

**MICROSOFT EXCHANGE SERVER 2007
TOTAL COST OF OWNERSHIP**

**An Industry Analysis Report
by
THE RADICATI GROUP, INC.**

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SCOPE

This report provides an analysis of the Total Cost of Ownership (TCO) of Microsoft Exchange Server 2007. This analysis was conducted by The Radicati Group, Inc. in early 2008. The study provides extensive information on Microsoft Exchange Server 2007 costs in the areas of acquisition, maintenance, storage, installation and configuration, administration, wireless administration, downtime, staffing requirements, training and more.

This study looked at the costs of deploying Microsoft Exchange 2007 across companies in two different size groups:

- 12 Mid-size companies – in the 500 – 2,500 user range, and
- 7 Large companies – in the 4,500 + user range.

For simplicity's sake, this study uses the terms "E-mail", "Messaging", and "Messaging and Collaboration" interchangeably.

Note: This study focuses only on the costs of deploying Microsoft Exchange 2007, it is intentionally not a productivity or ROI study. A productivity or ROI study could be a complement to this study, but would follow an entirely different methodology from that employed for this particular study.

Sponsorship of the Study

This is an independent study financed in full by The Radicati Group, Inc. without any vendor sponsorship or editorial involvement of any kind. The organizations surveyed were selected from The Radicati Group's own on-going surveying activities.

METHODOLOGY

The data and analysis in this report is based on primary research conducted by analysts of The Radicati Group, Inc. in the form of a specially designed questionnaire administered by phone and email. Respondents interviewed were largely senior managers, high level administrators, telecommunications managers, and IT managers knowledge-able about messaging within each of the enterprise organizations surveyed. A full description of the survey demographics for both groups analyzed in this study is provided.

All financial information presented in this study is in US\$.

EXECUTIVE SUMMARY

- This study looks at the Total Cost of Ownership of deploying Microsoft Exchange Server 2007 across organizations in two size groups:
 - 12 Mid-size companies – in the 500 – 2,500 user range, with a median size of 1,000 email users.
 - 7 Large companies – in the 4,500 + user range, with a median size of 5,200 email users.
- The Total Cost of Ownership model used in this study looks at various elements of cost, including: Acquisition costs, annual Maintenance contract costs, Installation costs, on-going Administration costs, Downtime costs, Training and Storage costs. It looks at costs using a straight line 3 year depreciation model where all acquisition costs are assumed to be incurred in the 1st year of operation and amortized over a 3 year period.
- Microsoft Exchange Server 2007 is a considerably more feature rich system than previous versions of Microsoft Exchange Server. To that effect it is even more complex to analyze Microsoft Exchange Server 2007 from a cost standpoint across different deployments as invariably organizations deploying it will have made different architecture and procurement choices reflective of their needs, geographical distribution and a myriad of other factors. We believe, however, that the model we describe in this study and the results it provides when applied to organizations in different size groups, will offer a realistic picture of what organizations can expect to pay to deploy and run Microsoft Exchange Server 2007.
- All the organizations we surveyed for this study were in the early stages of deployment, with plans to eventually roll out Microsoft Exchange Server 2007 to even larger user populations in the next 12-18 months.
- When asked what key factors drove their decision to migrate to Microsoft Exchange Server 2007, organizations surveyed provided the following responses:

- A desire for better economies of scale – by being able to put more users on a single server and consolidate the number of servers being deployed.
- Improved security.
- Support for clustering and replication.
- Native support for wireless “push” email functionality, through Microsoft Active Sync.
- All indicated strong interest in adopting Unified Communications, but had not yet done so.
- While none of these factors alone would have convinced organizations to begin migration, the combination of 2-3 of each of the above factors was usually what drove the decision to move to Microsoft Exchange Server 2007.
- In terms of 3 year average Total Cost of Ownership, the two organization groups surveyed provided the following costs (Figure 1, below):
 - Mid-size organizations (i.e. 1,000 email users) had a 3 year average TCO of \$562 per user/year.
 - Large organizations (i.e. 5,200 email users) had a 3 year average TCO of \$316 per user/year.
- The better economy of scale of the larger deployments was not surprising for several reasons:
 - Microsoft Exchange Server 2007 is considerably more feature rich and therefore complex than previous versions of Microsoft Exchange Server.
 - Larger organizations are more likely to invest significantly higher budgets in the design and planning of migration to a new system.
 - Many of the scalability benefits provided by Microsoft Exchange Server 2007, such as role-based architecture, and business continuity, are inherently realized more effectively in larger deployments.

- As the cost of deploying Microsoft Exchange Server 2007 scales down considerably (i.e. 44%) from a 1,000 user organization to a 5,200 user organization, we expect we will see even greater economies of scale in deployments of 10,000 users and up.
- We also expect to see the TCO costs decrease considerably over time as the “newness” of Microsoft Exchange Server 2007 wears off and many organizations gain greater familiarity with deploying the system.

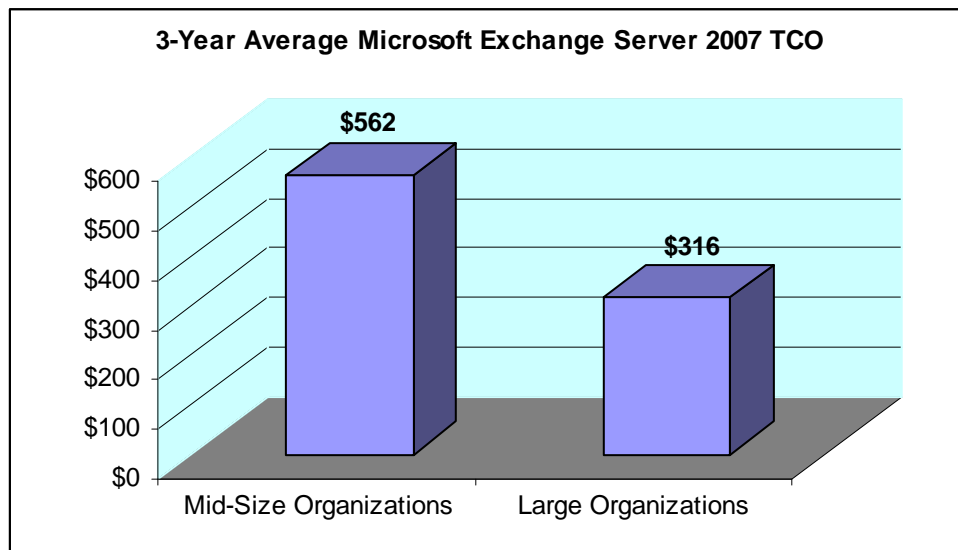


Figure 1: 3-year Average TCO for Microsoft Exchange Server 2007

- The TCO results presented in this study should not be directly compared to studies we published on the TCO of prior versions of Microsoft Exchange Server (e.g. 5.5, 2003) for the following reasons:
 - The TCO model used has been altered over time to reflect evolving product features.
 - The salary scales used as an underlying assumption for all calculations has changed over time.
 - The size of the survey sample is different.

CHAPTER 1: MICROSOFT EXCHANGE 2007 OVERVIEW

Microsoft Exchange Server is Microsoft's flagship e-mail platform. The first version of the solution, Microsoft Exchange Server 4.0 was released in 1996.

Microsoft Exchange Server is designed for businesses with more than 75 users. The company sells a separate offering called Microsoft Small Business Server for businesses with less than 75 users.

Microsoft Exchange Server 2007, which was released on December 8, 2006, is the current version of the software. With this release, Microsoft broadened the role of Microsoft Exchange Server to include telephony features, such as automated attendant, and 'unified messaging' features that increase integration between voicemail messages, faxes and e-mail.

Microsoft Exchange Server 2007 is targeted at users of Microsoft Exchange Server 2000, Microsoft Exchange Server 2003, and to a lesser extent, Microsoft Exchange Server 5.5. IBM Lotus Domino users are also a key target for the platform, particularly since the collaboration capabilities of Microsoft Exchange Server are on par or superior to many capabilities of the Domino platform.

1.1 64-BIT ARCHITECTURE

Microsoft Exchange Server 2007 relies on a 64-bit architecture. The software supports x64 systems with Intel EM64T or AMD64 processors (Itanium processors are not supported). Microsoft Exchange Server 2007 must also be deployed on the x64 version of Windows Server 2003 or the upcoming "Longhorn Server" platform. Unlike prior versions of the platform, Microsoft Exchange Server 2007 is not available for 32-bit systems.

Microsoft made the transition to the 64-bit architecture due to the performance and scalability benefits of the platform. A key benefit of the 64-bit architecture is increased maximum RAM support. For example, Microsoft Exchange Server 2007 can efficiently support a maximum of 32 GB of RAM (in the 'Mailbox' role), compared to 4 GB supported by Microsoft Exchange Server 2003.

