Email Consolidation, Record Retention, Archiving and e-Discovery, and High Availability

Research and Analysis Conducted by

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Symantec

The Alchemy Solutions Group
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Greg Malacane, Director, Research & Publishing
gregmalacane@alchemygroupinc.com
Executive Summary

Overview
Symantec Corporation is a global leader in infrastructure software. The company helps customers protect their infrastructure, information, and interactions by delivering software and services that address risks to security and system availability. Headquartered in Mountain View, California, Symantec has operations in more than 40 countries.

Barriers
Symantec sought an archiving solution to provide a framework for organizing unstructured content for legal holds and records retention purposes. Email was identified as one of the higher risk areas and became the focus of the first phase of the archiving project. The company also wanted to reduce email storage costs and improve end-user access to relevant emails and data.

The Solution
Seeking greater operational efficiency, lower costs, and the ability to benefit from the company’s own technology, Symantec leveraged the expertise of key legal, IT, product, and consulting personnel to establish an internal Corporate Records Retention Program. The program involved defining a global records management policy and retention schedule, deploying Symantec Enterprise Vault software, and enhancing the Enterprise Vault infrastructure. Between December 2005 and December 2007, the following milestones were achieved as part of Phase One: consolidation and clustering of the Microsoft Exchange Server infrastructure; deployment of Enterprise Vault, including Microsoft Exchange Archiving, to all 17,500 Symantec employees; and deployment of Microsoft Exchange Journaling to the executive team and the Vault Cache option to the executive team and mobile/remote employees.

Phase Two, which involved the rollout of Discovery Accelerator to the eDiscovery group for use with legal and other internal functions, was completed in June 2008.

Symantec’s relationship with NetApp was instrumental in the project planning and deployment, ensuring that the NetApp storage units and data management and protection components were properly integrated. In addition, the strong, cooperative partnership between Symantec’s core team members was a critical success factor.

Benefits
As a result of the Phase One Enterprise Vault deployment, Symantec is achieving substantial business value. The Alchemy Solutions Group conducted a Total Operational and Economic Impact (TOEI)™ analysis and quantified realized and projected business value in the following areas:

- **IT Helpdesk Mailbox Support Labor Savings:** $72,636 in cost savings by eliminating mailbox quota and corruption issues from August 2007 through December 2009.
- **Microsoft Exchange Server Cost and Labor Savings:** $2,663,366 in savings associated with server hardware, software, maintenance, and IT labor costs from May 2006 through December 2009.
- **Lower Cost Email Storage:** $1,799,680 in storage savings with compression and a tiered storage infrastructure from August 2007 through December 2009.
- **Green Energy Savings:** $89,998 in energy cost avoidance related to server reductions, data compression, and storage tiering from May 2006 through December 2009. By converting kilowatts of electricity avoided to kilograms of carbon emissions from electricity generation, Symantec estimates a corresponding reduction in greenhouse gas emissions of more than 500,000 kilograms of CO₂.
- **Higher Availability Productivity Savings:** $3,282,673 in labor productivity savings by consolidating and clustering Microsoft Exchange servers from May 2006 through December 2009.
In addition to the above benefits, Enterprise Vault Discovery Accelerator deployed to the eDiscovery group provided the capability for Symantec to reduce the cost of outsourced external processing and hosting fees. Discovery Accelerator enables the company to produce smaller, more targeted email data sets that is sent to outside counsel or other e-discovery vendors for litigation cases.

**About Symantec Corporation**

Symantec Corporation, a global corporation headquartered in Mountain View, California, helps enterprises and consumers keep their infrastructures up and running 24×7, ensuring they have access to information anytime and anywhere. Founded in 1982, Symantec has operations in 40 countries and reported revenues of $6.2 billion in fiscal year 2009.

For more than 25 years, Symantec has worked to keep digital infrastructures running, provide access to information on demand, and preserve interactions. The company's technology and service solutions protect the physical systems, operating environments, and applications across all tiers of a customer's infrastructure. Its solutions safeguard information such as email, business documents, digital photos, and audio and video files, as well as interactions associated with connections, collaborative environments, and movement of data while in use.

When the corporate decision was made to deploy Symantec’s most current technologies across the data center environment, David Thompson, Symantec group president and CIO, Symantec Services Group, and Sal Caruso, vice president of information technology, named Stephen Gronek the IT manager of the Center of Excellence for the Symantec Enterprise Vault rollout, and Ben Hill the program manager for mailbox management. Gronek and Hill oversaw the team responsible for the multi-phase initiative that would transform Symantec’s mail management practices and systems. The project would generate benefits that would spread throughout the organization, including its data center and disaster recovery site, host sites around the globe, and 17,500 employees around the world.

