Magic Quadrant for Storage Resource Management and SAN Management Software, 2007

SRM vendors provide products that are mandatory for the effective management of shared storage environments. Niche vendors can offer solutions for functions not addressed by general-purpose products or to provide a lower-cost alternative when only a portion of the SRM functionality is required.

WHAT YOU NEED TO KNOW

In 2005, Gartner merged its Magic Quadrants for storage area network (SAN) management software and storage resource management (SRM). Requirements for the individual and combined markets have continued to merge and advance.

For SAN management, Brocade (formerly McData) and Onaro represent the pure-play SAN solutions; they do not attempt to offer all SRM functions. Similarly, vendors such as Northern Parklife, NTP Software and TeraCloud focus solely on file capacity planning and file management.

Breakthrough technologies, such as root cause, change management and performance management, are available from Akorri, EMC and Onaro. Onaro has delivered change management and root cause, and continues to add features and gain customers. EMC has brought its Smarts offering to the storage space with some traction, addressing root-cause diagnosis. Recently, Akorri has entered the market to offer comprehensive cross-domain performance management, which includes storage.

CA, EMC, HP, IBM and Symantec provide comprehensive SRM solutions. Of the five major vendors, IBM made the most notable progress in the past 18 months, with the introduction of its TotalStorage Productivity Center (TPC) 3.1, which offers significant improvements in integration, ease of use and functionality, combined with an effective bundling and sales campaign. Relatively little is new with the other four vendors' suites. EMC now has EMC ControlCenter (ECC) 6.0 in beta, so we primarily rated it on its version 5 release. All the remaining suite vendors, including EMC, have made minor improvements in functionality through service packs or point releases.

Hitachi Data Systems (HDS), which delivers HP's SRM solution through OEM agreements, also brings its own portfolio of SRM capabilities to the market, as does Network Appliance (NetApp) with its network-attached storage (NAS) and block-based storage fibre channel, Internet Small Computer System Interface (iSCSI) management portfolio and a co-branded Symantec SRM offering.

Little progress has been made since the last Magic Quadrant in filling out the significant holes and capability gaps in the SRM segment. This leads us to examine the future direction of the segment and whether the comprehensive suites offered by these vendors will be completed

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to provide a single unified solution for managing a shared storage environment. Possibly, the market will devolve to where effective management is best accomplished by several, potentially overlapping, point products.

For a vendor to improve its position in a Magic Quadrant, it must track to the new market requirements and move ahead of them. As the SRM market evolves, expectations and requirements change. Because the Magic Quadrant is scored each year relative to the current market, vendors that have made slower progress than the overall market can appear to have moved backward, when, in fact, the entire market has moved forward. This was the case for CA and Symantec, which have moved incrementally forward, but not at the same rate as the market.

STRATEGIC PLANNING ASSUMPTION(S)
Through 2010, no single vendor will provide all the necessary SRM functionality (0.8 probability).

By 2012, one to two large SRM vendors will lead the market with a comprehensive SRM product (0.6 probability), or the SRM market will devolve back to point solutions (0.4 probability).

MAGIC QUADRANT

Market Overview
The SRM segment, including SAN management software, grew slightly in 2005 and showed modest growth in 2006. The SRM market is forecast to grow at a compound annual growth rate of 9.3%, taking the segment to $936 million in 2010. EMC, despite service pack updates, did not deliver on ECC 6.0, and revenue was essentially flat. IBM and, to a lesser extent, CA, HP and Symantec showed modest growth. Niche vendors are too small to affect the overall market; however, some small vendors are demonstrating solid traction, and new vendors continue to be attracted to the segment.

