



Aberdeen *Group*

The Data Protection Benchmark Report

The Road to Recovery

September 2006

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Executive Summary

In the beginning there was tape — and only tape. For years, most companies' idea of data protection focused largely on backing up bits and bytes to tape cartridges and either shelving the tape or storing it offsite. Tape is a stable and mature technology for sure, but it has its tradeoffs. If disaster struck a business, data was retrieved just as quickly as the storage administrator could gather the tapes containing the needed data sets; fire up the backup application to catalogue those tapes, and build an index of data sets. Once the index was built — a process that can take hours or days, depending on how many tapes need to be catalogued — the administrator selected the data sets that needed to be restored and picked a target location to execute the restore.

In a best-case scenario, the backup application already indexed the data sets into a database — meaning the process could take only hours. In a worst-case scenario, it could take days to fully restore lost information. That's assuming that any of the past full and incremental backups hadn't failed; in which case, the data was lost for good.

Much has changed in the last five or six years. Data protection is no longer just an afterthought — a task relegated to the IT administrator on the graveyard shift — but it has become a critical business practice; the process has evolved into a full-fledged discipline. In the last few years, data protection has been marked with a strong surge in innovation. Bottom line: Customers now have a lot more data protection options.

To gain some clarity on the data protection market, AberdeenGroup embarked on a survey of end-users, in different job roles and across numerous industry sectors, to gain insight into customers' data protection strategies. About 100 customers were surveyed and the results revealed that disaster recovery, business continuance and traditional backup/restore and legal discovery mandates make up the three top drivers behind customers' data protection strategies, while a whopping 72% of respondents surveyed cited “tight IT budget” is the top roadblock they encounter in addressing their data protection business drivers.

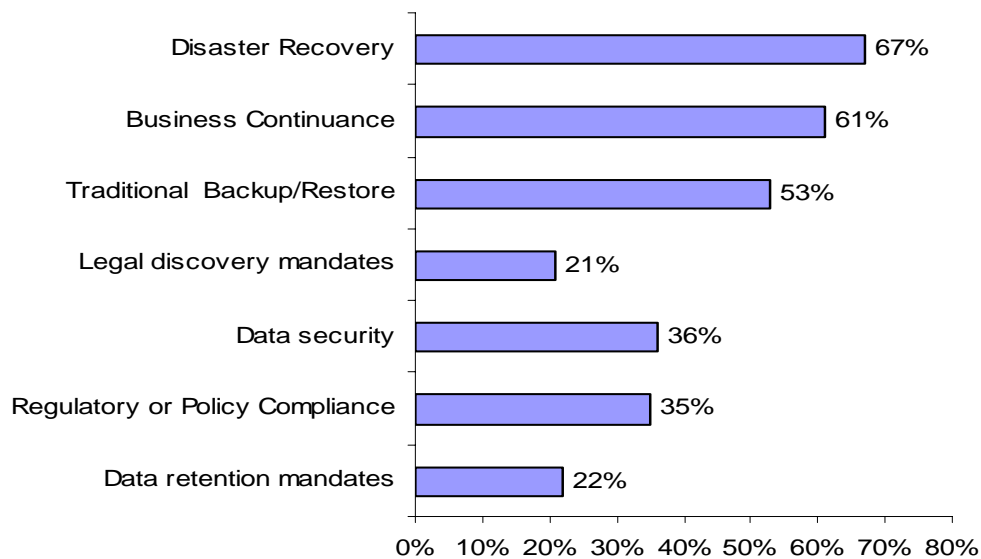
Key Business Value Findings

Our research found that disaster recovery and business continuance are the numbers one and two business drivers behind customers' data protection strategies (Figure i). At least 67 % of the respondents cited disaster recovery as the top data protection driver, while 61% listed business continuance. Traditional backup/restore and legal discovery tied for third place, named by 53% of respondents. Data security — a relatively new area in storage — garnered the fourth spot on the data protection podium, with a relatively healthy 36%. Regulatory or policy compliance came in a close fifth, at 35%.

The findings show how much data protection as a practice has evolved since the 9/11 terrorist attacks, which largely brought those issues into the mainstream within the IT industry. About 30% of respondents say their companies have implemented well-defined data protection strategies within the last two to five years; another 16% have deployed one within the last two years. It's also clear that a lack of money continues to hamstring customers in two key areas: deploying a tiered storage infrastructure and implementing overall data protection practices. At least 48% of respondents cited “no budget” and “tight IT budget” as roadblocks in deploying tiered storage infrastructures and in meeting the business drivers behind their data protection strategies, respectively.



Figure i: Customers' Primary Drivers for DP Strategies



Source: [AberdeenGroup](#), August 2006

Implications & Analysis

Data protection is at the forefront of customers' concerns. Clearly, it is a thriving area within the storage market, one that has helped fuel the development of new storage-based software and hardware in the last five years. It is also obvious that tape is not going away any time soon as many legacy customers speculate that it will remain part of their long-term data archiving needs. But customers are examining and deploying new options — especially since they are under increased pressure to reduce backup windows while accelerating access time to data. At least 48% of respondents said they are still evaluating the option of moving toward tapeless data protection strategies, while 32% said they will always use tape for archiving purposes. About 20% said they had strategic plans to eventually go tapeless (Figure 8, in Chapter Three).

According to AberdeenGroup's data protection survey findings, customers have deployed a myriad of data protection tools in the last few years. Tools such as disk-to-disk backup (D2D), virtual tape libraries (VTL), de-duplication and continuous data protection (CDP) are all offering new methods of storing and managing data. Additionally, replication and snapshot technologies — which six years ago were afforded only to enterprise-level customers willing to spend hundreds of thousands of dollars — have since moved down into the mid-range and even low end. In short, customers clearly have many more technology options in safeguarding their data, but it's not entirely clear yet which technologies will ultimately win customers' favor in the long-term.