**Business Drivers**

Several business drivers associated with regulatory compliance, litigation response and efficiencies, employee productivity, and operating cost issues led Symantec to reevaluate its strategies and processes and Thompson to initiate a program to leverage the company’s own technology for the benefit of the company, its employees, and the bottom line.

**Showcase Symantec Technology**

The strategy of deploying Symantec’s own latest product releases would accomplish several goals. Using its own solutions would showcase Symantec’s major technologies for potential customers and demonstrate compatibility with different storage technologies. Symantec's Solutions Engineering team could leverage first-hand experience with the products to evaluate areas for improvement. Symantec's Center of Excellence IT personnel could assess their deployment practices and create a best practice implementation approach in order to better serve Symantec customers.
Symantec Enterprise Vault offered an integrated solution supporting email archiving, mailbox management, records retention, automated categorization of records, and electronic discovery of data for legal review. In particular, in order to ensure compliance with regulatory and legal guidelines, the solution needed to be supported by a global records management program.

**Establish a Corporate Records Retention Program**

Symantec established a records management program that would help employees identify documents for retention by the company while helping the business reduce its load of non-essential data. The program addresses, among other items, record sources, schedules, and retention periods. Having data stored locally in personal folders (PST files) by individual end users placed the company at risk when individual computers were lost, damaged, or stolen. It also made email data retention and information searches challenging and resource-intensive.

To facilitate access to data, it was deemed beneficial to store email in a centralized, searchable format. This would provide a more timely and cost-effective means to review email and other electronic communications as needed by the business for its day-to-day operations, and as needed for legal compliance or discovery purposes. In addition, Symantec wanted to roll out journaling capabilities to its executives in order to further mitigate risk.

Symantec also wanted the ability to help ensure more comprehensive preservation of email across its enterprise and the ability to conduct more targeted searches and retrieval of email related to legal discovery requests. The IT eDiscovery team assists legal staff in connection with preservation and search requests for email across the enterprise. Improved retention policies and journaling would help prevent the incidental loss of relevant data to ensure compliance with legal hold requirements.

**Create More Efficient Processes Associated with Legal Discovery**

In conjunction with the need to effectively address compliance-related requirements around email retention and discovery, Symantec also sought to leverage automated search capabilities for producing more targeted email data sets as part of litigation support, legal discovery, or internal investigations. Automated search capability would help to improve search efficiencies and results and make it possible to reduce the costs associated with outsourcing to outside counsel and e-discovery hosting vendors.

**Improve End-user Productivity**

As with many companies, Symantec had set an email quota with a size limit for an individual’s mailbox. It was the responsibility of each end user to remain within the designated 300 megabyte (MB) limit. As a result, employees created local PST file archives, which made corporate visibility and control more difficult to achieve. If the mailbox quota limit was exceeded, email communications would temporarily cease. Specifically, users would need to delete or move email to PST files in order to reduce their mailboxes below the quota and thereby be able to send and receive email again. The sudden disruptions to email service and the time and effort required to manage PST files negatively impacted end-user productivity. The disruptions were particularly challenging for users who were traveling and those who regularly received large files (e.g., presentations, audio/video files) in their inboxes.

“The need for a formalized business practice guiding the retention of documents that have a business, legal, or regulatory purpose has never been greater. The goal is to harness the mass of information that’s weighing our systems and resources down and introduce more discipline in how we create and maintain that information.”

Joy Cartun  
Senior Director, Legal  
Symantec

“Enterprise Vault gives us a more complete repository of data, searchable with Discovery Accelerator, to help us locate pertinent information required by federal and state discovery rules for parties to litigation.”

Christina Alataris  
Director of Litigation  
Symantec
Another factor affecting end-user productivity was the time lost during a system crash—whether to a server or an endpoint. Symantec needed a means to minimize the time associated with system recovery so that end users could quickly resume normal operations.

**Automate Cumbersome Work Processes**
Symantec wanted centralized and automated email retention processes in order to minimize IT management risks and improve labor productivity. Calls came in to the IT helpdesk when end users needed assistance resolving quota issues or rebuilding corrupted PST files. Time spent resolving these issues impacted both IT and end-user productivity. Symantec desired a system that would simplify email management and eliminate the need to perform these tasks.

**Deliver Energy Efficiencies in Support of “Green IT”**
In 2006, Symantec embarked on a multi-pronged internal green data center transformation to achieve greater energy efficiency in its IT operations and support overall corporate environmental responsibility efforts. The company’s software-based approach to Green IT offered organizations various tools for streamlining their IT infrastructure and driving energy efficiencies. By leveraging its own email and content archiving technology as part of ongoing Green IT initiatives, Symantec looked to stem hardware device power consumption and decrease its environmental footprint.