The SRM market has changed throughout the years. The talk in 2000 was about a "single pane of glass" to manage the enterprise. The reality was that SRM tools were frequently used for quota management and basic reporting, and SAN management was in its infancy. In 2003 and 2004, SRM tools added features, including merging SAN management and device management capabilities. The latter function was mature from a passive management

Figure 1. Magic Quadrant for Storage Resource Management and SAN Management Software, 2007

Source: Gartner (March 2007)
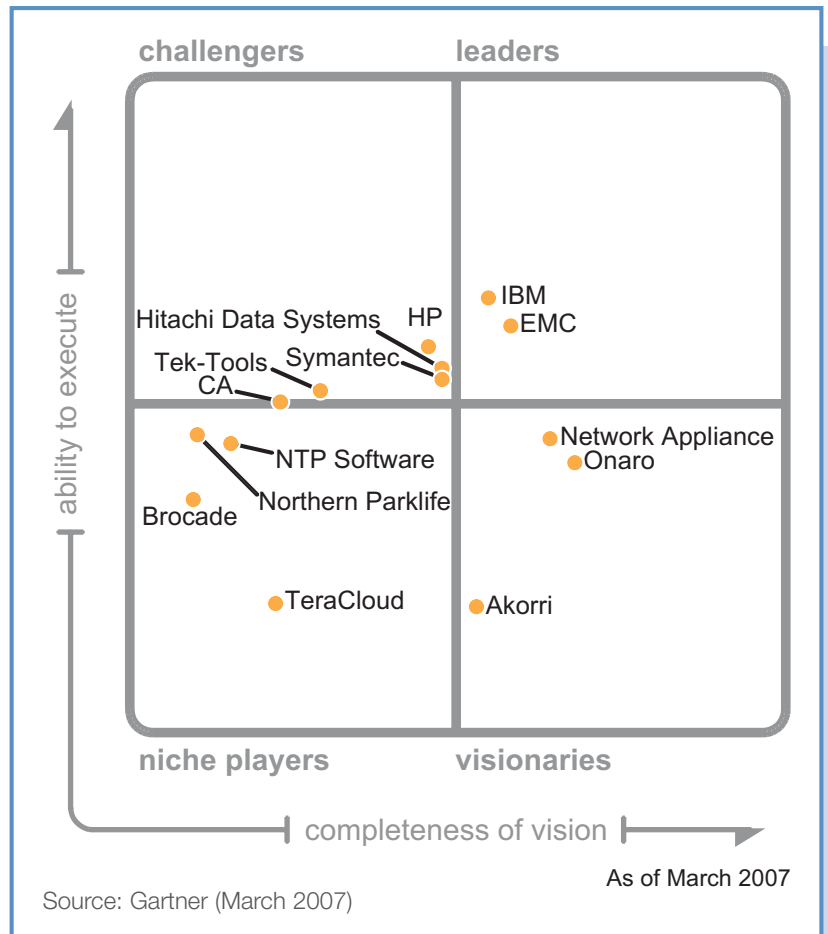
perspective at that point in time. However, in some cases, these merged functions were simply launched from the SRM console without any deep integration, and many functions remained in the domain of element managers.

In 2006 and the first part of 2007, the SRM market featured two types of tools:

- Traditional, comprehensive SRM offerings have continued to add functions, with an emphasis on product integration. A consolidated infrastructure (agent, console and repository), with significantly easier to use and deploy offerings, are becoming the norm, with fewer launched components. In addition, replication management capabilities are included.

- The more-focused SRM tool has emerged. Rather than being all-encompassing solutions, these new offerings address a particular piece of the storage management space. Examples include products from Akorri for performance management, Onaro for change management and TeraCloud for storage capacity analytics. Large vendor examples of this are EMC's Smarts solutions and Symantec's Veritas Backup Reporter.

Regardless of the vendor, large-scale deployments will often require professional services to install and configure the solution.

It is important to note that a vendor's position on the Magic Quadrant should not be equated to a product's attractiveness or suitability for every client's requirements. It can be perfectly acceptable to acquire solutions from vendors that are not in the Leader's quadrant if the solutions better fit your needs, have the appropriate support capabilities and are attractively priced.

Market Definition/Description

SRM products provide data collection and automation agents that consolidate and operate on information from multiple platforms supporting storage management tools on multiple operating systems (OSs), storage products and SAN devices. Key functions include capacity reporting/analysis, performance reporting/analysis, capacity/performance management automation, storage provisioning, storage management product integration, application and database integration, and hardware integration. SRM solutions should integrate with network and system management offerings to enable the SRM product to externalize events to other management products. Integration with device resource and replication management products, as well as media management products, should include launching hardware configuration utilities from the SRM console, collecting/reporting agent information and integrating logical level data. Products that provide for discovery, topology mapping and monitoring SAN components are also included in this segment because many are being included with SRM suites or expanding to include SRM functionality.