Recommendations for Action

Bottom line, this is clearly a dynamic era for data protection but it's also a period marked with much uncertainty. Tape remains a core technology for many customers' data protection strategies but it's facing increased competition. To grow their businesses and stay relevant, storage vendors are making multiple bets by building diversified portfolios of product offerings — both in hardware

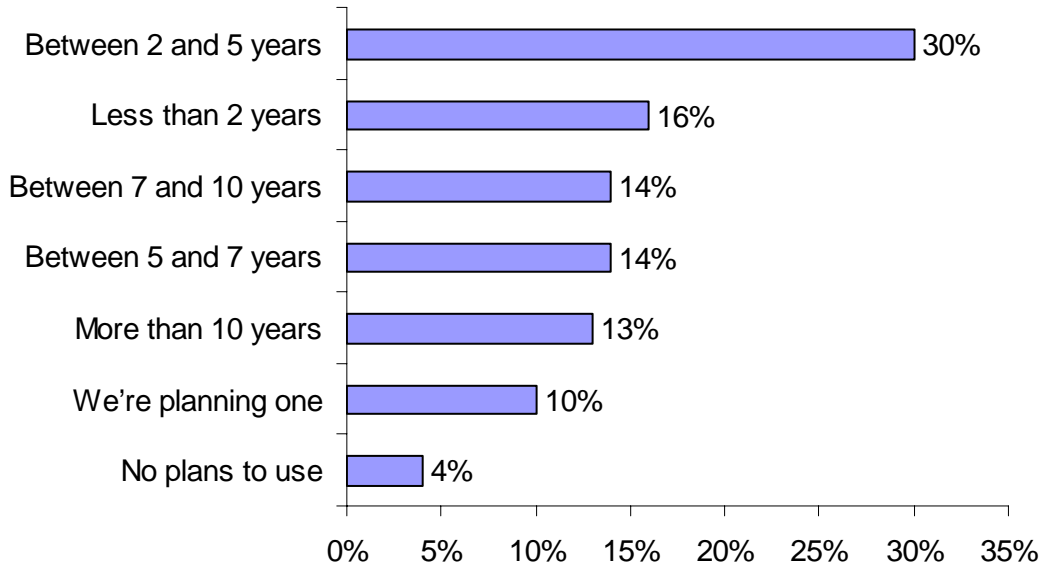


and software — while customers are taking advantage of the various technologies that have emerged in storage within the last six years.

Companies should also consider these three points:

- Even as data protection technologies are maturing and evolving, customers still need to have well-defined data protection strategies to support and respond to the many compliance and regulatory issues they face.
- Customers need to take the time to understand the benefits of the various storage technologies that provide data protection so they make proper investments consistent with their business and IT objectives.
- Thorough product evaluations will enable customers to understand the feature/function sets available to them and how they map to their overall data-protection strategies. This could include working with solution providers to implement a “proof-of-concept” installation.

Figure ii: Customers That Have Formulated DP Strategies



Source: [AberdeenGroup](#), August 2006



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Chapter One: Issue at Hand

Key Takeaways

- Data protection has evolved into a full-fledged discipline as the value of data has become increasingly tied to the survival of modern businesses.
- Data protection has become a top-level concern for executives such as CEOs, CIOs and CFOs. At least 70% of customers surveyed listed the CIO as the person responsible for the data protection projects budget.
- Serial ATA (SATA) disk drives have helped spawn a myriad of disk-based, data-protection technologies.

Man-made tragedies like 9/11 and natural disasters such as Hurricane Katrina have pushed the topic of data protection into the mainstream. Additionally, the federal government has forced companies to micromanage their data protection processes by dictating such aspects as data-retention timelines and even requiring that data be presented in “reasonable useable” formats. Suffice it to say, data protection not only is a preoccupation for storage administrators but has become a top-level concern for senior-level executives such as CEOs, CIOs and CFOs.

Customers must now approach data protection with new methods and it’s clear they are moving the process to the forefront of their business policies. *Disaster recovery*, which ensures there is no disruption to a company’s data or application availability, and *business continuance*, which is about companies getting their operations up and running should disaster strike, have been two particularly strong business drivers in the data protection space.

Furthermore, a myriad of new disk-based technologies have hit the storage industry in recent years, largely fueled by the introduction of low-cost Serial ATA (SATA) drives, which have been developed with a higher Mean Time Between Failure (MTBF) to handle more demanding spinning cycles that enterprise applications require of disk drives.

SATA essentially opened up the playing field within storage, giving customers the option of storing information on lower-cost drives instead of costly, albeit high-performance, disk drives. Ultimately, SATA helped give birth to such tools as disk-to-disk backup (D2D), disk-to-disk-to-tape backup (D2D2T), virtual tape libraries (VTL) and continuous data protection (CDP). A significant portion of customers surveyed have compartmentalized data on primary (high cost, high-performance) and secondary disk (cheaper, lower-performance) as well as tape archive, suggesting that some level of tiered storage has taken hold in customers’ environments.

Competitive Framework Key

The Aberdeen Competitive Framework defines enterprises as falling into one of the three following levels of practices and performance:

Laggards (30%)—practices that are significantly behind the average of the industry

Industry norm (50%)—practices that represent the average or norm

Best in class (20%)—practices that are the best currently being employed and significantly superior to the industry norm



All these technologies offer new methods in storing and managing data. Plus, they have helped shift the focus from just backing up data to recovery. It's no longer enough to store data onto tape and put it on a shelf somewhere for years. Businesses are under increased pressure to speed up data access.

Technologies in Use

According to AberdeenGroup's survey results, customers are taking advantage of the numerous technologies that now make up the data protection market (Figure 1). Data mirroring, Snapshot/Point-in-Time Copy, Asynchronous Replication and Tape Automation are not necessarily among the most bleeding-edge data protection technologies, so it's predictable that they ranked among the most widely deployed.

The incumbent tape proved to be the most installed technology, garnering 84% in the survey, while tape automation came in at 51%. But D2D Backup and D2D2T Backup are fairly new and have demonstrated good customer traction, according to the survey results. At least 49% of respondents have deployed D2D2T and 48% have installed D2D Backup; least 14% plan to implement D2D and D2D2T within six months. Another 9% plan to install D2D Backup within six to 12 months; and 5% will deploy D2D2T within 12 months.

VTL is another newer data protection product, which vendors claim has been gaining a strong customer traction. Aberdeen research found 17% of customers are using VTL today, while another 9% intend to buy it within six months and 7% plan to install it within six to 12 months. It's still unclear if VTL will survive as a long-term technology, or if it will prove to be a transition tool for as D2D products mature. VTL is any easy, plug-and-play product that requires no operational or process changes in order to work in customers' environments.

True continuous data protection (CDP), near-CDP and content addressable storage (CAS) all garnered strong numbers in the "no plans to use" category. CDP, in particular, is a bleeding-edge technology that has gained much publicity in the last few months but has come up short in customer traction thus far. Still, the technology holds much promise in helping customers recover data.

