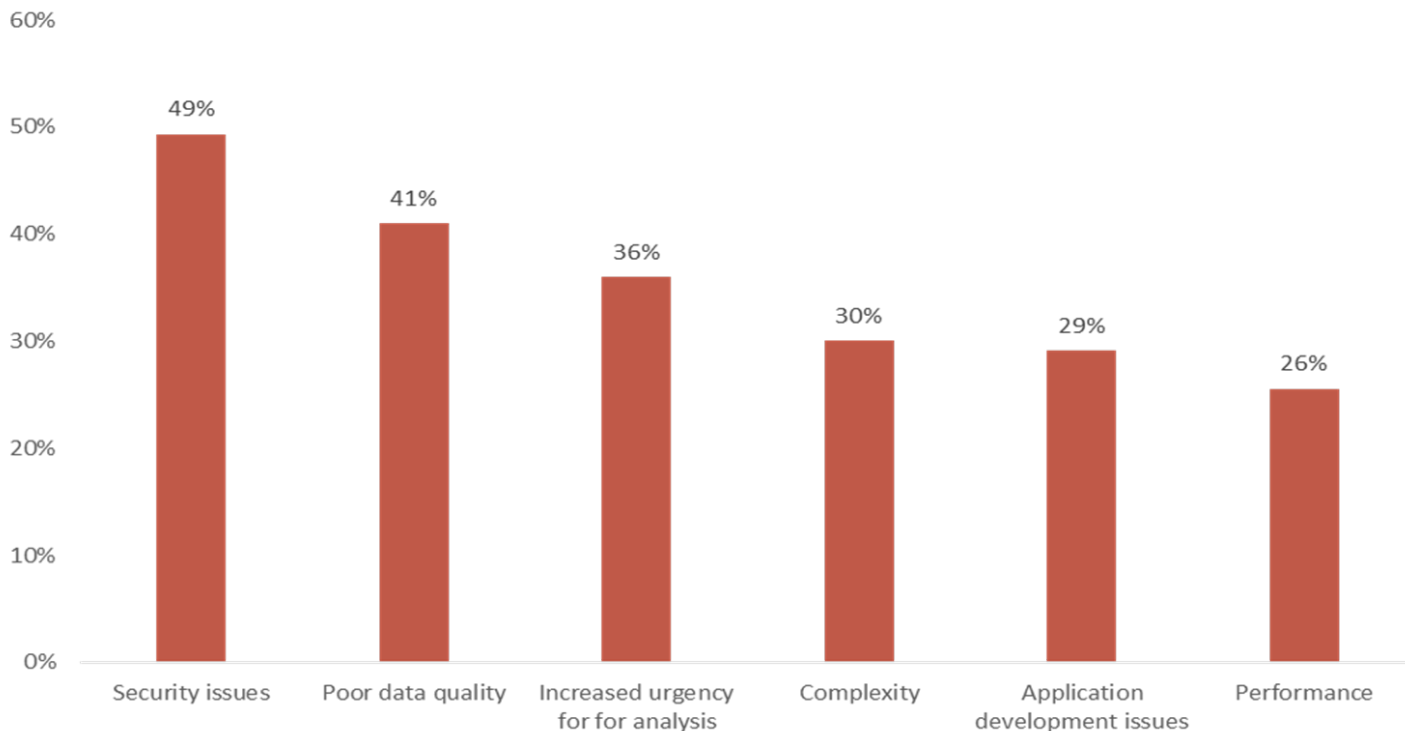
However, close behind this traditional need for analytics speed is the struggles that many organizations are facing in their ability to take

advantage of new technological innovations, while also being limited by lack of expertise in data analytics technologies and processes.

Aberdeen has found that the barriers that a company's data infrastructure places in the way of agility and innovation limits their ability to take advantage of cutting-edge technology. This is especially evident when they struggle to deal with data siloes and when their data infrastructure can't scale to meet growing needs.

And speaking of infrastructures, many organizations are finding that a traditional, disconnected, and high latency data infrastructure brings many additional and unnecessary challenges. In Figure 2, we asked businesses to list their top data infrastructure pain points, and, looking at this data, we see how the wrong infrastructure can not only limit data agility, but also hamper all areas of the organization.

Figure 2: Traditional Data Infrastructures Create Data Hurdles



Source: Aberdeen Strategy & Research

Here we see that the number one challenge of older data infrastructures is that they actually create security issues. When a business has poor access to data, with limited control and too many touch points, it becomes much harder to ensure that this vital data is safe.

Another side effect of older data infrastructures is their impact on data quality. Disconnected and siloed data sources don't just slow access or integration – they make it nearly impossible to leverage key technologies such as replication and synchronization, which optimize data quality, scalability, and high performance.