Increased memory support translates to improved performance and scalability. Each connection to Microsoft Exchange Server consumes memory, and the additional memory available to Microsoft Exchange Server 2007 enables the system to support more users and concurrent connections. Additional memory also allows more data to be temporarily stored in RAM, reducing the input/output (IO) load on hard disks. This is another benefit that increases scalability, and also allows Microsoft Exchange Server 2007 to use larger, less expensive hard disk storage.

1.2 ROLE-BASED ARCHITECTURE

With Microsoft Exchange Server 2007, Microsoft introduces a new concept of server roles. This is similar to the Front-end and Back-end roles of Microsoft Exchange Server 2003, but with Microsoft Exchange Server 2007 server roles are defined more precisely. There are five server roles of Microsoft Exchange Server 2007:

- **Edge Transport Role:** In this role, the Microsoft Exchange server sits at the network edge, i.e. the perimeter network or DMZ, and filters incoming and outgoing e-mail traffic.
- **Hub Transport Role:** The Hub Transport server is responsible for internal e-mail traffic. Incoming messages are passed from the Edge Transport server to the Hub Transport server, and then on to end users. Outgoing or internal messages also flow through the Hub Transport server before being passed to the Edge Transport server or delivered to an internal mailbox. The role of the Hub Transport server is similar to the Microsoft Exchange Server Bridgehead server in previous versions of Microsoft Exchange Server.
- **Mailbox Role:** The mailbox server contains Microsoft Exchange Server databases, which include end user mailboxes and public folders.
- **Client Access Role:** The Client Access server interacts with end user clients outside the firewall, including Outlook Web Access, mobile clients such as Outlook Mobile on a Windows Mobile device, or Outlook desktop clients that are used outside the organization. The Client Access Role is similar to the Front-End server role in previous versions of Microsoft Exchange Server.

- **Unified Messaging Role:** The unified messaging (UM) capabilities of Microsoft Exchange Server 2007 are a significant introduction to the platform. The UM server acts as a liaison between telephony systems and Microsoft Exchange Server 2007, enabling features voicemail to e-mail, automated attendant, voice access to Outlook, and more.

Server roles give organizations precise control over distinct components of the Microsoft Exchange Server 2007 infrastructure. This means that organizations can add specific servers to the Microsoft Exchange Server 2007 infrastructure, rather than adding general purpose front or back-end servers. Additionally, administration can be focused on specific server roles, reducing the potential for overall system downtime.

Server roles can be assigned to separate servers or assigned in any combination to a single server. The only exception to this is the Edge Transport Role, which must be deployed on a separate server at the network edge. This capability enables Microsoft Exchange Server 2007 to adapt to a wide range of business environments. For example, a smaller organization can deploy all Microsoft Exchange Server 2007 server roles on a single server, while a larger business can deploy separate servers for each role.

1.3 UNIFIED MESSAGING

Unified Messaging (UM) is a key addition to Microsoft Exchange Server 2007. Although UM technology has been available for many years, Microsoft is one of the first e-mail vendors to offer UM technology tightly integrated into the e-mail server itself.

To enable UM capabilities, the Microsoft Exchange Server 2007 Unified Messaging server connects to an organization's telephony system. Microsoft Exchange Server 2007 can connect directly to most IP PBX platforms, and can support traditional PBXs with an IP gateway.

Microsoft Exchange Server 2007 allows voicemail and fax messages to be received in a user's e-mail mailbox. Voicemail messages can be played directly through the e-mail client, or sent to a phone, such as an office line or mobile phone, for private playback. Voicemail messages can be annotated with notes – a convenient feature for taking down phone numbers during voicemail playback.

For mobile users, Microsoft Exchange Server 2007 offers a voice-based interface called Outlook Voice Access (OVA). OVA features automated speech recognition (ASR) and text-to-speech (TTS) capabilities that provide users with an audio driven interface for their Microsoft Exchange Server 2007 mailboxes.

Users navigate through OVA menus with voice or touch tone commands, and message, contact or appointment data can be ‘read’ to users over the phone. Users can also send messages to appointment attendees, such as “I will be 15 minutes late,” or clear their appointments if necessary.

For inbound calls, Microsoft Exchange Server 2007 offers an automated attendant interface that supports voice and touch tone commands. This feature can help smaller businesses to appear more professional, and streamline the call management process.

The UM capabilities of Microsoft Exchange Server 2007 are designed for OWA 2007 and Outlook 2007, although many features will be supported on older versions of Outlook as well. Microsoft designed the system to be easily self servable – users can reset passwords, record greetings, and manage folders from their e-mail client, without relying on help desk staff.

1.4 WIRELESS E-MAIL

Microsoft first introduced real-time push e-mail capabilities with Service Pack 2 (SP2) for Microsoft Exchange Server 2003. With Microsoft Exchange Server 2007, the company refined these capabilities and integrated UM support for mobile devices as well.

Microsoft’s wireless e-mail strategy is built around the Microsoft Exchange Server ActiveSync (EAS) protocol. EAS is available for Windows Mobile devices, and Microsoft also licenses the protocol to third party vendors such as DataViz, Motorola, Nokia, Palm, Sony Ericsson and Symbian.

EAS enables true push e-mail, as well as real-time synchronization of calendars, contacts and tasks. With EAS, users can also search through their entire Microsoft Exchange Server inbox, as well as access the GAL.

Microsoft's mobility strategy also includes integration with Windows SharePoint Services (WSS). Mobile users can access WSS files directly through e-mail links with Microsoft's LinkAccess technology.

If a device is lost or stolen, users can remotely wipe the device. Administrators can also define password policies, such as the strength of passwords, password timeout, etc. Devices are managed centrally through Microsoft Exchange Server 2007 – without the need of a separate wireless e-mail server.

1.5 E-MAIL SECURITY

Microsoft Exchange Server 2007 is designed to provide organizations with a multi-layered e-mail security infrastructure. E-mail security features extend throughout different Microsoft Exchange Server 2007 server roles, as well as Microsoft Outlook 2007. The platform offers a number of improvements over previous versions of the software designed to make e-mail security capabilities more effective and easier to manage.

The Edge Transport server plays a key role in the security of Microsoft Exchange Server 2007. Deployed at the network edge, this server filters incoming e-mail traffic and can stop unwanted messages from penetrating the network. By stopping spam and viruses at the network perimeter, the server reduces message traffic throughout the rest of the Microsoft Exchange Server 2007 infrastructure.

The Edge Transport server uses a combination of e-mail filters and reputation services to identify potentially unwanted messages. This data is cross-referenced with user Safe Sender lists to prevent false positives.

Microsoft Exchange Server 2007 filters messages with the Intelligent Message Filter (IMF), a versatile content filter based on Microsoft's machine learning SmartScreen technology. IMF is automatically updated and can be customized to filter specific words or phrases.

The solution monitors sender reputation by analyzing the IP address and domain messages were sent from, message recipients, message content and Sender ID

information. Microsoft Exchange Server 2007 also monitors for malicious attacks and can throttle e-mail traffic to prevent denial of service attacks.

Microsoft Exchange Server 2007 assigns a Spam Confidence Level (SCL) to messages that can be used to determine how suspect messages are handled. Administrators can develop thresholds for message quarantines, deletion, or rejection.

Multiple anti-virus scanning engines can be used with Microsoft Exchange Server 2007 on either the Edge or Hub Transport servers. As new viruses are released, administrators can filter messages based on known virus patterns to prevent the spread of new outbreaks. Administrators can also strip attachments from messages based on their size, content or file type.

In addition to spam and virus filtering, Microsoft Exchange Server 2007 offers encryption capabilities. All messages within the Microsoft Exchange Server 2007 organization are encrypted by default with TLS. Remote Outlook clients are protected with RPC, and OWA and Microsoft Exchange Server ActiveSync messages are protected with SSL.

1.6 MICROSOFT FOREFRONT SECURITY FOR MICROSOFT EXCHANGE SERVER

Microsoft also offers an e-mail security software solution called Microsoft Forefront Security for Microsoft Exchange Server (formerly called Microsoft Antigen for Microsoft Exchange Server). Microsoft's Forefront product portfolio is based on technology acquired from the 2005 purchase of security vendor Sybari Software.

Microsoft Forefront Security for Microsoft Exchange Server uses multiple virus scanning engines from Computer Associates, Kaspersky Labs, Sophos and others. To curb spam, Forefront Security for Microsoft Exchange Server uses a combination of reputation-based filtering, content filtering, and spam signatures. Unlike single layered e-mail security products, Forefront Security for Microsoft Exchange Server provides multiple layers of protection at the Edge, Hub and Mailbox roles of Microsoft Exchange Server 2007.

