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TURBULENCE AHEAD: CHANGING ROLE OF DATA PROTECTION

Intelligent data management and protection requires both a deep philosophical and rich technological approach.

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Data is the driving force at most enterprises today, but storing, managing, and deriving maximum value from that data continues to pose significant challenges. Both the volume and variety of the data companies across all industries continue to gather is growing beyond what was once even considered possible.

Looking ahead at the rapid increase in the size of corporate data stores, data management processes and technologies have sometimes struggled to keep pace. "Data management is going to be a big effort. We will need more efficient utilization of resources," says Jon Toigo, Managing Principal Partner of Toigo Partners and Chairman of Data Management Institute.

And those refined data management efforts will manifest themselves in several different ways. "We need to manage data better, and also better manage the number of copies of that data," he says. "We are ultimately going to need cognitive data management capability, because the amount of data will be too much for humans to manage. We'll enlist cognitive computing and artificial intelligence (AI)."

Toigo presented his views on the rapidly evolving world of data management and protection along with David Russell, Vice President of Enterprise Strategy for Veeam, during a webcast entitled, "Turbulence Ahead: The changing role of data protection in a hyper-growth info environment."

TECHNOLOGY AS BOTH CATALYST AND CAVALRY

While technology is enabling companies to gather and maintain these massive data stores, it will also play a critical role in helping companies manage all of that data. Cloud platforms certainly provide the flexibility and agility to accommodate multiple and varied workloads, but there are lingering concerns about the cost,

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—JON TOIGO, CHAIRMAN OF DATA MANAGEMENT INSTITUTE

coordination, and security of operating in the cloud. This is particularly true in multiple cloud or hybrid environments.

"With software-defined everything, there is not only a decrease in the cost per terabyte of storage, but also an increase in the number of terabytes a single person can manage," says Toigo, quoting a recent Gartner report. However, that same report also notes that along with software-defined storage, there can be increased instances of data silos, with some data hidden behind a particular hypervisor associated with that storage array. "That can make access to data a bit more challenging; while organizations are more data driven than ever and needing access to those data sets."

advancements, but also the rapidly increasing volume of corporate data stores. "It's the data explosion; or what I call the Zettabyte apocalypse," he says.

Toigo looked back at IDC forecasts that by 2014, there would 10 zettabytes of new data produced in the world. Then by 2020, IDC expected 60 ZB of new data. And last summer, it forecast 160 ZB of new data. "Where are we going to host all this?" asks Toigo.

INTELLIGENT DATA PROTECTION

He points out several possible solutions. "Some take confidence in de-duplication and compression to redress this capacity gap," he says. "Others count on media technology breakthroughs or new

"NEW HARDWARE TECHNOLOGY PROMISES IMPROVEMENTS IN PERFORMANCE AND RESILIENCY, BUT THERE'S ALWAYS A LEARNING CURVE ASSOCIATED WITH THOSE CHANGES." —JON TOIGO

Toigo notes that with the opportunities provided by advanced technologies, there are an equivalent amount of challenges. "New hardware technology promises improvements in performance and resiliency, but there's always a learning curve associated with those changes," he says. "Plus, there's the propensity for greater error that could lead to slight increases in downtime and data lost."

These external pressures are adding more "turbulence" to the world of data management. And it's not just technology

storage algorithms." However, these are likely only stop-gap measures at best. More functions of data storage and data management will need to be addressed across the board.

He also sees forthcoming more efficient utilization of resources through better data management and data copy management; improved definition of data lifecycle by class; indexing data; using metadata to tag data; creating policies for data placement based on accessibility, update frequency, and cost; keeping track

of storage resources such as data utilization, availability, access speed; and available data storage services.

The data classification process is where it will be critical to enlist cognitive computing or AI to sort and tag data, oversee data placement, and automate data relocation and management. "The hardest part [of data classification] is coordinating efforts of stakeholders," he says. "It's challenging enough aiming at compliance or just security or archiving. General data management gets to be painful. A lot of companies are spending a lot of money on this. So why don't we leverage work being done in the data protection space?"

"IF YOU WANT A MORE ROBUST BUSINESS CASE FOR DATA RECOVERY, FRAME IT WITHIN RISK MANAGEMENT."

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Toigo notes many enterprises are already working to identify and prioritize critical business processes. In pursuing this strategy, organizations can also identify the infrastructure, applications, and data that support those critical business processes. This ensures organizations can better develop recovery priorities and plans.

"The process begins with a business impact analysis," he says. "They look at the impact of the loss of a workload for a period of time, and determine the criticality by looking at the cost to the organization of that workload being unavailable."

This data classification and business process analysis can serve multiple purposes, which is important when securing the internal resources for these activities from corporate management. Data classification can also be part of the business continuity planning process. Organizations are creating data archives to ease the burden on the backup function, identifying security and access control requirements, and better securing corporate data stores against malware and other cyberthreats. Finally, this classification and planning can also become part of a data governance structure to ensure regulatory compliance.

"Create a Governance, Risk and Compliance policy for your data," he suggests. "You can do that out of the research for your data recovery efforts." He advises identifying what type of security is required for what type of data, how to control access to that data, what data requires encryption or redaction, and how to ensure protection against hackers or even disgruntled employees.

And creating a solid business case around these data management and data recovery efforts helps corporate management see the value. "Management doesn't like spending on data recovery," says Toigo. "They don't see it as necessary until there is a disaster or an audit. Everything you do these days needs that full business case. So, if you want a more

robust business case for data recovery, frame it within risk management."

