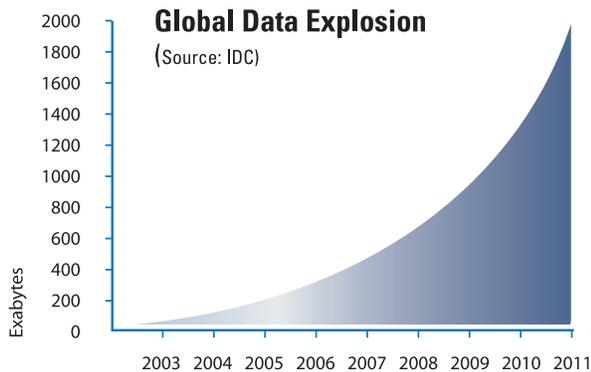**TANDBERG DATA**
Securing your Information

SMB Storage Gets Personal

Driven both by corporate business needs and government regulations, small and medium-sized businesses (SMBs) today face the challenge of safely storing and protecting their corporate data—whether those assets are in the form of documents, databases, e-mail, images, video or audio.

At the same time, the quantity of the information they generate and consume daily has grown exponentially. Just like their larger counterparts, SMBs must manage and safeguard this data and other physical records or face business disruption, devastating losses or potential failure of the business itself.

Global Data Explosion
(Source: IDC)

Exabytes

2000
1800
1600
1400
1200
1000
800
600
400
200
0

2003 2004 2005 2006 2007 2008 2009 2010 2011

This white paper discusses the storage needs of SMBs, which are similar to those of large corporations, but with resource and complexity constraints. Faced with multiple options, SMBs must select the easiest solution to deploy and manage to preserve their digital assets. Fortunately, storage technology that was once affordable only to larger enterprises is now readily available to the SMB market and even the small office/home office (SOHO) market. This development of "personal storage" as the key component of an overall data storage solution can enable SMBs to simultaneously establish practical and highly effective backup and archival practices.

The Data Deluge

In the course of running their own businesses, SMBs face a daily deluge of data across every department—administrative, financial, legal and operational. And this data can take on a wide range of forms—emails, instant messages, text files, voice mails, faxes, invoices, employee records, Website content, photographs or even physical samples, such as product samples or historical printed documents.
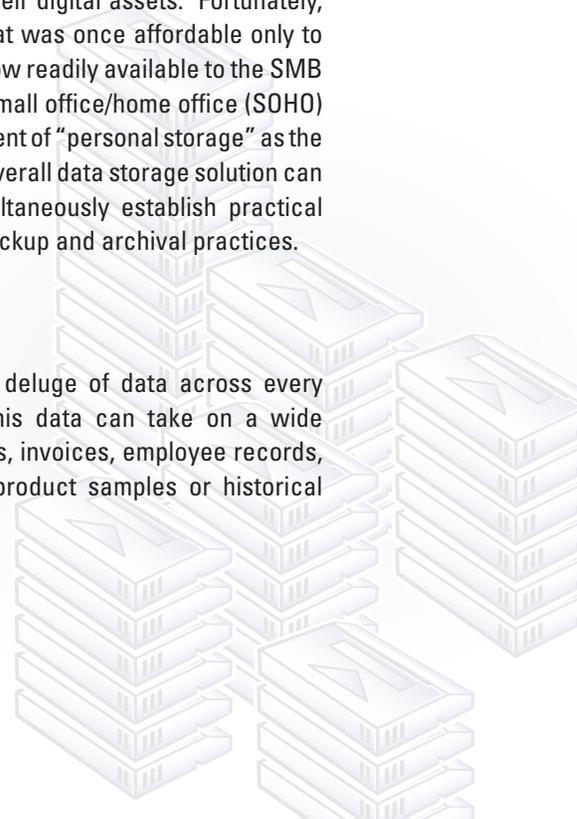
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All of this adds up to vast amounts of data to keep track of and make sense out of. Taken as a whole, IDC notes "the world has seen the amount of data grow from 5 exabytes (5 billion gigabytes) in 2003 to 161 exabytes in 2006." According to consulting firm Winter Corporation, nothing compares to this growth, which is even faster than the growth in processor capacity as predicted by Moore's Law (the number of transistors on a chip will double approximately every two years). While the quantity of data keeps growing, so too must data storage capacity requirements. IDC reports that storage capacity is growing more than 60% annually, pressuring companies of all sizes to increase their storage capacity at a similar rate. (Source: IDC "Worldwide Storage 2008 Top 10 Predictions: New Paradigms")

