Information Services
[redacted]

IS
STRATEGY REPORT
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Strategic Planning & Research Advisory

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ISRN - 8

OIS MIGRATION: DEVELOPING AN ELECTRONIC MESSAGING STRATEGY

In 1994 the [redacted] Group in Houston stands at the threshold of a major enhancement to its existing E-mail infrastructure. As enterprise Email systems evolve into enterprise messaging utilities, the IS organizations are challenged to develop an Enterprise Messaging Strategy to migrate to this new client/server, middleware-centric E-mail world. An HPOpenMail/MicroSoft Mail solution - while a quantum leap over the current system - may only be an interim step.

Key Issue

What is an appropriate E-mail strategy for the [redacted]-Houston group of companies?

How can organizations justify the costs of migrating to the new OIS model?

How will mail-enabled applications affect the traditional applications, future development and legacy system evolution?

Strategic Assumptions

The existing E-mail infrastructure at [redacted]Houston is a host-centric, non-GUI based system, poorly received by the user community. A migration to an enterprise-wide, client/server based architecture will be required.

By 1995, enterprise E-mail systems will evolve into enterprise messaging services, and will be as fundamental as the telephone utility is today.

The messaging service access module and associated API will become an integral function of the leading operating systems by YE1995.

The development of an Enterprise Messaging Strategy must be developed as part of a general OIS Strategy that incorporates Electronic Commerce and Mobile Computing Strategies.

INTRODUCTION

Though its use at the [redacted]Houston companies is not widespread, E-mail is well accepted in most large organizations as a valuable resource for streamlining interpersonal communication. While these second generation systems were typically justified on this basis, the compelling justifications often came from the benefits of increasing the exchange of information across an organization, expressed in qualitative terms rather than quantitative. The higher value of E-mail is derived from an expanded role as a general purpose information transfer service and an enabler of applications to send/ receive information throughout and beyond the enterprise.

E-MAIL REDEFINED

How is this value realized? An organization must institute an enterprise-messaging strategy that is broader in scope than the traditional E-mail strategy. A view of E-mail as an infrastructure to link customer-support groups or the platform on which work processes are built must replace the view of E-mail as simply a user productivity tool. Central to this concept is the concept of mail-enabled applications

E-mail is migrating from a tightly integrated set of proprietary services to a modular architecture of independent components *(See Figure 1; Notes 1 & 2)* providing clear interface points that better facilitate mail-enabling of personal- productivity, workgroup and enterprisewide applications. This decomposition into modular components exemplifies the nascent OIS middleware model - layers of software between the operating system and the applications. Some vendors are driving down various functions to the level of the operating system (e.g. recent releases by Novell, Microsoft and Lotus).

Note 1
What is the difference between E-mail and Messaging?

E-mail, is simply a kind of message. Messaging is a broader concept, which can be used to transport database records, E-mail, images, voices, file updates, etc. through a single pipeline.

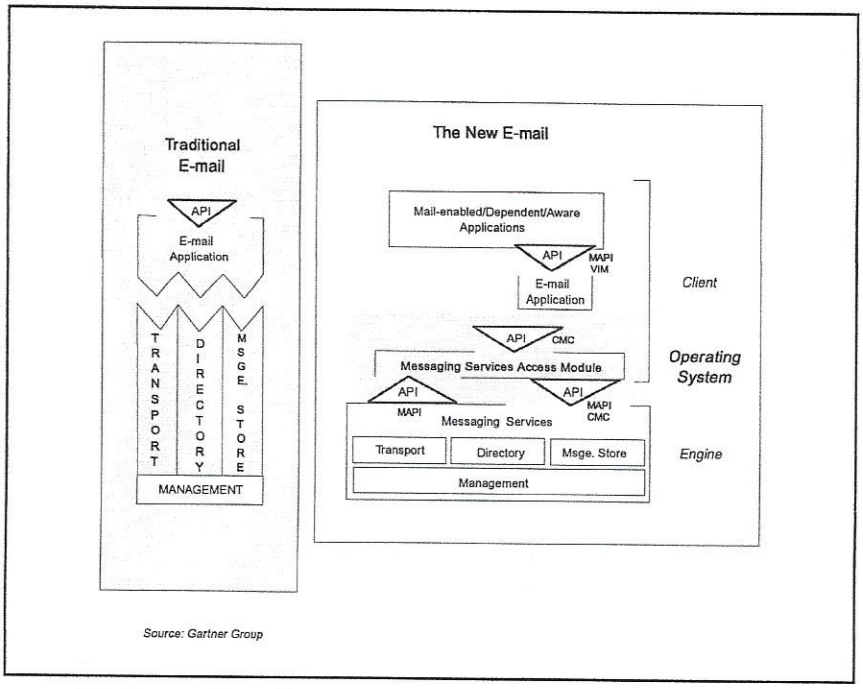
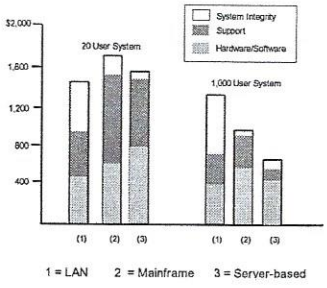