Key components of an SRM solution include:

- *Central administrative console:* The console is increasingly Web-based and provides a way to get a view of storage resources and metrics based on a user's profile and credentials. The product's security features will define the level of access and the breadth of view a user will have for role-based administration.
- *Discovery and storage information repository:* The SRM tool must be able to automatically identify new storage objects and collect and store information on those objects in an information database. Data must be collected and stored so that it can be used to not only identify the current state of the environment, but also to conduct historical views and future trending. Data on managed storage objects includes metadata information on data files (size, date of creation and owner) and physical storage systems (capacity and performance characteristics). The repository ties the storage information to the application and the user. The repository should be based on a commercially available relational database with an open and published schema so that it can be queried via standard database reporting tools. There should be the ability to manually add data about a given object, such as acquisition date, location and asset tag number. The data should be exportable to another relational database management system.

- *Capacity management and planning:* This includes the activities to identify resource use. It also provides tools for reclaiming space for better resource use and ensuring that storage is available as needed. The information stored in the repository is used to analyze trends and, using modeling and simulation, predict future capacity requirements by server, department, application and enterprise via user definable groups that align with a line of business (LOB). It identifies the need to purchase more storage or networking devices.
- *Quota management:* This is a special capacity management function. A quota management application implements a corporate policy regarding the amount of disk space allowed per user. Many products offer only soft quota management, which is informational in nature. Hard quotas, those that stop allocation once the defined level of storage space is used, have most commonly been implemented in the Windows and NAS environments. Filters provide capacity management by preventing certain types of files from being saved to disk or tape, sometimes by scanning file content versus only detecting file type extensions.
- *Performance management:* This should monitor, diagnose and optimize the performance of the application, server, host bus adapter, storage network and storage devices. Because many of these resources are shared, the capability to model and understand complex interactions and their impact on performance is desirable. When performance issues are identified based on defined thresholds, events can be sent to notify storage administrators or trigger actions to correct the problem. Performance functions should take advantage of historical views of the environment and event correlation techniques.
- *Event management:* This collects events sent from applications and devices that indicate, for example, a pending disk failure or an out-of-space condition. It then initiates the appropriate notification or triggers a pre-defined response to correct the problem. It is important for SRM products to be able to percolate events to systems and network management solutions.
- *Root-cause analysis:* This analyzes events to determine the underlying root cause and eliminate the need for blind troubleshooting, which expedites the diagnosis process.
- *Reporting:* This provides basic real-time and historical reports and the capability to use reporting tools (including powerful online analytical processing tools) to create custom reports and views. The goal is not to have hundreds of reports but to have a few useful ones, along with the ability to generate custom reports.
- *Chargeback:* This acts as the accounting mechanism for billing users and LOBs for storage resources. Comprehensive chargeback includes multiple cost metrics based on the type and quantity of storage resources consumed.
- *Configuration management:* At a minimum, this provides the capability to monitor and track changes to the storage environment. Ideally, this will enable the active configuration of heterogeneous storage arrays and fabric resources from a common console, not just the link and launch of resource element managers.
- *Change management:* This helps control and manage planned changes to the storage and networking environment, and monitor and report on all unplanned changes, alerting users when configuration rules have been violated. Some products

take snapshots of the storage environment at set intervals so that, in the case of a problem, the configuration can be compared with the last-known working state or used to generate a bill of materials.

- *SAN design and analysis:* This helps create and verify that the layout of the SAN and all edge devices have been designed and implemented to compatibility rules.

- *Provisioning:* This is the process of adding, deleting or modifying the capacity of logical unit numbers (LUNs) required for a given application. It follows proper rules for security, performance and availability, and takes into account storage arrays, network paths and potential replication targets.

- *Workflow automation:* This enables organizations to automate frequently preformed storage activities (processes) in a way that links to instrumentation and active management capabilities.

- *Scalability:* SRM products should deliver the designed functionality with very high availability and adequate performance for large-scale environments. SRM products should be capable of addressing small, midsize and large enterprise environments so that hundreds of storage arrays, thousands of SAN switch ports, and hundreds to thousands of servers can be monitored and managed from a single product.