Organizations can deploy Microsoft Exchange Server Hosted Filtering or Microsoft

Forefront Security for Microsoft Exchange Server separately, or deploy both solutions in tandem. When deployed together, messages would first be filtered by Microsoft Exchange Server Hosted Filtering, then by Forefront Security for Microsoft Exchange Server. This would provide businesses with several layers of e-mail security protection, as well as the policy management and disaster recovery features of Microsoft Exchange Server Hosted Filtering. Both solutions are included with the Microsoft Exchange Server 2007 Enterprise CAL license.

1.7 MICROSOFT EXCHANGE SERVER BUSINESS CONTINUITY

Microsoft Exchange Server 2007 offers several new features designed to increase the availability and continuity of the platform. Business continuity is a top concern of a growing number of businesses, and Microsoft Exchange Server 2007 makes business continuity features available to businesses of all sizes.

One of the business continuity features of Microsoft Exchange Server 2007 is called Cluster Continuous Replication (CCR). CCR continuously replicates data between an active and passive node, eliminating a single point of failure by preserving a second copy of a database. If the active server fails the system automatically reverts to the passive server. CCR also allows configuration backups and maintenance to be run against the passive server, thereby decreasing the performance impact on active servers.

For mid-market businesses, the deployment of a replication cluster is often not an option. For these companies, Microsoft offers Local Continuous Replication. This feature enables data to be replicated across multiple disks on a single server. Therefore, if one disk fails, data can be restored from the replicated disk.

1.8 COMPLIANCE

Microsoft Exchange Server 2007 is designed to provide organizations with a flexible platform for the enforcement of compliance policies. These policies can include government regulations that govern the handling of messages, or corporate policies that restrict communication between different departments, or certain types of inappropriate message content.

The Hub Transport role of Microsoft Exchange Server 2007 plays a central role in the compliance process. Since all incoming, outgoing and internal messages pass through the Hub Transport server, administrators are able to easily implement policies at this server, rather than on individual mailbox stores.

Message handling rules can prohibit certain actions or language, require encryption for messages, append disclaimers to messages, or BCC a compliance officer when certain keywords or phrases appear in a message. Organizations can implement these policies on a group basis as well, preventing sensitive data from being passed between groups which should be isolated.

Microsoft Exchange Server 2007 also features improved journaling capabilities that take advantage of the Hub Transport server. Administrators can create journaling rules to define which messages are journaled, and where these messages are journaled to. Message retention and message deletion policies can be created as well – an important requirement for many corporate policies.

Another message management capability of Microsoft Exchange Server 2007 is called Messaging Records Management. This feature enables administrators to define retention policies for individual folders, including journaling and archiving policies.

1.9 ADMINISTRATION

Microsoft Exchange Server 2007 offers two management interfaces for administrators. The Microsoft Exchange Server Management Console is a graphical interface that includes a variety of management and troubleshooting tools. New to Microsoft Exchange Server 2007 is the Microsoft Exchange Server Management Shell. Based on Microsoft Windows PowerShell, the Microsoft Exchange Server Management Shell is a command line interface that offers greater flexibility than the traditional graphical interface.

Microsoft Exchange Server 2007 also works with Microsoft Operations Manager (MOM) 2005 with the downloadable Microsoft Exchange Server 2007 Management Pack. MOM 2005 provides administrators with a variety of reporting capabilities, as well as integration with the Microsoft Exchange Server Best Practices Analyzer.

CHAPTER 2: TOTAL COST OF OWNERSHIP MODEL

The Radicati Group's Messaging and Collaboration Total Cost of Ownership Model for Enterprises has been built to assist organizations in assessing the effectiveness of their systems, reduce costs and make better decisions on how to invest time and budgets.

The Enterprise TCO model used in this study looks at the following key components of cost:

- **Acquisition Costs** - Acquisition Costs refer to the costs of purchasing the hardware and software required to run Microsoft Exchange 2007. It includes the cost of the server hardware platform, the Windows Server operating system server and user licenses, and the Microsoft Exchange 2007 server and user licenses. It does not include the costs of the desktop hardware and software platform as these costs are not directly attributable to running Microsoft Exchange 2007 (i.e. users will have desktops no matter what email system is used).
- **Maintenance Costs** - These comprise the cost of yearly support contracts for all hardware and software components accounted for as part of the acquisition costs outlined above.
- **Storage Costs** – Many organizations still rely primarily on the messaging server platform to store emails, however, as email volumes grow most organizations need to off load a certain percentage of email storage to external backup devices. Such external storage can comprise a variety of approaches ranging from simple tape backup systems to complex SAN/NAS architectures, as well as email archiving products. Our model makes a simplifying assumption that external storage is based on tape backup only. Attempting to include the costs of SAN/NAS, or email archiving products would have derailed this analysis into a cost analysis of different storage systems rather than an analysis of the messaging system itself.
- **Installation and Configuration** – This comprises the cost to install and configure Microsoft Exchange Servers, Microsoft Outlook clients, as well as installing and configuring Microsoft Active Sync for the portion of user

population that leverages this feature aspect of Microsoft Exchange Server 2007.

- **Administration Costs** - These include a series of tasks, on-going as well as corrective, performed by Messaging Administrators to ensure the efficient update and operation of the messaging system. It includes the time to install new software patches, add/delete users, manage policy settings, and much more.
- **Downtime Costs** - These include any lost productivity caused by failure (i.e. downtime) of the messaging system. Downtime can be either scheduled (i.e. due to normal maintenance requirements), or unscheduled (i.e. due to unexpected failures of the system). For scheduled downtime we include only the cost to the administrators of dealing with the scheduled downtime. In the case of unscheduled downtime we make a simplifying assumption that 25% of the total e-mail user population is affected by an outage.
- **Training Costs** - These include training costs for Administrators, Help Desk Staff and Users.

Microsoft Exchange Server 2007 includes powerful anti-spam and anti-virus filtering capabilities. However, as it is common for companies to layer defense mechanisms from different vendors, we also asked companies participating in this study to tell us whether they are deploying additional anti-spam and anti-virus products. The answer to this question was not computed as part of the TCO calculations, but we report what companies said to provide an interesting reference point to this critical element of any company's messaging deployment.

2.1 GENERAL ASSUMPTIONS

In order to be able to compare costs across different organizations, this TCO model makes a number of key assumptions which are essential to our calculations. These include the following:

1. **Salaries** – In order to compare costs across organizations we made the following assumptions about salaries:

- a. \$69/hour for Messaging Administrators fully burdened (i.e. includes overhead, taxes, benefits, etc.). We also assume Full-time and Part-time Messaging Administrators receive the same level of compensation.
- b. \$45/hour for Help Desk Staff, fully burdened.
- c. \$57/hour for Messaging Users, fully burdened.

Note: The salaries used in this study are in line with current accepted industry levels, and are higher than the salary levels we used in some of our previous TCO studies.

- 2. *Population size* - We assume the number of users deployed on Microsoft Exchange 2007 stays constant over a 3 year period. While we know that the user population does not remain constant and most organizations are gradually migrating users to Microsoft Exchange Server 2007, this process occurs at a different pace in each company and it becomes nearly impossible to generalize it across all companies surveyed. Our model, therefore, assumes a constant user population over the 3 year period.
- 3. *Depreciation* – We assume a simple three-year, straight line depreciation model in estimating messaging acquisition costs. We further assume that all acquisitions occur in the first year of deployment and the user population remains constant over a three year period.
- 4. *Hardware Platform Costs* - Microsoft Exchange 2007 requires a 64-bit server platform to run on. There is a wide cost spread in the market for 64-bit servers, ranging anywhere from \$2,000 to upwards of \$12,000. For the sake of simplicity and based on the median costs reported by the companies surveyed, we picked a standard cost of \$5,000 for a basic server hardware platform, and \$10,000 for a more high-capacity platform that includes clustering and replication.
- 5. *Training costs* – while this study includes training costs, we looked only at training costs in terms of the amount of time that administrators, help desk personnel and messaging users invested to go through some form of training process. We did not take into account the cost of the “trainers” or training

- programs, that is of engaging a 3rd party to deliver training to the organization – such costs vary greatly and would have been impossible to account for in a systematic way for all organizations surveyed.
6. *Installation and configurations costs* – we looked only at the time (and resulting cost) of the company’s own administrators installing and configuring Microsoft Exchange Server 2007. We did not include the cost of any external consultants, systems integrators or other 3rd party professional services organizations which assisted in the initial system planning and deployment stages. There are many possible such external 3rd party choices available to companies and it would have been impossible to account for their services in a consistent manner.
 7. *Hardware maintenance* – we assumed a fixed annual hardware maintenance fee of 15% of the hardware acquisition costs for all companies. This is based on available industry data, and was confirmed by survey responses to this question which typically ranged anywhere from 10% to 25%.
 8. *Storage* – Storage decisions vary greatly from organization to organization and are often driven by other corporate choices not directly related to messaging use. So while company storage choices range from simple Tape backup systems to sophisticated SAN/NAS environments, this study looks only at what percentage of email storage organizations choose to offload from the email server and assumes that in all cases tape is being used for external backup. We further assume a cost of \$0.32/GB of tape storage based on average industry data.

