Microsoft Exchange Server 2003

Summary

Exchange Server 2003, the latest release of Microsoft's messaging and collaboration platform, is a part of the Windows Server System. Existing customers must consider some issues before migrating to Exchange Server 2003.

Note

Microsoft Exchange Server 2003 was released to manufacturing on 30 June 2003 and began shipping to volume-licensing customers in August 2003. Key enhancements include client-to-server performance improvements, redesigned Outlook Web Access (OWA) and integrated mobile support.

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Microsoft Exchange Server 2003

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Overview
Exchange Server 2003 builds on the architecture and functionality of its predecessor, Exchange 2000. With Exchange 2003 come long-awaited productivity improvements, yet it should be considered more of a “point release” than a major upgrade. It does not require the major infrastructure overhaul required by Exchange 2000 implementations. Like its predecessors, Exchange 2003 focuses on e-mail and calendar services through an integrated set of server and client capabilities. The following were dropped from Exchange Server 2003: Exchange 2000 Instant Messaging, Microsoft Exchange Connector for Lotus cc:Mail and Microsoft Exchange MS Mail Connector. Most of the Microsoft Mobile Information Server Exchange features have been replaced by the Exchange mobile features in Exchange 2003.

Exchange Server 2003 is officially branded as part of the Windows Server System (WSS), Microsoft’s integrated and interoperable server infrastructure. It is also a member of the Microsoft Office System family. Microsoft Office System consists of the traditional desktop Office suite, plus SharePoint Portal Server 2003, Microsoft Exchange Server 2003 and three new programs—Microsoft Office InfoPath 2003, Microsoft Office Live Communications Server 2003 and Microsoft Office OneNote 2003. It also includes a hosted offering, Microsoft Office Live Meeting (from the PlaceWare acquisition). By including Exchange as part of both families, Microsoft is appealing to both the information worker community and to IT developers and professionals. The branding, however, is likely to cause confusion.


Client Support
Exchange Server 2003 supports Outlook (2003, 2002 and 2000) as the desktop client as well as Internet Explorer and Netscape Messenger browsers for OWA. It also supports Post Office Protocol version 3 (POP3) and Internet Message Access Protocol version 4 (IMAP4)-compliant e-mail clients.

Outlook
Though users can connect to Exchange Server 2003 through various versions of Microsoft Outlook, many of the performance and productivity enhancements are provided when Exchange Server 2003 is used in conjunction with Outlook 2003. Outlook 2003 offers a new user interface, tools for inbox management and enhanced performance over low-bandwidth networks.

OWA
Microsoft Exchange Server 2003

The OWA 2003 user interface closely resembles desktop Outlook 2003 with near functional parity. Primary differences are that OWA 2003 doesn’t support offline capability, and it is a thinner client. New to OWA are the spell check capability, support for automatic signatures, the ability to create e-mail rules and junk e-mail folder capabilities. OWA 2003 comes in two client versions—Premium and Basic. OWA 2003 Premium requires Internet Explorer 5.01 or later for Microsoft Windows.

Migration Strategies/Issues

Existing Exchange customers face a number of issues and need to make strategic decisions regarding migration to Exchange Server 2003. Exchange 5.5 users can migrate to Exchange 2000 and then to Exchange 2003 or go directly to Exchange 2003. Microsoft supports in-place upgrades from Exchange 2000 to Exchange Server 2003. Lastly, Microsoft also supports co-existence of different versions of Exchange. During the migration phase, “mixed mode” refers to an Exchange 5.5 and 2000 environment or an Exchange 5.5 and 2003 environment. While some enterprises may find themselves in a combination Exchange 5.5, 2000 and 2003 environment (perhaps as a result of a merger), Gartner cautions that such three-version migrations are high risk due to the added planning complexity. Gartner recommends that an enterprise stay within a two-version migration. For example, where an enterprise is well into their Exchange 5.5 to Exchange 2000 migration, it should be completed before migrating to Exchange 2003.