Figure 1. The Migration To A Modular Architecture

Figure 2.
Costs of Ownership for E-mail Applications (Annual/User)



WHERE ARE THE PRODUCTS TODAY?

LAN E-mail products have been trying over the past two years to improve scalability, connectivity and manageability for wide-area deployment. Current market leaders (Microsoft Mail, Lotus' cc:Mail) use the approach of dedicated PCs to manage files between file servers for exchange of messages between end user PCs. While offering flexibility, fast response and installation simplicity at the work-level group, this file-based architecture is weak in wide-area manageability.

Next generation client/server products offered today, and promised in late '95 by leading LAN E-mail vendors, are built on a robust server-centric architecture. These products will substantially reduce the overhead of managing the system *(Figure 2)* lowering costs by as much as 40% over today's file based Lan systems.

Current server-centric products existing today include Hewlett-Packard's OpenMail, Digital's MailWorks, Wordperfect's WordPerfect Office, Oracle's Oracle Office and Fischer International's TAO/LAN. Due in 1995 are Microsoft's Enterprise Messaging Server, Lotus' cc:Mail messaging server and an enhanced version of Novell's Netware Global MHS product.

With client/server versions of LAN E-mail products approximately a year away, four options exist for companies wanting to install large

scale systems: 1) continue deploying LAN E-mail; 2) install one of the currently available server-based products; 3) leverage an existing mainframe system with an intelligent desktop client; or 4) defer migration until late 1994 - early 1995 when the more robust server-based systems become available.

Option 1 may be preferred by end-users in an environment already possessing an established LAN E-mail base, but requires a two-phase re-engineering of the messaging infrastructure. Options 2 and 3 offer a one-phase infrastructure migration, but possess limited user appeal, although advances in support of drivers for desktop client such as Microsoft Mail and cc:Mail are making this more attractive. While Option 4 avoids a two-phase migration, it fails to meet the user communities short term needs.

[redacted] STRATEGY

It is ironic that two aspects of the existing E-mail system, identified as deterrents to the [redacted] computing infrastructure today, will simplify the implementation of an electronic messaging strategy for the Houston campuses:

1) The cautious migration to a Local Area Networks (LANs) in the '80s, avoided the proliferation of LAN E-mail packages which have become the legacy E-mail systems of the '90s.

2) The poor acceptance of the existing HPDESK host-centric E-mail package by the [redacted] user community, has prevented the development of any dependence on this system, minimizing the business impact of any type of migration planned for the future.

The latest release of Hewlett Packard's E-mail software, now entitled HPOpenDesk and OpenMail, signifies an awareness of the shortcomings inherent in the legacy host-centric systems of the past. These packages, originally developed for the terminal environment, were incapable of providing the ease-of-use that PC users have come to expect in this day of GUI interfaces.

Positioning itself as the E-mail *engine* in the modular E-mail model shown in Figure 3, HPOpenDesk/OpenMail contains a number of long sought after enhancements to improve user-friendliness. The terminal emulation user (via Reflections) is now presented with a GUI interface and the use of a mouse to navigate around the screen. The Windows user is able to use Microsoft Mail (MSMail) as a client, enjoying all the benefits of the MSMail package.

Since the DSI standard for E-mail software is HPDesk, it is only natural that the short-term messaging strategy will be based on the enhanced version of that package.

Note 2
Messaging API's

There are four major initiatives in desktop E-mail APIs, which are designed toward providing a standard messaging platform for mail-enabled applications: CMC, MAPI, VIM, OCE.

CMC = *Common Messaging Calls specification.*

Standard that defines a standard set of calls to interface desktop applications to messaging services. While all E-mail vendors support this, they still promote their own proprietary APIs at this time.

MAPI = *Messaging Application Programming Interface*

A Windows-centric specification that is supported by DEC, HP, Novell, and Banyan. Full MAPI is expected to ship 4Q/94.