2.2 DIFFERENCES FROM PREVIOUS STUDIES

The components of our TCO model are occasionally changed to reflect evolving industry conditions. Key differences in this study compared to studies we conducted in previous years include:

- *Loaded Messaging TCO* – previous studies we published looked at the cost of “Loaded Messaging TCO” which included client platform and infrastructure costs (e.g. network bandwidth, etc.). We felt that it is no longer relevant to include these costs in our TCO analysis as they vary

greatly across deployments and are not necessarily directly reflective of the messaging platform itself.

- *Higher salary levels* – are used in this study to stay consistent with current industry accepted averages.
- *User training* – was usually not included in previous studies, but is included in this study as the user interface of Microsoft Exchange 2007 presents some major enhancements which in turn involve some amount of user training.

2.3 ESTIMATING ACQUISITION COSTS

Microsoft pricing is complex. Microsoft offers a variety of programs under which organizations may purchase software, in addition channel partners may offer various bundling options and volume discounts. In order to provide a baseline fair comparison for the purposes of this study, we made a few simplifying assumptions and relied mainly on published Microsoft list pricing.

2.3.1 SERVER SOFTWARE

Microsoft offers Microsoft Exchange Server 2007 in Standard and Enterprise versions. The two versions differ mainly in the amount of storage groups and databases allowed, as well as in their support for clustering and replication, as follows:

- **Microsoft Exchange Server 2007 Standard Edition:** Supports 5 storage groups, 5 databases and local continuous replication, but does not support Single Copy Clusters and Cluster Continuous Replication. List pricing for Microsoft Exchange Server 2007 Standard Edition is \$699.
- **Microsoft Exchange Server 2007 Enterprise Edition:** Supports 50 storage groups and 50 databases, and supports Single Copy Clusters, Local Continuous Replication, and Cluster Continuous Replication. List pricing for Microsoft

Exchange Server 2007 Enterprise Edition is \$3,999.

2.3.2 CLIENT SOFTWARE

In addition to the Microsoft Exchange Server 2007, organizations must also purchase a Client Access License (CAL) for each user or device that accesses Microsoft Exchange Server 2007. A user CAL is a license for a single user, while a device CAL is a license for a single device, such as an Internet kiosk.

With Microsoft Exchange Server 2007, Microsoft offers two types of CALs, Standard and Enterprise, either type of CAL may be used with either type of server Standard or Enterprise. The price cost of the Standard and Enterprise CALs is additive in the sense that organizations must purchase first the Standard CAL and can then add the Enterprise CAL for those users that need the extra functionality provided by Enterprise CALs.

- **Standard CAL:** This CAL includes core Microsoft Exchange Server 2007 features like e-mail, shared calendaring, contacts, tasks, Outlook Web Access and Microsoft Exchange Server ActiveSync. List pricing for the Standard CAL is \$67.
- **Enterprise CAL:** The Microsoft Exchange Server 2007 Enterprise CAL adds capabilities to the Standard CAL, and is not available individually. With the Enterprise CAL, Standard CAL users gain access to unified messaging features, per-user/per-distribution list journaling, managed e-mail folders, Microsoft Exchange Server Hosted Filtering and Forefront Security for Microsoft Exchange Server. List pricing for the Enterprise CAL is \$25.

Microsoft also offers Core Suite CAL and Enterprise Suite CAL bundles which include a variety of solutions such as: Windows Server CAL, Office Communications Server CALs, SharePoint Server CALs, etc. Many organizations purchase the Suite CALs as a way of obtaining better value across the various software products they need. For the purposes of this study we chose to use only the pricing directly related to the use of Microsoft Exchange Server 2007, therefore we used the list pricing for the Standard and Enterprise CALs for all our calculations.

2.3.3 WINDOWS SERVER

In addition to purchasing Microsoft Exchange Server 2007 server and client licenses, organizations will also have had to purchase Windows Server. Windows Server also comes in an Enterprise and Standard server edition, and requires Enterprise or Server CAL licenses. For the purposes of this study we assumed only Standard Windows Server and Standard Windows CAL licenses.

2.3.4 SOFTWARE ASSURANCE

Microsoft offers Software Assurance as a program to provide maintenance, training and various forms of on-going support to their customers. Most of the organizations which we surveyed for this study indicated that they had purchased Software Assurance. We therefore based the Microsoft Exchange 2007 software maintenance fees on Software Assurance.

2.3.5 OUR SOFTWARE PRICING ASSUMPTIONS

For the purposes of this study, we made a number of simplifying assumptions about pricing as follows:

1. We based our acquisition pricing only on the discrete Microsoft Exchange Server and Client licenses, not the Core or Enterprise Suite licenses. We used Microsoft Standard CALs at \$67/user, and Microsoft Enterprise CALs at \$25/user.
2. We did ask organizations about their mix of Standard and Enterprise licenses and used a different percent distribution of Standard and Enterprise licenses in the two survey groups analyzed.
3. We assumed an industry standard volume discount of 20% on the software list price.

4. We chose to use Windows Server Standard Licenses at the list price of \$699/server, and Windows Server Standard CAL licenses at \$40/user.

5. We applied a 25% annual charge for Software Assurance to the total cost of all Microsoft Exchange Server software purchased, as well as to the cost of the Microsoft Windows Server software purchased.

2.3.6 OUR OVERALL HARDWARE PRICING ASSUMPTIONS

Organizations surveyed indicated they were deploying Microsoft Exchange Server 2007 on a wide range of 64-bit hardware platforms, ranging in price from \$2,000 to \$12,000. Based on survey responses, we used \$5,000 for a standard hardware platform (running Microsoft Exchange Server Standard edition), and \$10,000 for a higher-end platform inclusive of clustering and replication (running Microsoft Exchange Server Enterprise edition).

Based on industry averages, as well as survey responses we chose to use 15% as the annual charge for hardware maintenance contracts.

CHAPTER 3: MEDIUM SIZE COMPANY TCO

The organizations surveyed in this group ranged in size from 500 to 19,000 employees. However, not all employees were deployed on Microsoft Exchange Server 2007, only 500 to 2,500 employees were email users on Microsoft Exchange Server 2007. The median Microsoft Exchange Server 2007 population size in this group was 1,000.

- This study is based on survey responses from 12 organizations in the 500 – 2,500 email user range.

- All companies surveyed in this group were US based.

- In terms of vertical distribution, companies in this group represented a number of different vertical industries as follows:
 - 3 Utilities (26%)
 - 2 Health Care (17%)
 - 2 IT (17%)
 - 1 Financial Services (8%)
 - 1 Legal (8%)
 - 1 Retail (8%)
 - 1 Travel (8%)
 - 1 Manufacturing (8%)

- Figure 2, shows the vertical distribution of companies in our mid-size survey sample.

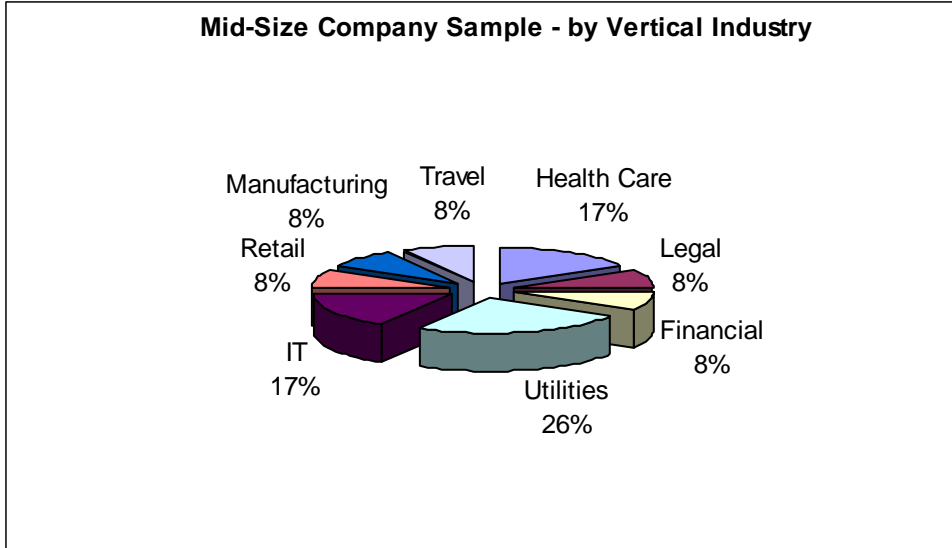


Figure 2: Mid-Size Organizations Surveyed – by Vertical Industry

- While Microsoft Exchange Server 2007 can easily support 1,000 users on a single server, all organizations surveyed were deploying more than 1 server. We believe this is mainly for reliability reasons, but sometimes could also be a reflection of the companies’ geographical distribution.
- The median number of servers for a 1,000 user population was 2 servers.