Implement Optimized Data Replication to Succeed

What are some of the strategies that organizations should follow to overcome these challenges that slow analytics, limit access, and increase risk? Some businesses might make the decision to move all their data to the cloud or share “some” data with cloud-based analytics systems for agile processing and lower cost, while some try to bolster their legacy systems with additional on-premises investments.

But Aberdeen research shows that organizations that are leaders in data integration and management are instead embracing solutions that are designed for today's hybrid and multicloud environments. With systems that offer the best capabilities of on-premise computing and the public cloud ecosystem, these businesses have the flexibility and agility needed to innovate.

Also, these leaders are implementing solutions that give them state of the art data replication that enables real-time big data analytics, fast applications, support for key C2C and G2C topologies, and high availability. In fact, Aberdeen research shows that organizations that are Best-in-Class in data management and integration are 2x more likely than their competitors to use these kinds of data replication solutions.

While trusted and agile data replication is nearly synonymous with Best-in-Class, businesses that utilize these intelligent and flexible systems see a number of advantages and increased capabilities when compared to their competitors. We found that businesses with modernized data replication solutions (see sidebar) were more likely to implement key data infrastructure processes and more likely to take advantage of innovative data technologies.

In Figure 3 below, we see that, with modernized data replication in place, businesses greatly exceed their peers when it comes to innovation. They are over 3x more likely to already have a Hadoop data lake in place, which gives them the powerful data transformation and replication architecture needed for today's big data analytics.

Organizations that are Best-in-Class in data management and integration are

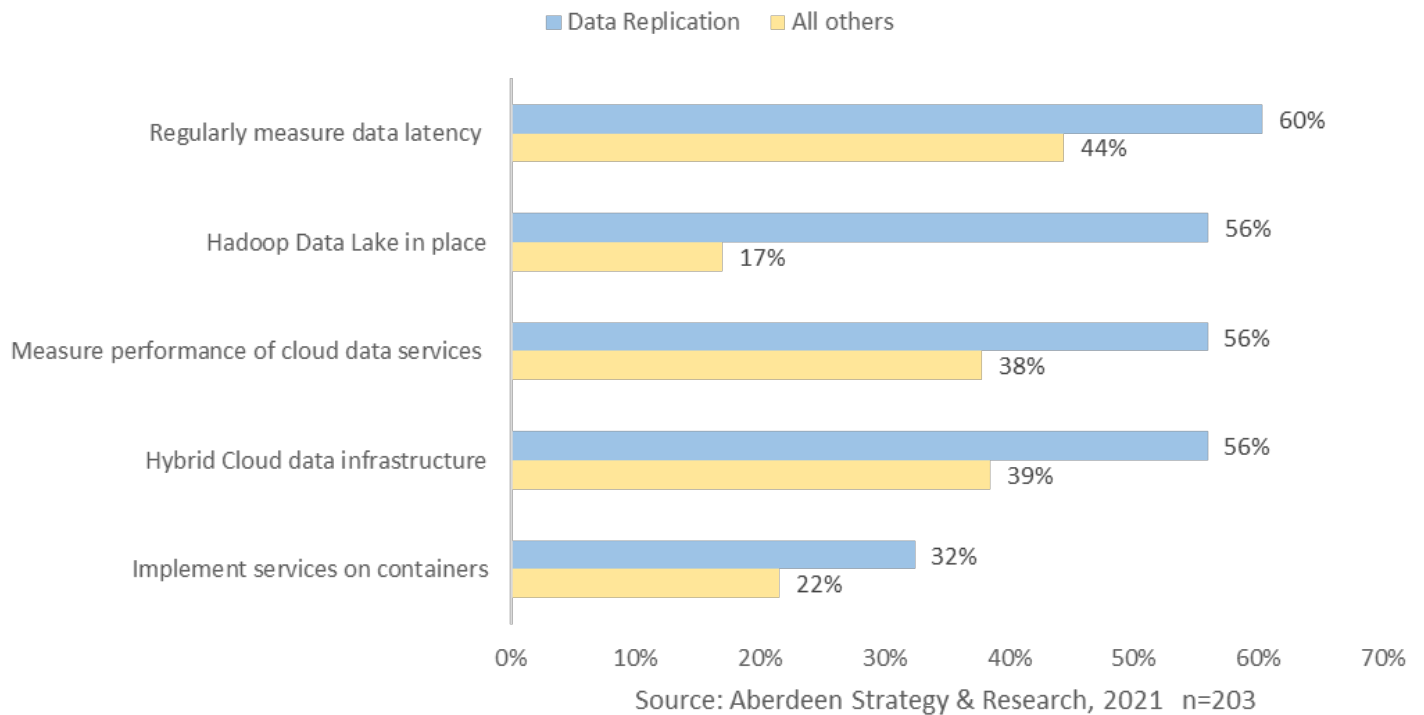
2x more likely
than their competitors
to use these kinds of
data replication
solutions.