- *Integration:* The SRM solution should be self-contained and require as few infrastructure components as necessary. The ability to navigate seamlessly across all product features with a single sign-on capability is important. Common agents, repositories and consoles for the product are desired.

- *Ease of use and deployment:* The time and resources required to deploy and configure the product to the point of delivering useful results to the organization should be commensurate with the scale and scope of the deployment. Modest deployments should be user-installable, with professional services available for more-complex environments.

resellers or value-added resellers (VARs). Each company should have at least five enterprises that are using the software in a production environment and can provide references to Gartner.

Added
Akorri, HDS, NetApp and TeraCloud have been added to this year's Magic Quadrant.

- Akorri's BalancePoint can help administrators diagnose, fix and guarantee application performance. BalancePoint focuses on storage performance, but also looks at the more commonly analyzed factors of the server and network infrastructure.

- In addition to reselling HP's SRM product, the Hitachi Storage Management Software Suite provides SRM capabilities.

- NetApp provides SRM offerings for the NetApp NAS and NetApp-managed, block-based storage environments. NetApp also possesses its own management and recovery capabilities and a broad partner strategy for heterogeneous storage management.

- TeraCloud, which has re-entered the open-system SRM space, offers a storage analytics solution via its TeraCloud Storage Analytics (TSA) and TeraCloud Storage Framework (TSF) offerings. TeraCloud is aimed at storage administrators that seek file-level storage capacity management.

- Brocade, which completed its acquisition of McData in January 2007, now appears in the Magic Quadrant in place of McData.

Dropped
CreekPath and Softek were dropped from this year's Magic Quadrant. In July 2006, OpsWare acquired the assets of CreekPath and intends to incorporate the storage discovering capabilities into its server and system management offerings. In January 2007, IBM Global Services acquired Softek, primarily for its data migration products, Logical Data Migration Facility (LDMF) and Transparent Data Migration Facility (TDMF).

Support for heterogeneous server platforms should include support for AIX, HP-UX, Solaris, Linux, Windows and NetWare servers. Products should also support common disk arrays, tape drives and libraries, storage networking devices and NAS filers. Support for an expanding list of databases and applications, such as IBM DB2, IBM Domino/Notes, Microsoft Exchange, Microsoft SQL Server, Oracle and SAP, are also important.

Inclusion and Exclusion Criteria
Included vendors must be the developers of their products or have made significant functional additions or modification to the products' codes, not just be pure

Table 1. Ability to Execute Evaluation Criteria

Evaluation Criteria	Weighting
Product/Service	high
Overall Viability (Business Unit, Financial, Strategy, Organization)	standard
Sales Execution/Pricing	high
Market Responsiveness and Track Record	high
Marketing Execution	standard
Customer Experience	high
Operations	low
Source: Gartner	

Evaluation Criteria

Ability to Execute
Several factors contribute to the vendors' execution ratings. The product capabilities were evaluated separately for basic and advanced functionality. Special focus was placed on capacity management, change management, policy automation, performance management, integration and root cause. Because this market includes many small vendors with uncertain futures, financial viability was an important factor. The ability of a vendor to anticipate and respond to changes in the market and achieve competitive success as market dynamics change was also highly rated.

Product/Service Criteria
• Capacity management
• Change management
• Device management (array and fabric)
• Ease of deployment
• Ease of use
• Integration
• Performance management
• Policy automation and workflow
• Root cause
• Scalability

Completeness of Vision
Each vendor's completeness of vision was evaluated based on its ability to convincingly articulate its future product direction and demonstrate innovation in meeting customer needs, enabling the vendor to more effectively compete in the market. The credibility of the vendor's vision was weighed against its past ability to execute against previously stated plans. Market understanding is the guiding factor in new product development to ensure that the product engineered meets customer needs. Managing the complexity of storage environments requires innovative approaches that will distinguish leaders and delight customers.

