

# **Concentric Hosted Exchange Whitepaper**

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## 1.0 Executive Summary

Email, calendaring, collaboration, and mobility solutions are moving from corporate data centers to service provider networks. Service providers can realize far greater economies of scale than most businesses and deliver higher levels of service to more users at a lower cost; in fact, the fewer the users, the higher cost for each.

Concentric Hosted Exchange is a fast, reliable and affordable solution for email, calendaring, collaboration, and mobility based on Microsoft® Exchange Server 2007 Service Pack 1 (SP1) and Microsoft Outlook® 2007. Concentric Hosted Exchange provides all of the benefits of Microsoft Exchange and Outlook 2007 without the up-front infrastructure costs or ongoing overhead.

Using a hosted service allows businesses of all sizes—from one employee to thousands—to benefit from the same email, calendaring, collaboration, and mobility features used by Fortune 500 companies around the world. Concentric Hosted Exchange provides:

- Lower costs that are more predictable and flexible
- Increased security, performance, reliability, and up time
- Access to the latest, most advanced technology features

The cost and productivity benefits of Concentric Hosted Exchange are incentivizing companies to upgrade at an accelerating pace. This trend is expected to continue until most businesses move to hosted messaging and collaboration services in the next three-five years.

## 2.0 The Business Case for Concentric Hosted Exchange

More businesses are choosing hosted email, calendaring, collaboration, and mobility solutions over maintaining their own servers. While large companies own and operate their own infrastructure for email, calendaring, collaboration, and mobility, companies with fewer than 5,000 employees can realize dramatic savings using a hosted service. In fact, the smaller the number of email users, the bigger the savings.

Over the past five years, the cost of owning and operating a messaging and collaboration system has increased dramatically. This is partially the result of rising operating expenses for power and cooling and growing storage requirements.

The Radicati Group estimates the total cost of ownership (TCO) for Microsoft Exchange has risen to \$562.00 per user per year for businesses with approximately 1,000 email users and to \$316.00 per user per year for businesses with approximately 5,000 email users. For smaller companies, these costs increase as the number of email users grow smaller.

### Microsoft Exchange Server 2007 Total Cost of Ownership: In-House 3 Year Average

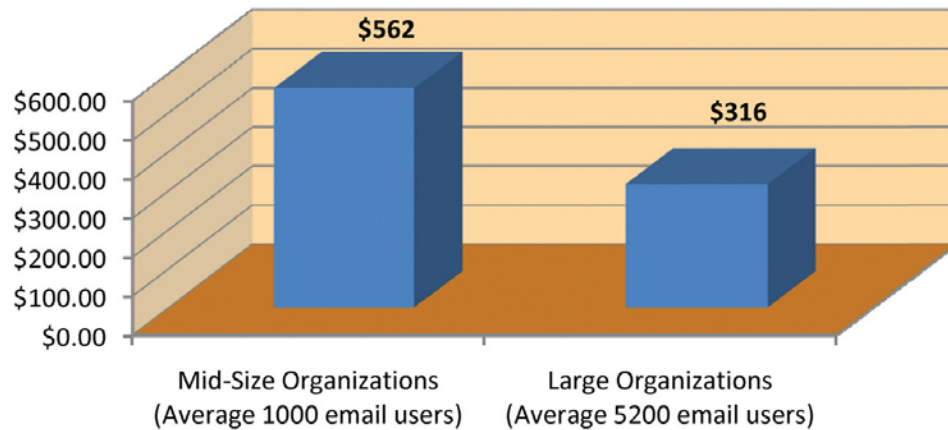


Figure 1: Cost per user of In-house Exchange (Radicati Group 2008)

#### 2.1. Avoiding the Size Penalty

A key benefit of upgrading to Concentric Hosted Exchange is the elimination of infrastructure costs and the operational burden of implementing and managing an Exchange Server. Companies with fewer than 1,000 employees either don't use Exchange or pay a "size penalty." Projecting the Radicati Group's estimates linearly indicates that the cost of Microsoft Exchange is prohibitive for smaller companies.