Migration From Exchange 5.5

Gartner estimates that when Exchange Server 2003 was released in August 2003 only about 15 percent of Exchange 5.5 enterprises had completed their migration to Exchange 2000. The majority of Exchange 5.5 enterprises were in some stage of deployment or planning—with about 20 percent having made no plans for migration. A primary goal for Microsoft is to get the Exchange 5.5 shops to Exchange 2003. As such, deployment tools are included with Exchange 2003. More importantly, Exchange 5.5 shops can migrate directly to Exchange 2003 (that is, without first migrating to Exchange 2000). In-place hardware Exchange 5.5 to Exchange 2003 migrations are not supported. Exchange 5.5 must be on Service Pack 3 or later. Exchange 5.5 maintenance-covered support ends 31 December 2004 and for-fee-extended support ends 31 December 2005.

Migration From Exchange 2000

The majority of enterprises that have completed their Exchange 2000 migration or have invested significant time or money toward it will not migrate to Exchange 2003—at least not to start before mid-2005. Exchange 5.5 to Exchange 2000 averaged US$100 to $125 per user. (Enterprises can expect the cost of Exchange 5.5 to Exchange 2003 migrations to average the same.) Microsoft supports in-place upgrades from Exchange 2000 to Exchange Server 2003. The migration requires that Exchange 2000 be on Service Pack 2 or later. Enterprises currently in an Exchange 2000 migration planning or early deployment phase should perform a cost/benefit analysis of the time and money spent to date against postponing the migration in favor of Exchange Server 2003. Enterprises well into their Exchange 2000 deployment should complete their migration, then make a separate decision on when to migrate to Exchange Server 2003.

<table>
<thead>
<tr>
<th>Table 1: Specifications: Microsoft Exchange Server 2003</th>
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<tbody>
<tr>
<td>Version</td>
</tr>
<tr>
<td>Product Type</td>
</tr>
<tr>
<td>Date Announced</td>
</tr>
<tr>
<td>Date Generally Available</td>
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</tbody>
</table>
## Table 1: Specifications: Microsoft Exchange Server 2003

<table>
<thead>
<tr>
<th>Platforms Supported</th>
<th>Windows 2000 Server with Service Pack 3 (SP3) or Windows Server 2003 operating system</th>
</tr>
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<tbody>
<tr>
<td>Internet Protocol Support</td>
<td>Exchange supports many common Internet access protocols, such as HTTP, POP3, IMAP4 and Simple Mail Transfer Protocol (SMTP).</td>
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</tbody>
</table>

### Application Development

**General**

Microsoft provides a variety of tools for developing custom messaging and collaborative applications on Exchange Server 2003. Custom applications can be built with development tools such as Microsoft Visual Studio, Microsoft FrontPage 2000 and Microsoft Office, Developer Edition. In addition, Exchange Server 2003 includes support for Extensible Markup Language (XML), the Web-based Distributed Authoring and Versioning (WebDAV) protocol, and Active Server Pages (ASP). Data access technologies, such as Object Linking and Embedding Data Binding (OLE DB) and Microsoft ActiveX Data Objects (ADO) allow developers to build custom applications for Exchange Server 2003.

**Portal Applications**

Exchange Server 2003 includes new Web Parts and redirection support to improve integration of Exchange with portals. Through Outlook Web Access customizations, Outlook Web Access Web Parts enable specific mail, calendar, contact, Outlook Today and public folder information into a Web portal.

**Microsoft Exchange Software Development Kit (SDK)**

Microsoft provides the Microsoft Exchange SDK for developers that wish to build applications for Exchange Server 2003. It includes sample applications, sample code and information about object modules and application programming interfaces (APIs) to use when building applications.