Encryption for data at rest appeared to have the strongest sales potential, with 20% already using it now and another 17% planning to implement it within six months. This support the fact that data security gained a lot of momentum in the last couple of years as more customers are trying to mitigate bad publicity surrounding lost data.

Tier 1 storage vendors have joined the security market by adding encryption to storage products, particularly tape, as the first line of defense. In the past, storage administrators did not worry about security of the data stored on their disk arrays. Such data often resided within a glass house with limited and highly controlled access. Security, for the

PACE Key — For more detailed description see Appendix A

Aberdeen applies a methodology to benchmark research that evaluates the business pressures, actions, capabilities, and enablers (PACE) that indicate corporate behavior in specific business processes. These terms are defined as follows:

Pressures — external forces that impact an organization's market position, competitiveness, or business operations

Actions — the strategic approaches that an organization takes in response to industry pressures

Capabilities — the business process competencies required to execute corporate strategy

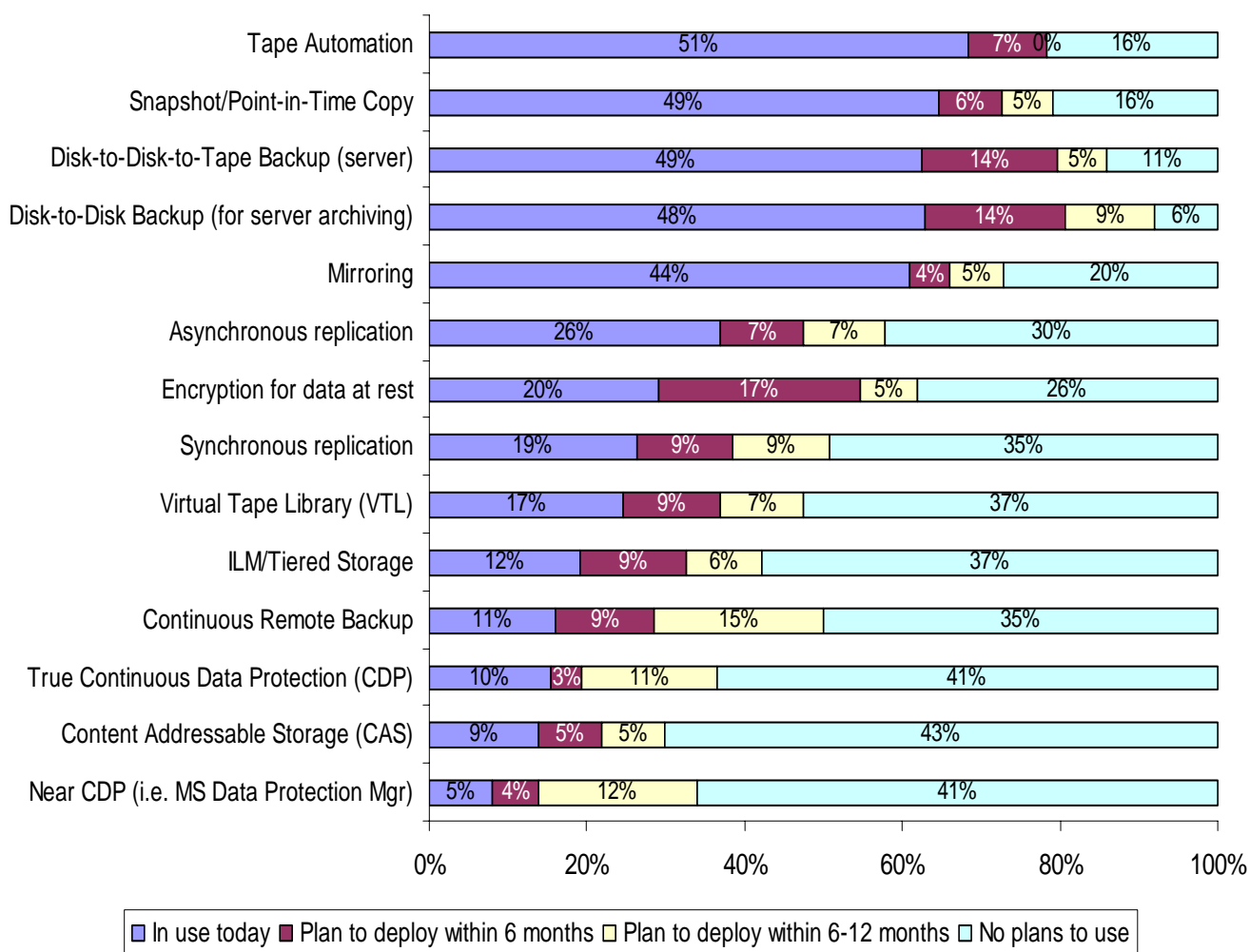
Enablers — the key functionality of technology solutions required to support the organization's enabling business practices

most part, was more of a priority among IT networking specialists. That dynamic is changing as storage has become increasingly tied to the IP network.

Encryption and decryption of backed-up and archived data are gaining favor among customers, but they are process-intensive activities that can slow access to stored data, especially when organizations are storing and accessing massive amounts of information.

It's still not clear what other types of security technologies will migrate into storage. There is still a debate whether methods such as identity management will move into the storage realm. Then there are some vendors that advocate implementing security measures at the application layer — where data is first created. Again, regulations and audits are fueling the focus on storage data security.