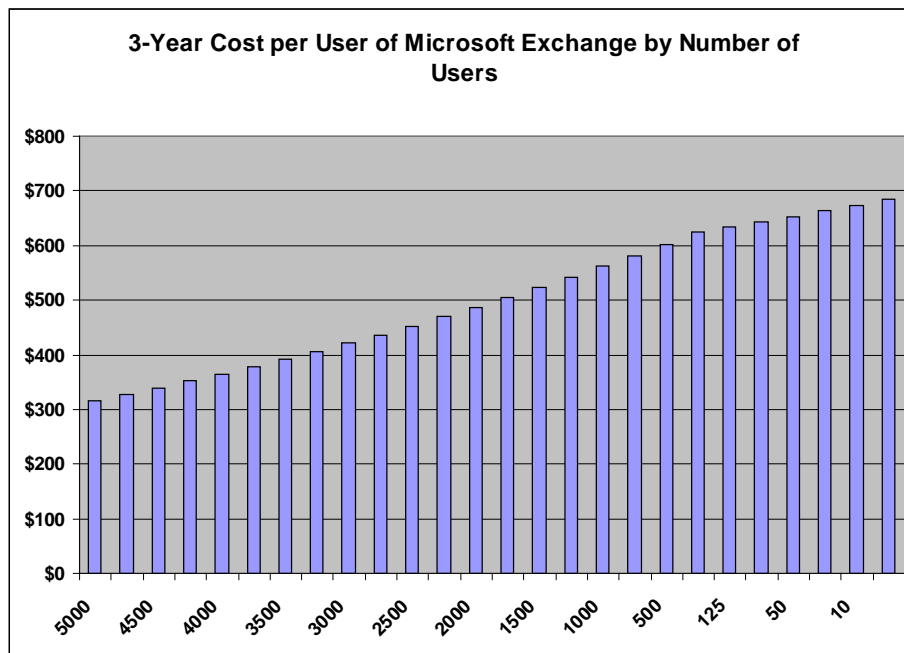


Figure 2: Three Year Cost per User of Microsoft Exchange by Number of Users (Global System Services Corporation 2008)

The reason it's expensive for smaller companies to purchase hardware and software and deploy an Exchange Server with its supporting infrastructure (such as Microsoft Active Directory) is primarily because experts are required for installation, maintenance, and support.

As a result, the cost of an in-house upgrade to Exchange 2007 simply doesn't make financial sense for many businesses. Exchange 2007 raises the bar higher for smaller companies because it's more complex and harder to implement than previous versions. Exchange 2007 requires new 64-bit hardware and Windows Server licenses and IT staff must be re-trained for Microsoft's new CLI (Command Line Interface). At the same time, storage requirements continue to grow.

## **2.2. Rising Cost of Supporting Infrastructure**

While Concentric Hosted Exchange is a sound decision based on cost, the main reason businesses are migrating is the significant increase in the support infrastructure required for email, calendaring, collaboration, and mobility.

In actuality, the Radicati Group's estimates are too low. Because of the rising expense of supporting infrastructure, the actual cost of deploying, operating, and maintaining Microsoft Exchange is much higher and especially impacts smaller companies.

Requirements for anti-spam and antivirus defenses, disaster recovery planning, and compliance with government regulations have driven up the cost of owning and operating a messaging and collaboration solution. Increasing security threats mean constant software patches, costly and disruptive upgrades, and potential down time. And the cost of downtime is higher than ever. Today, email outages mean lost productivity, project and transaction delays, and missed sales. At the same time, key business enablers such as group calendaring, secure access to email over the web, and wireless access have increased infrastructure requirements.

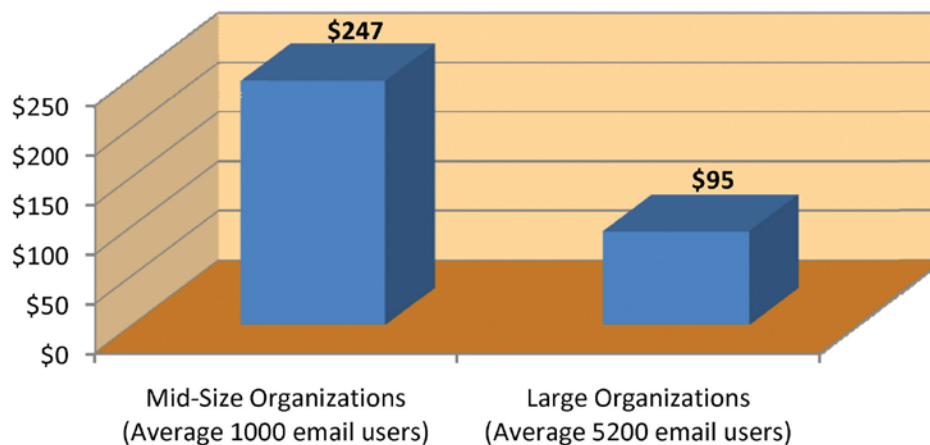
Investment in supporting infrastructure means more servers, hardware and maintenance, monitoring and administration, bandwidth, storage, and complexity. This is an escalating expense that doesn't scale up or down with business needs.

