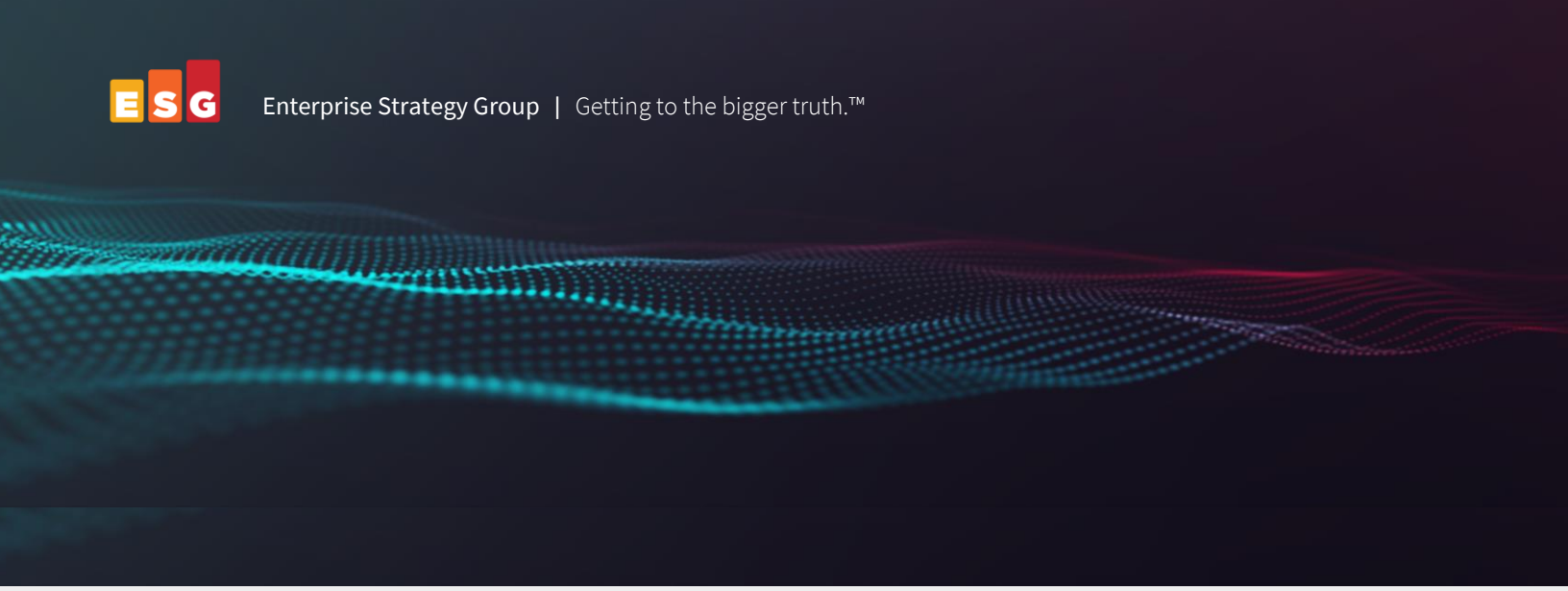

ESG WHITE PAPER

Minimizing Downtime with Hitachi Vantara's Modern Data Protection Solutions

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Overview

IT is constantly evolving as it adapts and adjusts to a tumultuous business climate. Digital transformation is driving IT initiatives at an unprecedented level, but organizations still have room to grow. Only 22% of organizations surveyed by ESG said they currently have implemented and optimized several digital transformation initiatives, but another 50% are in process. This effort is business-critical; when asked about their most important objectives for digital transformation, organizations most frequently reported that they wanted to become more operationally efficient.[1]

Storage and data protection were of particular note. Fifty percent of the organizations surveyed by ESG indicated that they would increase their spending in data protection in 2021, and 46% reported that they would increase their data center infrastructure spending. It should also be noted that improving data backup and recovery is the top investment area for data center modernization in 2021.[2]

At the heart of the matter is the ability of IT to efficiently meet modern data protection service levels as their organizations undergo these transformation and modernization efforts. IT is responsible for truly managing data and service-interruption events, both minor and major, and that's where the data protection infrastructure plays a critical role. It mitigates technical and business risks while the organization proceeds on its transformation journey.

