



Dealing With the Complexities of Application-Centric Data Management

It's all well and good to talk about data protection generally, but IT organizations aren't tasked with protecting an amorphous mass of undifferentiated data. The reality is that they must safeguard the specific applications and services the business depends on.

This reality is highlighted by the application-specific data management and storage concerns of the nearly 250 IT decision-makers and senior executives surveyed in a comprehensive new study by UBM Tech, "The State of Data Storage, Backup, and Management." It is also underscored by the fact that only 16% of respondents apply a single set of data management policies to all of their applications (see sidebar, p. 3).

For example, when respondents were asked generally about their top data storage concerns, only about a quarter (26%) cited making their recovery point objectives (RPOs) more recent. When asked about RPO for SAP, that number rose to 30% (see Figure 4, p. 4), but for SharePoint it shot up to 38% (see Figure 3, p. 3). This illustrates that business imperatives for the data associated with specific applications can vary significantly.

"Not all data is created equal," says Ernesto Hernandez, director of IT at Chicago-based Neumann Family Services. "That's why it's essential for us to treat an application like payroll much differently than

Executive Summary

Data management used to be a straightforward proposition. You made sure you had enough online storage capacity to support the production environment, and you periodically backed up the data in that environment so the business could recover from an outage.

The relationship between IT and the business, however, has changed. Now, everything the business does depends on one application or another. In this application-centric world, backup and storage managers can no longer just protect data at rest. They must aggressively safeguard and optimize access to the enterprise applications on which the business depends.

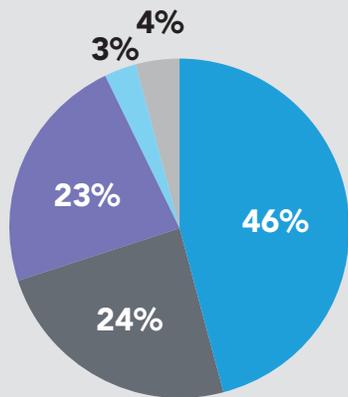
This sort of application-level data management is posing challenges for IT. According to a UBM Tech study, IT decision-makers are nearly twice as likely to be worried about their storage-related costs as they are about those related to servers or networks (see Figure 1, p. 2).

That's why IT is looking to simplify the increasingly complex work associated with application-level data management – and, by doing so, to significantly improve the efficiency and effectiveness with which it meets the escalating demands of the business.

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Another concern with SharePoint highlighted in the survey is the retrieval of files that have been removed from the production environment but remain available in backup. Nearly half (47%) of survey respondents said they would like to make it easier for users to do this on their own. This

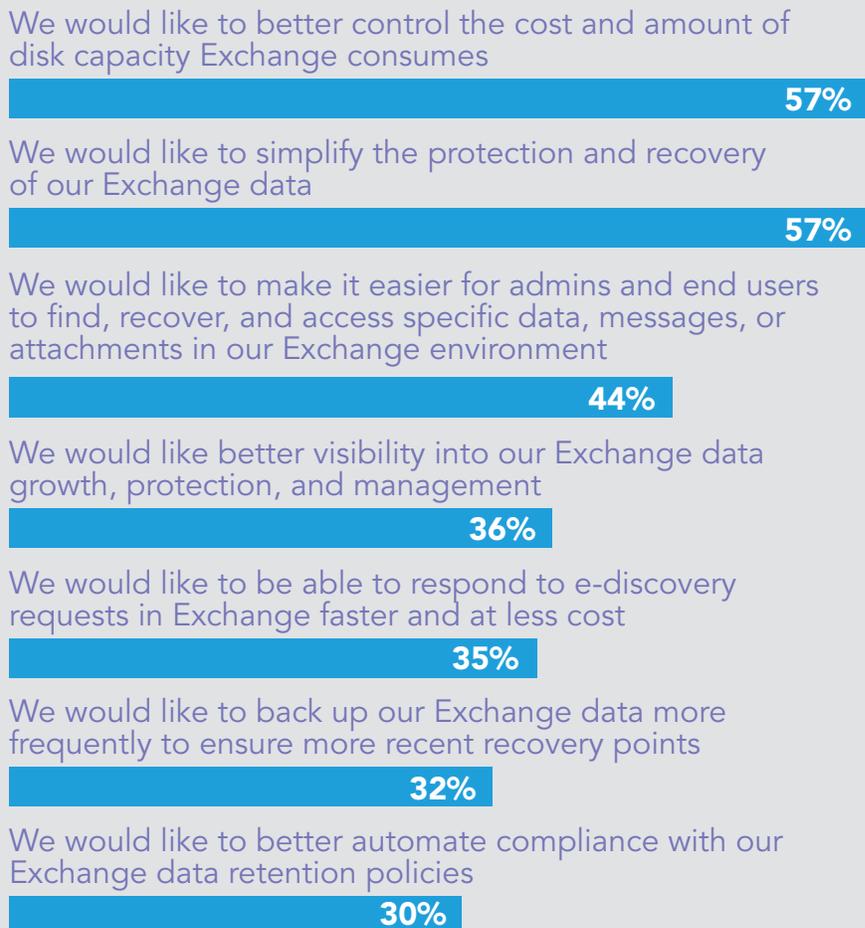
Figure 1. Which aspect of your infrastructure is most likely to generate excessive future costs for your organization?