**Technology Challenges**
Symantec needed to confront numerous technology challenges as it launched its information management initiative. Email infrastructure costs, server availability, expensive storage, scalability requirements, and mailbox migration methods were among the IT team’s concerns.

**Consolidate the Email Infrastructure**
IT was managing approximately 100 Microsoft Exchange servers globally and acquiring additional servers every year. Hence, Symantec needed to reduce the number of Microsoft Exchange servers used throughout the company in order to decrease exposure to high server hardware, software, and maintenance costs and to reduce the amount of time spent by IT on server administration.

**Ensure High Availability for Failover**
Coinciding with the goal of Microsoft Exchange server consolidation, IT sought to develop a high-availability architecture for its Microsoft Exchange environment. If individual Microsoft Exchange servers were not clustered or mirrored and one went down, then IT would have to manually rebuild it. Clustering mailbox servers would minimize the impact of server maintenance or failures on end users and enable higher availability.

**Reduce Email Storage Requirements**
Given the cost premium for tier-one high performance storage, Symantec IT needed the ability to compress its email archives to reduce its storage requirements. In addition, the team wanted to incorporate a lower-cost, tiered storage solution for email and journal archiving. Any storage-related changes needed to be accomplished without compromising access to information.

**Ensure Sufficient Scalability**
The next-generation email infrastructure needed to be capable of supporting all current email users and scaling up to accommodate future growth. It also needed to provide a solid foundation for the phased rollout of multiple Enterprise Vault options.
Simplify Mailbox Migrations

The IT team wanted to manage the migration of users to the new email archiving solution by specific groups rather than by the individual servers that their mailboxes were on. Most other archiving solutions require migration paths based on servers, so that if employees from the engineering, marketing, and sales organizations were on the same Microsoft Exchange server, all of them would have to be migrated at the same time.

IT Transformation

A cross-functional core team comprised of representatives from the legal, IT, and Enterprise Vault product organizations established the Corporate Records Retention Program, which included deploying Enterprise Vault for mailbox management to all of Symantec, enhancing the Enterprise Vault IT infrastructure to support legal hold and discovery response, and establishing a records management program.

In December 2005, Thompson's IT team, under the direction of Gronek and Hill, determined that the phased rollout outlined below was the appropriate approach to provide maximum control and manageability and to improve overall project results. In summary, between December 2005 and June 2007, Enterprise Vault and certain options were deployed to the executive team and select members of other departments. Between May 2006 and November 2007, the Microsoft Exchange infrastructure was consolidated and clustered. Between August 2007 and December 2007, Enterprise Vault was rolled out company-wide and integrated with the NetApp storage solution and components, and email data storage was tiered. Finally, the Discovery Accelerator tool for Enterprise Vault was deployed in June 2008.

Deployment services were provided by Symantec's Solutions Engineering organization, IT personnel within the Center of Excellence, and staff from Symantec Consulting Services, along with implementation services provided by NetApp Sales Support.

Deployment of Enterprise Vault

**Enterprise Vault Deployed to Executives**

Between December 2005 and June 2007, as part of its larger technology showcase initiative, Symantec IT deployed Enterprise Vault and the following options to the company’s executive team and select administrators:

- Microsoft Exchange Archiving, which allows users to manage email more efficiently via the elimination of email quotas, was deployed to 50 executives and 50 administrators in December 2005 and to 70 additional executives in June 2007.
- Vault Cache, which extends Enterprise Vault capabilities to users working offline by creating a local archive on their PCs, was deployed to 50 executives and 50 administrators in December 2005.
- Microsoft Exchange Journaling, which captures in-bound and out-bound communications to better satisfy corporate, legal, and regulatory retention requirements, was deployed to 50 executives and 50 administrators in December 2005.

**Enterprise Vault Deployed Corporate-wide**

From August 2007 through December 2007, the IT team rolled out the following Enterprise Vault options to Symantec employees world-wide:

- Microsoft Exchange Archiving was deployed to all employees.
- Vault Cache was deployed to mobile employees on an as-needed basis.

Since Symantec Enterprise Vault release 7.0 supported provisioning by organizational group rather than by individual Microsoft Exchange server, the company-wide rollout of Enterprise Vault was done by group (e.g., North American sales, corporate marketing, etc.). The server-based method used initially with the executive
Consolidated Microsoft Exchange Infrastructure

Coinciding with the Enterprise Vault initiative, a global Microsoft Exchange infrastructure consolidation and clustering project was completed between May 2006 and November 2007. By accommodating more users per Microsoft Exchange server and reducing the number of mailbox servers worldwide, the IT team was able to reduce its Microsoft Exchange Server 2003 footprint by 54 percent—from 100 to 46.