The bottom line, he says, is you're doing that to satisfy management that you're adding business value. "And to get the bucks for funding. Data management can borrow heavily from the discipline of data protection, impact analysis, setting recovery objectives, how quickly you can restore data, and identifying the business criticality or priority. It forms the foundation of your recovery strategy when you know the objectives."

organization's budget, and meet testing parameters.

ADOPT AND ADJUST FOR IMPROVED DATA MANAGEMENT

Toigo's philosophy for data management strategies and tactics maps closely with that of Veeam's Vice President, Enterprise Strategy, Dave Russell, who was also a speaker for this webcast. "There's no getting around the fact that best practices are best practices," Russell says. "You just have to think of

"THE TOTAL AMOUNT OF APPS THAT DATA ORGANIZATIONS HAVE IDENTIFIED AS MISSION CRITICAL HAS TRIPLED IN LAST FEW YEARS. DATA IS HYPER-CRITICAL."

— DAVE RUSSELL, VICE PRESIDENT, ENTERPRISE STRATEGY, VEEAM

For Toigo, it boils down to several fundamental phases as an organization's data management efforts mature and evolve:

• Automate data management to streamline your efforts. This can originate, or certainly borrow, from your overall data protection strategy.

• Relate business processes to the supporting resources and classify the impact of an interruption event in both tangible and intangible terms.

• Set reasonable recovery service objectives and establish time-to-data standards in line with your recovery priorities.

• Develop recovery strategies that meet business objectives, work within the

new environments [where you can] apply them. Veeam has three characteristics of data management we're advancing. And none of this should sound new."

Russell walked through the three primary forces he sees as affecting modern data management. "First is about hyper-criticality of data. We always knew data was important, but it is now getting more critical," says Russell. "The total amount of apps that data organizations have identified as mission critical has tripled in last few years. Data is hyper-critical."

Like Toigo, Russell also sees the explosion of data volume. "The second is

growth. What does the phrase 'hyper-growth' mean?" he says. "There is an increase not only in the number of data types, but also overall data volume. The other aspect is the rate of change. How frequent are updates and modifications; and do you back up or don't you at every update? Now you probably have to back up every few minutes for some workloads."

There is not only exponential growth in the volume and variety of data, but also the manner in which and the locations in which it is stored. "The third attribute is hyper-sprawl," he says. "Data lives in many touchpoints. Even with data center data, some is on-premise, some is off-premise. The scope of where data resides is causing pressure."

"WE ARE BASICALLY STARTING TO SHIFT FROM FIGHTING FIRES TO ENABLING BETTER BUSINESS OUTCOMES."
—DAVE RUSSELL

Toigo concurs with Russell's assessment. "I am hearing three things I agree with—the criticality of data reflected in desire for more meaningful use of data they've got, ramifications of accessibility of that data, and the growth and sprawl of data seeing a lot of multi-cloud environments. Imagine when your mission critical data is spread over several clouds."

FIVE STAGES OF INTELLIGENT DATA MANAGEMENT

Veeam's Hyper-Availability Platform supports this data management philosophy through five stages, as Russell explains. "These five stages of intelligent data management follow how data behaves throughout its useful life," says Russell. He outlines the five stages as:

• Backup: Back up all workloads to ensure they are always able to be recovered in the event of loss, theft, attack, or some other sort of outage.

• Aggregation: Ensure access to data and its protection across multiple clouds to drive digital services and ensure continuity of business operations.

• Visibility: Improve on-prem and multi-cloud management in hybrid environments with clear, unified visibility and control of data usage, performance issues, and business operations.

• Orchestration: Seamlessly move data to the most efficient and effective storage location across multiple clouds to ensure business continuity, compliance, security, and optimal use of resources.

• Automation: Get corporate data stores to the point of becoming self-managing by automating back up, migration to ideal storage location, boosting security during anomalous activity, and ensuring instantaneous recovery.

"The idea here is to create a continuum," says Russell. "It's a journey from point A to B, with stage five being point B. Consider what makes sense for your organization at the time. What is the right workload at this time and which policy behavior has these rich

characteristics? You have to know the outcomes in advance."

Russell briefly walked through each stage, elaborating on what they mean. "Backup is probably self-describing," he says. "Backup and recovery is a vital operation. We need to make sure that the business is protected. That critical systems can be made available."

Aggregation refers to what an organization can protect, whether that data is stored on- or off-premises or within multiple clouds. "We have to figure out where all this data lives, or should live," he says.

Visibility is critical of course because organizations can't manage what they can't see, so it is important to know what data resides where. Russell advocates maintaining that visibility through a single pane of glass type of management view.

Stages four and five are moving toward more behavior-based attributes. Automation moves from being simply reactive to becoming more proactive. "We are basically starting to shift from fighting fires to enabling better business outcomes. We move from policy-based to behavioral based operations" he says.

When data starts achieving self-adaptability, then organizations can take intelligent actions and make better informed business decisions. "With orchestration, you don't just bring back the bits," Russell says. "You must have everything you need to complete a business process. You can do more interesting things with the data."

The Veeam Hyper-Availability Platform addresses this philosophical framework at each level. "It begins with backup," Russell explained. "You have to first ingest data. Veeam integrated separate tools for backup and recovery and replication and failover into a unified tool-set. Then we started looking to delivering universal APIs. We're looking up the stack to apps and look across domains at storage arrays and networking. We leverage the array-based snapshot and then Veeam will coordinate the rest of the data management, working with the applications to maintain consistency."

More intelligently managing corporate data stores is a critical capability for the modern enterprise. "We have tons of data," Russell says, "so we have to get smarter in how we manage that data."

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