VIM = *Vendor - Independent Messaging.*

A specification that has its origins in Lotus Development Corp.'s Open Messaging Interface (OMI). The VIM group is made up of Apple, Borland, Lotus, and Novell, all contributing parts of their proprietary APIs to the VIM specification. Notes v.3 and cc:Mail are the first VIM compliant products.

OCE = *Open Cooperative Environment*

A messaging interface provided for Apple's Mac System 7 for Mac applications.

However, despite the enhancements to HPOpenDesk, on its own the package still does not provide the level of user-friendliness found in LAN E-mail packages. Demonstration of the new editor showed a somewhat clumsy implementation of the mouse:

- When pointing and clicking to a point in a message, the cursor slowly tracks across the screen to reach that point in an almost comical fashion
- The newly introduced word wrap feature, is not a true word wrap, in that, paragraph structure is not maintained during editing as words are added to an existing line. The user must click on the format paragraph button to reassemble the paragraph.
- To mark a word(s), the user may highlight the word with the mouse, but the extra step of clicking on the MARK button must be done before any action may be taken with the word.

Note 3
Mail Enabling Benefits

Mail-enabling offers substantial benefits in the development, deployment, on-going support and end-user productivity of line-of-business applications.

Benefit: Reduced Cost
Reason: Leverage E-mail information transport

Benefit: Expedited Deployment
Reason: E-mail infrastructure in place

Benefit: Reduced Support
Reason: Transport common with E-mail

Benefit: increased user productivity
Reason: Familiarity with E-mail service

While many functions have been mouse-enabled in the GUI interface (terminal mode users), the various Trays and Areas still exist from the old HPDESK. Navigation through these functions has always been a complaint from the user community. Also still present is the use of typed-in commands that are not intuitive to the PC-oriented user. The hooks developed by HP into Microsoft Mail, however, overcome these shortcomings by leveraging the best of the Windows interface, while maintaining behind-the-scenes links to HPOpenDesk functions.

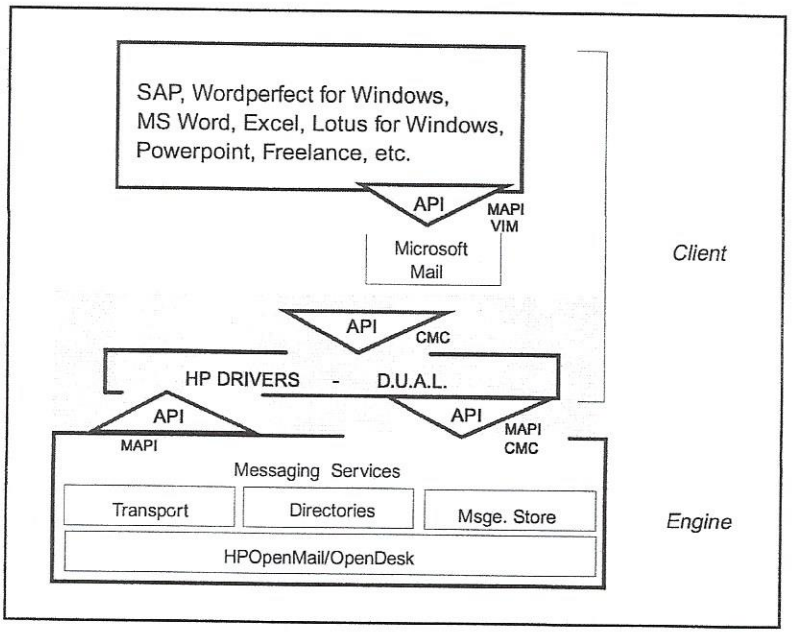


Figure 3. The HP/Microsoft Modular E-mail Strategy

BOTTOM LINE

Implementation of the HPOpenDesk/OpenMail package without the use of the Microsoft Mail client will assure failure of an E-mail system initiative at the [redacted] Houston campuses. User-acceptance of any system is the *touchstone* of that systems success. Debate as to whether the users perceptions of a system are justified or not is irrelevant; a poorly perceived system, is an unused system. This is especially true in today's environment where many users have Windows applications on their home PCs; and the role of IS is moving from one of controller to caretaker of the computing systems at a company.

Of course, the Microsoft Mail client requires the existence of both an enterprise LAN, and the implementation of Windows throughout the user community. Each of these elements have profound cost implications for the [redacted] group, though the implementation of the LAN in Houston has been accelerated due to the installation of the integrated application suite - SAP. Also to be considered are the costs associated with this system migration itself (see Note 4).

The challenges to the [redacted] IS organizations are: 1) Develop a migration plan that leverages the phased installation of the LAN infrastructure, and the slow turnover in the PC platform population to allow Windows proliferation*(See Figure 4)*, and 2) development of a comprehensive training and communication effort to inform the users what the messaging strategy is, what the effect of the migration will mean to them, and how it will be rolled out.