The second aspect of the consolidation program was to design the underlying Microsoft Exchange Server 2003 environment in an active-passive high availability cluster using Veritas Cluster Server. The clustering took place as Symantec’s mailbox servers were completed. The clusters enable higher server availability by reducing the time to recover from server crashes. Specifically, 1:1 clusters enable rapid failover in the case of system failure. Symantec now has 15 passive (30 physical) mailbox clusters in the three data centers that host Microsoft Exchange; the majority of these are located in the company’s Arizona data center, with the remaining configurations in its Dublin, Ireland, and Pune, India data centers.

Impact of Deployment

Enabled Microsoft Exchange Journaling

Because of its ability to capture communications in the organization, Symantec Enterprise Vault’s Microsoft Exchange Journaling option works with Enterprise Vault to satisfy corporate, legal, and regulatory retention requirements. Enterprise Vault is currently configured to retain a copy of all executive email messages sent and received per Symantec’s executive journaling retention policy of one year. Microsoft Exchange Journaling provides the added benefit of allowing searches by location as well as by individual.

Automated Archiving for All Employees with Microsoft Exchange Archiving

The Enterprise Vault Microsoft Exchange Archiving option allows the system to archive individual mailboxes, thereby allowing the IT team to manage quotas and message size restrictions, while controlling message store growth and preventing disruptions to end-user operations. Email and attachments are now automatically archived out of the email server to online NetApp FAS3070 storage based on the quota-based document management policy the IT team implemented with the Enterprise Vault solution. The policy specifies that once an individual reaches 70 percent of their 300MB mailbox quota, email content will be automatically archived. Thus, when 210MB is reached, the system will archive the largest email and attachments first, followed by the oldest, until the volume is reduced to no more than 210MB, so that the user will never reach the 300MB quota limit.

Improved Mobile Email Management for All Employees with Vault Cache

The Enterprise Vault Vault Cache option provides laptop access to archived email even when the end user is not connected to the corporate network. The Enterprise Vault software can be configured to provide users with a local vault stored on their laptop hard drive. As a result, when a disconnected end user tries to access an archived email, the email is retrieved from the local vault, thus ensuring that end users have access to important content wherever it is located. At the same time, each end user’s email is archived to the corporate archive, so it is not vulnerable to loss or damage.

Supported Archiving with NetApp FAS3070 Storage for All Employees

The Enterprise Vault solution was integrated with the NetApp solution for Vault storage and the NetApp data management and protection software components. Several major intersections of integration include:

“"We had originally conceived of rolling out Enterprise Vault on a [Microsoft] Exchange server basis, but as the Enterprise Vault project itself got more sophisticated, there were features that became part of later releases that we implemented that enabled us to do provisioning by organization.”

Stephen Gronen
Project Manager
Symantec
“Not all documents contain information that should be kept for business reasons. It took true cross-functional collaboration to create the groups of information that absolutely had to be retained.”

Mel Conway
Senior Director, eDiscovery
Symantec

“The Symantec Enterprise Vault deployment was very smooth. It is tightly integrated with the NetApp technologies, which not only enhances performance but significantly reduces typical project customizations. Enterprise Vault is more of a plug-and-play type technology versus some of the competing technologies, so I found it to be very easy and painless from an application standpoint.”

Richard Longtin
Presales Systems Engineer
NetApp

“One of the most significant impacts that I’ve seen with Enterprise Vault Discovery Accelerator is its ability to take a very large body of information, apply search terms, and narrow that large body down to a smaller set of more pertinent data. That’s an important efficiency gain for legal discovery.”

Christina Alataris
Director of Litigation
Symantec

“SnapDrive, for dynamically managing volume growth without impacting availability or performance
• SnapManager, for automating the backup and recovery of Microsoft SQL Server databases
• SnapMirror, for disk-to-disk replication”

To archive email on the NetApp FAS3070, the data is backed up to disk by the Symantec IT team using NetApp Snapshot copies, and it is replicated with NetApp SnapMirror for offsite storage, resulting in lower storage costs.

**Enabled Cost-effective Tiered Storage**
Symantec IT implemented a cost-effective tiered-storage infrastructure, in which backup data is routinely moved to less expensive disk space. Because Enterprise Vault is compatible with both storage solutions used by Symantec—tier-one Hitachi USP100 and tier-two NetApp FAS3070—its deployment allows Symantec to extend the cost savings associated with its tiered storage infrastructure to email archiving. Email and journaling data is now automatically moved to NetApp FAS3070 storage, which has a much lower cost per gigabyte (GB) than the Hitachi USP100. In addition to leveraging less-expensive storage for email archiving, Symantec IT was able to reduce its email storage costs and data footprint further by tapping single-instance archiving functionality in Enterprise Vault. This means that only one copy of an email message sent to multiple recipients is stored in the archive, which saves a great deal of storage space over time.