Microsoft Exchange Server 2007 Environment	Quantity
<i>Median Number of Users</i>	1,000
<i>Number of Servers</i>	2

Table 1: Microsoft Exchange Server 2007 Environment – Mid-Size Organizations

- Table 2, shows the number of Administrators and Help Desk staff in our survey sample. Many organizations have a mix of both full-time and part-time administrators, we asked about both and applied 50% of the part-time administrator population to the total administrator population (i.e. 2 full-time administrators, and 2 part-time administrators was taken as 3 administrators for the purposes of this study).
- On average, survey respondents had 2.5 administrators, and 4 Help Desk staff.

Messaging Administration Staff	Total
Administrators	2.5
Help Desk Staff	4

Table 2: Microsoft Exchange Server 2007 Staffing Chart – Mid-Size Organizations

3.1 ACQUISITION COSTS

- The mid-size organizations we surveyed had an average of 50% of users on Standard CALs and 50% on Enterprise CALs.
- As previously mentioned, we assume that all servers are Standard edition.
- All mid-size organizations surveyed indicated that they had purchased Software Assurance.
- On average, in the organizations surveyed 50% of users were deploying wireless email services based on Microsoft Active Sync.
- Table 3, below summarizes the acquisition costs for a mid-size organization of 1,000 users.
- The Microsoft Exchange Server 2007 acquisition cost for a mid-size organization of 1,000 users is \$108/user.

MS Exchange 2007	Cost	Mid-Size	Acquisition Cost
Average # of Users		1,000	
% Users on Standard CALs		50%	
% Users on Enterprise CALs		50%	
Server Hardware Cost	\$5,000	2	\$10,000
<i>Exchange Server 2007 Licenses</i>			
100% Exchange Server (Standard)	\$699	2	\$1,398
Total Exchange Server Cost			\$1,398
<i>Exchange Client Licenses</i>			
% Exchange CALs (Standard)	\$67	500	\$33,500
% Exchange CALs (Enterprise)	\$92	500	\$46,000
Total Exchange Client Cost			\$79,500
<i>Windows Server License</i>			
Windows Server License (Standard)	\$699	2	\$1,398
Windows Server CAL (Standard)	\$40	1000	\$40,000
Total Windows Server Cost			\$41,398
Total Software Cost			\$122,296
20% Volume discount			\$24,459
Software cost after discount			\$97,837
Total Cost			\$107,837
Total Cost/User			\$108

Table 3: Microsoft Exchange Server 2007 Acquisition Costs – Mid-Size Organizations

3.2 MAINTENANCE COSTS

- As previously mentioned all organizations surveyed had purchased Software Assurance. We estimate that Software Assurance represents 25% of the software purchase price on an annual basis.
- Table 4, below shows the cost of Maintenance contracts for both software and hardware over a three year period.
- We estimated 25% of the software purchase price on a recurring basis for each year for Software Assurance.
- We estimated 15% of the hardware purchase price on a recurring basis for each year for server hardware maintenance contracts.

Maintenance Costs	Total (*)	%	Year 1	Year 2	Year 3
Software (with SA)	\$97,837	25%	\$24,459	\$24,459	\$24,459
Hardware	\$10,000	15%	\$1,500	\$1,500	\$1,500
Total Maintenance Costs			\$25,959	\$25,959	\$25,959

Table 4: Microsoft Exchange Server 2007 Maintenance Costs – Mid-Size Organizations

(*) From Table 3 above.

3.3 STORAGE COSTS

- Organizations use a variety of strategies for working with the ever increasing amounts of email. All the mid-size organizations surveyed as part of this study indicated that they were off-loading email to backup tapes.
- We asked all the organizations we surveyed what percentage of their email is kept on their servers and what percentage is off loaded to back-up tapes.
- Organizations in the mid-size range indicated that they store about 20% of their email on backup tapes.

- Based on our on-going research we know that the average business user requires about 6.5 GB of storage a year for email.
 - As the amount of email exchanged increases from year to year, so do storage requirements. In an effort to keep this model simple however, we chose to assume that the amount of storage per user remains constant at 6.5 GB per user/year.
- Table 5 below shows the estimated cost of storage on an annual basis for a mid-size organization of 1,000 users.

Storage Costs	Amount	Cost	Year 1	Year 2	Year 3
Total Annual Storage in GB	6,500				
% of External Storage (i.e. Tape)	20%				
Annual External storage/GB	1,300	\$0.32	\$416	\$416	\$416
Total Storage Costs			\$416	\$416	\$416

Table 5: Microsoft Exchange Server 2007 Storage Costs – Mid-Size Organizations

3.4 INSTALLATION AND CONFIGURATION COSTS

- Based on our surveys, we found that initial installation and set up costs for Microsoft Exchange Server 2007 in mid-size organizations were as follows:
 - 10 hours to install Microsoft Exchange Server 2007 per server.
 - 0.5 hours to install Microsoft Exchange Server 2007 clients per user.
 - 10 hours to install Microsoft Active Sync for the percentage of user population deploying wireless push email functionality (i.e 50% of users in our survey sample).
- For the purposes of this study, we assume that installation and set-up of servers, clients and wireless push functionality occurs as a one-time activity in year 1 of

deployment. Table 6, below, summarizes the one-time installation costs for year 1 of operation.

Installation & Set Up Costs	Amount	Cost
Install & Config MS Exchange per Server	20	\$2,760
Install & Config Outlook per User	0.5	\$34,500
Install of MS Active Sync Wireless	15	\$1,035
Total Installation & Config Costs		\$38,295

Table 6 : Microsoft Exchange Server 2007 Storage Costs – Mid-Size Organizations

3.5 ADMINISTRATION COSTS

- Our TCO model asked survey respondents about at a variety of on-going administration tasks that need to be performed on a weekly basis.
- Table 7, below, summarizes the responses to the questions. The question was asked as total administrator time for all administrators per week.

Administration Tasks	Hrs/wk	Year 1	Year 2	Year 3
Adding/deleting users	2			
Managing distribution lists	1			
Managing access controls	2			
Managing user passwords	2			
Directory Management	2			
Performing Backups/Restores	2			
Administration of remote clients	2			
Administration of wireless clients/devices	2			
Administration of Archiving	1			
Recovery of deleted email	1			
Policy Management and Rules-based filtering	1			
Administration of Anti-Virus inc. patches & updates	1.5			
Administration of Anti-Spam inc. patches & updates	2			
Administration of Other Security Features	1.5			
End user configuration support	2			
Installing and configuring new software patches	1			

Other tasks	1			
Total for all Administration Tasks	27	\$96,876	\$96,876	\$96,876

Table 7 : Microsoft Exchange Server 2007 Administration Costs – Mid-Size Organizations

3.6 DOWNTIME COSTS

- All messaging systems incur some amount of scheduled and un-scheduled downtime. The mid-size organizations which we surveyed reported the following amounts of average downtime per month.
 - 2 hours/month scheduled downtime.
 - 2 hours/month un-scheduled downtime.
- Table 8, below, provides a summary of the cost of downtime over a three year period.

Downtime	Hours/month	Year 1	Year 2	Year 3
Scheduled	2	\$4,140		
Un-Scheduled	2	\$346,140		
Total Downtime Costs		\$350,280	\$350,280	\$350,280

Table 8 : Microsoft Exchange Server 2007 Downtime Costs – Mid-Size Organizations

- The relatively high downtime reported by organizations in this group is mainly a reflection of the “newness” of the system and the fact that administrators are still learning how to set up and manage Microsoft Exchange Server 2007. We believe that over time as the system is in place, most of these organizations will see the average downtime go down considerably.

3.7 TRAINING COSTS

- We looked at training costs as a one-time cost of training administrators, help desk staff and users. The organizations we surveyed reported the following average training times:
 - 20 hours for Administrators
 - 18 hours for Help Desk staff

- 2 hours for users
- We estimated only the time spent by administrators, help desk staff and users in training programs, we did not attempt to measure the cost to deliver these programs as that varies too greatly from organization to organization.
- Table 9, below summarizes training costs as a one-time activity in year 1 of deployment.

Training	Hours	# of People	Cost
Administrators	20	2.5	\$3,450
Help Desk Staff	18	4	\$3,240
Users	2	1,000	\$114,000
Total Installation & Config. Costs			\$120,690

Table 9 : Microsoft Exchange Server 2007 Training Costs – Mid-Size Organizations

3.8 THREE-YEAR TOTAL COST OF OWNERSHIP

We estimate the 3 year Total Cost of Ownership by putting together all the above categories of cost, as shown in Table 10 below.