Product/Offering Criteria
• Capacity management
• Change management
• Device management (array and fabric)
• Ease of deployment
• Ease of use
• Integration
• Performance management
• Policy automation and workflow
• Root cause
• Scalability

Leaders
Leaders have the highest combined measures of an ability to execute and a completeness of vision. They have the most-comprehensive and scalable products. They have a proven track record of financial performance and an established market presence. In terms of vision, they are perceived as thought leaders, having well-articulated plans for ease of use, how to

address scalability and product breadth. For vendors to have long-term success, they must plan to address the expanded market requirements for change management and root-cause and performance analysis. Leaders must not only deliver to the current market requirements, which continue to change, but they also need to anticipate and deliver on future requirements. A cornerstone for leaders is the ability to articulate how these requirements will be addressed as part of their vision for resource management. As a group, leaders can be considered a part of most new purchase proposals, and they have high success rates in winning new business.

IBM made a large move from our previous Magic Quadrant as a result of a new unified product infrastructure and a new administrative console. IBM also moved into the No. 2 position of units sold for comprehensive SRM suites thanks to a new bundling program that has created up-sell opportunities. EMC continues to acquire many vendors to strengthen its portfolio. The next version of EMC's ControlCenter was initially expected at a much earlier date, with this upcoming version looking to improve product integration and user experience for the suite.

Challengers
Challengers can execute today, but they have limited vision. They have capable products and can perform well for many enterprises. Vendors in this group have the financial and market resources and capabilities to become leaders, but the question is whether they have an understanding of the market trends and requirements needed to succeed in the future. In addition, challengers may not devote sufficient development resources to achieve leadership.

HP and Symantec moved from the Leaders quadrant to the Challengers quadrant. Both vendors also moved down in their ability to execute. HP is not having the same level of bundling success that EMC and IBM are having with their storage arrays. Symantec is recrafting its SRM portfolio, recently splitting out the backup reporting capability as a separate offering, and is looking to

Table 2. Completeness of Vision Evaluation Criteria

Evaluation Criteria	Weighting
Market Understanding	high
Marketing Strategy	standard
Sales Strategy	standard
Offering (Product) Strategy	high
Business Model	no rating
Vertical/Industry Strategy	no rating
Innovation	high
Geographic Strategy	low
Source: Gartner	

release new modules and enhancements later in 2007. Tek-Tools moved up from the Niche Players quadrant to the Challengers quadrant as a result of new product offerings and a sixfold improvement in licenses.

Visionaries
Visionaries are forward-thinking, but their execution has not propelled them into leadership positions. These vendors are differentiated by product innovation, but they have not achieved a completeness of solution or the sales and marketing expertise required to give them the high visibility of leaders.

Niche Players
Niche players are narrowly focused on an application, market or product mix, or they offer broad capabilities without the relative success of competitors in other quadrants. Niche players may focus on a segment of the market and do it well, or they may have modest horizons and lower overall capabilities compared with competitors. Others are simply too new to the market or have fallen behind, and although worth watching, have not yet developed complete functionality or the ability to execute.

Vendor Strengths and Cautions

Akorri

Strengths
- Provides a file or application view of storage performance by creating a sophisticated behavior model that comprehends application, OS, networking and storage domains
- Generic modeling capability with pre-configured templates for several data types, enabling performance monitoring of standard and custom applications
- Can diagnose storage performance implications of multiple virtual machines on a single physical server
- Can be part of a capacity provisioning strategy that assigns LUNs based on potential performance effects
- Agentless solution offers nonintrusive deployment with a potentially faster return on investment

Cautions
- New to market and has yet to prove itself with a significant number of production deployments
- Support limited to specific enterprise storage arrays and no NAS filer support
- Limited ability to link and integrate with other management solutions
- No product internationalization
- No rollup across multiple BalancePoint instances; scalability is claimed at up to 300 servers per solution, but clients need to investigate this

Brocade
Strengths
- Focused solely on SAN fabric management
- More-comprehensive alternative to switch element managers
- Comprehensive SAN design capabilities
- Scalable solution that manages more than 10,000 switch ports
- More than 8,000 product installs with large ecosystem of 18 OEMs

Cautions
- Not a full SRM and SAN management offering
- Recent acquisition of McData by Brocade will affect engineering through 2007
- Full Brocade and McData integration of the tools will not be available until 2008

CA
Strengths
- Comprehensive open systems and a mainframe SRM portfolio that provides broad platform support (OSs, application, fabric devices and storage arrays)
- Common SRM graphical user interface across mainframe and open systems, with the mainframe console being a unique differentiator
- New generic application modeler for storage capacity monitoring and reporting of any application (third party or custom)
- SAN design tool with rule checking and best-practice enforcement
- Robust iSCSI capabilities and broad Linux distribution support