For many companies with fewer than 100 employees, support infrastructure cost has become more expensive than the email, calendaring, collaboration, and mobility solution itself. It's no longer economically feasible for individual businesses to own and operate massive and complex support infrastructures needed for today's email, calendaring, collaboration, and mobility tools. Because smaller companies pay more per user per year than larger companies, businesses with fewer than 1000 email users are struggling to justify the cost of owning and operating an Exchange solution.

## **2.3. Saving Money with Hosted Exchange**

Concentric Hosted Exchange costs significantly less than an in-house solution. For businesses with approximately 1,000 email users, it cuts costs by approximately 56% and for businesses with approximately 5000 email users by approximately 70%.

### Microsoft Exchange Server 2007 Total Cost of Ownership: Hosted 3 Year Average



**Figure 3: Concentric Hosted Exchange Lowers Cost per User 56% to 70%**

According to IRS data, there are over 30 million U.S. companies with up to 500 PCs or 1000 employees. Microsoft research indicates 12.6 million of these will be using hosted Microsoft Exchange solutions by the year 2013. The primary reason is cost savings as the infrastructure for email, calendaring, collaboration, and mobility continues to grow.

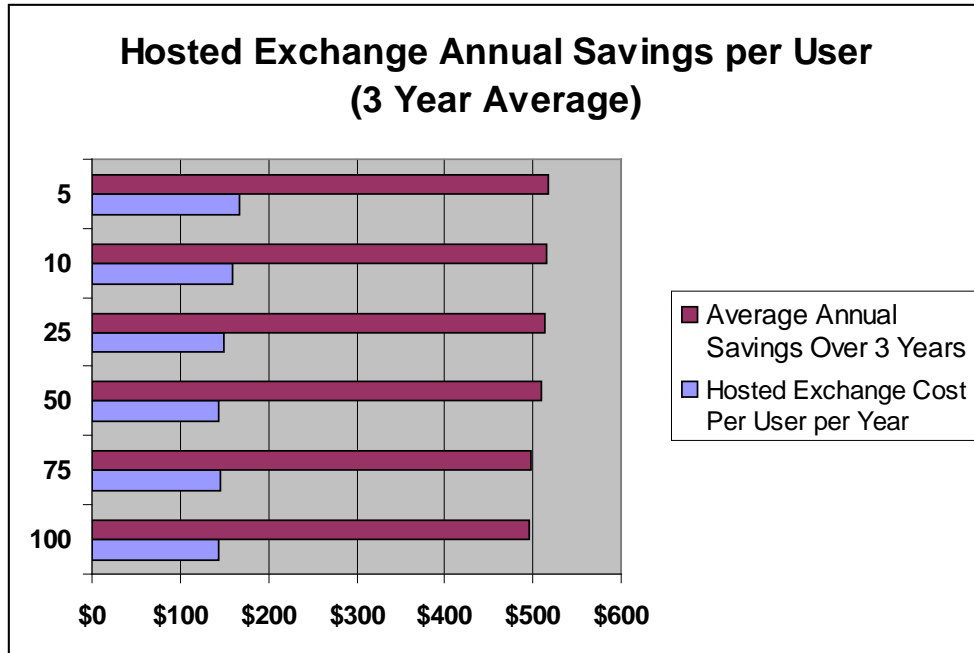
At the same time, the lower bandwidth cost and wider availability of fast, reliable Internet connections are making it possible for companies of all sizes to take advantage of hosted email, calendaring, and collaboration. More companies are realizing it's not profitable to own and operate an in-house email, calendaring, collaboration, and mobility system. The business benefits of a hosted service are compelling:

- Reduced operating and administrative costs
- Protection against spam, viruses, and other threats
- Improved performance and reliability
- Addresses need for disaster recovery planning
- Complies with government regulations
- Scales costs up or down with changing business needs

Upgrading to hosted email, calendaring, collaboration, and mobility also means gaining access to new features without disruptive upgrades.