**Supported Corporate Green IT Initiatives**
As part of its larger green data center initiative, Symantec looked to its own email and content archiving solution to deliver energy efficiencies and reduce the company’s electricity consumption and environmental footprint. The implementation of the tiered-storage infrastructure and single-instance archiving functionality just described, as well as data compression prior to archiving, led to improved utilization of the company’s power-hungry hardware assets. Similarly, the decommissioning of 54 Microsoft Exchange Servers reduced the company’s overall energy consumption and related utility costs.

**Enhanced Legal Discovery Through Automation**
The Phase Two deployment of Discovery Accelerator to the eDiscovery group extended the benefits of Enterprise Vault by providing more robust and efficient search and review capabilities, configurable enforcement of items during legal holds, and more flexible export capabilities. The tool facilitates data collection and preservation as well as the organization and analysis of archived items in electronic discovery.

**Enterprise Vault Deployment Team**
A strong partnership between the IT, legal, and Symantec product and consulting teams was crucial to the success of the project. The groups worked hand-in-hand to resolve issues and configure and implement the solution. Representatives from the legal, IT, and Enterprise Vault product team developed and drove the Corporate Records Retention Program, showcasing Enterprise Vault and helping to ensure compliance with regulatory and legal guidelines via a global records management policy. The physical deployment of Enterprise Vault was supported by Symantec’s Solutions Engineering organization, IT personnel within the Center of Excellence, and the Enterprise Vault and Microsoft Exchange product teams. The 2008 deployment of the Discovery Accelerator tool was driven by the IT Center of Excellence and by Consulting Services Manager Marjorie Abelkrime and the Consulting Services team.
In addition, NetApp Sales Support provided significant implementation services throughout the entire transformation. NetApp personnel were involved in the planning, training, deployment, and tuning of Enterprise Vault at Symantec, and they ensured existing NetApp data management and protection technologies and NetApp storage devices were fully integrated.

**Network Architecture**

Symantec Enterprise Vault provides Symantec Corporation with a software-based, intelligent archiving platform to manage corporate email data, allowing Symantec to retain and protect important information while reducing storage costs.

Symantec uses Veritas Cluster Server by Symantec to provide active-passive clustering for servers running Microsoft Exchange. This ensures rapid failover and minimum downtime in the event of hardware failure.

With Enterprise Vault Discovery Accelerator, the eDiscovery team for legal and other internal functions can run enterprise-wide searches across archived email content to assist with case assessment and the legal discovery process.

17,500 Symantec employees worldwide use Symantec Enterprise Vault for email archiving.

Eight active-passive server clusters support Microsoft Exchange: 10 in Arizona, two in Ireland, and two in India.

14 active-passive server clusters support Microsoft Exchange 10 in Arizona, two in Ireland, and two in India.

Eight servers running Symantec Enterprise Vault in Arizona, one in Ireland, and one in India.

A dedicated server provides Enterprise Vault Microsoft Exchange Journaling for the Symantec executive team.

Applications from Symantec partner NetApp help Symantec make the best use of its storage hardware. NetApp SnapDrive Software enables flexible and efficient use of storage resources, reducing both the cost and complexity of storage. SnapMirror Software mirrors data between Symantec’s NetApp units, ensuring data protection. NetApp SnapManager for Microsoft automates and simplifies backup, recovery, and verification of Symantec’s data.

**Veritas Cluster Server** by Symantec provides active-passive clustering for servers running Microsoft Exchange.

**Hitachi Data Systems TagmaStore USP 100 Universal Storage Platform**

**Two NetApp FAS3070 Storage devices, clustered**

**Symantec Enterprise Vault Offline Vault for Offline and Laptop Users** gives Symantec employees access to archived email from their laptops, even when they’re off the corporate network. Email is still saved in the corporate archive, protected in case a laptop is lost or damaged.

For members of Symantec’s executive team, the Microsoft Exchange Journaling option of Enterprise Vault ensures emails are saved for the required periods for regulatory and legal requirements.

Figure: Symantec Enterprise Vault Architecture
Key Business Value

The next-generation Microsoft Exchange infrastructure and deployment of Symantec Enterprise Vault are producing significant business benefits for Symantec. A TOEI analysis by The Alchemy Solutions Group quantifies the following areas where business value has been realized:

- IT helpdesk mailbox support labor savings
- Microsoft Exchange cost and labor savings
- Lower cost email storage
- Energy savings related to server and storage hardware
- IT productivity savings from higher availability
- Potential outsourcing cost reduction through e-discovery automation

Throughout this section, The Alchemy Solutions Group used a full-time equivalent IT salary of $83,270\(^2\), a 3.1 percent\(^3\) year-to-year salary adjustment, and an average employee salary of $57,540\(^4\) for TOEI labor-related calculations.