Modernized Data Replication

Modernized data replication solutions provide agile, flexible and real-time capabilities that support high data volumes, zero-downtime, and secure replication across multiple data sources and data stores. They enable efficient database migration, application consolidation, business analytics, and high-quality data processes that boost business productivity and provide end-to-end visibility into processes.

These data replication leaders are also 45% more likely to be deploying these solutions on a hybrid cloud infrastructure, giving them the flexibility to get the most out of their data infrastructure and modernize their data warehousing capabilities. With an innovative, fast, and scalable data replication system at their disposal, they are more likely to utilize containers and Kubernetes for their core enterprise applications and services.

Figure 3: Data Replication Drives Key Data Infrastructure Innovation



The leaders that power their organizations with modernized data replication also ensure that they have deep understanding of how their data services, connections and sources are performing. They are 38% more likely to measure latency across their data architecture and they are 48% more likely to track, monitor and measure the performance of their cloud-based data services.

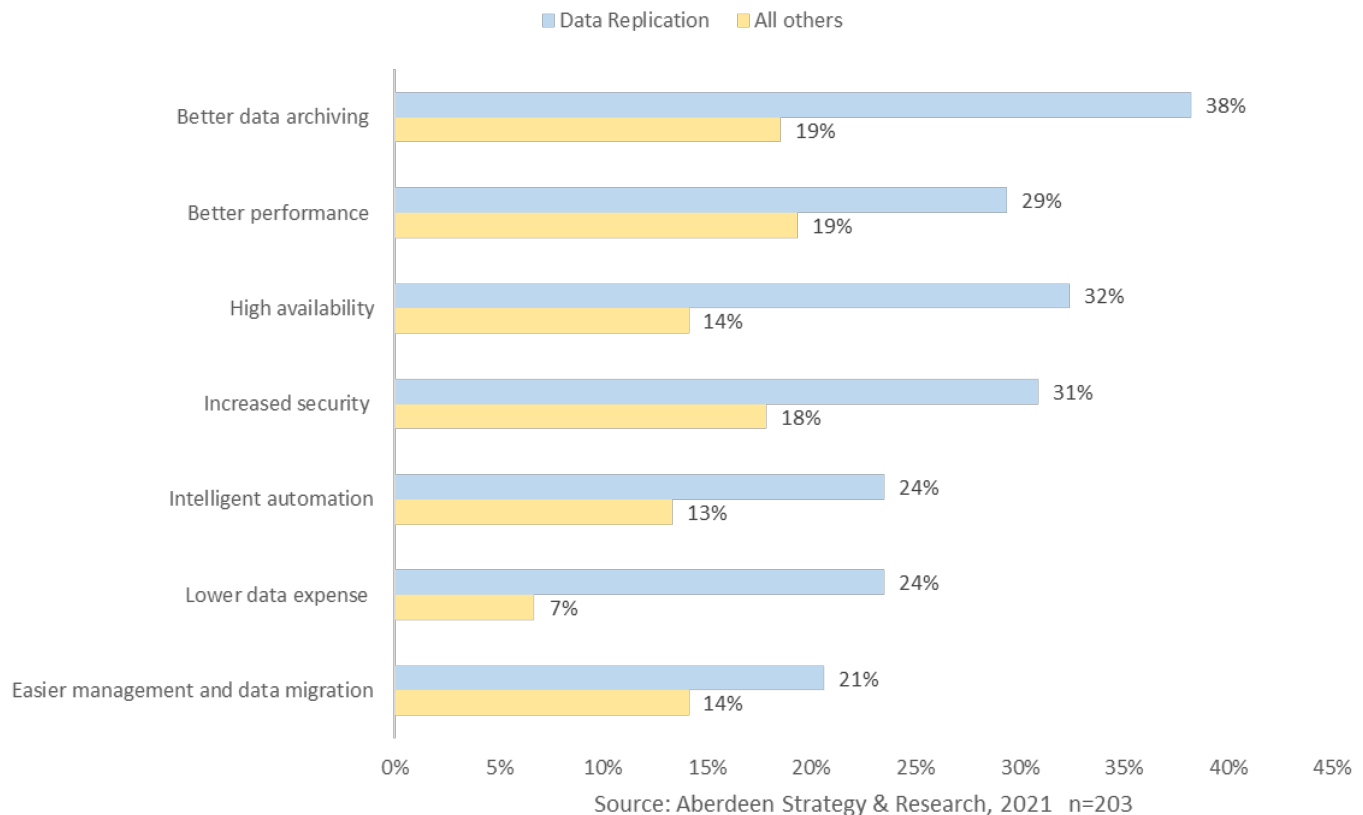
This kind of cutting-edge data replication gives these organizations an advantage in many areas when it comes to getting the most out of their data. Businesses can utilize these data replication solutions with minimal or no impact on their sources and existing databases and applications, while centralizing management to reduce complexity and increase integration with vital applications and systems.