#### **2.4. Reversing the Size Penalty**

Not counting the growing cost of supporting infrastructure, Concentric Hosted Exchange results in bigger savings for smaller companies, reversing the size penalty.



**Figure 4: Bigger Savings for Smaller Companies (Global System Services Corporation 2008)**

Concentric Hosted Exchange allows smaller companies to enjoy lower costs per user compared to larger businesses. It transfers the service provider’s economies of scale to smaller organizations. Instead of paying more per user as the number of users decreases, Concentric Hosted Exchange enables smaller companies to pay less.

### 3.0 Concentric Hosted Exchange

Concentric Hosted Exchange is a logical step for companies that have a Microsoft Windows or Microsoft Office desktop environment and want to leverage their investment by using Microsoft Outlook for email, calendaring, collaboration, and mobility.

Concentric Hosted Exchange is based on Microsoft’s Hosted Messaging and Collaboration (HMC) v4.0 standard. This Microsoft-designed and tested solution scales up to 1 million email mailboxes.

With over 140 million Exchange Server licenses sold, Microsoft is the undisputed leader in email, calendaring, collaboration, and mobility. Microsoft’s Exchange and Outlook products are rich in functionality compared to competing offerings. Notable Outlook and Exchange 2007 features include:

**Collaboration**

- Group Calendaring and Scheduling
- Public Email Folders
- Shared Contacts, Calendars and Folders
- Tasks and Task Delegation

**Microsoft Exchange 2007 Email**

- Outlook Web Access (OWA)
- Secure mailbox access via Outlook
- Optional mobile device access

#### **Microsoft Outlook 2007**

- Email, Calendar, Contacts
- Tasks, Notes, Journal

#### **Microsoft Active Directory**

- Global Address List (GAL)
- Contacts and Distribution Lists
- Offline Address Book (OAB)

Microsoft Exchange and Outlook benefits include increased productivity through collaboration features and new capabilities that allow people to work faster and smarter. Organizations using Concentric Hosted Exchange with mobility features like RIM BlackBerry® are more responsive, more competitive, and better equipped both to meet internal demands and to serve their customers.

### **3.1. Are Productivity Gains Real?**

Over time, every software vendor's claim of increased productivity seems less credible. However, economic statistics show that productivity in the U.S. is at an all time high and far ahead of most other countries. American businesses operate with fewer employees than foreign competitors and do more with less. This is because American businesses are ahead in technology adoption. And the technologies with the greatest impact on productivity are email, calendaring, collaboration, and mobility.

Scheduling meetings without a shared calendar takes approximately three to four times longer and involves multiple email messages or phone calls. In contrast, scheduling a meeting using Microsoft Outlook and Exchange takes a single invitation because the scheduler can see the availability of the other participants.

Time savings means increased productivity and the actual time saved from email, calendaring, collaboration, and mobility can be enormous. While productivity gains are real, rising costs can undermine this critical competitive advantage.

### **3.2. Advanced Collaboration and Mobility**

In the U.S., unprecedented levels of productivity have been achieved through collaboration and mobile technologies that enable virtual teams in disparate locations to work together. But, the majority of businesses haven't been able to take full advantage of collaborative capabilities such as group calendaring, task delegation, and mobile technologies. Now, Concentric Hosted Exchange makes it possible for companies of all sizes to take full advantage of advanced collaboration and mobile technologies.

The powerful collaboration features available through Concentric Hosted Exchange decreases the time needed to aligning schedules and increases productivity with the most up-to-date information and the ability to connect with other employees anywhere around the world.

Mobile devices such as Research in Motion (RIM) BlackBerry®, Treo™, iPhone®, or Windows Mobile® devices are a critical part of the day-to-day operations of most companies. Mobilizing the workplace with Microsoft ActiveSync® boosts business performance by increasing productivity and allowing workers to make timely decisions based on the most accurate information available. The benefits of Concentric Hosted Exchange ActiveSync include:

- Inbox, sent items, calendar, contact, and tasks are synchronized wirelessly and two-way

- Deleting, creating, and moving an email is synchronized to the user's Outlook to save time
- View attachments from the device
- No software to install on the user's PC
- Communications that are secure and encrypted
- Low total cost-of-ownership

With Concentric Hosted Exchange, mobile users can enjoy full access to up-to-date email, calendaring, collaboration, and mobility features from anywhere in the world. Mobile users become more productive as companies become more responsive, competitive, and profitable.