### System Requirements

**Exchange 2003 Enterprise Edition**

- Intel Pentium or compatible processor (133MHz or higher; 733MHz recommended)
- Minimum of 256MB RAM, 512KB RAM recommended
- Minimum 500MB available hard disk space
- Minimum 200MB available space on system disk
- File Format: disk partitions must be formatted for NT file system (NTFS) and not file allocation table (FAT) file format.
### Table 1: Specifications: Microsoft Exchange Server 2003

| Exchange 2003 Standard Edition | • Intel Pentium or compatible processor (133MHz or higher; 550MHz recommended)  
| | • Minimum of 256MB RAM, 512KB RAM recommended  
| | • Minimum 500MB available hard disk space  
| | • Minimum 200MB available space on system disk  
| | • File Format: disk partitions must be formatted for NTFS and not file allocation table FAT file format. |

### Table 2: Feature/Function Enhancements: Microsoft Exchange Server 2003

| Information Store | Exchange Server 2003 provides a scalable-database architecture. It supports up to 16GB per mailbox database and up to 20 mailboxes per server. Exchange 2003 Standard Edition allows for one storage group and two databases per storage group. Exchange 2003 Enterprise Edition supports up to four storage groups with five databases per server. The Exchange Server 2003 Information Store provides better virtual memory usage. With Exchange 2003, the default message size settings (Sending and Receiving) are 10240KB. The maximum item size limit setting on public folder stores is 10240KB. |
| Mobile Support | Outlook Mobile Access and Exchange Server ActiveSync are installed automatically on Exchange servers. Exchange Server 2003 supports access from HTML, Compact HTML (cHTML) and Wireless Application Protocol (WAP 2.0) browser-based devices and iMode devices. It also provides a set of services that use Short Message Service (SMS) to notify mobile device users when they have new information in their Inboxes. |

### Administrative Capabilities

| General | Administrative tasks include new mail setup, backup and restore, and recovery. Multiple mailboxes can be moved simultaneously. Exchange Server 2003 supports the Volume Shadow Copy service provided in Windows Server 2003. A single administrator can perform tasks for both Windows Server 2003 and Exchange. User and group access can be specified by object class. |
| Query-Based Distribution Groups | A new feature, Query-Based Distribution Groups, enables administrators to use a Lightweight Directory Access Protocol (LDAP) query to specify members of distribution lists. |
| Active Directory Connector | With Exchange Server 2003, the Active Directory Connector has been updated. An Active Directory Connector Wizard automates setup and connection agreements between existing Exchange 5.5 directories and Windows Server and Exchange Server 2003. |
| Exchange System Manager | Administrators configure servers, connectors, public folders, address lists, protocols and policies in Exchange System Manager. With Exchange Server 2003, the Exchange System Manager has an enhanced user interface. |
| Public Folder Management | Exchange Server 2003 provides public folder user interface enhancements, including new tabs. A public folder can be configured to have replicas on multiple servers. |
Table 2: Feature/Function Enhancements: Microsoft Exchange Server 2003