- Storage
- Network
- Servers
- Other
- Don't know

DATA: UBM Tech survey of 244 business tech professionals involved in purchasing data backup and recovery at companies with 1,000 or more employees, March 2014

Figure 2. Which of the following statements are true for you regarding Exchange?



NOTE: Multiple responses allowed
BASE: 198 Exchange users
DATA: UBM Tech survey of 244 business tech professionals involved in purchasing data backup and recovery at companies with 1,000 or more employees, March 2014

Survey Methodology

UBM Tech conducted an online survey in February and March 2014 of 244 business technology professionals exploring the state of business-critical data storage, backup, recovery, management, and access. All respondents were involved in data backup and management at organizations with more than 1,000 employees, and worked in a variety of vertical market segments, including energy, financial services, government, healthcare, and retail. The greatest possible margin of error for the total respondent base (N=244) is +/- 6 percentage points. UBM Tech was responsible for all programming and data analysis. These procedures were carried out in strict accordance with standard market research practices.

desire reflects the fact that users often need information in files that haven't been used in a long time or have been over-written — and they wind up depending on IT to bail them out.

"File retrieval is one of those tasks that seems minor, but cumulatively erodes IT staff productivity," Hernandez says. "It would be great if we could empower users to do this themselves."

"Not all data is created equal. That's why it's essential for us to treat an application like payroll much differently than we treat case management."

— Ernesto Hernandez,
Neumann Family Services

Our survey also revealed subtle but non-trivial differences in storage objectives among similar applications. Control of backup storage costs, for instance, was the top concern for Oracle database users, with 63% citing it as a concern (see Figure 4, p. 4). In marked contrast, backup storage cost control was second for SQL Server users at 54%. This difference shows that IT's data management and storage concerns are driven by issues such as the application behaviors and licensing cost structures of specific vendors' solutions, as well as by broader application categories.

Figure 3. Which of the following statements are true for you regarding SharePoint?

We would like to simplify the protection and recovery of our SharePoint data

56%

We would like to better control the storage costs for SharePoint and its backup copies

55%

We would like to make it easier for end users to find and recover specific data, information, or files that were removed from our SharePoint environment but still reside in a backup

47%

We would like to back up our SharePoint data more frequently to ensure more recent recovery points

38%

We would like to have more granularity when it comes to recovering SharePoint data

35%

NOTE: Multiple responses allowed

BASE: 176 SharePoint users

DATA: UBM Tech survey of 244 business tech professionals involved in purchasing data backup and recovery at companies with 1,000 or more employees, March 2014

What's Your Policy?

Differences in how an organization handles storage, backup, and recovery for its various applications are best understood in terms of the specific policies that are defined for those applications. Those policies can define everything from RPO and RTO to data retention and encryption.

The challenge for IT is to be able to implement appropriately differentiated policies for each of its applications — while still keeping complexity under control.

UBM Tech's "The State of Data Storage, Backup, and Management" survey revealed that only a third of respondents have managed to balance variation and complexity by ensuring that every application is subject to one of several well-defined policy "tiers." On the other hand, an even larger number (43%) have at least some applications that have their own one-off policies. And a surprising 32% were not able to assert the existence of any well-defined policy tiers at all.