Figure 1: Data Protection Technologies/Processes Customers Use Most Today



Source: [AberdeenGroup](#), August 2006



Chapter Two: Key Business Value Findings

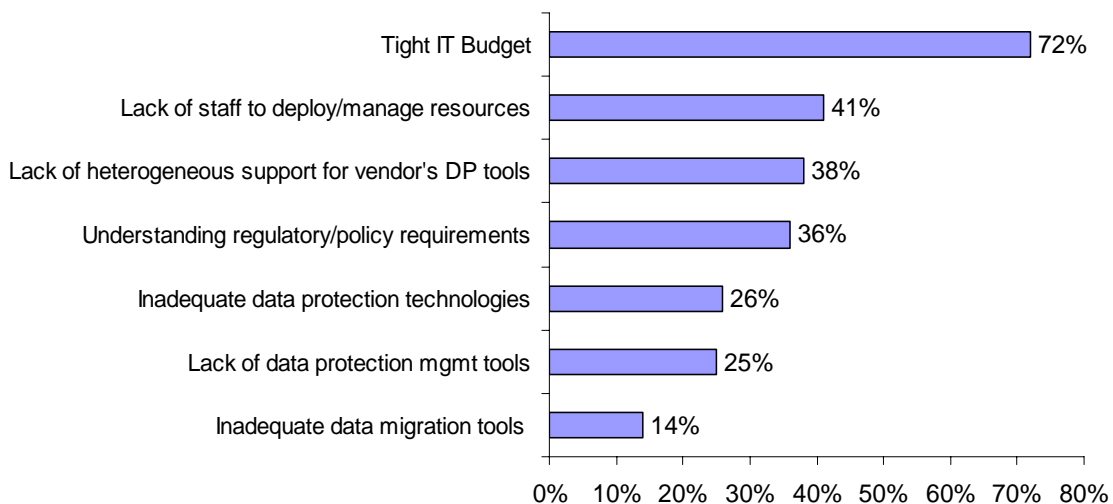
Key Takeaways

- Disaster recovery, business continuance, and traditional backup/restore are top data-protection business drivers for customers.
- Data security, regulatory or policy compliance (SOX, HIPAA, PCI, etc.) also are primary business drivers for having a data protection strategy and plan in place.
- Lack of heterogeneous support among vendors' data protection tools (backup, replication applications, etc.) ranked third among the top challenges customers face in meeting their data protection business drivers.

The survey results confirm a well-known fact that tight budgets and lack of staff resources are holding customers back in their attempts to meet the top data-protection business drivers, but customers have stated clearly that the long-held “lack of heterogeneous support” complaint about storage products continues.

At least 38% of customers cited lack of heterogeneous support among vendors' data protection tools as a roadblock, while 26% named inadequate or immature data protection technologies as an impediment. Another 25% cited lack of data protection management tools, a relatively young area within storage given the number of new products that have hit the market in recent years.

Figure 2: Challenges Customers Face in Meeting Top Data Protection Drivers



Source: [AberdeenGroup](#), August 2006

The storage industry has long been plagued with interoperability issues, a trend that started among the hardware vendors. An IT manager at one of the top three automakers stated that the lack of heterogeneous support continues to be a “huge problem out there.” For instance, vendor A’s replication application works with its hardware, but not with vendor B’s hardware, and vice versa. Customers still find that individual vendors have had vested interests in keeping them locked into their own products.

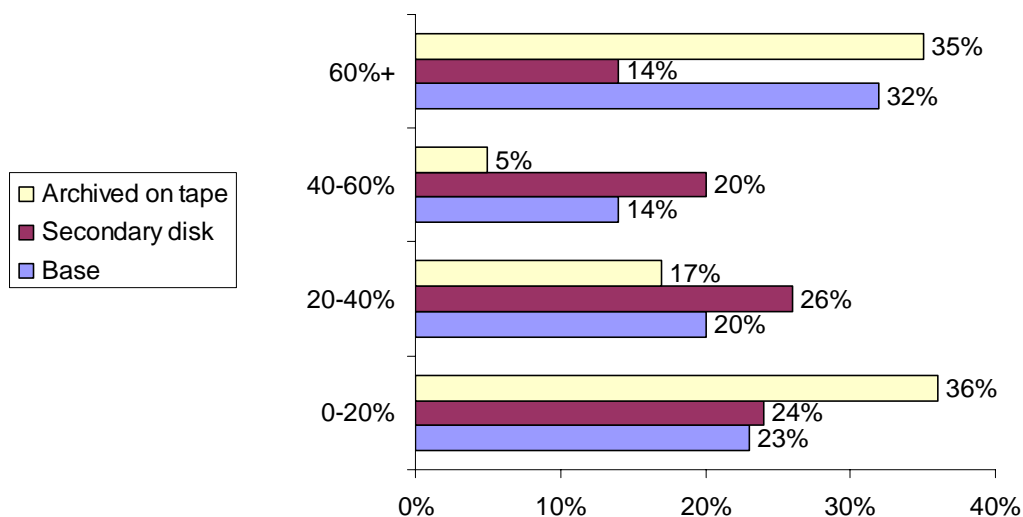
Data protection management is still very much an emerging area within storage. For instance, it is only in the last several years that several startup vendors have come forth to deliver backup reporting software that enables customers to conduct performance diagnostics on their systems to determine the root-cause of failure during a regular backup to fail. Without such software, customers are flying blind in trying to determine the root cause behind a backup failure; this is an area that the backup application vendors have inadequately addressed for years.

A lack of data migration tools also pulled in an noticeable number as 25% of customers claimed it was holding them back from meeting data protection goals, especially considering there are a plethora of data migration tools and services available, but it’s likely that these are still maturing and developing.

Customers stated, overall, the data migration tools on the market are not mature enough to make migrating data a more elegant task. For example, these tools on the market are not sophisticated enough to unravel the data if a customer has carved out numerous logical volumes and spread them across several disk drives.

The figure below demonstrates that customers surveyed have started the process of tiering storage, a concept that existed in the mainframe world but has started to become a topic for distributed storage.

Figure 3: Data Stored on Primary, Secondary and Archived Storage



Source: AberdeenGroup, August 2006



Chapter Three: Implications & Analysis

Key Takeaways

- Best-in-Class companies have well-defined, operational data protection strategies and technologies in their environment.
- Best-in-Class companies have a plan to consistently evaluate emerging data protection technologies and solutions that will improve the management of data.
- Best-in-Class companies understand that meeting compliance and regulatory issues involves having data archiving, retention, and security policies in place as part of their overall data protection strategies.

Table 1 shows that survey respondents fell into one of three categories – Laggard, Industry Average, or Best in Class — based on their characteristics in four key categories: (1) process (responsiveness to customer needs, defined information/data processes, use of standards); (2) organization (level of data protection strategy or plan in place, required skills and competencies); (3) knowledge (visibility into information assets, quality, security and accuracy of data); and (4) technology (scope of data protection technologies that exist in the company’s environment).

In each of these categories, survey results show that the firms exhibiting Best in Class usage of data protection characteristics have taken specific steps to leverage and integrate best practices into their organizations.