<table>
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<tr>
<th>Security and Privacy</th>
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<tr>
<td>General</td>
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<tr>
<td>Exchange Server 2003 leverages enhanced security functionality within Windows Server 2003. Exchange Server 2003 supports IPsec or Internet Protocol security. It also supports Kerberos authentication between front-end and back-end servers. Exchange Server 2003 supports Microsoft Internet Information Services (IIS) 6.0, which isolates Web applications. Other features include inbound recipient filtering, the ability to restrict distribution lists to authenticated users, and restricted submissions and relaying. OWA allows the blocking of attachments.</td>
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<tr>
<td>S/MIME Support</td>
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<tr>
<td>Outlook Web Access supports the Secure/Multipurpose Internet Mail Extensions (S/MIME) security protocol for signing and encrypting messages when using Internet Explorer 6 and Microsoft Windows 2000 (or later).</td>
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<tr>
<td>Privacy</td>
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<tr>
<td>Microsoft provides a feature to help protect the user’s privacy when viewing a uniform resource locator (URL) from a message in OWA. The user’s IP address is hidden between the front-end and back-end servers so that it is not visible or accessible. The front-end server connects to the Internet and “translates” the URLs appropriately.</td>
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<tr>
<td>Anti-Spam</td>
</tr>
<tr>
<td>Exchange Server 2003 provides anti-spam protection at the server and client. For example, Exchange 2003 multiple blacklists and global allow/block lists. Outlook 2003 supports user-level anti-spam (junk) filtering. Third-party products are required for boundary-level enterprise spam filtering.</td>
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<tr>
<td>Antivirus</td>
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<tr>
<td>Exchange Server 2003 includes an enhanced Virus Scanning API 2.5 that lets third-party antivirus vendor products run on Exchange servers that don’t have resident Exchange mailboxes (for example, gateway servers or bridgehead servers).</td>
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<tr>
<th>Backup and Recovery</th>
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<tr>
<td>Mailbox Recovery Center</td>
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<tr>
<td>A new feature, the Mailbox Recovery Center enables recovery or export operations to be performed simultaneously on multiple disconnected mailboxes. A special storage group, the Recovery Storage Group, lets system administrators backup and recover entire mailbox stores or just a single mailbox.</td>
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<tr>
<td>Error Reporting</td>
</tr>
<tr>
<td>Exchange Server 2003 provides improved error reporting. Administrators can report errors through a dialogue box, or they can enable Exchange to automatically send error reports directly to Microsoft. Exchange can be integrated with Dr. Watson 2.0 for additional error-reporting capabilities.</td>
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</table>

Analysis

Microsoft’s primary target audience for Exchange Server 2003 is enterprises on Exchange 5.5—which is now a two-version old product. Of almost equal importance is enterprises evaluating Exchange against IBM/Lotus Domino. The infamous Exchange vs. Domino rivalry will escalate over 2004 and 2005—fueled by the Microsoft’s Office Systems vs. IBM/Lotus’s Workplace initiatives. To a lesser degree, Microsoft is courting enterprises on Exchange 2000. To date, Microsoft has been underestimating attrition to other players, for example, Novell, Oracle and Sun—a move Gartner deems as unwise.

With Exchange 2003, Microsoft focuses on e-mail, calendaring and scheduling, departing from the inflated Exchange 2000 that attempted to do too much within one application (for example, application development on par with the Domino application development environment and instant messaging). This modular approach is more in line with messaging product trends of the past three years.
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For most enterprises, the most significant reason for migrating to Exchange 2003 will be the client-to-server performance improvements, which are realized through the following:

- The message transport between the client and server uses remote procedure calls (RPC) over hypertext transfer protocol (HTTP). The connection protocol has been tuned to compact data between the Outlook 2003 client and Exchange 2003 servers. To utilize the data compaction, the Exchange Server 2003 front-end server (if being used), the back-end (mailbox) server, the system and public folder store and the global catalog server need to be running on Windows Server 2003. Outlook 2003 requires Windows XP Service Pack 1 on the desktop.

- The user can access messages from a local cache. If in Connected mode, the cached message store is continually updated in the background with the user’s Exchange mailbox, using property-level (that is, delta-level) synchronization. For example, if a message changes from un-read to read, only that property of the message gets synchronized instead of the entire e-mail (body and attachment). The cache is created as a new .ost file during the Outlook 2003 installation.

- At startup, Outlook 2003 will “sense” the type of network connection established (such as, virtual private network, dial-up or LAN) and make the appropriate adjustment. In other words, the desktop Windows XP drivers report the network connection speed (bandwidth profile) to the XP operating system, which then communicates with Outlook 2003. Outlook then selects the optimum performance (readjust buffer sizes) for the bandwidth profile. Exchange 2003 must be running under Windows 2003 for a virtual private network connection to be recognized.