A Convergence of Factors

The back up and storage capacity requirements have been fueled by a convergence of factors: companies today require 24x7 access to increasingly large amounts of data; compliance regulations now extend the retention periods for documents and data that needs to be kept; and companies have gained a growing awareness of the need to back up their data as part of an overall business continuity or disaster recovery plan.

Instant access to data is now taken for granted, whether in the office, on the road or working remotely. This has become a business imperative as unmanaged or poorly managed data can "bury decisions under even higher piles of conflicting data" (Source: Relevance by David Apgar). This can also cause companies to waste time looking for information, reducing overall productivity and leading to missed opportunities to grow the business, from losing individual sales to losing customers.

At the same time, the expanding body of state and federal government legislation and compliance requirements now mandate how and when certain types of information may be used, stored, retained and destroyed. In addition, certain industries have regulations mandating how information must be stored and made available, and the Internet has produced a growing body of privacy laws.

Properly managed, data is a strategic corporate asset. Improperly managed, it can become a significant liability. In the case of a litigation request, for example, companies are responsible for producing the required information that is needed for its defense. Company executives have the responsibility of producing the right records at the right time.

Therefore, companies have a growing awareness of the necessity of disaster recovery programs that include the regular backup and archiving of data so that in the event of a hardware failure, malicious attack (virus), natural disaster (fire, water, etc.), or simple human error, they can quickly access another copy of their corporate data and be back up and running again quickly.

40% of SMBs don't back up their data at all, and 60% of all data is stored on PC desktops and laptops.

Small Business Computing Magazine

However, while companies may recognize the value of their data and the negative impact of data loss on their businesses, many are still not adequately protecting their data. According to Small Business Computing magazine, 40% of SMBs don't back up their data at all, and 60% of all data is stored on PC desktops and laptops. Looking at SOHO users, only 73% who have a personal backup device, for example, back up at least monthly, and only 40% back up daily. Consumers are even worse—only 50% back up at least monthly, and only 18% back up daily. (Source: IDC, Worldwide Personal Storage 2007–2011 Forecast and Analysis)

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This failure to protect data adequately can have dire consequences. Of course, disasters aren't always extreme—an extended power outage can devastate a small business just as effectively as a major earthquake or flood. However, personal disasters are even more likely, according to the following statistics from research at the University of North Carolina's Information Technology Service:

- **A hard drive crashes every 15 seconds**
- **2,000 laptops are stolen or lost every day**
- **32% of data loss is caused by human error**
- **31% of PC users have lost all of their PC files to events beyond their control**
- **25% of lost data is due to the failure of a portable drive**
- **44% of data loss is caused by mechanical failures**
- **15% or more of laptops are stolen or suffer hard drive failures**
- **One in 5 computers suffer a fatal hard drive crash during its lifetime**

Today's Dynamic: Technology Evolves To Keep Pace with Storage Requirements

The good news is that the right storage devices can help SMBs share data, collaborate in an automated way and protect their valuable assets. In addition to avoiding wasted time and improved collaboration, SMBs can move more quickly and arrive at key decisions more efficiently if they manage, back up and intelligently migrate data on an ongoing basis. (Source: IDC "Worldwide Storage 2008 Top 10 Predictions: New Paradigms")

Due to the sheer breadth and depth of data storage products, businesses must make the right decisions when storing their data. For SMBs, the amount of data needed to be stored varies significantly based on the industry and the regulations required in that industry. This becomes a much more useful metric than the number of employees or sales revenue in defining the size of a business with regard to data protection.