Table 1: Data Protection Competitive Framework

	Laggards	Industry Average	Best in Class
Process	No initiative in leveraging industry best practices that DP solutions firms can bring to solve issues	<ul style="list-style-type: none"> • Reactive to corporate data protection issues. • Apply point solutions and limited standards 	Proactively leverage DP solutions firms to continuously improve and define processes and standards for supporting data protection strategies
Organization	<ul style="list-style-type: none"> • IT organization has limited skills and competencies to address data protection issues • No defined data protection strategy 	<ul style="list-style-type: none"> • IT organization has some skills and competencies for data protection • Data protection objectives are defined 	<ul style="list-style-type: none"> • IT organization employs necessary skills but also has core outsourcing relationships to supplement needed competencies • Well-defined data protection plan and strategy
Knowledge	Limited visibility into information and data assets = limited knowledge of risk	Some visibility into information and data assets	Real-time visibility into information and data assets

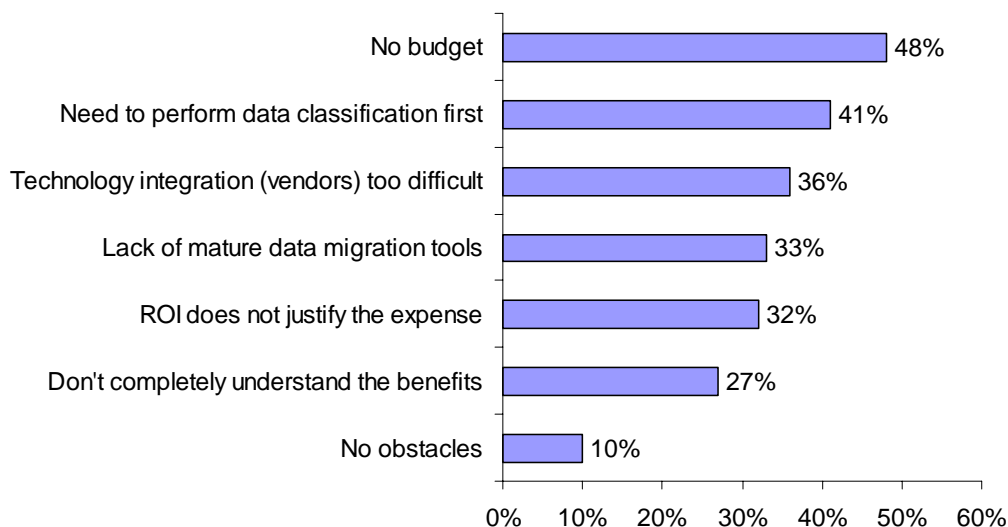
	Laggards	Industry Average	Best in Class
Technology	<ul style="list-style-type: none"> Traditional storage and data management technology and practices Limited services required to support 	Specific software and services to drive improved data protection technology and practices	IT environment supported by data protection strategy inclusive of specific solutions, industry standards, best practices, and consulting relationships

Source: AberdeenGroup, August 2006

Process and Organization

- In the process category, firms that proactively leverage industry best practices for data protection have addressed the need to tier their storage infrastructures and look to implement supporting processes that are consistently performed better than firms that are reactive or unresponsive to data protection requirements.
- That stated, only 10% of firms reported that they have not faced obstacles in implementing a tiered storage infrastructure as part of their overall data protection strategy (Figure 4). At least 48% cited “no budget” as a major obstacle in deploying a tiered storage strategy. Another 41% cited the need to perform data classification first as a roadblock.

Figure 4: Roadblocks to a Tiered Storage Infrastructure



Source: AberdeenGroup, August 2006

- Customer interviews confirmed that many are evaluating tiered storage strategies but data classification is a definite part of the process. Difficulty in integrating vendors’ technologies and lack of mature data migration tools were also cited as key roadblocks.



Data Protection Technology Usage

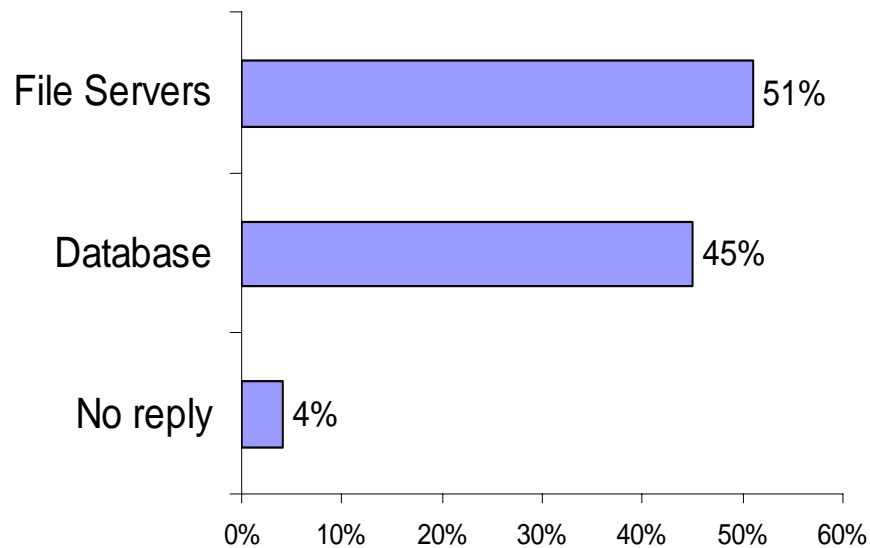
In Figure 2, we showed which data protection solutions tools are most in use today and the ones companies plan on using in the coming months as specific technology areas mature. We also asked customers to tell how they view certain emerging areas, leveraging others, and if their data protection strategies will change.

The following series of charts represents some important findings on how customers are thinking of the topics, particularly in the popular areas of VTL and consolidated remote backup. Both areas are considered “hot” trends within the storage industry. To reduce overhead costs, many customers are centralizing and consolidating backups of their remote or branch offices.

Furthermore, VTL, which is essentially another form of D2D, is viewed as a technology that enables customers to easily and non-disruptively move their backup processes from tape to disk, again with the intention of providing faster data recovery of information that may not be old enough to archive to tape yet.

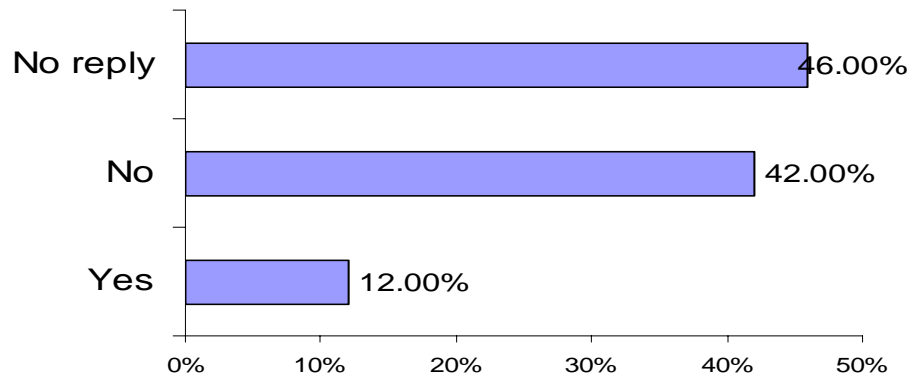
Today, VTL can be more expensive than tape because customers are backing up a lot of redundant data. But the introduction of de-duplication technology is expected to reduce that cost since it promises the ability to only back up changed bits and bytes.