For a mid-size organization of 1,000 users the average TCO over a three year period was \$562/user per year.

Mid-Size Deployment	Amount	Year 1	Year 2	Year 3
Average # of Users	1,000			
Number of Administrators	2.5			
Number of Help Desk Staff	4			
Number of Servers	2			
% Users on Standard CALs	50%			
% Users on Enterprise CALs	50%			
% Storage on backup tapes	20%			
Acquisition Cost		\$107,837		

Maintenance Cost	\$25,959	\$25,959	\$25,959
Installation & Config Cost	\$38,295		
Storage Cost	\$416	\$416	\$416
Administration Cost	\$96,876	\$96,876	\$96,876
Downtime Cost	\$350,280	\$350,280	\$350,280
Training Cost	\$120,690		
Total Cost	\$740,353	\$473,531	\$473,531
Total Cost/User	\$740	\$474	\$474
Average 3-Year Cost/user	\$562		

Table 10 : Microsoft Exchange Server 2007 – Summary TCO for Mid-Size Organization

- Figure 3, below, gives a visual summary of the cost components for year 1.

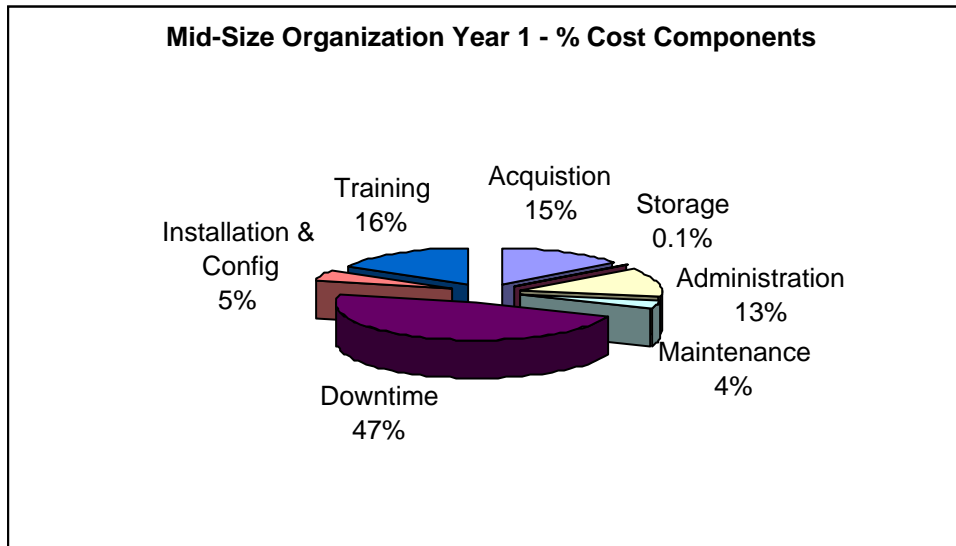


Figure 3: Year 1 % Cost Components for Mid-Size Organization

3.9 WIRELESS DEPLOYMENT

Among our survey sample wireless email was not deployed across all users. We asked about the number of users deploying wireless email based on Microsoft Exchange Server 2007 native Active Sync. We found the following deployment across mid-size organizations:

- 50% of email users had wireless email, deployed on Microsoft Exchange Server 2007.

- 20% of email users had wireless email, deployed on Blackberry BES.
- 30% of email users did not have wireless email.

3.10 ANTI-SPAM DEPLOYMENT

Microsoft Exchange Server 2007 incorporates sophisticated security features for anti-spam protection. Nevertheless, it is common for organizations to layer multiple layers of protection. We asked organizations if they were using additional 3rd party anti-spam products to protect their email environment. Mid-size organizations responded as follows:

- 5 were not deploying any additional anti-spam product or services.
- 7 were deploying additional 3 party products, including: Norton, McAfee, and Symantec.

3.11 ANTI-VIRUS DEPLOYMENT

Microsoft Exchange Server 2007 incorporates sophisticated security features for anti-virus protection. Nevertheless, it is common for organizations to layer multiple layers of protection. We asked organizations if they were using additional 3rd party anti-virus products to protect their email environment. Mid-size organizations responded as follows:

- 6 were not deploying any additional anti-virus product or services.
- 6 were deploying additional 3 party products, including: CA eTrust, McAfee, and Symantec.

CHAPTER 4: LARGE COMPANY TCO

The organizations surveyed in this group ranged in size from 5,000 to 35,000 employees. However, not all employees were deployed on Microsoft Exchange 2007, only 4,500 to 6,500 employees were email users on Microsoft Exchange 2007. The median Microsoft Exchange 2007 population size in this group was 5,200.

- This study is based on survey responses from 7 organizations in the 4,500 – 6,500 email user range.
- All companies surveyed in this group were US based.
- In terms of vertical distribution, companies in this group represented a number of different vertical industries as follows:
 - 2 Health Care (29%)
 - 2 Financial Services (29%)
 - 1 Transportation (14%)
 - 1 Manufacturing (14%)
 - 1 Distribution (14%)
- Figure 4, shows the vertical distribution of large companies in our survey sample.

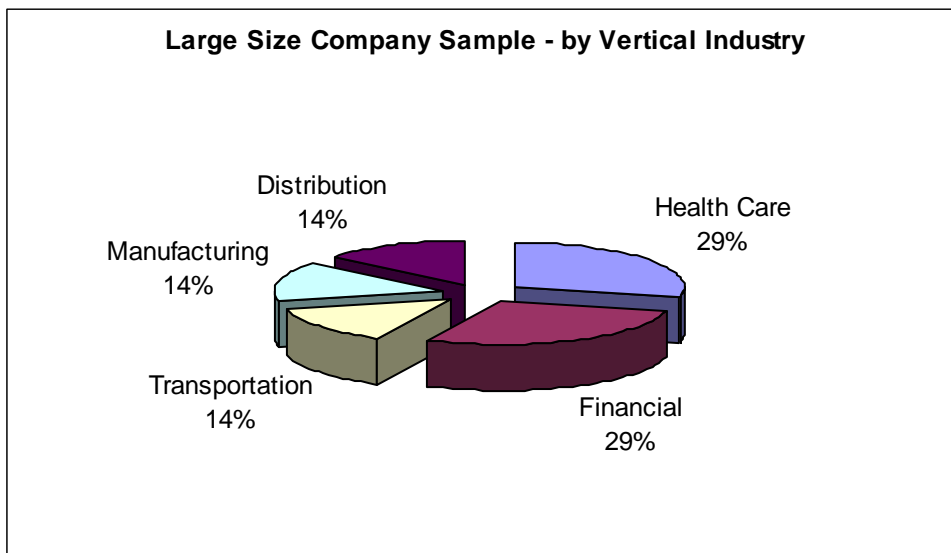


Figure 4: Large Organizations Surveyed – by Vertical Industry

- Microsoft Exchange Server 2007 supports the deployment of servers according to different “roles”, as follows:
 - Edge transport
 - Hub transport
 - Client Access
 - Mailbox
 - Unified Messaging

- The group of large organizations we interviewed had in fact deployed Microsoft Exchange Server in a number of architectures leveraging the different server roles in different ways to best meet their feature requirements, as well as the geographical distribution of their users.

- All the organizations we surveyed indicated a strong interest to eventually deploy Unified Communication services, but to date none of them had yet actively embarked on this.

- The other four roles were deployed in many different ways to meet different security requirements, wireless & mobility requirements and more.

- Based on responses from the organizations surveyed, we are able to make the following simplifying assumptions about the deployment of servers in a 5,200 email user organization:

- A 5,200 user population would typically be distributed across 2 Mailbox servers, using clustering and replication. These servers are typically deployed on more expensive server platforms in the \$8,000 to \$12,000 range. We chose to use \$10,000 as the server hardware cost. Mailbox servers would also be running the Microsoft Exchange Server 2007 Enterprise edition (i.e. cost of \$3,999).

- In addition, the organization would typically have 4 more servers running some combination of Hub Transport, Client Access or Edge server roles. These are typically deployed on less expensive server hardware platforms. We chose a cost of \$5,000 for the server hardware cost. These servers would be running the Microsoft Exchange Server 2007 Standard edition (i.e. cost of \$699).

Microsoft Exchange Server 2007 Environment	Quantity
<i>Median Number of Users</i>	5,200
<i>Number of Mailbox Servers</i>	2
<i>Number of other Servers</i>	4
<i>Total Number of Servers</i>	6

Table 11 : Microsoft Exchange Server 2007 Environment – Large Organizations

- Table 12, shows the number of Administrator and Help Desk staff in our survey sample. Many organizations have a mix of both full-time and part-time administrators, we asked about both and applied 50% of the part-time administrator population to the total administrator population, (i.e. 2 full-time administrators, and 2 part-time administrators was taken as 3 administrators for the purposes of this study).
- On average, survey respondents had 3 administrators, and 4 Help Desk staff.