These results indicate that IT still often takes a fragmented approach to the protection of enterprise applications — and there is still plenty of work to be done when it comes to standardizing data protection policies across the organization.

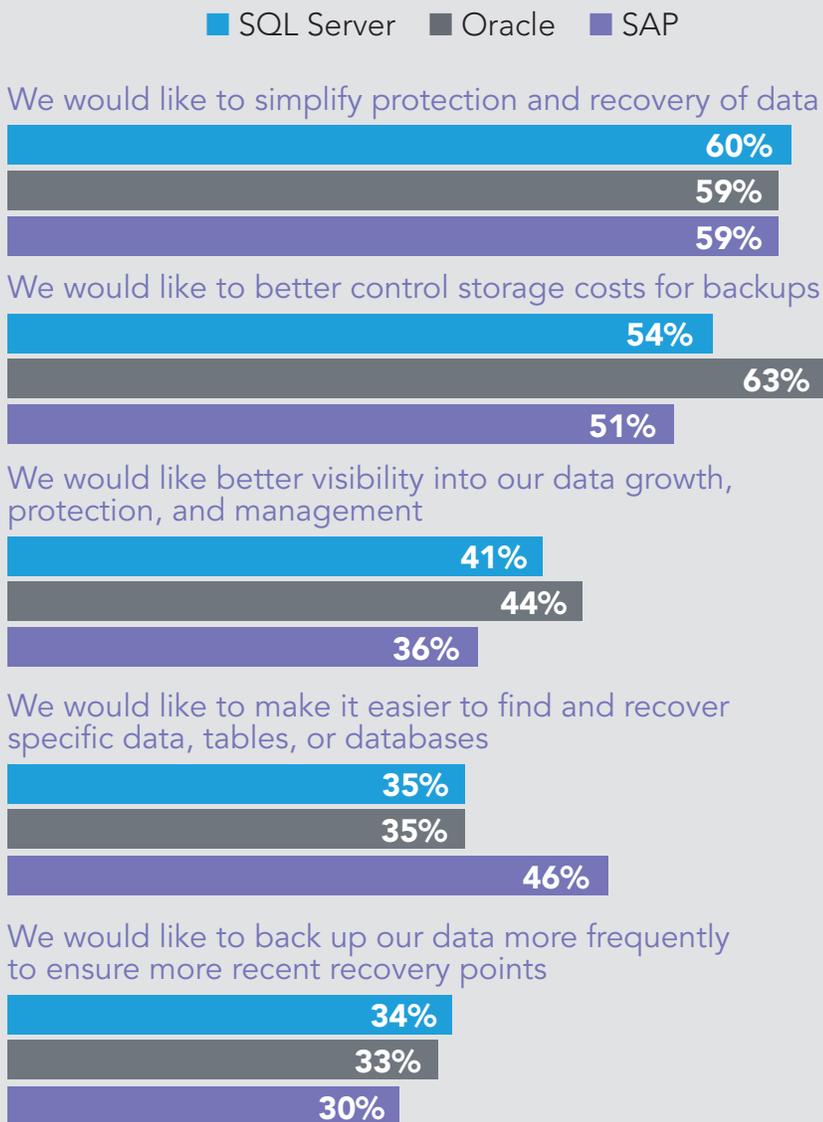
Interestingly, despite the volume of data SAP generates, SAP users expressed the least concern for cost control — although, at 51%, their level of concern is still significant.

This difference may be at least in part due to the perceived business-value-per-GB associated with SAP data being high, relative to that of your typical SharePoint instance,

so respondents are willing to bear higher costs.

Nonetheless, nearly the same percentage of respondents is interested in simplifying administration of data backup for their SAP environments as they are for their database, SharePoint, and Exchange environments. This response indicates that complexity is seen as a top challenge across the board, regardless of an organization’s application mix.

Figure 4. Which of the following statements are true for you regarding SQL Server, Oracle, and SAP?