Figure 5: Applications Driving Consolidated Remote Backup Deployments



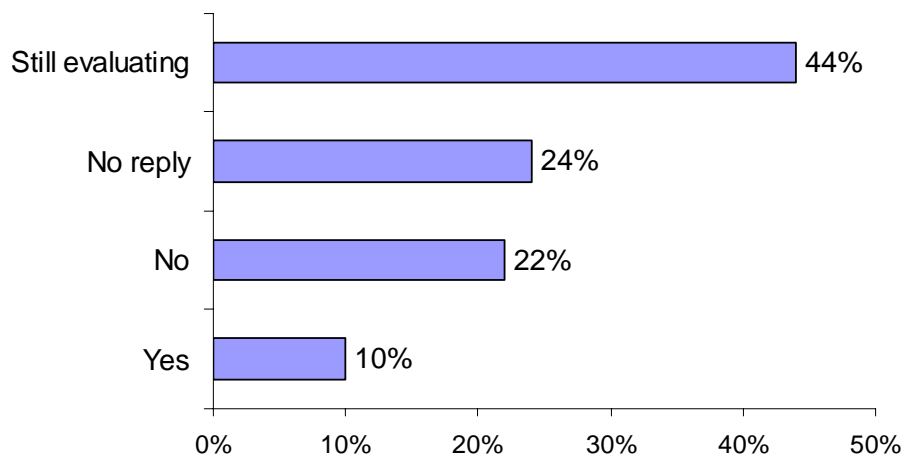
Source: [AberdeenGroup](#), August 2006

Figure 6: VTL Customers That Notice a Backup Window Reduction



Source: [AberdeenGroup](#), August 2006

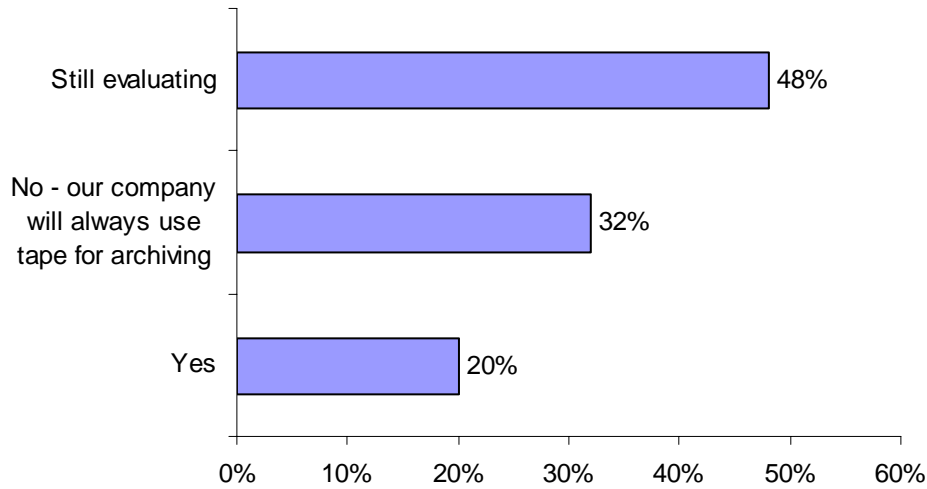
Figure 7: Deployment Plans for De-Duplication Technology



Source: [AberdeenGroup](#), August 2006

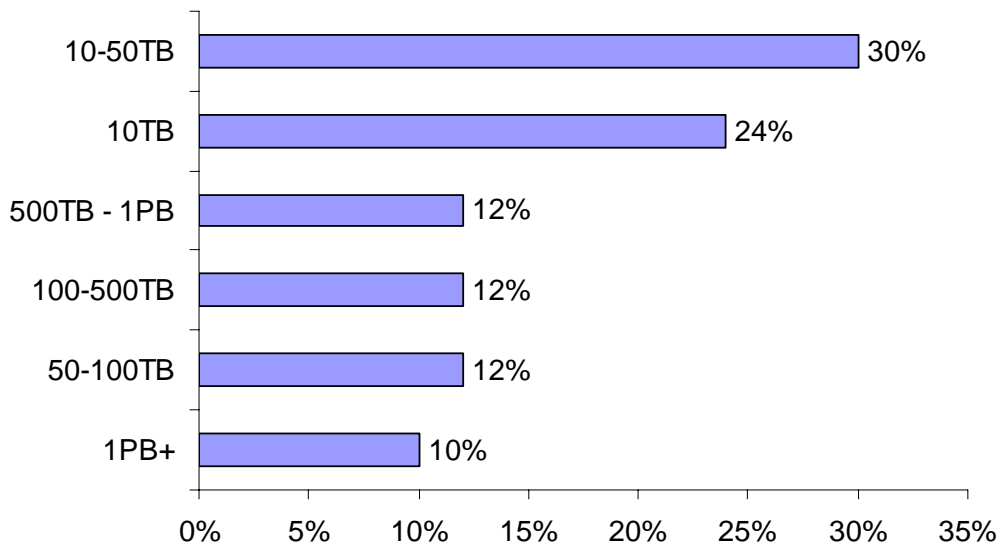


Figure 8: Customers with Strategic Plans to Move Toward Tapeless Backup



Source: AberdeenGroup, August 2006

Figure 9: Respondents' Total Server-Based, Storage Subsystem Capacity



Source: AberdeenGroup, August 2006

Pressures, Actions, Capabilities, Enablers (PACE)

We have shown that there is a clear relationship between the pressures companies identify and the actions they take, and subsequent competitive performance. All participants should examine their prioritized PACE selections and determine whether they can gain valuable perspectives by comparing them with the PACE priorities of Best-in-Class companies.

What is behind this increased focus and priority? External forces such as compliance and regulatory matters have been large contributors. Enterprises ranked traditional backup/restore and pressure from meeting compliance challenges as the strongest pressures behind their decisions to deploy data protection strategies.

In response to these external forces, companies are setting strategies and taking actions primarily around understanding the varying data protection technologies available to them in the marketplace. The reason: The data protection markets is still maturing and the tools to manage and migrate data, in some cases, are not robust enough, nor do they fully meet customers' requirements.