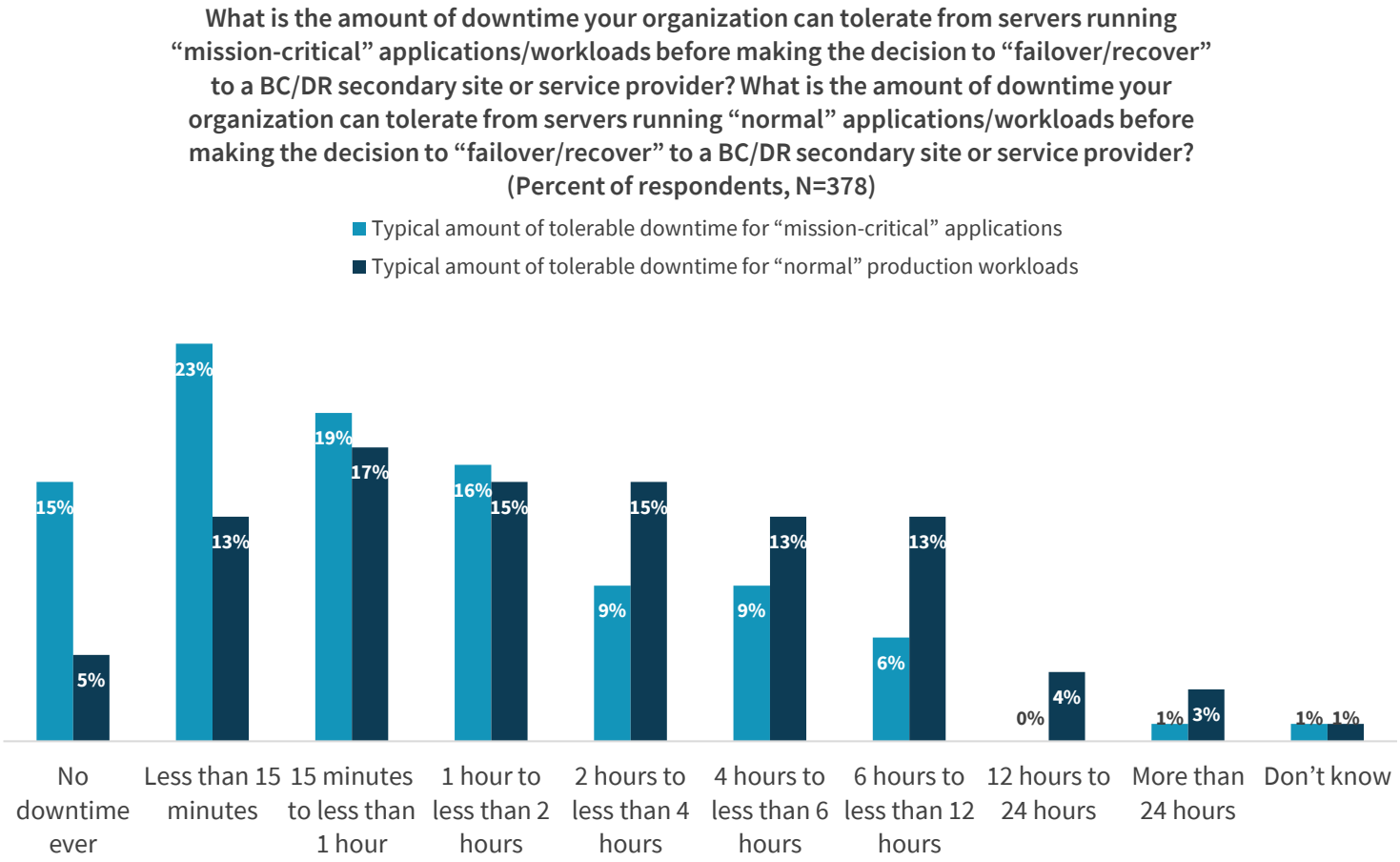
Data Protection SLAs Are Stringent

ESG research has repeatedly confirmed that organizations have little tolerance for downtime—in particular for mission-critical workloads. Among the organizations surveyed by ESG, a combined 57% reported they can't tolerate more than one hour of downtime before invoking a failover for business-critical applications (see Figure 1).[3] One hour is actually a fairly long time in terms of potential business consequences, especially for highly transactional environments or critical service operations.

As a matter of fact, 15% of respondents reported that their organizations can't tolerate any downtime at all for high-priority applications. Failure is simply not an option, or more precisely, unavailability is simply not acceptable. And even *normal* applications are experiencing higher availability demands, with 5% of respondents reporting that they cannot tolerate any downtime, and overall 35% reporting that they can tolerate only less than one hour.