IT Helpdesk Mailbox Support Labor Savings

Prior to deploying Symantec Enterprise Vault, IT helpdesk support for mailboxes was a time-consuming and costly endeavor. IT helpdesk personnel were responsible for resolving issues with quota limits and rebuilding corrupted PST files. Email data corruption would occur regularly due to PST files being too large, and full recovery from data corruption was rare. The following actions were required of the IT helpdesk:

- Resolution of 24 mailbox quota limit issues per month, with each issue requiring one hour on average to resolve
- Twenty rebuilds of corrupted PST files per month, with each incident averaging two hours to resolve

With the deployment of Symantec Enterprise Vault, mailbox quota limit issues were eliminated and rebuilds of corrupted PST files were reduced to six per month with an average resolution time of one hour. The Alchemy Solutions Group forecasts IT labor savings of more than $72,000 from August 2007 through December 2009 by eliminating email-related IT helpdesk tasks.
Microsoft Exchange Server Cost and Labor Savings
Symantec’s infrastructure consolidation project enabled a 54 percent reduction in Microsoft Exchange servers, from 100 to 46 from May 2006 to November 2007. The estimated total cost for each fully loaded server is approximately $30,000, which includes hardware, the Microsoft Windows operating system, the Microsoft Exchange software, and associated maintenance costs. The one-time server reduction equated to more than $1.6 million from May 2006 through November 2007.

In addition to the avoided acquisition costs, Symantec IT was able to reallocate three FTEs to other IT initiatives. Symantec will achieve more than $1 million in labor productivity improvements from May 2006 through December 2009. When the two business values are aggregated, the email consolidation initiative will save Symantec more than $2.6 million in Microsoft Exchange acquisition costs and labor productivity through 2009.

Symantec consolidated its Microsoft Exchange environment over a 19-month period from May 2006 to November 2007. The consolidation effort reduced the total number of servers from 100 to 46, an average of 2.8 servers retired per month. As a result, the number of IT staff required for Microsoft Exchange was reduced from six to four FTEs in 2006 and again from four to two FTEs in 2007. These IT resources are now reassigned to other core responsibilities.

Chart 2: Microsoft Exchange Server Acquisition Cost Savings and Labor Productivity Gains

Lower Cost Email Storage
Symantec estimates that it has about 23 terabytes (TB) of archived email company-wide in Enterprise Vault. Twenty-year growth forecasts predict the company will have from 165TB archived. Data compression and a tiered storage infrastructure provide Symantec with significant hardware savings. Indeed, compressing tier-one Hitachi USP100 data archived storage by 40 percent annually with Enterprise Vault will save Symantec nearly $800,000 from August 2007 through December 2009, based on an average $70 fully-burdened cost per GB of storage for 2007 and 2008, and $40 fully-burdened cost per GB for 2009.5

Further, as a result of routinely archiving email with Enterprise Vault to less expensive disk space using a tiered-storage approach, Symantec reduced its storage costs. Moving data from tier-one Hitachi USP100 storage, which cost $70 per GB on average in 2007 and 2008 and $40 per GB in 2009, to tier-two NetApp FAS3070 storage, which averaged $14 per GB in 2007 and 2008 and $5 per GB in 2009, will help Symantec reduce its email storage costs by just over $1 million from August 2007 through December 2009.

When the two business values are aggregated, the Enterprise Vault compression and tiered-storage infrastructure will produce nearly $1.8 million in savings for Symantec from August 2007 through December 2009.
Symantec achieves significant storage cost savings by compressing tier-one archived data by 40% annually with Enterprise Vault. In addition, by moving tier-one storage to less expensive tier-two storage, the company further reduces its overall email storage costs.

Chart 3: Storage Savings Using Data Compression and Less Expensive Storage

Green IT Savings Related to Server and Storage Hardware
As previously noted, Symantec retired 54 Microsoft Exchange servers in the 19 months from May 2006 to August 2007—an average of approximately three servers per month. The server reduction contributed to the broader corporate Green IT initiative by reducing hardware energy consumption and related utility costs. Additional energy savings were achieved by archiving emails on less power-hungry lower-tier storage—which consumes electricity at an average cost per watt of $75 per TB versus $180 per TB for top-tier storage—as well as from the annual 40 percent compression of email data being moved to the archive.