Since most distributed Exchange topologies follow the network topology, client-to-server performance improvements may mean that mailboxes on a remote server can be moved to a regional hub server or central hub server. Conceivably, if mailboxes on all regional remote servers in an Exchange site are moved to the central hub, the regional Exchange site could be eliminated—streamlining the Exchange architecture. The enterprise should do phased testing (that is, gradually moving mailboxes to the regional or central hub servers) before deciding to decommission a remote Exchange mailbox server.

Pricing

Exchange 2003 continues to use the Microsoft Server licensing and client access license (CAL) licensing models, but Microsoft has made the options more flexible with this release. Microsoft offers a User CAL that enables a single user to connect to the server from any device; a Device CAL, which allows unlimited users to access Exchange Server from a single device; and an External Connector CAL, which lets enterprises provide nonemployees with access to the Exchange Server.

In addition, Microsoft introduced a new CAL suite that is available through volume licensing—the Core CAL. The Core CAL includes CALs for Microsoft Windows Server, Microsoft Exchange Server, Microsoft Systems Management Server and Microsoft SharePoint Portal Server.

<table>
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<th>Table 3: Pricing: Microsoft Exchange Server 2003</th>
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<tr>
<td>Component</td>
</tr>
<tr>
<td>Exchange Server 2003 CAL (either by user or by device)</td>
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</table>

GSA Pricing

Yes.
Competitors

IBM/Lotus has two complementary offerings. IBM/Lotus' Workplace Messaging, released in the first half of 2003, is targeted to the worker with simple messaging needs. Workplace Messaging is being built on components such as Java 2 Platform, Enterprise Edition (J2EE) programming model, DB2 relational store, IMAP4, POP3 and browser/portal access. The next release of Notes/Domino, version 7, is targeted for the first half of 2005 (0.8 probability), which can be implemented with a DB2 or the traditional .NSF datastore. It is a good vision that allows enterprises to choose e-mail services unique to their worker types; however, few enterprises have shifted from a one-size-fits-all delivery of messaging services to a worker-type-centric model.

During the past two years, Novell has revived GroupWise, nearly stopping attrition and gaining some significant customers. Released in February 2003, GroupWise 6.5 includes much needed features—for example, an exposed application programming interface for third-party e-mail archiving applications—and a new “Outlook-like” GroupWise client. The vendor has also built up its partner network for GroupWise. Novell has demonstrated concerted and results-producing marketing and product-development efforts. Novell’s January 2004 acquisition of SuSE and its OpenExchange product, however, opens questions about future product roadmaps.

Like all vendors with an e-mail product, Sun Microsystems has been positioning its Sun Java System Communications software (formerly Sun ONE Communications software) as an Exchange-alternative. On 10 February 2004, Sun launched the Sun Infrastructure Solution for Enterprise Messaging Consolidation, an offering that includes e-mail, calendar/scheduling, instant messaging, reference architectures and migration services. Sun’s communications products have wide adoption within the service provider space. However, to date, Sun has not had as strong a presence in the Microsoft replacement market as have other vendors.

Oracle is the most aggressive as a new e-mail competitor, spending millions of dollars on marketing Oracle Collaboration Suite (OCS). Introduced in July 2002, OCS has quickly gained “mind share” (primarily as an alternative to Exchange). With version 2, released in June 2003, Oracle built out OCS with the additions of chat and webconferencing. OCS version 3, targeted for mid-2004, will be focused on content management. Oracle’s biggest challenge is building enough market share to be strongly considered by large, global enterprises.

There are a number of Internet standards-based messaging systems, such as Critical Path, Gordano, Ipswitch, Mirapoint, Rockliffe, Samsung, Scalix, Sendmail and Stalker all vying for a piece of the Exchange market share. Linux-based e-mail systems have grabbed the attention of enterprise decision makers eager to find less costly, more secure e-mail environments. Increased enterprise due diligence has created longer, harder sales cycles for all vendors.