### **3.3. Mobile Security**

Concentric Hosted Exchange provides the ability to provision and manage mobile devices including Research in Motion (RIM) BlackBerry devices, and Windows Mobile® 5.0 and higher devices, and iPhone with 2.0 software and above. Customers can activate and deactivate devices from a web-based control panel and securely wipe devices that are lost or stolen.

### **3.4. Data Protection (Backups, Dumpsters, Pooled Quotas)**

Multiple backups allow customers to easily recover from PC failures or comply with government regulations. Additionally, they can undelete messages from a “dumpster” within 48 hours via Outlook or OWA. Concentric ensures customer data is carefully backed up.

This includes:

- Daily backups
- Restoring of individual email mailboxes upon request

Concentric Hosted Exchange customers never miss important messages because of flexible storage options that include “pooled” quotas—a 10GB hard limit on email mailbox size and a 20MB send/receive limit. A pooled quota means if a customer has 10 mailboxes with 2GB of storage each, they can have a total of 20GB of storage. If one mailbox is 10GB, there’s no penalty as long as the combined storage of all mailboxes is less than 20GB.

## **4.0 Exchange 2007 Service Pack 1**

The latest version of Microsoft Exchange Server (2007 SP1) offers a number of advantages over previous versions and competing products. In addition to being optimized for hosted environments, Exchange Server 2007 SP1 improvements include:

**Performance** – Exchange 2007 supports 64-bit architecture for improved performance and capacity and the Enterprise Edition of Exchange Server 2007 supports a larger number of storage groups and databases per server. Exchange 2007 allows the creation of as many as 50 storage groups per server. Although a storage group can contain as many as five databases, there’s a limit of 50 databases per server.

**High Availability** – Exchange 2007 includes three built-in features that provide high availability for Mailbox servers:

1. Local Continuous Replication (LCR)
2. Cluster Continuous Replication (CCR)
3. Single Copy Clusters (SCC)

Continuous replication features use log shipping to create a copy of a production storage group. In a LCR environment, the copy is located on the same server as the group. In a CCR environment, the copy is located on the passive node in the cluster.

**Disaster recovery** – Introduced in Exchange 2007 SP1, Standby Continuous Replication (SCR) extends continuous replication features to enable data availability scenarios for Exchange 2007 Mailbox servers using the same log shipping and replay technology as LCR and CCR. SCR supports multiple targets per storage group, allows an administrator to specify a lag time for replication, and provides continuous replication of Mailbox server data from a stand-alone Mailbox server, or from a clustered mailbox server in a SCC or CCR environment.

**Hub Transport Failover** – When multiple Exchange 2007 computers and the Hub Transport server role are deployed, mail flow between Hub Transport servers and Mailbox servers are automatically load balanced and require no additional configuration by the administrator. If a Hub Transport server (formerly known as a bridgehead server) is unavailable because of a failure or regularly scheduled maintenance, failover to the other Hub Transport servers is automatic.

**Client Connection Optimization (Autodiscover)** – When a remote user connects to an Exchange 2007 computer, the Client Access server that accepts the initial request locates the user's mailbox. After the user's Mailbox server is located, the client request is redirected to the Client Access server nearest the user's Mailbox server.

#### **4.1. Outlook Web Access (OWA) 2007**

In Exchange Server 2007 SP1, Outlook Web Access (OWA) provides a complete, consistent mailbox image on the web. Instant search and a Web 2.0 interface provide a faster, cleaner user experience similar to Outlook than previous versions. With an out-of-office feature and improved Global Address List (GAL) search, OWA users can now manage their Outlook junk email settings (client whitelists and blacklists).

The calendar features of OWA have been improved to make it easier to find information and manage schedules. Reminders and notifications are now presented as an overlay on the current web browser window. Users can click “Reminders” to view a current list (the “Reminders” link is located in the upper-right corner next to the “Help” icon).

Notifications that new mail has arrived are less distracting than in earlier versions of OWA. A notification appears as a brief overlay to the main window. Users can access the newest message by clicking the notification.

The spelling checker feature in OWA now offers all the options available in the spelling checker feature in Outlook 2007 including:

- Ignore words in UPPERCASE
- Ignore words with numbers
- Always check spelling before sending
- Select language to use when spell checking

#### **4.2. Outlook 2007 (with Exchange Server 2007 SP1)**

In Exchange Server 2007 SP1, email appears automatically in the Inbox and the unread counts in the folder tree stay up-to-date so users no longer have to press the “Check Message” button to see if they have received new email messages.