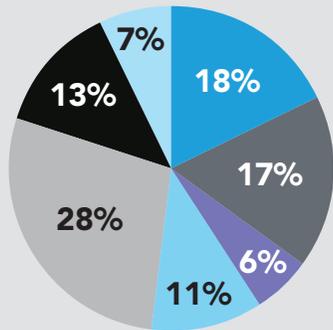
NOTE: Multiple responses allowed
BASE: 201 SQL Server users, 138 Oracle users, and 81 SAP users
DATA: UBM Tech survey of 244 business tech professionals involved in purchasing data backup and recovery at companies with 1,000 or more employees, March 2014

Snapshots and Deduplication

Snapshots and deduplication are two technologies that respondents agree are helpful for achieving data protection objectives. More than 80% of respondents find the value proposition associated with snapshots — i.e., their ability to capture recent recovery points for an application and the role they play in accelerating that recovery — sufficiently compelling to include them in their organizations’ data protection strategies (see Figure 5, p. 5). A full 87% find the cost savings offered by deduplication similarly compelling.

Andrew Widmayer, an IT analyst for the City of Daytona Beach, Fla., notes that these technologies can help IT become more efficient with its finite storage capacity and network bandwidth. “The latter is especially important as we start to move more data off site more frequently for business continuity and replication,” he says.

Figure 5. Which best describes your organization's use of snapshots on your storage arrays?



- We do not do snapshots and have no plans to
- We do not do snapshots but would like to start
- We do not do snapshots but plan to start in the next six months
- We just started doing snapshots within the past year
- We have been doing snapshots for more than a year and plan to further expand our use of them
- We have been doing snapshots for more than a year and have achieved the ability to snapshot all the applications and data for which it is appropriate
- We have been doing snapshots, but plan to reduce our use of them

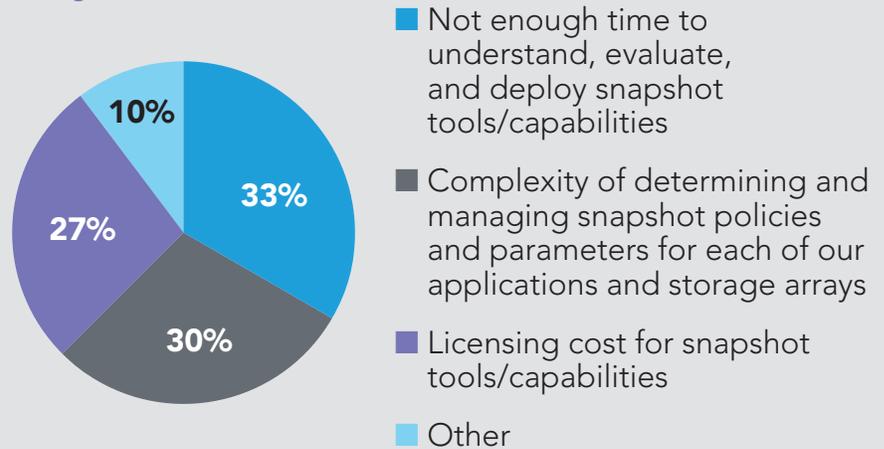
DATA: UBM Tech survey of 244 business tech professionals involved in purchasing data backup and recovery at companies with 1,000 or more employees, March 2014

However, given limited time and resources, most respondents have not implemented snapshots and deduplication everywhere that they want them. Only 20% have reached this level of maturity

using snapshots, and only 24% have reached it with deduplication technology.

For those who have not implemented snapshots to help with RPO and RTO, some primary

Figure 6. What is the main challenge keeping you from rolling out snapshots on your storage arrays?



BASE: 99 respondents who do not use snapshots

DATA: UBM Tech survey of 244 business tech professionals involved in purchasing data backup and recovery at companies with 1,000 or more employees, March 2014

Key Takeaways

Responses from survey respondents revealed several market trends.

- Data storage management is becoming increasingly application-centric as IT looks to respond more precisely to the actual requirements of the business.
- Application-centric data storage management is adding significantly to the complexity and cost of IT, especially as the business becomes increasingly dependent on a growing range of applications.
- IT organizations are struggling to bring order and consistency to their data storage management policies.
- Complexity can inhibit the implementation of technologies such as deduplication and application snapshots that have the potential to improve IT's efficiency and effectiveness.
- To overcome complexity, IT leaders are seeking to unify automation of core data storage and backup management operations across the enterprise.