Strengths

Web Access

There are two clients for OWA 2003—Premium and Basic. Premium is supported through an Internet Explorer 5.01 or later browser. For browsers below Internet Explorer 5.01 and other browsers, such as Netscape, OWA 2003 runs under the Basic client. In Premium mode, OWA 2003 has a rich user interface that closely resembles Outlook 2003 with near-parity functionality. New security features to OWA 2003 include:

- S/MIME support
Microsoft Exchange Server 2003

- Blocking of spam beacons (commonly called Web bugs). A spam beacon is a small piece of code embedded in the e-mail. When the user opens the e-mail, the beacon sends a signal to the spammer that verifies the user’s e-mail address as valid.
- Providing a “hidden destination” site to protect the user’s IP address when viewing a URL from within a message in OWA. The original URL is hidden between the front-end and back-end servers. The front end connects to the Internet and “translates” the URL appropriately.
- When using OWA outside of the firewall, attachment blocking that can be used to disable attachments or prevent sensitive attachments from being downloaded.
- An administrator-configurable session inactivity timeout.

Mobile Support

Exchange Server 2003 integrates the now defunct Mobile Information Server (MIS) functionality. Exchange Server 2003 includes Outlook Mobile Access (OMA), which is similar to OWA for devices. While Microsoft supports push-based e-mail for different networks and device types, Exchange 2003 interfaces extend to Windows CE devices only. It will support other devices via manufacturer or third-party efforts.

Tight Integration in Microsoft-centric Environment

Like other Microsoft technologies, Exchange 2003 tightly integrates with Microsoft applications, for example, Microsoft Operations Manager (MOM), Windows and Active Directory. Because of the predominance of Microsoft technologies, there are a volume of system integrators, external service providers and independent software vendors (ISVs) with third-party products and services for Exchange 2003.

Limitations

Clustered Failover Not Reliable

Exchange clustering occurs at the Windows level. Exchange’s “sensitivity to failures” results in a significant number of false failovers to the point that enterprises have chosen to remove the clustering after implementing it. It is critical to understand where clustering does not help (the vulnerabilities not solved with clustering) including corruption of the information store, so that these risks can be mitigated. Where the Exchange datastore resides on a common storage area network (SAN), as well as other forms of file-based replication, the SAN provides a degree of data protection (for example, through mirroring or snap shots).

Dependence on Windows 2003 and Outlook 2003 for Some Features

Microsoft Exchange Server 2003 provides a number of benefits and improvements over its predecessors in the areas of security, reliability and performance. However, to achieve many of these benefits, enterprises must implement Exchange on Windows Server 2003 with Outlook 2003 as the client. For example, when running on Windows Server 2003, Exchange provides improved memory allocation, reduced Microsoft Active Directory replication traffic and rollback of Active Directory changes. To support the remote procedure call (RPC) over HTTP feature in Outlook, the enterprise’s Exchange server and a global catalog server must be on Windows Server 2003, and the Active Directory schema must be upgraded to Windows Server 2003. Though Outlook 2003 is required for many of the enhancements, it can be deployed without having to deploy the rest of the Microsoft Office suite. Exchange Server 2003 can be used with Windows 2000 and Outlook 2000 or 2002, without the upgrade-specific enhancements.
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Tight Integration in Microsoft-centric Environment

For Microsoft-centric shops, the tight integration is a definite plus. However, it also means vendor lock-in—and, in many situations, mushrooming upgrades across applications to achieve the full functionality of one migration, for example, with Exchange 2003.

Recommended Gartner Research

Magic Quadrant for Wireless E-Mail/PIM, 2H03, M-20-9454

When Enterprises Want Outlook, but Not Exchange, TG-21-1096

Insight

For Microsoft Exchange 5.5 and 2000 enterprises, Exchange Server 2003 includes significant improvements focused on the remote and Web-based user and data center efficiencies (particularly for shops migrating from 5.5). With Exchange 2003, Microsoft has crossed over the chasm by addressing the primary deficiencies in earlier versions. While continuing development, Microsoft must now turn its attention to its increasingly strong competitors.