Cautions
- Multiple agents for SRM and SAN management
- Multiple consoles for SRM, SAN management and SAN design activities
- No built-in rollup facility for multiple CA SRM product instances
- Inability to generate combined reports across mainframe and open systems
- Modest penetration when compared with the overall CA installed base

EMC
Strengths
- Comprehensive open-system and mainframe SRM portfolio that provides broad platform support (OSs, application, fabric devices and storage arrays)
- Deep VMware integration for reporting on and displaying virtual machines in SRM reporting and SAN management activities
- Robust support for multiple administrator roles, which includes single sign-on capabilities
- Comprehensive SAN design validation and root cause across Internet Protocol (IP), NAS and storage
- Data classification and policy-based migration for file data via its Infoscape offering
- Targeted small and midsize business (SMB) products for SRM and SAN management
- Largest installed base for comprehensive SRM

Cautions
- Ease-of-use issues require significant training and ongoing practice for product proficiency (EMC claims that this will be addressed in its next version in 1H07)
- Several modules are not fully integrated with the rest of ECC

- Multiple server engines required for large-scale deployments; scalability improving but marketplace concerns remain
- No agentless file reporting, multiple SRM agents required in ECC 5.x and no built-in rollup facility for multiple ECC products
- Limited reporting and management for third-party storage arrays and tape/virtual tape, no NetWare support and complete NetApp filer support is forthcoming

Hitachi Data Systems
Strengths
- Comprehensive open-system SRM portfolio that provides broad platform support (OSs, application, fabric devices and storage arrays)
- The Hitachi Storage Management Software Suite has a common task-oriented console redesigned by Frog Design (designer of the Macintosh and Windows Media Player)
- Table-space to disk spindle views for DB2, Exchange, Oracle and SQL Server for performance tuning
- Strong ecosystem of re-branded and resold solutions that address heterogeneous SRM, backup reporting, and root-cause and change management
- Portions of the Hitachi Storage Management Software Suite are resold or re-branded by HP and Sun

Cautions
- Limited common reporting, object grouping and filtering across the portfolio
- Multiple replication management solutions
- Several SRM functions are launched from the primary console vs. complete integration
- HDS professional services still ramping up to support breadth of portfolio
- Limited installed base

HP
Strengths
- Comprehensive open-system SRM portfolio that provides broad platform support (OSs, application, fabric devices and storage arrays)
- Relatively easy to use compared with other comprehensive SRM solutions
- All product features are fully integrated into a unified console
- Storage Essentials is integrated with HP's Systems Insight Manager tools for managing servers and applications
- Large ecosystem of OEM and reseller agreements with Bull, Engenio, HDS, SGI and Sun

Cautions
- Other products are more comprehensive in SAN management, reporting, NAS support and workflow
- No EMC NAS support
- No root-cause capability or iSCSI support
- Large-enterprise customers should seek references of similarly sized installations to address concerns regarding product scalability

- Products sold through the ecosystem may be at different code levels than the HP version

IBM
Strengths
- Comprehensive open-system SRM portfolio that provides broad platform support (OSs, application, fabric devices and storage arrays)
- Relatively easy to use and deploy compared with other comprehensive SRM solutions
- All product features are fully integrated into a unified console
- Administrative console handles the challenges of displaying large-scale environments
- Second-largest installed base of the comprehensive SRM suites

Cautions
- Lacks e-mail (Exchange or Notes/Domino) application coverage
- No agentless file reporting, root-cause, workflow or backup reporting capabilities
- Limited provisioning and chargeback
- Lacks references for environments larger than 5,000 switch ports
- No built-in rollup facility for multiple TPC product instances

Network Appliance
Strengths
- NetApp portfolio has NetApp platform and comprehensive SRM capabilities
- For NetApp-specific solutions, ease of deployment and ease of use receive high marks from end users
- Robust application support for NetApp platforms, including Exchange, Oracle and SQL Server; NetApp has large-scale production references for these solutions
- User and application server tools for controlling snapshot recovery and policies
- Strong data classification and new policy migration based on the content and metadata via the Kazeon relationship for the IS1200 offering
- Strong ecosystem of re-branded and co-branded solutions that address heterogeneous file system, SAN fabric, storage array and global namespace capabilities