IT wants solutions that simplify the execution of application-level data protection and provide better economies of scale.

obstacles to adoption include the time required to understand, evaluate, and deploy snapshot solutions; the complexity of determining appropriate snapshot parameters for the various applications in the enterprise portfolio; and the perception that licensing costs for the technology could exceed their budget

thresholds (see Figure 6, p. 5).

Those who have already begun to implement snapshots are even more likely to find the complexity of supporting diverse applications with diverse data protection requirements somewhat daunting (see Figure 7, below). A small percentage (6%) has also discovered that their solutions-of-choice don't adequately support application-level snapshots.

These responses highlight IT's appetite for solutions that simplify the execution of application-level data protection and provide better economies of scale across the

enterprise application portfolio. IT organizations can't reap the benefits of best-practices if too much time and money stand between them and adoption of these best-practices. Remove the obstacles and IT decision-makers will be more than happy to evolve their approaches to application-specific data storage management.

Desperately Seeking Simplicity

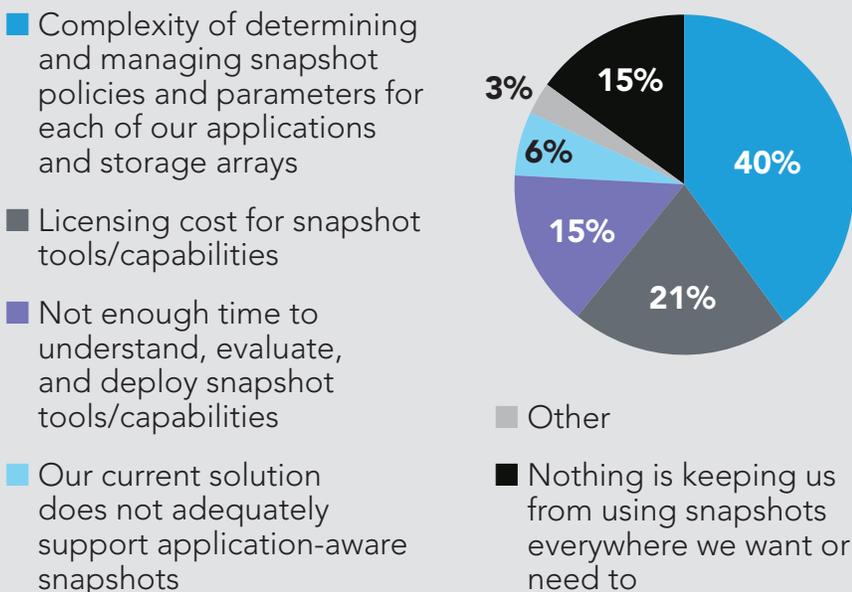
Cost is clearly a central issue when it comes to data storage. Capex and opex are two of respondents' top three storage challenges — with good application performance and appropriate support for business continuity also ranking high.

Capital equipment costs are, of course, largely driven by the sheer volume of data that an enterprise generates. And capital cost issues are being mitigated to one degree or another by lower per-GB media costs, as well as by technologies such as deduplication and compression.

Operational costs are another issue. Survey results indicate that those costs are at least in part due to the multiplicity of tools IT organizations use to manage the many operational requirements of their diverse application portfolios. The resulting fragmented approach can drive up costs.

With data backup, for example, only 11% of respondents have a single tool that their IT staffs can use

Figure 7. What is the main challenge you've faced when it comes to rolling out a storage-array snapshot capability?



BASE: 140 respondents who use snapshots

DATA: UBM Tech survey of 244 business tech professionals involved in purchasing data backup and recovery at companies with 1,000 or more employees, March 2014