Note 4
Migration Cost Categories

- Migration planning
- Test system installation
- New product testing
- Software/Hardware Installation
- Functional comparison and analysis
- Usage comparison and analysis
- Enhancements and extensions
- User and data migration
- User training
- Transition help desk
- Coexistence gateways
- Tools to migrate users and data

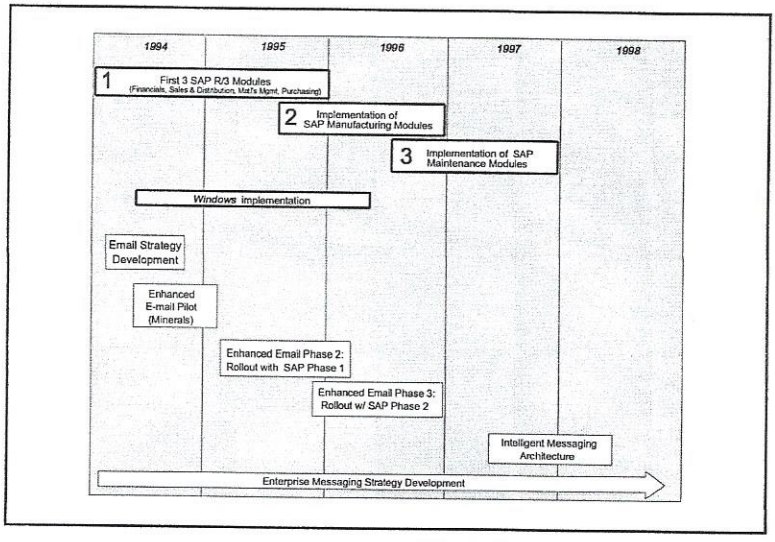


Figure 4. Implementing Enhanced E-mail with SAP

THE LONG TERM STRATEGY

The messaging industry is evolving rapidly as APIs and standards are being defined and components of traditional messaging packages are being driven down to the middleware layer and even the operating system level. The HPOpenDesk/MicroSoft Mail architecture should not be considered a final solution. Rapid advances by the LAN E-mail vendors will produce robust systems that will pose a serious challenge to today's server-centric vendors (HP, DEC) by YE1995.

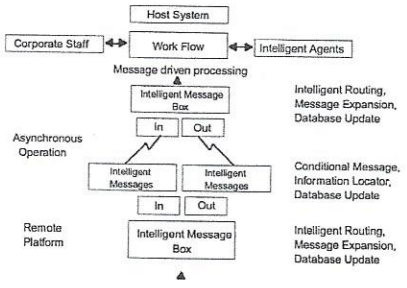
Microsoft's *Enterprise Messaging Server* - is just such a LAN E-mail package. As a 4.00 mail server running on Windows NT, it will support MAPI, CMC, and X.500, and be tightly integrated with Netware's NDS. The MS Mail client will be driven down into the Windows 4.0 operating system (now know as Chicago), further streamlining the links to mail-enabled applications.

In addition to the importance of evolving API's and standards, a comprehensive messaging strategy must take into account the impact of the mobile/remote user - a style of computing that will account for significant communication growth from beyond the boundaries of one's company. To reduce the workload in processing an increasing level in personal messages, new technologies are being developed to help with mobile computing issues. Figure 5 shows three areas where enhancements are required: 1) the message (intelligent message), 2) the queues where messages are stored for review (message boxes), and 3) in an external process linked to the messaging system (intelligent agents).

The [redacted] organizations should be studying the implications of the above issues to prepare for a tangible impact in the 1997 timeframe (See Gannt chart in Figure 4). By YE1996 the following factors will force a second evolution in Solvay's messaging infrastructure:

1) Windows will have proliferated to the majority of desktops in the various companies
2) SAP will be generally available throughout the enterprise
3) Organizational changes driven by external forces (Texas Air Control Board, competition), and internal forces (business process streamlining) will have increased the level of Remote/Mobile computing users significantly.

Figure 5.
Intelligent Messaging Architecture
(Source: Gartner Group)



Note 5
Companies Making Intelligent Messaging a Reality.

General Magic (backed by Motorola, Apple, AT&T and Phillips), is aiming to make intelligent messaging a reality with its product called Telescript. AT&T is upgrading Easy-Link to add messaging intelligence features by 1994 using Telescript. BeyondMail (from Beyond Inc.) incorporates intelligent messaging today.

Note:
Major operating system vendors such as Microsoft and Apple are expected to incorporate these features by YE1994.