The drag and drop function of the email folder tree has been enhanced so users can place single or multiple items from an email list into a folder and interact with them by

right clicking and choosing “Actions” within the context menu. The right-click folder tree context menu now includes:

- New folder creation and in-place folder renaming (no more dialogs). Choose the type of folder you want (Mail, Calendar, Contacts, Tasks) and right-click to choose "Create New Folder" from the menu
- "Mark All as Read" action for folders
- "Empty Folder" to delete all items in one click—a new Option to empty the Deleted Items folder on log off is also provided in the new Options pages

A new, integrated “Reminders” drop-down has been added to the folder title area in Outlook 2007. Users can choose to hide these temporarily with one click outside the menu, or dismiss individual or multiple appointments by clicking the Snooze or Dismiss buttons.

#### **4.3. Outlook and Exchange 2007 Security**

Communications in Exchange Server 2007 are optimized for large enterprises and service providers. Communications between Outlook and Exchange Server are encrypted using the remote procedure call (RPC) protocol over secure sockets layer (SSL) which uses the hypertext transfer protocol (HTTP), i.e., RPC over HTTPS (using the standard SSL port, TCP port 443). This feature, known as Outlook Anywhere, allows Microsoft Outlook to connect anywhere a web browser works. At the same time, communications via the Internet standard simple mail transfer protocol (SMTP) are also secured using transport layer security (TLS).

In addition to the strong security of Microsoft Exchange Server 2007 SP1 and Microsoft Outlook 2007, Concentric Hosted Exchange is operated and maintained proactively by professional security experts who evaluate, test, and apply monthly Microsoft patches.

### **5.0 Concentric Junk Mail and Virus Filtering**

Concentric Junk Mail and Virus Filtering is a unique offering included in Concentric Hosted Exchange at no additional cost. Concentric handles an average of **200 million inbound emails** each day, and has developed highly effective Junk Mail filters based on processing and analyzing this level of mail volume over many years.

Concentric Junk Mail and Virus Filtering, which is also sold separately from Hosted Exchange, is a complete email protection service with tools to filter and authenticate incoming email before it reaches the Exchange server. This leading-edge technology prevents spam, viruses, directory harvesting, denial-of-service or dictionary attacks, fraud, phishing schemes, and other debilitating email bombs and other denial of service (DoS) attacks from reaching user mailboxes. Concentric Junk Mail and Virus Filtering ensures only clean, valid, and properly addressed email is delivered. It includes core protocol enforcement and rejects messages that fail basic compliance/compatibility tests as well as other standard techniques. A proprietary engine performs statistical analyses on inbound messages and collects pattern information it uses to update itself multiple times each day to keep pace with constantly changing spam techniques. This same updating process takes reported errors from customers into account for future corrections for continual improvement in accuracy. Concentric has also developed proprietary algorithms that detect inbound connections from Junk Mail servers and sever the connections before legitimate mail is impeded.

Concentric Junk Mail and Virus Filtering improves system performance and employee productivity by stopping spam and email-based attacks at the perimeter. It can reduce email storage requirements and bandwidth used for email by 90% or more. Individual users can review junk email messages at any time through a secure web console and

take actions such as releasing messages for delivery and whitelisting or blacklisting senders.

### **5.1. Premium Junk Email and Virus Protection**

Although the majority of companies will be protected from junk email and viruses with Concentric's standard Junk Mail and Virus Filtering, some customers may want more control. Anti-spam solutions are based on the fact that valid email messages share common characteristics different from the characteristics of junk email messages. With Concentric's Premium Junk Mail and Virus Filtering, the differences between junk email and valid email can be fine tuned. Dynamic feedback-based filters and a custom engine make Concentric Premium Junk Mail and Virus Filtering superior to other anti-spam technologies.

## **6.0 The Concentric Service Provider Advantage**

Compared with the infrastructure most companies put in place to support email, calendaring, collaboration, and mobility, Concentric can help achieve economies of scale of a large enterprise. Upgrading to Concentric Hosted Exchange allows companies of all sizes to take advantage of email, calendaring, collaboration and mobility services from a Tier 4 data center (the highest level) that features:

- No single point of failure
  - Clustered Exchange Server software
  - Two connections to power grid
  - Redundant firewalls and routers for maximum reliability and security
  - Reliable network with redundant backbone network connections from two directions
- Storage area network (SAN)
- High-speed network infrastructure
- UPS (power backup) and standby diesel generators
- Geologically stable geographical location
- Optional 7x24 support (based in the U.S.A.)