Cautions
- Heterogeneous SRM solution has had modest penetration
- Lacks the Oracle on Windows support that is found on Unix and Linux platforms without scripting
- Snapshot automation products lack support for SAP
- No built-in rollup facility for multiple management products
- Limited software penetration outside the Americas, as well as Europe, the Middle East and Africa

Northern Parklife
Strengths
- Focused solely on Windows quota (hard and soft) management
- Best-practice guides with recommendations added as part of the base product

- Generates and e-mails reports detailing capacity trends and what has changed since the previous report
- Content scan capability to filer or block files based on actual data, not just file name and file type
- More than 28,000 product installs

Cautions
- Not a full SRM and SAN management offering
- Native NetApp quota support (q-trees) not yet formally released, although it is in beta
- Limited product internationalization (English and Japanese)

NTP Software
Strengths
- Focused solely on Windows and NetApp file and quota (hard and soft) management
- Content scan capability to filer or block files based on actual data, not just file name and file type
- Proven NetApp integration with q-tree support and partial roll-up capability for expanded deployments
- New NTP Software Storage Billing and Storage M&A modules offer expanded capabilities for base solution, including a heuristic engine for analyzing storage growth
- More than 20,000 product installations

Cautions
- Not a full SRM and SAN management offering
- Support for EMC NAS filers not as deep as support for NetApp filers
- Limited product internationalization

Onaro
Strengths
- Focused solely on root-cause analysis and change management, including design rule checking of proposed designs
- Agentless solution offers nonintrusive deployment with a potentially faster return on investment
- Scalable solution with up to 10,000 SAN switch ports from a single product and customer references of 44,000 ports
- New Replication Assurance and Performance Insight modules offer expanded capabilities for base solution

- Ecosystem with HDS OEM, as well as Cisco and Oracle relationships

Cautions
- Small vendor raises viability concerns; however, it was profitable in 2006 with Fortune 500 installs
- Not a full SRM and SAN management offering
- Lacks iSCSI support
- No built-in rollup facility for multiple SANscreen product instances
- No product internationalization

Symantec
Strengths
- Comprehensive open-system SRM portfolio that provides broad platform support (OSs, application, fabric devices and storage arrays)
- Robust workflow engine with pre-configured storage templates
- Robust heterogeneous backup reporting module, which is available separately from the SRM solution
- Scalable solution that can manage 3,000 servers and 10,000 switch ports from a single product
- Targeted SRM products for SMB space
- Ecosystem with NetApp co-branded solution

Cautions
- No agentless file reporting
- No EMC NAS support
- No root-cause capability
- Service-intensive deployment
- Modest penetration when compared with the overall Veritas-heritage installed base

Tek-Tools
Strengths
- Focused solutions that address backup reporting, storage arrays, and server and application management
- Robust backup reporting for a broad set of solutions, including all major industry vendors (eight products covered in total)
- File system capacity reporting particularly well-penetrated on Windows, Solaris and NetWare, with more than six times as many customers since the previous Magic Quadrant

- Robust Storage Management Initiative-Specification (SMI-S) and proprietary storage array support provide comprehensive storage array reporting
- NetApp NAS filer support

Cautions
- Small private company; however, it has been in the business for more than a decade and has a recent history of strong sales growth
- Large enterprises will want to seek references of similar size and complexity
- Application support limited to Oracle off of the Windows platform
- EMC NAS support not as robust as the NetApp support
- No built-in rollup facility for multiple Profiler products

TeraCloud
Strengths
- Focused solely on file-level capacity management
- Storage analytics capability is a combination of products and services that provides detailed best-practice reports for next-step actions based on actual customer data
- Unique pay-as-you-go pricing model for TSF Lite at $395 per month for up to 20 terabytes of managed storage; licensing enables clients to start/stop/start up service again
- Free storage capacity capability offering in the TSF Express product that is intended for trial and small installations
- Mainframe SRM solutions can augment Data Facility Storage Management Subsystem (DFSMS) capabilities, particularly for tape, hierarchical storage management and integrated catalog facility issues