[1] Source: ESG Research Report, *2021 Technology Spending Intentions Survey*, January 2021.
[2] Ibid.
[3] Source: ESG Research Report, *Real-world SLAs and Availability Requirements*, October 2020.

Figure 1. Amount of Downtime Tolerance



Source: Enterprise Strategy Group

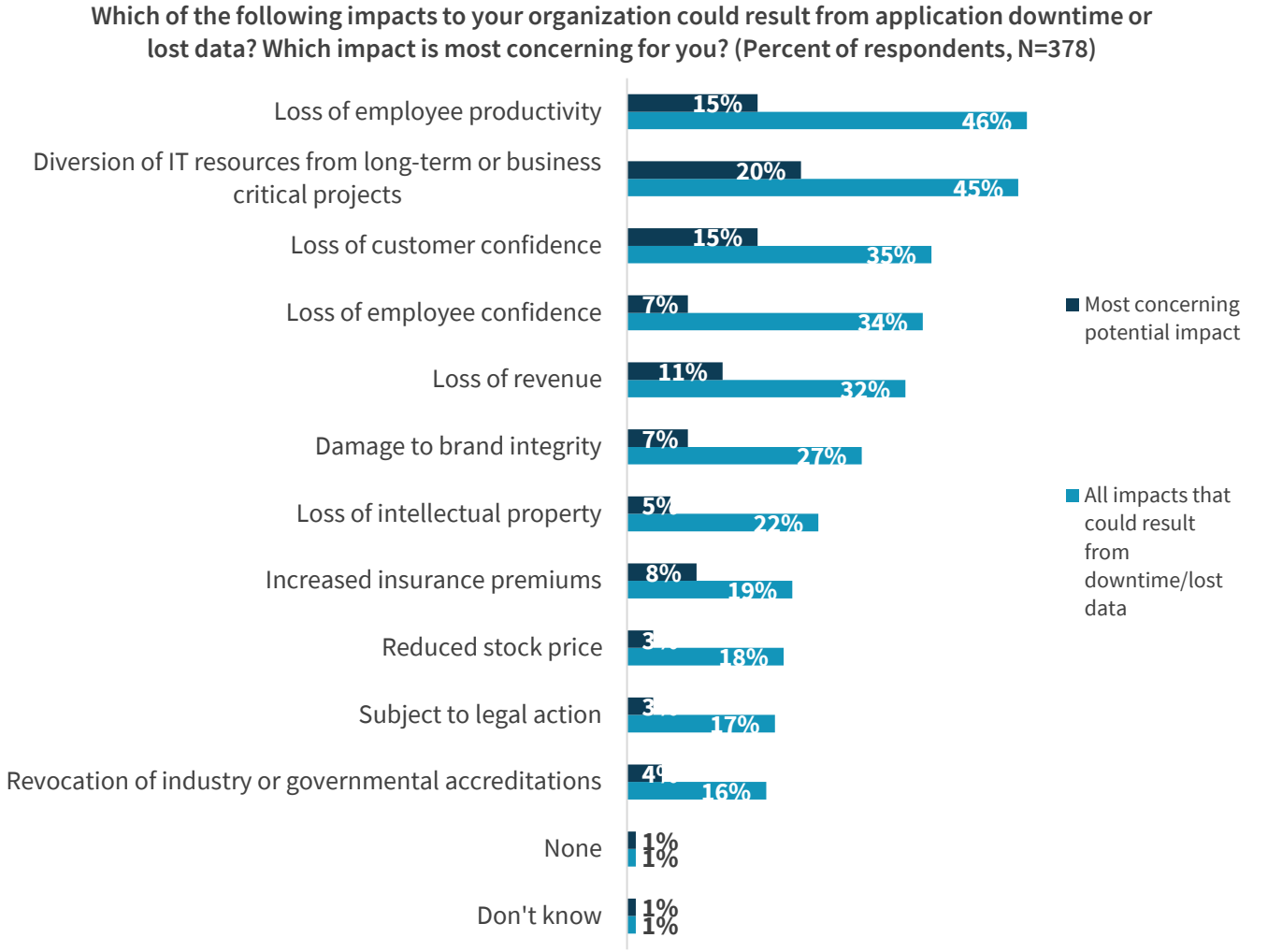
Data and applications need to be available to the business and must meet agreed-upon performance levels—which means that IT must take one or more of the following technical actions to manage the whole data protection infrastructure:

- Maintain local copies that are immediately available for application resumption.
- Establish failover to another site to maintain access to mission-critical services and data.
- Mitigate data/transaction loss by replicating everything to multiple locations for redundancy.