Concentric Hosted Exchange includes backup and restore service, as well as world-class anti-spam and antivirus filtering. Additionally, customers of other Concentric services, such as network connections and web hosting, can manage all their services from one, intuitive control panel.

### **6.1. Data Center Security**

Some companies express concern about having their mission-critical email data hosted by a service provider. Without the highest standards of security, the benefits of lower cost, higher performance, and improved reliability are worth little. That's why Concentric's data center security includes:

- Back-end compartmentalization of customer data
- 24x7 dedicated professional security staff
- Multiple layers of hard-line physical security
- Multiple layers of electronically controlled access
- Multiple Biometric scanners control access
- Video surveillance throughout the facility
- Digital storage of all events and video maintained
- All servers are secured in locked cabinets

In addition, network security is provided by multiple, redundant firewalls, restricted physical access to the network, and strict security policies including password policies.

Concentric Hosted Exchange is as secure as online banking or payroll services. Today, only the largest companies operate their own payroll service with the majority of businesses using online payroll services. Similarly, fewer companies are owning and operating servers for email, calendaring, collaboration, and mobility.

## **7.0 Conclusion**

Email, calendaring, collaboration, and mobility are currently moving out of corporate data centers to service provider networks. This means higher levels of service delivered at lower cost to more users. The success and momentum of Concentric Hosted Exchange illustrates the practical benefits and economic inevitability of hosted solutions for email, calendaring, collaboration, and mobility.

Concentric Hosted Exchange allows companies of all sizes to enjoy the advanced features of Microsoft Outlook and Exchange 2007 email, calendaring, collaboration, and mobility without up-front infrastructure costs or ongoing overhead.

Concentric's world-class data center, multi-tier security, junk email and virus protection, data protection and other features ensure the security, reliability and performance of Concentric Hosted Exchange.

Over a three year period, Concentric Hosted Exchange costs as much as 56% less for businesses with approximately 1000 email users and as much as 70% less for businesses with approximately 5000 email users. These dramatic cost savings make it the ideal solution for businesses with fewer than 5000 email users.

## 8.0 Concentric Hosted Exchange Glossary

**ActiveSync®** – Microsoft protocol use by Windows Mobile®, iPhone 3G, and other wireless devices to synchronize data with Exchange Server.

**DNS (Domain Name System)** – Internet-standards-based protocol used to lookup IP addresses, mail exchanger (MX) server names, and related data to facilitate communication using the TCP/IP protocol suite.

**GAL (Global Address List)** – Internal company address list where each company has their own private name space.

**IMAP4 (Internet Message Access Protocol)** – Internet-standards-based protocol that provides email messages and folders access to server-based email mailboxes.

**MAPI (Messaging API)** – Microsoft protocol supporting access to Exchange data objects including email messages, contacts, calendar information, tasks, etc., (normally MAPI works over Port 135 / RPC Protocol).

**MX records** – DNS records used to locate SMTP servers for Internet domains.

**OWA / Outlook Web Access** – Web-based email client application built into Exchange Server that provides access to email mailboxes through a web browser.

**POP3 (Post Office Protocol) v3** – Internet standards-based protocol used for simple email message download.

**RPC/HTTPS** – Remote procedure call protocol over secure HTTP (RPC/HTTPS, TCP port 443).

**SAN (Storage Area Network)** – Storage technology that allows multiple servers to share a common pool of disk drives.

**SMTP (Simple Mail Transfer Protocol)** – Internet standards-based protocol used between all email servers to transmit email messages.

**SSL / Secure Sockets Layer (AKA HTTPS)** – Encryption technology used for the HTTP protocol and used by OWA.

**Split Domain** – System with 2 or more email servers on different networks that service email addresses in the same domain.

**TLS (Transport Layer Security)** – Internet standards-based security technology used by higher-level protocols such as SMTP (typically uses 128-bit encryption and requires that both email servers have an SSL certificate installed).

**WebDav (over HTTPS)** – Protocol used by Microsoft Entourage® on the Mac OS platform.