Of equal importance is how these businesses administer the storage of their data. The capacity demand increases are similar across businesses in the same industry regardless of the size. However, what is different is the means of dealing with meeting these capacity demands. In terms of actual size, SMBs behave differently than large enterprises; they have different priorities and different needs. Typically, SMBs have an internal IT staff that does not include a storage specialist. Usually, a systems administrator will handle storage as an added task, necessitating that data protection be simple to understand, implement and administer. In addition, storage demands are usually immediate because of the lack of time to invest in implementing an overall long-term storage strategy.

Once defined, understanding the characteristics and the considerations specific to the business will help sort out the available data storage options into a solution set that will meet an individual business' needs. However, the bottom line is that SMBs—either with or without IT expertise in-house—require an easy to use, simple to integrate, fool-proof and cost-effective "all in one" storage solution. The key features that appeal to SMBs in any external storage device are capacity and throughput, with portability and an external button to start their backup as other key features.

> "
>
> *32% of data loss is caused by human error"*
>
> **University of North Carolina's Information Technology Service**

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Establishing Personal Storage Best Practices

There are numerous laws, regulations, standards and business practices that include data retention requirements. SMBs must comply with the recordkeeping requirements defined by regulators, their industry and by legal precedence. The retention requirements vary significantly from one type of data to another and the same data may be required to be kept for different time periods by different states.

To meet these increasingly complex requirements, SMBs must improve how they manage their business records with regard to the creation, protection, retrieval and disposition of a company's records over time. Records management requirements must be designed and integrated into business processes and the technical infrastructure. Some of these requirements include:

- **Records are retained on the basis of their value to the organization**
- **Records are created and maintained for many reasons, including to preserve rights, fulfill compliance obligations, document business processes, provide customer service and mitigate risk**
- **Records management is an ongoing process, not a project**
- **Records must be managed on a media-neutral basis and retained in accordance with approved policies, procedures and schedules**
- **Regardless of the media on which they are stored, specific records titles (or series) should be retained for the same period of time**

Retention schedules are the foundation of a successful records management process. These schedules take into account an organization's legal, regulatory and operational requirements while providing guidance on how long to keep records and what to do when the records are no longer needed and can be destroyed. It is important to develop a schedule for backing up and archiving all computer records and keeping current copies of all paper and computer files off-site and accessible. (Source: Small Business Administration)

While backup and archiving are often used interchangeably, it is important to distinguish between the two terms when considering a records management process. Backup is used for data recovery, while archiving is used for preserving and retrieving data in the event of a disaster, inquiry or litigation.

Specifically, backup is seen as short-term, with the data periodically being overwritten as the data changes. In the backup process, a copy of data at a specific point in time is created in case something should happen to the original. That way, in the case of a failure, the data can be reconstructed from that time. It's very similar to backing up a Word document either automatically or with the "Save" button, except that the backed up data is stored on a remote device. Fixed disk is typically used for backup because of its speed and instant access.

On the other hand, archiving is long-term, unalterable and therefore used for compliance or disaster recovery. Redundancy and physical separation are crucial to effective archiving. Archived files can be kept for decades, usually at an offsite location, and two or more copies are better than one to safeguard priceless corporate data against disaster. It's also smart to test these systems to make sure they work, such as practicing recovery of a file that is several weeks old. Tape is typically used for archiving because of its affordability, reliability and portability.

Ultimately, by instituting a records management and storage process:
- **Storage becomes highly reliable and error-free**
- **Archived assets are easy to preserve, locate, reuse and resell**
- **Archival storage becomes the standard, rather than a luxury**
- **Disaster recovery best practices can be instituted**

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Tandberg Data's RDX® QuikStor™: The Best of Both Worlds

The exploding growth of mission-critical digital content combined with government regulated retention policies has created a need for SMBs for secure, reliable, robust, portable data protection solution at an affordable cost.