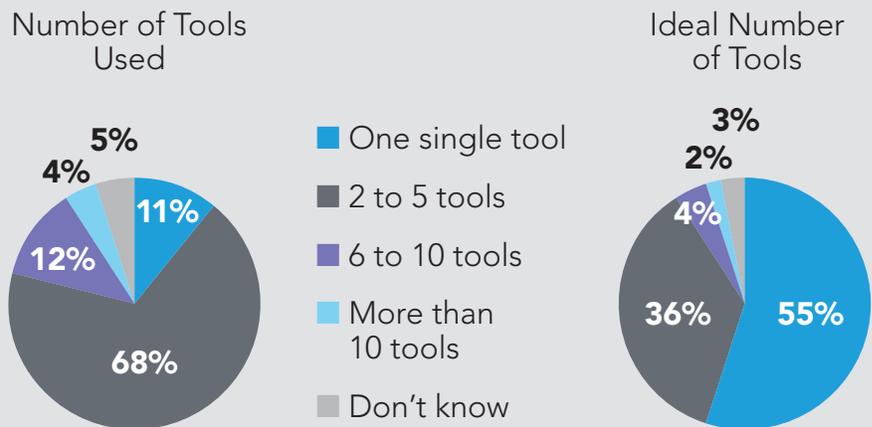
to execute backup operations for all applications across the enterprise environment (see Figure 8, at right). This contrasts dramatically with the 55% of respondents who said they would prefer to employ such a unified and simpler approach.

The overwhelming majority of respondents (68%) use between two and five tools to perform their backup operations. More than a fifth of respondents use more than that or aren't sure how many tools they use to protect their organizations' data. These numbers make it clear that IT is less efficient than it could be when it comes to performing routine backup operations.

The survey revealed similar fragmentation in other aspects of data and storage management. In the case of data retention and compliance, only 15% of respondents use a single tool across the entire environment, while 57% said they would like to use a single tool (see Figure 9, at right). And more than a quarter use six or more tools, or answered "Don't know" — indicating even greater fragmentation than with routine backup. In addition to driving up costs, this fragmentation likely plays a role in the difficulty IT teams have applying a unified set of policies to application-specific data (see sidebar, p. 3).

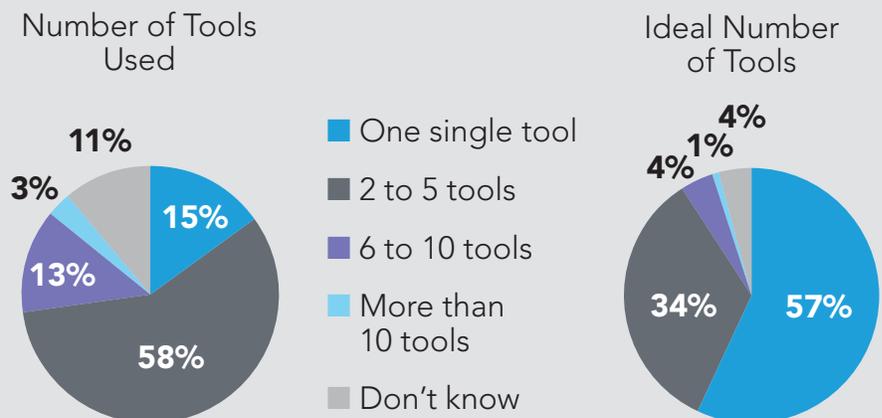
When it comes to e-discovery, 60% of respondents would like to have a single tool that could be applied across all applications

Figure 8. How many different tools do you currently use to back up all your data across your enterprise infrastructure and applications? Ideally, how many different tools would you like to use?



DATA: UBM Tech survey of 244 business tech professionals involved in purchasing data backup and recovery at companies with 1,000 or more employees, March 2014

Figure 9. How many different tools do you currently use to manage data retention and compliance across your enterprise environment? Ideally, how many different tools would you like to use?



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(see Figure 10, below). This is probably because e-discovery requests are unusual events that can be extremely disruptive to everyday IT operations, and because responses to those requests must be complete, regardless of how many different applications contain data relevant to a request. So there are significant advantages to being able to respond to e-discovery requests with a single, effective tool.

Interestingly enough, responses to the e-discovery question yielded the greatest disparity. That is, while almost a quarter of respondents claimed that they already had a single tool for executing e-discovery across the enterprise, more than a fifth were

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not sure how many tools their organizations had to fulfill such a request. This indicates that there are significant differences in how well organizations are prepared to support the e-discovery needs of the business in the event of a legal engagement.

The fact that so many IT organizations use multiple tools to address each of these operational areas raises a further question: What if,

in addition to using a single tool to perform each of these data management functions across the enterprise, IT could actually use a single tool to perform all of these functions across the enterprise? That degree of unification and simplicity would certainly have a significant impact on both the efficiency and the effectiveness with which IT does its job.