Energy savings resulting from decommissioned server hardware is calculated by multiplying the number of retired units by a Power Use Efficiency (PUE) factor of 2.5, a server uptime of 99 percent, and the actual cost in cents per kilowatt hour (kWh) for electricity in Arizona (the location of Symantec's primary data center) for each of the years from 2006 through 2009. Because power consumption in storage units is a factor of storage volume, energy savings for these units is calculated by using an average of 75 watts per TB, then multiplying by a PUE factor of 2.5, an uptime of 99 percent, and the actual cents per kWh for electricity in Arizona for each of the years from 2007 through 2009.

The Alchemy Solutions Group calculates that the energy cost Symantec avoided by removing a large number of servers, using more energy-efficient storage units, and compressing email data prior to archiving saved Symantec almost $90,000 in utility costs between May 2006 and December 2009. By converting kilowatts of electricity avoided to kilograms of carbon emissions, Symantec estimates that the cumulative decrease in power consumption during this time period has reduced greenhouse gas emissions from electricity generation by more than 500,000 kilograms of carbon dioxide.
The deployment of Symantec Enterprise Vault allowed the company to eliminate nearly three Microsoft Exchange servers per month from May 2006 through August 2007. The server reduction contributed to a corporate Green IT initiative to reduce energy costs. Further energy savings were realized by archiving emails on less power-hungry lower-tier storage as well as from the initial 40% compression of email data prior to being moved to the archive.

Chart 4: Energy Cost Savings from Data Compression, Storage Tiering, and Server Reductions

**IT Productivity Savings from Higher Availability**

Symantec experiences approximately four Microsoft Exchange crashes per year due to larger than normal mailboxes. Under the prior Exchange solution, without built-in redundancy, each occurrence affected approximately 1,000 employees and lasted 12 hours. The consolidation and clustering of Symantec’s Microsoft Exchange servers resulted in higher availability, such that each server crash now affects 3,000 employees for 1.5 hours. The Alchemy Solutions Group estimates the Microsoft Exchange consolidation and clustering will result in more than $3.2 million in employee labor productivity improvements from May 2006 through December 2009.

Further, two IT FTEs previously spent 12 hours per occurrence resolving server crashes. Now, one IT FTE can recover the server in 1.5 hours. Symantec will achieve more than $12,900 in IT labor productivity improvements from May 2006 through December 2009. When the two business values are aggregated, the Microsoft Exchange consolidation and clustering initiative will save Symantec nearly $3.3 million in labor productivity from May 2006 through December 2009.

Higher availability realized from clustering the Microsoft Exchange servers since May 2006 has enhanced both employee and IT productivity. Server crashes occurring once per quarter that previously impacted 1,000 employees per server for 12 hours now affect 3,000 employees per server for just 1.5 hours. Previously, two FTEs worked 12 hours to resolve each server outage. Today, one IT FTE can address a server crash and bring it back on line in 1.5 hours.

Chart 5: Labor Savings and Higher Availability with Server Consolidation and Clustering

**IT Labor Productivity Gains**

<table>
<thead>
<tr>
<th>Year</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>$2,466</td>
<td>$3,930</td>
<td>$3,496</td>
<td>$3,604</td>
</tr>
</tbody>
</table>

**Employee Labor Productivity Gains**

<table>
<thead>
<tr>
<th>Year</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>$622,428</td>
<td>$855,631</td>
<td>$882,155</td>
<td>$890,502</td>
</tr>
</tbody>
</table>
Potential Outsourcing Cost Reduction Through e-Discovery Automation

Enterprise Vault Discovery Accelerator can help reduce the volume of legal discovery data sent to outside vendors for processing, hosting, and review for litigation cases. The tool can search specified email repositories and return a subset of more targeted items from a much larger set of available data, thereby reducing the volume and corresponding cost for such outsourced services. Based on the sample set provided by Symantec for the chart below, the data size reduction ranges from 28 percent to 100 percent, with an overall average of 83 percent. Since vendor processing and hosting fees are typically billed by the MB or GB of hosted data—and attorney review time is billed by the hour with review time typically increasing for higher volumes of data—Symantec has the capability to lower outsourcing costs by using the Discovery Accelerator to narrow material to a smaller targeted body of data.

In one of the sampled cases, Symantec saw a reduction in volume of 34,577 emails (6,213 MB) down to 2,689 emails (457 MB) after using Discovery Accelerator to apply targeted search terms to the broader data set. This translates to an overall reduction in volume of nearly 93 percent of the data in this sampled case. By applying industry fee averages, The Alchemy Solutions Group conservatively estimates that engaging outside vendors for processing and hosting of the unfiltered data set in 2009 could have cost approximately $14,000. The cost for attorney review in 2009 of this same information based on conservative estimates could have been approximately $185,000.9

Symantec leverages Discovery Accelerator to reduce the data set from custodian email repositories searched in connection with discovery. The more targeted data set returned may then be outsourced to an e-discovery or other vendor to be processed, hosted, and reviewed. Based upon the sample set of cases provided by Symantec, the reduction in volume of data by using Discovery Accelerator averages 83%.