Until now, SMBs had to select the right data protection technology from either of two distinct categories: fixed storage and removable storage. Fixed storage solutions use either a single disk drive or multiple disks. The technology is generally robust and reliable, but the disks are not portable; they cannot be rotated offsite for increased protection and disaster recovery.

In contrast, removable storage methods offer easy transportability. Traditional removable methods, however, are generally based on tape media. Tape has been the mainstay of backup for 50 years, with data capacities of anywhere from a few hundred kilobytes to hundreds of gigabytes. While the tapes are a very portable removable storage solution, the disadvantage of tape drives is that they are not a random access medium—to find any particular file, all of the proceeding files have to be read first, which can often take time.

Now, Tandberg Data has developed the ideal solution for SMBs—removable disk—a combination of the two technologies. Before the arrival of the award-winning RDX QuikStor technology, businesses had to choose between tape, disk or a combination of both to back up their high-end desktops and low-end servers—each with architecture, performance and cost issues. The RDX QuikStor now offers SOHO and SMB users an affordable, enterprise-class protection tool.

Tandberg Data's RDX technology is a pocket-size 2.5-inch removable Serial ATA hard drive that looks and acts like a tape cartridge, but performs with the speed and reliability of fixed disk. The RDX QuikStor is the only backup technology that offers the best of both worlds: tape (simplicity, portability, affordability, archivability) and disk (higher performance, instant access, reliability)—all in one cost-effective package.

Best of Tape
Removable and Portable
Long Archive Life
Rugged Cartridge
Low Cost

Best of Disk
Random Access Performance
High Transfer Rates
Data Reliability
Rapid Capacity Growth

A Combination of the Best Features of Hard Disk Drives and Tape Technology into one Product

It is the ideal solution for SMBs that need to use six to 10 cartridges for their backup, archive, data exchange and disaster recovery solution. In a seven-cartridge scenario, for example, RDX users would have one cartridge in the unit, one next to it for replacement when necessary and one offsite for disaster recovery. When a cartridge gets full, just insert another one—it's that simple! The balance of cartridges would rotate through this program.

The RDX QuikStor offers native storage capacities of up to 1TB of data on a single cartridge today— enough capacity to back up an entire computer, ensuring that data is fully protected, yet instantly available. With plug-and-play installation, it appears to Windows-based computers as a standard removable media device—computers instantly recognize it—providing instant access and easy drag

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and drop control. RDX media is randomly accessed so stored files can be immediately retrieved without time-consuming sequential seeks. Access is near instant, allowing users to work directly with the data on the cartridge, just as they would with any other hard drive. Drives can be inserted and ejected while Windows is running (no need to power down), using either the unit's eject button or by clicking on eject in Windows Explorer.

The removable cartridge in the RDX looks and handles like a tape cartridge, but performs with the speed and reliability of fixed disk. The media is robust, with a service life of at least 10 years and up to 5,000 uses. Designed for high performance, the RDX QuikStor is designed to sustain data transfers up to 45MB/sec—that's more than 162GB/hr.

Recording is fast—and so is restoring data from backup. Single files and selected volumes can be restored in seconds instead of hours as with traditional tape. The cartridge itself alerts a user if there is a problem either with the backup or the media, avoiding surprises during data recovery.

While the ruggedized cartridge is designed to protect the drive from shock and electrostatic discharge, having vital company data on a physical piece of media endows it with a unique set of reliability characteristics. It can be:
• **Placed in a vault**
• **Copied, stored and maintained in multiple locations**
• **Physically moved to locations when and where needed**

When storage volume increases, additional RDX QuikStor cartridges and drives can be easily added. The technology provides forward and backward compatibility, enabling SMBs to upgrade to higher-capacity cartridges in the future, without having to buy a new drive. That means that tomorrow's higher capacity RDX cartridges will operate in today's RDX systems, eliminating the risk of hardware obsolescence and unnecessary expenditures.