Table 2: PACE (Pressures, Actions, Capabilities, Enablers)

Priorities	Prioritized Pressures	Prioritized Actions	Prioritized Capabilities	Prioritized Enablers
1	Continued pressures to obtain better data protection migration and management tools	Perform an evaluation of technology solutions available that are specific to your needs	Identify the policies and processes that will be required to support your DP strategy	Data protection solution providers can support the effort through best practices, skills and compelling technology solutions
2	Continued pressures to meet looming compliance and regulatory issues as it relates to Data Protection strategies	Segment the Compliance issues to identify requirements for each and how they map to your DP strategy	Look at implementing a Proof-of-Concept for a particular area first to quantify the results	Data protection solution providers can support the effort through best practices, skills and compelling technology solutions
3	Lack of education on what data protection strategies and solutions are available to a customer's specific set of requirements	Perform an evaluation of technology solutions available that are specific to your needs	Establish a team to "Workshop" this topic and identify, define and document requirements	Data protection solution providers can support the effort through best practices, skills and compelling technology solutions
4	Need to address ongoing data related issues: retention, security, legal discovery	Understand which features matter most, what solutions are most scalable or modular	Look at implementing a Proof-of-Concept for a particular area first to quantify the results	Data protection solution providers can support the effort through best practices, skills and compelling technology solutions



Priorities	Prioritized Pressures	Prioritized Actions	Prioritized Capabilities	Prioritized Enablers
5	No clear data protection strategy	Define corporate team to own data protection topics and objectives	Implement performance objectives that tie to the overall IT/Corporate governance plan	Data protection solution providers can support the effort through best practices, skills and compelling technology solutions

Source: [AberdeenGroup](#), August 2006

Chapter Four: Recommendations for Action

Key Takeaways

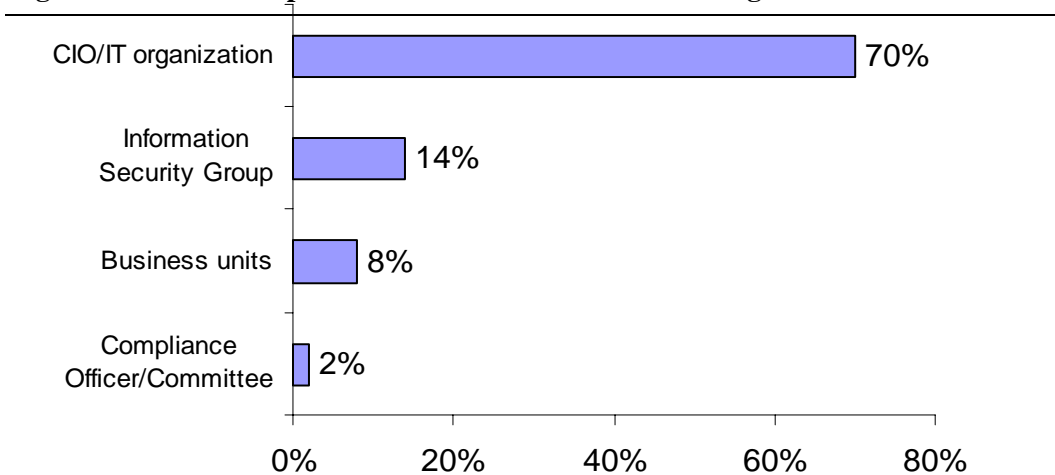
- Companies need to be educated on the numerous emerging solutions for improved data protection and the immediate impact it can have on their environments.
- Companies should aggressively pursue integrating their existing data protection strategies into their overall IT/information governance plans.
- Since meeting compliance is a data protection business driver; companies need to ensure that their DP solutions support the compliance requirements for how data needs to be managed (archived, retained, accessed and destroyed).

AberdeenGroup’s preliminary survey findings overwhelmingly indicate that the CIO and IT organization are responsible for the data protection budget. This is important in understanding how customers can strengthen their data protection policies. Rather than having a single or group of IT administrators build a data protection plan pieced together with point products, the CIO can help IT formulate a company-wide strategy that is integrated into an overall IT/information governance plan.

Such a strategy should include a thorough evaluation of all the old and emerging data protection technologies in the storage industry. It’s critical for customers to stay educated on all the upcoming technology/product evolutions within the marketplace. Such knowledge will enable them to pick best-of-breed tools and practices and prevent customers from investing in the wrong technologies.

Today, the survival of a business is interlocked with protection and safeguarding of the data that is created and moved — sometimes from opposite sides of the world — on a daily basis. Ensuring data protection has to be a company-wide effort.

Figure 10: Who is Responsible for the Data Protection Budget?



Source: AberdeenGroup, August 2006



Laggard Steps to Success

1. *Proactively define data protection initiatives and objectives.*

This can be accomplished by establishing a core team of key stakeholders (in many cases, the same teams driving compliance will support data protection) and establishing the expectations and requirements to address this area.

2. *Evaluate industry standards and best practices for data protection.*

If companies are going to get their arms around their data challenges and drive data security, access, quality, and retention, it's critical to evaluate standards and leverage what others have done best.

3. *Evaluate data protection technologies and solutions.*

There are a number of existing and emerging solutions in the market that provide varying degrees of data protection. Understanding these solutions will allow customers to select those that integrate best into their environments.

Industry Norm Steps to Success

1. *Develop a well-defined data protection plan for your enterprise.*

To effectively support data protection agendas, companies need to effectively plan and strategize to build roadmaps that encompass the necessary solutions, policies, and ties to the business that will allow for successful execution.

2. *Integrate data protection strategy with overall IT/information governance plan.*

Companies that have some level of DP technology solutions in place and have documented needed policies and processes around them need to look at how they fit into the overall governance strategies for managing information based on the numerous internal and external challenges they face.

3. *Evaluate data protection technologies and solutions.*

There are a number of existing and emerging solutions in the market that provide varying degrees of data protection. Understanding these solutions will allow customers to select those that integrate best into their environments.

Best in Class Next Steps

1. *Develop a well-defined data protection plan for your enterprise*

To effectively support the Data Protection agenda companies need to effectively plan and strategize to build a roadmap that encompasses the necessary solutions, policies and ties to the business that will allow for successful execution

2. *Integrate data protection strategies with your overall IT/Info Governance plan*

Companies who have some level of DP technology solutions in place and have documented needed policies and processes around them need to look at how this now fits into the overall governance strategy for managing information based on the numerous internal and external challenges they face.