### Chart 6: Outsourced Data Size Reduction with Discovery Accelerator

<table>
<thead>
<tr>
<th>Case #1</th>
<th>Case #2</th>
<th>Case #3</th>
<th>Case #4</th>
<th>Case #5</th>
<th>Case #6</th>
<th>Case #7</th>
<th>Case #8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Email Search Size (MB)</td>
<td>15,942</td>
<td>14,116</td>
<td>11,204</td>
<td>10,137</td>
<td>6,213</td>
<td>2,512</td>
<td>952</td>
</tr>
<tr>
<td>Total Email Search Size After Discovery Accelerator (MB)</td>
<td>1,312</td>
<td>5</td>
<td>8,120</td>
<td>3</td>
<td>457</td>
<td>98</td>
<td>184</td>
</tr>
</tbody>
</table>
Conclusion

Symantec has successfully aligned its IT infrastructure with its business requirements. Symantec's technology showcase initiative has allowed the company to experience tangible financial benefits associated with the deployment of Symantec Enterprise Vault. Based on TOEI projections of The Alchemy Solutions Group, aggregate savings from January 2006 through December 2009 were found in the following areas:

- **Microsoft Exchange Server Cost and Labor Savings**: $2,663,366 in savings associated with server hardware, software, maintenance, and IT labor costs from May 2006 through December 2009.
- **Lower Cost Email Storage**: $1,799,680 in storage savings with compression and a tiered storage infrastructure from August 2007 through December 2009.
- **Green Energy Savings**: $89,998 in energy cost avoidance related to server reductions, data compression, and storage tiering from May 2006 through December 2009. By converting kilowatts of electricity avoided to kilograms of carbon emissions from electricity generation, Symantec estimates a corresponding reduction in greenhouse gas emissions of more than 500,000 kilograms of CO₂.

In addition to the above benefits, Enterprise Vault Discovery Accelerator deployed to the eDiscovery group provided the capability for Symantec to reduce the cost of outsourced external processing and hosting fees. Discovery Accelerator enables the company to produce smaller, more targeted email data sets that is sent to outside counsel or other e-discovery vendors for litigation cases.

Notes

1. Calculations for converting electricity consumption to carbon dioxide emissions provided by Symantec. Natural gas is used for the calculation.
5. Fully-burdened storage costs include administrative and RAID overhead, frames, implementation, and support and operational costs.
9. The Alchemy Solutions Group estimates processing fees of $1,000 per GB and hosting fees of $1,200 per GB. Contract attorney review fees of $300 per hour were used at a rate of 55 items reviewed each hour. The metrics are based on Alchemy independently confirmed private research.
The Alchemy Solutions Group

The Alchemy Solutions Group is a global management consulting and marketing research firm providing program level support to senior IT, sales, marketing, and customer relationship professionals in Fortune 1000 companies. Alchemy’s Research and Publishing services help clients assess the economic impact of leading technology solutions in the global IT supply chain.

The Total Operational and Economic Impact (TOEI)™ Research Practice delivers public and private research services that measure a product’s positive and potentially negative impact in post-implementation environments. Alchemy’s Business Value Analysis (BVA)™ is one of the public communication mediums available for this research.

Alchemy leverages deep industry expertise and formal research best practices to help business leaders understand the key attributes of and constraints on corporate performance. TOEI research enables IT executives to make decisions based on the operational and economic impact of select products and services. Alchemy’s clients leverage TOEI research to provide economically driven go-to-market strategies and support integrated marketing best practices.

Stanley King — Managing Director

As MD of The Alchemy Solutions Group, Stanley King is responsible for establishing strategic relationships with executives who are committed to understanding the economic impact that products and services have in the global IT supply chain. King’s international sales and marketing experience and ongoing research efforts provide industry executives with the candid insight required to educate employees and customers—and the customer’s customer. The repurposing of TOEI research has proven valuable to IT procurement, product development, strategic and product marketing, enterprise sales, and long-term customer support.

Prior to founding The Alchemy Solutions Group, King served in the software industry for 19 years, specializing in mergers and acquisitions, executive management, field operations, and sales management. With global experience in large technology companies like Oracle and in smaller technology start-ups, King brings a wealth of insight in the support of Research and Publishing efforts at The Alchemy Solutions Group.

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