Because the RDX cartridge uses the same 2.5-inch hard disk drives found in millions of notebook computers, it is part of an extensive hard disk drive roadmap—storage capacities will increase at the same rate over time while maintaining compatibility and benefiting from manufacturing efficiencies.

Revolutionary Backup Software Designed for Removable Disk

Because implementing better data management procedures is so important to SMBs, Tandberg Data recently introduced AccuGuard deduplication software, a revolutionary deduplication capacity backup software package.

Tandberg Data specifically developed AccuGuard because traditional tape backup packages are designed for larger businesses with professional IT staffs. These packages are too cumbersome, too difficult to install and too difficult to use for SMBs. In addition, SMBs don't always operate in client/server environments and often don't understand how to manage cartridge rotations.

To address these concerns, Tandberg Data's AccuGuard is tailored to work the way SMBs "act and think." he easy to use RDX AccuGuard software offers powerful deduplication and data protection. The RDX QuikStor provides fast transfer rates of up to 45MB/s and users can select between 160GB, 320GB, 500GB, 640GB and 1TB native capacities. Portable, removable cartridges are the only guaranteed way to protect against fire, theft and viruses. The 3-year warranty and a rugged, shockproof design means your data remains protected even under the most extreme conditions. AccuGuard utilizes

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views and searches presented in the format familiar to Windows users. Restores are as simple as dragging the file to where you like to restore or a simple right click access to earlier versions of files easily protects against accidental deletions, corruption and accidental overwriting.

Disaster recovery backup allows users to make complete system images—snapshots of the system at points in time—to provide complete protection against hardware failure and other disasters. If needed, recovery from an AccuGuard backup takes milliseconds, and users can boot and restore from the RDX cartridge itself.

By combining both user and server data protection schemes into a single, easy-to-use GUI interface, AccuGuard offers a flexible solution that can be used in any small business environment while including protection for key business applications such as Exchange and SQL.

Simple Steps to System Backup and Continuous Data Protection

AccuGuard's installation consists of easy steps that are simple enough that anyone can start protecting their data immediately. The wizard guides the user through the process, including what to protect, how often to protect and other options like whether or not to encrypt the data cartridge for added security.

AccuGuard increases effective data storage by providing 20:1* or greater deduplication, intelligently optimizing the data at the source which results in drastically improved backup windows and network bandwidth.

It is an all too common mistake to accidentally overwrite an important document. With the file versioning and roll back capabilities, mistakes are easily erased. Restoring files is as simple as right clicking a mouse in Windows Explorer. This will allow you to restore deleted files or previous versions of your files. The other way to restore data is through the AccuGuard Control Panel—where searches for files can be performed when you do not know their location.

In the event of hardware failure where a full system recovery is needed, AccuGuard has the ability to get the user back up and running quickly, either through a complete restore or allowing the immediate ability to view and access files directly from the cartridge.

To summarize, Tandberg Data's RDX QuikStor and AccuGuard meet the reliability, performance and business requirements for all backup and data archive applications from home-based, SOHO and SMBs through to the low-end enterprise for departmental backup.

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SMARTER STORAGE = EASY, RUGGED, FAST AND PORTABLE BACKUP.

The Future

As a leading storage company focused on the SMB market, Tandberg Data recognizes that SMBs need a storage solution that is ideally suited to their unique needs and characteristics. With a perspective gained from more than 30 years in the storage business, Tandberg Data has taken a leadership role to help SMBs meet the challenges of today and tomorrow.

These challenge are complex, but our vision for success is clear: We know performance and affordability are critical issues to SMBs, and we are committed to offering the most affordable, highly efficient data storage solutions for SMBs, like the RDX QuikStor. It's the best of best of both worlds—tape and disk—in one cost-effective package.

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