And from a business perspective, the effort must center on properly managing risks and mitigating potential consequences that would adversely affect the organization. The goal has to be to meet the organization's service level because the effects of application downtime or lost data can be devastating. ESG has identified a wide range of consequences, including loss of employee productivity, diversion of IT resources from business-critical projects, and loss of customer confidence or direct revenue (see Figure 2).[4] Notably, employees can also lose confidence in their own employer when such issues occur, which can generate further long-term risks to the organization.

[4] ibid.

Figure 2. Impacts Resulting from Application Downtime or Lost Data

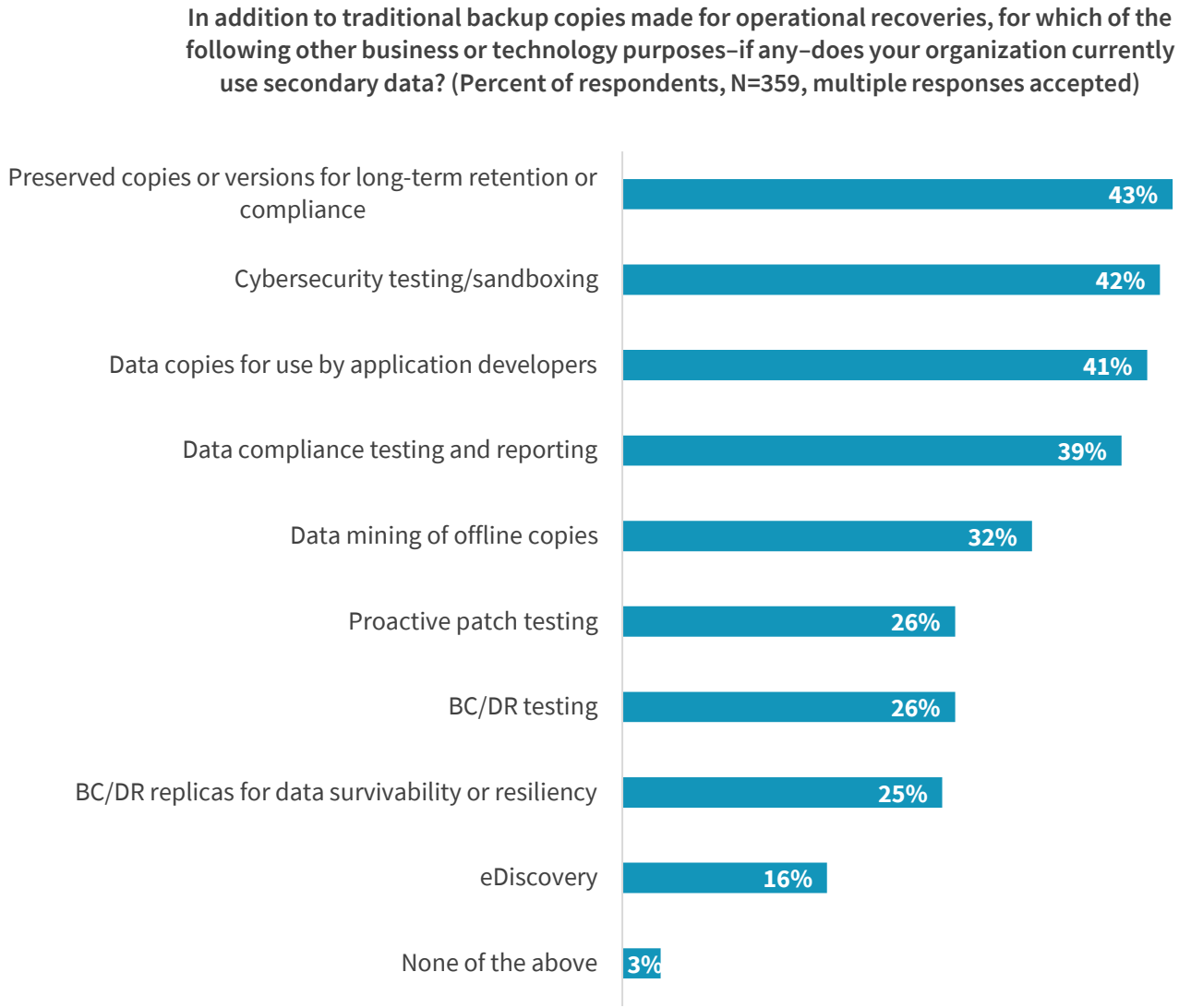


Source: Enterprise Strategy Group

Data protection is an important first step for organizations to achieve, but there are many other uses for the data (see Figure 3) that can generate significant business and technical advantages. As a matter of fact, organizations that successfully reuse data report gaining in business agility, lowering operational cost, gaining better data visibility, and increasing resiliency to cyber-attacks, among other benefits.[5]

[5] Source: ESG Research Report, *The Evolution from Data Backup to Data Intelligence*, February 2020.