Messaging Administration Staff	Total
Administrators	3
Help Desk Staff	4

Table 12: Microsoft Exchange Server 2007 Staffing Chart – Large Organizations

4.1 ACQUISITION COSTS

- The large organizations we surveyed had an average of 10% of users on Standard CALs and 90% on Enterprise CALs. We believe that this is a reflection of the desire of companies to gain economy of scale by investing in volume purchases of the higher cost licenses, while at the same time planning for the eventual move towards unified communications and other premium features offered by the Enterprise license.

- Large organizations surveyed in this group had an average of 2 high-end servers deployed as Mailbox servers running Microsoft Exchange Server 2007 Enterprise edition on high-end hardware platforms at a cost of \$10,000 per platform. In addition, they were deploying an average of 4 servers in a variety of Edge, Hub or Client Access roles running Microsoft Exchange Server 2007 Standard edition on basic hardware platforms at a cost of \$5,000 per platform.
- All large organizations surveyed indicated that they had purchased Software Assurance.
- On average, in the organizations surveyed 50% of users were deploying wireless email services based on Microsoft Active Sync.
- Table 13, below summarizes the acquisition costs for a large organization of 5,200 users.
- The Microsoft Exchange Server 2007 acquisition cost for a large organization of 5,200 users is \$115/user.

MS Exchange 2007	Cost	Large	Acquisition Cost
Average # of Users		5,200	
% Users on Standard CALs		10%	
% Users on Enterprise CALs		90%	
<i>Server Hardware</i>			
Mailbox Servers	\$10,000	2	\$20,000
Standard Servers	\$5,000	4	\$20,000
Total Server Hardware Cost		6	\$40,000
<i>Exchange Server 2007 Licenses</i>			
Exchange Server (Enterprise)	\$3,999	2	\$7,998
Exchange Server (Standard)	\$699	4	\$2,796
Total Exchange Server Cost			\$10,794
<i>Exchange Client Licenses</i>			

% Exchange CALs (Standard)	\$67	520	\$34,840
% Exchange CALs (Enterprise)	\$92	4,680	\$430,560
Total Exchange Client Cost			\$465,400
<i>Windows Server License</i>			
Windows Server License (Enterprise)	\$3,999	2	\$7,998
Windows Server License (Standard)	\$699	4	\$2,796
Windows Server CAL (Standard)	\$40	5,300	\$208,000
Total Windows Server Cost			\$218,794
Total Software Cost			\$694,988
20% Volume discount			\$138,998
Software cost after discount			\$555,990
Total Cost			\$595,990
Total Cost/User			\$115

Table 13 : Microsoft Exchange Server 2007 Acquisition Costs – Large Organizations

4.2 MAINTENANCE COSTS

- As previously mentioned all organizations surveyed had purchased Software Assurance. We estimate that Software Assurance represents 25% of the software purchase price on an annual basis.
- Table 14, below shows the cost of Maintenance contracts for both software and hardware over a three year period.
- We estimated 25% of the software purchase price on a recurring basis for each year for Software Assurance.
- We estimated 15% of the hardware purchase price on a recurring basis for each year for server hardware maintenance contracts.

Maintenance Costs	Total (*)	%	Year 1	Year 2	Year 3
Software (with SA)	\$555,990	25%	\$138,998	\$138,998	\$138,998

Hardware	\$40,000	15%	\$6,000	\$6,000	\$6,000
Total Maintenance Costs			\$144,998	\$144,998	\$144,998

Table 14 : Microsoft Exchange Server 2007 Maintenance Costs – Large Organizations

(*) From Table 13 above.

4.3 STORAGE COSTS

- Organizations use a variety of strategies for working with the ever increasing amounts of email. For the purposes of this study we assumed that email not stored on the email server is off-loaded to backup tapes.
- We asked all the organizations we surveyed what percentage of their email is kept on their servers and what percentage is off loaded to external storage.
- Organizations in the large size range indicated that they store about 30% of their email on external storage.
- Based on our on-going research we know that the average business user requires about 6.5 GB of storage a year for email.
 - As the amount of email exchanged increases from year to year, so do storage requirements. In an effort to keep this model simple however, we chose to assume that the amount of storage per user remains constant at 6.5 GB per user/year.
- Table 15, below, shows the estimated cost of storage on an annual basis for a large organization of 5,200 users.

Storage Costs	Amount	Cost	Year 1	Year 2	Year 3
Total Annual Storage in GB	33,800				
% of External Storage (i.e. Tape)	30%				
Annual External storage/GB	10,140	\$0.32	\$3,245	\$3,245	\$3,245
Total Storage Costs			\$3,245	\$3,245	\$3,245

Table 15 : Microsoft Exchange Server 2007 Storage Costs – Large Organizations

4.4 INSTALLATION AND CONFIGURATION COSTS

- Based on our surveys we found that initial installation and set up costs for Microsoft Exchange Server 2007 were as follows:
 - 10 hours to install Microsoft Exchange Server 2007 per server.
 - 0.5 hours to install Microsoft Exchange Server 2007 clients per user.
 - 9 hours to install Microsoft Active Sync for the percentage of user population deploying wireless push email functionality.
- For the purposes of this study, we assume that installation and set-up of servers, clients and wireless push functionality occurs as a one-time activity in year 1 of deployment. Table 16, below, summarizes the one-time installation costs for year 1 of operation.

Installation & Set Up Costs	Amount	Cost
Install & Config MS Exchange per Server	10	\$4,190
Install & Config Outlook per User	0.5	\$179,400
Install of MS Active Sync Wireless	9	\$621
Total Installation & Config Costs		\$184,161

Table 16: Microsoft Exchange Server 2007 Storage Costs – Large Organizations

4.5 ADMINISTRATION COSTS

- Our TCO model asked survey respondents about at a variety of on-going administration tasks that need to be performed on a weekly basis.
- Table 17, below, summarizes the responses to the questions. The question was asked as total administrator time for all administrators per week.

Administration Tasks	Hrs/wk	Year 1	Year 2	Year 3
Adding/deleting users	2			
Managing distribution lists	1			

Managing access controls	2			
Managing user passwords	2			
Directory Management	2			
Performing Backups/Restores	2			
Administration of remote clients	2			
Administration of wireless clients/devices	2			
Administration of Archiving	1			
Recovery of deleted email	1			
Policy Management and Rules-based filtering	1			
Administration of Anti-Virus inc. patches & updates	1.5			
Administration of Anti-Spam inc. patches & updates	2			
Administration of Other Security Features	1.5			
End user configuration support	2			
Installing and configuring new software patches	1			
Other tasks	1			
Total for all Administration Tasks	38	\$136,344	\$136,344	\$136,344

Table 17 : Microsoft Exchange Server 2007 Administration Costs – Large Organizations

4.6 DOWNTIME COSTS

- All messaging systems incur some amount of scheduled and un-scheduled downtime. The large organizations which we surveyed reported the following amounts of average downtime per month.
 - 2 hours/month scheduled downtime.
 - 1 hours/month un-scheduled downtime.
- Table 18, below, provides a summary of the cost of downtime over a three year period.

Downtime	Hours/month	Year 1	Year 2	Year 3
Scheduled	2	\$4,968		
Un-Scheduled	1	\$894,168		
Total Downtime Costs		\$899,136	\$899,136	\$899,136

Table 18 : Microsoft Exchange Server 2007 Downtime Costs –Large Organizations

- The un-scheduled downtime for large organizations was considerably lower than that of the mid-size organizations we surveyed (i.e. 1 hour vs. 2 hours). We believe that this is again a reflection of the learning curve involved with correctly deploying and managing a relatively new system like Microsoft Exchange Server 2007, particularly with respect to the use of the various server roles. Large organizations are more likely to have deployed considerable resources in the initial planning and design phases of their migration project and are more likely to have configured the system more appropriately to their needs. We believe that over time as the system is in place, these organizations will also see a further decrease in the average un-scheduled downtime.

4.7 TRAINING COSTS

- We looked at training costs as a one-time cost of training administrators, help desk staff and users. The organizations we surveyed reported the following average training times:
 - 40 hours for Administrators
 - 20 hours for Help Desk staff
 - 2 hours for users
- We estimated only the time spent by administrators, help desk staff and users in training programs, we did not attempt to measure the cost to deliver these programs as that varies too greatly from organization to organization.
- Table 19, below summarizes training costs as a one-time activity in year 1 of deployment.

Training	Hours	# of People	Cost
Administrators	40	3	\$8,280
Help Desk Staff	20	4	\$3,600
Users	2	5,200	\$592,800
Total Installation & Config Costs			\$604,680

Table 19 : Microsoft Exchange Server 2007 Training Costs –Large Organizations

4.8 THREE-YEAR TOTAL COST OF OWNERSHIP

We estimate the 3 year Total Cost of Ownership by putting together all the above categories of cost, as shown in Table 20 below.