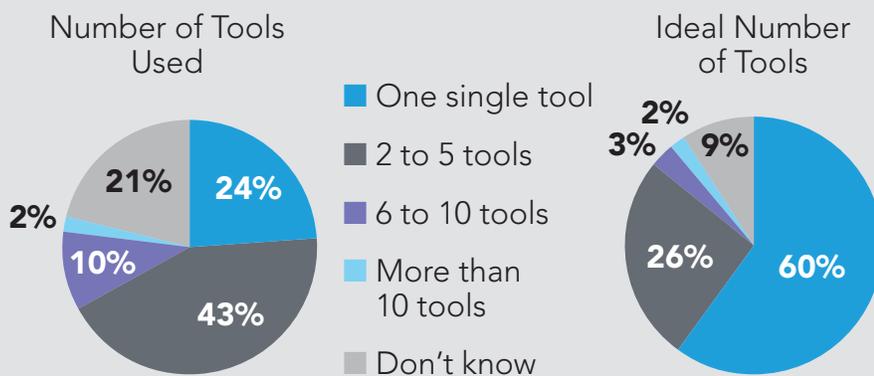
Time for a Change?

As pressure to do more with less continues to build, IT organizations aren't just looking for tools that will streamline their management processes and technologies that will help them get more use out of their storage infrastructures. They're also looking to embrace public cloud services as a way of reducing costs and offloading management tasks.

That's why 61% of respondents agreed that cost complexity and other data-related management challenges are contributing to their organizations' consideration of public cloud services (see Figure 11, p. 9).

Cloud services, however, are no panacea. They may provide a cost-effective means of storing data off site for disaster recovery and long-term retention. They may offer elastic capacity that makes it easier to respond to unpredictable changes in business demand. They also may provide self-service capabilities that let users quickly

Figure 10. How many different tools do you currently use to respond to an e-discovery request? Ideally, how many different tools would you like to use?



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provision their own resources, relieving IT of some work.

But public cloud services don't eliminate the need to automate and enforce policies for data recoverability and retention. And they still have to be included in any enterprise-wide e-discovery response. In fact, public cloud services can even become a drag on IT's efficiency by creating another set of storage silos that have to be managed by still another set of tools.

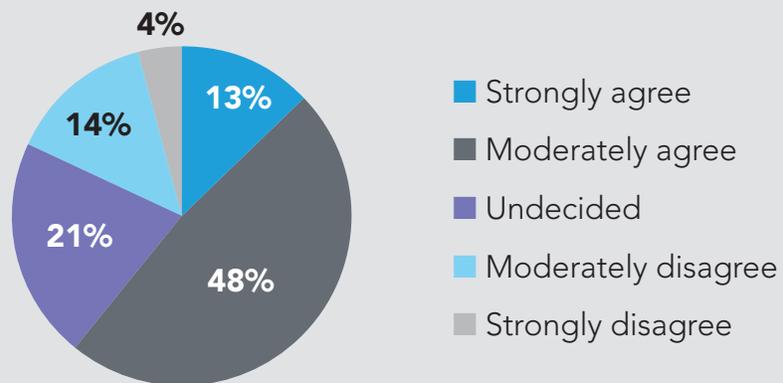
Given all this, IT must maintain a rigorous focus on simplicity and cost control in order to fulfill the relentlessly escalating requirements for app-level data management. Fragmented management of data storage is becoming less acceptable as resources are increasingly strained and the potential consequences of

downtime grow more costly.

IT leaders who understand this are well advised to evaluate solutions that will let them unify

and automate all of their application-specific data storage and protection operations in a single consistent manner.

Figure 11. Tell us whether you agree or disagree with this statement. Cost, complexity, and other challenges associated with data storage, management, and business continuity are part of what is driving our interest in public cloud services.



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Seventeen years ago, **CommVault** was launched to give companies a better way to protect, manage, and gain business value from their data. Today, with more than 19,000 customers and counting, CommVault is liberating companies worldwide from chaos, excessive costs, and complexity. We appeal to companies that are forward thinking, unafraid, and willing to make a change in order to get where they want to be.

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