Cautions
- Not a full SRM and SAN management offering
- Small vendor raises viability concerns; however, mainframe storage products generate revenue streams that mitigate risk
- No formal support for HP-UX or NetWare platforms
- Lacks application and NAS support
- No product internationalization

Acronym Key and Glossary Terms

ECC	EMC ControlCenter
HDS	Hitachi Data Systems
iSCSI	Internet Small Computer System Interface
LOB	line of business
LUN	logical unit number
NAS	network-attached storage
OS	operating system
SAN	storage area network
SMB	small and midsize business
SRM	storage resource management
TPC	TotalStorage Productivity Center
TSA	TeraCloud Storage Analytics
TSF	TeraCloud Storage Framework

Vendors Added or Dropped
We review and adjust our inclusion criteria for Magic Quadrants and MarketScopes as markets change. As a result of these adjustments, the mix of vendors in any Magic Quadrant or MarketScope may change over time. A vendor appearing in a Magic Quadrant or MarketScope one year and not the next does not necessarily indicate that we have changed our opinion of that vendor. This may be a reflection of a change in the market and, therefore, changed evaluation criteria, or a change of focus by a vendor.

Evaluation Criteria Definitions

Ability to Execute

Product/Service: Core goods and services offered by the vendor that compete in/serve the defined market. This includes current product/service capabilities, quality, feature sets, skills, etc., whether offered natively or through OEM agreements/partnerships as defined in the market definition and detailed in the subcriteria.

Overall Viability (Business Unit, Financial, Strategy, Organization): Viability includes an assessment of the overall organization's financial health, the financial and practical success of the business unit, and the likelihood of the individual business unit to continue investing in the product, to continue offering the product and to advance the state of the art within the organization's portfolio of products.

Sales Execution/Pricing: The vendor's capabilities in all pre-sales activities and the structure that supports them. This includes deal management, pricing and negotiation, pre-sales support and the overall effectiveness of the sales channel.

Market Responsiveness and Track Record: Ability to respond, change direction, be flexible and achieve competitive success as opportunities develop, competitors act, customer needs evolve and market dynamics change. This criterion also considers the vendor's history of responsiveness.

Marketing Execution: The clarity, quality, creativity and efficacy of programs designed to deliver the organization's message in order to influence the market, promote the brand and business, increase awareness of the products, and establish a positive identification with the product/brand and organization in the minds of buyers. This "mind share" can be driven by a combination of publicity, promotional, thought leadership, word-of-mouth and sales activities.

Customer Experience: Relationships, products and services/programs that enable clients to be successful with the products evaluated. Specifically, this includes the ways customers receive technical support or account support. This can also include ancillary tools, customer support programs (and the quality thereof), availability of user groups, service-level agreements, etc.

Operations: The ability of the organization to meet its goals and commitments. Factors include the quality of the organizational structure including skills, experiences, programs, systems and other vehicles that enable the organization to operate effectively and efficiently on an ongoing basis.

Completeness of Vision

Market Understanding: Ability of the vendor to understand buyers' wants and needs and to translate those into products and services. Vendors that show the highest degree of vision listen and understand buyers' wants and needs, and can shape or enhance those with their added vision.

Marketing Strategy: A clear, differentiated set of messages consistently communicated throughout the organization and externalized through the Web site, advertising, customer programs and positioning statements.

Sales Strategy: The strategy for selling product that uses the appropriate network of direct and indirect sales, marketing, service and communication affiliates that extend the scope and depth of market reach, skills, expertise, technologies, services and the customer base.

Offering (Product) Strategy: The vendor's approach to product development and delivery that emphasizes differentiation, functionality, methodology and feature set as they map to current and future requirements.

Business Model: The soundness and logic of the vendor's underlying business proposition.

Vertical/Industry Strategy: The vendor's strategy to direct resources, skills and offerings to meet the specific needs of individual market segments, including verticals.

Innovation: Direct, related, complementary and synergistic layouts of resources, expertise or capital for investment, consolidation, defensive or pre-emptive purposes.

Geographic Strategy: The vendor's strategy to direct resources, skills and offerings to meet the specific needs of geographies outside the "home" or native geography, either directly or through partners, channels and subsidiaries as appropriate for that geography and market.