For a large organization of 5,200 users the average TCO over a three year period was \$316/user per year.

Large Deployment	Amount	Year 1	Year 2	Year 3
Average # of Users	5,200			
Number of Administrators	3			
Number of Help Desk Staff	4			
Total Number of Servers	6			
% Users on Standard CALs	10%			
% Users on Enterprise CALs	90%			
% Storage on backup tapes	30%			
Acquisition Cost		\$595,990		
Maintenance Cost		\$144,998	\$144,998	\$144,998
Installation & Config Cost		\$184,161		
Storage Cost		\$3,245	\$3,245	\$3,245
Administration Cost		\$136,344	\$136,344	\$136,344
Downtime Cost		\$899,136	\$899,136	\$899,136
Training Cost		\$604,680		
Total Cost		\$2,568,554	\$1,183,722	\$1,183,722
Total Cost/User		\$494	\$228	\$228
Average 3-Year Cost/user	\$316			

Table 20 : Microsoft Exchange Server 2007 – Summary TCO for Large Organizations

- Figure 5, below, gives a visual summary of the cost components for year 1.

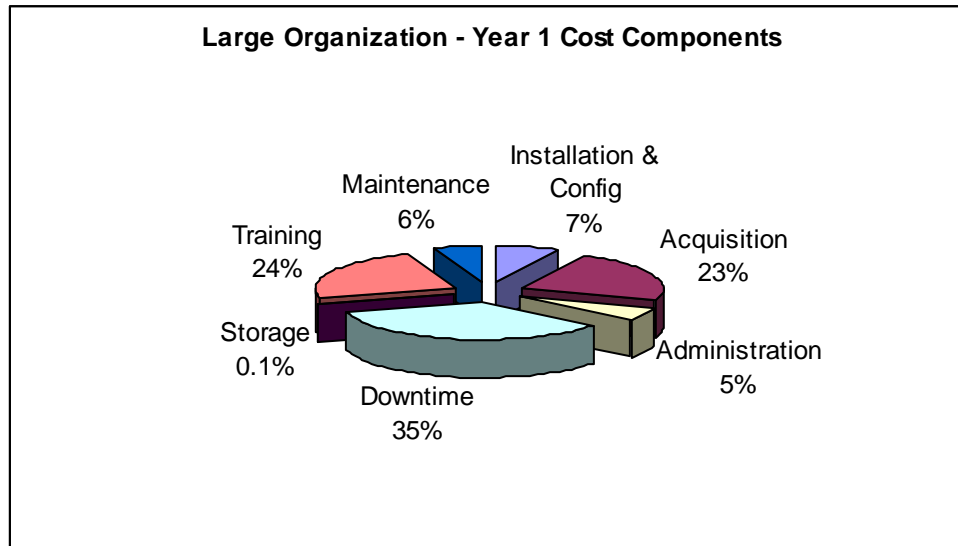


Figure 5: Year 1 Cost Components for Large Organization

4.9 WIRELESS DEPLOYMENT

Among our survey sample wireless email was not deployed across all users. We asked about the number of users deploying wireless email based on Microsoft Exchange Server 2007 native Active Sync. We found the following deployment across large organizations:

- 50% of email users had wireless email, deployed on Microsoft Exchange Server 2007.
- 15% of email users had wireless email, deployed on Blackberry BES.
- 35% of email users did not have wireless email.

4.10 ANTI-SPAM DEPLOYMENT

Microsoft Exchange Server 2007 incorporates sophisticated security features for anti-spam protection. Nevertheless, it is common for organizations to layer multiple layers of protection. We asked organizations if they were using additional 3rd party anti-spam products to protect their email environment. Large organizations responded as follows:

- 2 organizations were not deploying any additional anti-spam product or services.

- 5 organizations were deploying additional 3 party products, including: IronPort, McAfee, Norton, Symantec, and Trend Micro.

4.11 ANTI-VIRUS DEPLOYMENT

Microsoft Exchange Server 2007 incorporates sophisticated security features for anti-virus protection. Nevertheless, it is common for organizations to layer multiple layers of protection. We asked organizations if they were using additional 3rd party anti-virus products to protect their email environment. Large organizations responded as follows:

- 4 were not deploying any additional anti-virus product or services.
- 3 were deploying additional 3 party products, including: McAfee, and Trend Micro.

5.0 SUMMARY & CONCLUSIONS

- Microsoft Exchange Server 2007 is a considerably more feature-rich system than any messaging and collaboration system released by Microsoft so far. With the increased richness in functionality comes additional complexity which can translate into a higher Total Cost of Ownership than previous versions of Microsoft Exchange Server.
- Nevertheless, we believe that over time as organizations become more familiar with deploying the new system they will see their TCO go down dramatically. Particularly in the area of downtime, which we believe is directly attributable to organizations not always implementing the system correctly, especially with regards to architecting server roles and load balancing in their specific environment.
- Table 21, below, provides a quick comparison summary of the costs of both groups of organizations: mid-size and large organizations.

Summary Comparison	Mid-Size	Mid-Size	Large	Large
	Total Cost	Cost/User	Total Cost	Cost/User
Average # of Users	1,000		5,200	
Number of Administrators	2.5		3	
Number of Help Desk Staff	4		4	
Number of Servers	2		6	
% Users on Standard CALs	50%		10%	
% Users on Enterprise CALs	50%		90%	
% Storage on backup tapes	20%		30%	
Acquisition Cost	\$107,837	\$108	\$595,990	\$115
Maintenance Cost	\$25,959	\$26	\$144,998	\$28
Installation & Configuration Cost	\$38,295	\$38	\$184,161	\$35
Storage Cost	\$416	\$0.41	\$3,245	\$0.62
Administration Cost	\$96,876	\$97	\$136,344	\$26
Downtime Cost	\$350,280	\$350	\$899,136	\$173

Training Cost	\$120,690	\$121	\$604,680	\$116
Total Cost Year 1	\$740,353	\$740	\$2,568,554	\$494
Total Cost Year 2 & 3	\$473,531	\$474	\$1,183,722	\$228
Average 3-Year Cost/user		\$562		\$316

Table 21 : Microsoft Exchange Server 2007 – Summary TCO

- Table 21, shows that the Total Cost of Ownership costs for Microsoft Exchange Server 2007 do scale down considerably as the size of deployment increases. This is not too surprising as larger organizations tend to have better access to knowledgeable professional services teams and training for their administrators. Also, many of the architecture features in Microsoft Exchange Server 2007, such as server roles, business continuity, etc. are better suited to large environments and show their TCO benefits in larger environments of 5,000 plus users.
- Figure 6, below, summarizes the differences in cost over a 3-year average for mid-size organizations in the 1,000 user range, and large organizations in the 4,500+ user range.

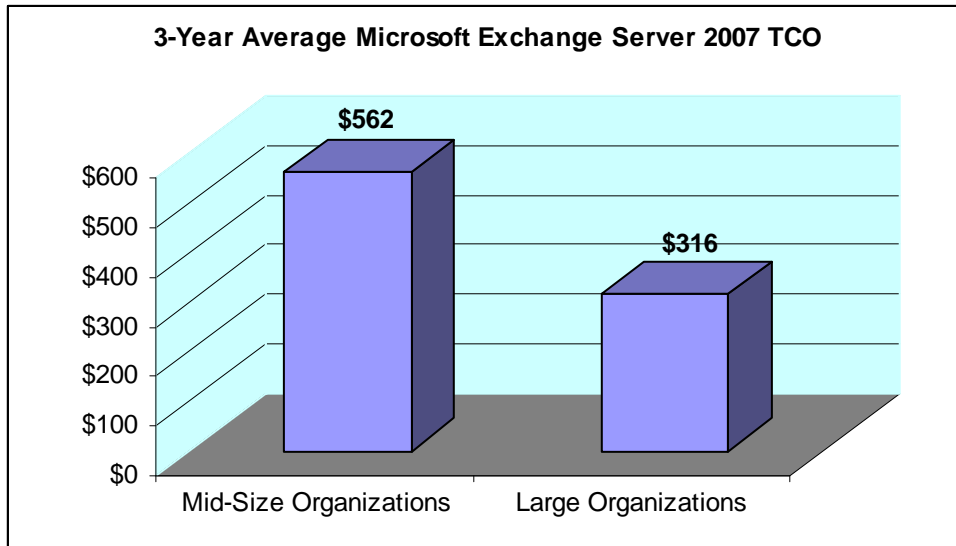


Figure 6: Microsoft Exchange Server 2007 - 3-year Average TCO

- We expect that the cost of deployment of Microsoft Exchange Server 2007 would scale down even further in the 10,000 plus user deployment range.

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