3. *Evaluate data protection technologies and solutions*

There are a number of existing and emerging solutions in the market that provide varying degrees of data protection. Understanding these solutions will allow customers to select the ones that integrate best into their existing environment.



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Sonia R. Lelii brings more than seven years of experience in covering the storage industry. She most recently worked as a storage analyst at the New York-based 451 Group, concentrating on areas such as iSCSI, data classification, storage management, holographic and perpendicular storage, and RAID controllers.

She first began writing about storage, servers and databases at eWeek (formerly PC Week) in 1999, with a focus on vendors like EMC, Hewlett-Packard, IBM, Hitachi Data Systems and Network Appliance.

Lelii also spent almost three years developing the storage beat as both a senior writer and columnist for the VARBusiness reseller magazine, where she was brought on board specifically to beef up the storage coverage. Lelii also has worked as a writer for storage-focused InfoStor magazine.

Lelii initially began her career as a newspaper journalist, working in New Jersey Bureau at the The Philadelphia Inquirer; the New York Times' regional Lakeland Ledger in Central Florida.

She also lived for two years in Prague, Czech Republic working at an Internet-based news site called the European Information Network (EIN) and as the English editor for The Prague Tribune. Lelii graduated cum laude from Temple University in Philadelphia.

Appendix A: Research Methodology

Between July and August 2006, **AberdeenGroup** examined more than 70 global enterprises across various industries to obtain a broad view of how IT organizations are addressing data protection.

Responding IT and LOB executives completed an online survey that included questions designed to determine the following:

- The degree to which data protection strategies play an important role in their organization
- The structure and effectiveness of the data protection technologies and solutions offered on the market today
- The primary business drivers and challenges that drive them to deploy a data protection solution
- The benefits, if any, that specific data protection solutions have had as part of a larger enterprise effort

Aberdeen supplemented this online survey effort with telephone interviews with select survey respondents, gathering additional information on data protection strategies, experiences, and results.

The study aimed to identify emerging best practices for data protection and provide a framework by which readers could assess their own data protection efforts that drive better alignment between IT and the business.

Responding enterprises included the following:

- **Job title/function:** The research sample included respondents with the following job titles: senior executive management (CEO, CFO, COO) (6%); IT executive management (CIO, Security, Risk, Compliance officers) (39%); IT manager (29%) and storage administrator (26%).
- **Industry:** The research sample included respondents predominantly from manufacturing industries. Education represented 16% of the sample, followed closely by Insurance/Legal services firms, which accounted for 10% of respondents. Other sectors responding with an equal similar percentages included financial services, medical equipment, construction/engineering, retail, mining/oil/gas, pharmaceutical, consumer packaged goods, consumer electronics.
- **Geography:** About 70% of respondents were from North America. Remaining respondents were from the Asia-Pacific region (5%), Middle East, Africa (1.2%), South and Central America (4%), and Europe (11%).
- **Company size:** About 30% of respondents were from enterprises with annual revenues less than US\$50 million, 18% with revenues between US\$50 million to 249 million, 14% were from companies with revenues more than US\$5 billion; 11% had annual revenues between \$US1 billion and \$US 5billion.



Table 3: PACE Framework

PACE Key
<p>Aberdeen applies a methodology to benchmark research that evaluates the business pressures, actions, capabilities, and enablers (PACE) that indicate corporate behavior in specific business processes. These terms are defined as follows:</p> <p><i>Pressures</i> — external forces that impact an organization's market position, competitiveness, or business operations (e.g., economic, political and regulatory, technology, changing customer preferences, competitive)</p> <p><i>Actions</i> — the strategic approaches that an organization takes in response to industry pressures (e.g., align the corporate business model to leverage industry opportunities, such as product/service strategy, target markets, financial strategy, go-to-market, and sales strategy)</p> <p><i>Capabilities</i> — the business process competencies required to execute corporate strategy (e.g., skilled people, brand, market positioning, viable products/services, ecosystem partners, financing)</p> <p><i>Enablers</i> — the key functionality of technology solutions required to support the organization's enabling business practices (e.g., development platform, applications, network connectivity, user interface, training and support, partner interfaces, data cleansing, and management)</p>

Source: [AberdeenGroup](#), August 2006

Table 4: Relationship between PACE and Competitive Framework

PACE and Competitive Framework How They Interact
<p>Aberdeen research indicates that companies that identify the most impactful pressures and take the most transformational and effective actions are most likely to achieve superior performance. The level of competitive performance that a company achieves is strongly determined by the PACE choices that they make and how well they execute.</p>

Source: [AberdeenGroup](#), August 2006

Table 5: Competitive Framework

Competitive Framework Key
<p>The Aberdeen Competitive Framework defines enterprises as falling into one of the three following levels of Data Protection Professional Services and Consulting practices and performance:</p> <p><i>Laggards (30%)</i> — Data protection professional services and consulting practices that are significantly behind the average of the industry, and result in below average performance</p> <p><i>Industry norm (50%)</i> — Data protection professional services and consulting practices that represent the average or norm, and result in average industry performance.</p> <p><i>Best in class (20%)</i> — Data protection professional services and consulting practices that are the best currently being employed and significantly superior to the industry norm, and result in the top industry performance.</p>

Source: [AberdeenGroup](#), August 2006

About AberdeenGroup

Our Mission

To be the trusted advisor and business value research destination of choice for the Global Business Executive.

Our Approach

Aberdeen delivers unbiased, primary research that helps enterprises derive tangible business value from technology-enabled solutions. Through continuous benchmarking and analysis of value chain practices, Aberdeen offers a unique mix of research, tools, and services to help Global Business Executives accomplish the following:

- IMPROVE the financial and competitive position of their business now
- PRIORITIZE operational improvement areas to drive immediate, tangible value to their business
- LEVERAGE information technology for tangible business value.

Aberdeen also offers selected solution providers fact-based tools and services to empower and equip them to accomplish the following:

- CREATE DEMAND, by reaching the right level of executives in companies where their solutions can deliver differentiated results
- ACCELERATE SALES, by accessing executive decision-makers who need a solution and arming the sales team with fact-based differentiation around business impact
- EXPAND CUSTOMERS, by fortifying their value proposition with independent fact-based research and demonstrating installed base proof points

Our History of Integrity

Aberdeen was founded in 1988 to conduct fact-based, unbiased research that delivers tangible value to executives trying to advance their businesses with technology-enabled solutions.

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September 2006

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