Figure 3. Beyond Data Protection: Secondary Data Use Cases



Source: Enterprise Strategy Group

Simply put, data loss and data unavailability directly and indirectly affect a company's top and bottom line, as does the ability to reuse the data for other purposes. Therefore, resilient IT processes and technologies are crucial to building a robust protection infrastructure that will alleviate technical and business risks and promote data reuse. This is the core focus of technologies delivered by Hitachi Vantara.

Hitachi Vantara's Data Protection Portfolio

A wholly owned subsidiary of Hitachi, Ltd., Hitachi Vantara built its reputation in data protection over the course of many years of successfully innovating storage-based business continuity solutions. It offers a portfolio composed of tightly integrated technologies covering multiple facets of data protection and recovery. Its key components augment organizations' abilities to deliver against data protection SLAs.

Hitachi Ops Center Protector

Hitachi Ops Center Protector is a copy data management platform that simplifies the creation and management of policy-based workflows. It is a vital component of Hitachi Vantara's approach to defeating downtime, as it automates and orchestrates policies of host-based and storage-based data protection processes. Ops Center Protector essentially translates business-defined data protection objectives into protection processes and tasks to deliver the expected SLA. The solution also integrates traditional silos of data protection such as backup, disaster recovery, and long-term retention.

Ops Center Protector orchestrates and automates storage-based snapshots and clones, combining local and remote operational recovery processes as needed. It is squarely focused on supporting business processes—it features application-consistent protection capabilities for environments, including Oracle and VMware vSphere. Additionally, it boasts a very simple end-user interface akin to a white board with drag and drop capabilities.

Ops Center Protector not only helps IT to adhere to uptime SLAs, but it also helps to cut operational costs and improve compliance, thanks to its integration with the entire Hitachi Ops Center portfolio, including Ops Center Administrator and Automator.

Hitachi Local Replication

Storage-based local replication capabilities are key to providing copies of critical data volumes quickly and reliably. Multiple tools are available in the Hitachi Vantara portfolio to ensure fast recovery using local copies without incurring host or application overhead:

- Hitachi ShadowImage replication software provides full in-system clones of data volumes.
- Hitachi Thin Image snapshot software provides near-immediate copies, which can also be used in decision support, software testing, and development. This tool has the advantage of using much less storage than multiple point-in-time full clones would require.

The cloning capabilities not only support business continuity by reducing recovery time, but they also provide a non-disruptive data backup capability and allow the organization to conduct disaster recovery testing without interrupting business operations.

Hitachi Remote Replication

Remote replication is a proven technology to support in-region and out-of-region business continuity. It is the cornerstone of a solid business continuity and availability plan. Hitachi Vantara offers a complete remote replication tool set:

- Hitachi TrueCopy for synchronous replication, which is an active-passive topology and is typically used for metropolitan deployments.
- Global-active device is an active-active stretched cluster over local and metropolitan distances.
- Hitachi Universal Replicator, which is asynchronous and typically used in out-of-region deployments, including trans- and cross-continental implementations. A three-data center option combining asynchronous with synchronous or active-active replication is also a very powerful topology for disaster recovery of the most demanding environments.

Hitachi Vantara has many customers who successfully leverage these replication solutions around the world across many industries.

The Bigger Truth

In a perfect world, downtime would be a thing of the past. We know that's not the case, and as organizations continue their digital transformation journeys, more data assets are being created—generating, in turn, higher availability demands. Delivering on availability service levels is not just a technical responsibility, but also a business imperative extending well beyond IT. The consequences of failing to meet service levels can be dire and costly.

However, there is a bright side. Making the right architectural and technical choices can tip the scale in an organization's favor. That's where Hitachi Vantara comes in with its very robust set of tools. Leveraging Hitachi Vantara's advanced replication technologies and its Ops Center Protector platform will allow an organization to deliver against recovery point and recovery time objectives (RPO/RTO) in ways that are not only flexible, but also properly orchestrated and policy-driven.

With all these tools in hand, organizations can then take the next step of implementing intelligent data management and fostering the reuse of data for broad additional business benefits. That's where technology meets business, and it's where the IT organization can make a truly positive difference.

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