The Key Benefits of Having Real-Time and Reliable Data Replication

Looking at the research presented, we see that businesses that implement hybrid cloud ready data replication are serious when it comes to building an agile, resilient, and real-time data architecture. They measure performance, ensure scalability, boost integration, and enable innovation throughout their infrastructure.

These organizations also understand the importance of real-time access to high quality data, which is vital to successful operations in the short information windows of today's businesses, and the ability to analyze data that is in motion. Aberdeen research indicates that these organizations are implementing enterprise-ready data replication that provides simplified migration, continuous replication, and high availability. With these capabilities in place, these organizations are seeing a number of important benefits, as shown in Figure 4.

Figure 3: Data Replication Brings Vital Business Benefits



Earlier, we saw that the top data infrastructure challenge for businesses was data security. With a modernized data replication solution in place, these businesses reduce their risks and exposures through improved access controls and trusted delivery. And since the replication solution sends only needed changes and has zero downtime, less data is exposed.

With these advanced security capabilities, organizations are 75% more likely to report improved security, and, as they are 2x more likely to have better data archiving, they can more easily meet compliance and data recovery commitments.

These businesses also achieve both improved reliability and better performance. By implementing key data replication systems, they are 55% more likely to see improved performance, and they are over 2x more likely to achieve high availability for their vital data systems.

With increased and intelligent automation capabilities at their disposal, along with centralized and non-intrusive implementations, these leading data businesses are 50% more likely to see simplified management and easier migrations. All of which pays off on the bottom line, as organizations with modernized data replication are nearly 3.5x more likely to see lower expenses in their data architecture.

Takeaways and Recommendations

Companies today need data to work for them, not against them. That means they need data solutions that give them the ability to leverage real-time analytics and information to take advantage of any business opportunity and gain an edge over their competitors.

Leading organizations are implementing data replication solutions that simplify migration and management, utilize automation to break down data siloes, and build the reliable transactional data connections needed for a modern and successful business.

As enterprises make data a more integral and vital part of their business success through trends like agile development and DataOps, they need data replication solutions that drive their data fabrics and enable integration and flexibility as both their data needs and their business grow. With modernized data replication solutions that provide real-time data to power cutting-edge applications and big data analytics, these businesses improve results, increase security and reliability, and enable innovation to move their organization into the future.

Organizations with modernized data replication are:

- **Nearly 3.5x more likely** to see lower expenses in their data architecture
 - **2x more likely** to have better data archiving
 - **75% more likely** to report improved security
-

To join these data infrastructure leaders, consider these key takeaways:

- ▶ **Bring a real-time approach to transactional data** – When working towards modernizing your data architecture, remember that speed is vital in order to optimize decision making and to react to events as they happen. Understand that successful data replication and analytics relies on the ability to track data, in motion, and see all changes and vital information in real-time.
- ▶ **Expand ability to utilize today's growing data requirements** – In today's data rich business environments, organizations need replication solutions that can handle the high volumes of data that businesses need to understand in order to succeed. And they need to support the evolving data topologies in core areas such as C2C and G2C.
- ▶ **Transform and modernize your entire data infrastructure** – Businesses that are successful at transforming their data capabilities understand the extensive reach of their data. They know that they need to improve and modernize the data in all data warehouses and data lakes, and they need replication capabilities that support a breadth of endpoints in order to work with any sources or targets. Most importantly, their data architecture needs to be built for today's hybrid cloud and mutlicloud environments.
- ▶ **Work with partners who understand data and future trends** – Keeping track and building expertise on every new technology and trend is difficult for any organization. Businesses that are leaders in data modernization choose partners who understand their specific requirements, challenges, and opportunities, while also having deep expertise in key technologies of today, such as hybrid cloud, Hadoop, and automation. When you work with a partner who is a peer and knows your day-to-day, it makes a significant difference in effectively transforming your organization.

About Aberdeen Group

Since 1988, Aberdeen Group has published research that helps businesses worldwide to improve their performance. Our analysts derive fact-based, vendor-neutral insights from a proprietary analytical framework, which identifies Best-in-Class organizations from primary research conducted with industry practitioners. The resulting research content is used by hundreds of thousands of business professionals to drive smarter decision-making and improve business strategies. Aberdeen Group is headquartered in Waltham, Massachusetts, USA.

This document is the result of primary research performed by Aberdeen Group and represents the best analysis available at the time of publication. Unless otherwise noted, the entire contents of this publication are copyrighted by Aberdeen Group and may not be reproduced, distributed, archived, or transmitted in any form or by any means without prior written consent by Aberdeen Group.