

CUSTOMER NEEDS AND STRATEGIES

Wayne State University Graduates to "No Fail" Email from Mirapoint

Julie Rahal
Mark Levitt

Robert P. Mahowald

IDC OPINION

Recognizing that yesterday's solutions may not address today's needs is a critical step that must occur before an application as entrenched as email can be replaced. Universities and other environments that support large groups of users who have diverse requirements look for solutions such as an email appliance from Mirapoint that will do the following:

- Lower overall costs, including not only software licenses, servers, and storage hardware but also administration and support staff hours by ensuring that the solution closely fits the need and performs as promised.
 - Be flexible enough to avoid a one-size-fits-all approach by enabling end users to choose from among a range of email interfaces and access points and to grow in terms of support for end-user and email volumes and new functionality.
 - Integrate with other business systems, such as portals, to put collaboration in context and have it reach a wider audience and address business needs more directly.
-

IN THIS STUDY

This IDC study examines a successful implementation of a Mirapoint messaging server appliance solution. Most firms rely on email as a primary collaboration and messaging product, and with some differences the same core business needs — high scalability, minimal downtime, low cost of ownership, ease of administration, and high usability — can be found across most organizations.

Using the example of Wayne State University, IDC analyzes the technology and management demands that drove adoption as well as the strategies, benefits, and challenges of implementation.

SITUATION OVERVIEW

MIRAPPOINT

Founded in 1997, Mirapoint is located in Sunnyvale, California, and has more than 600 customers. Mirapoint's products provide service providers and enterprises with one-stop shopping for an array of email-related capabilities in a messaging server appliance that is designed specifically for environments that demand maximum scalability and reliability. Mirapoint has been successful at selling this solution into firms that host and route email for varying user classes.

Mirapoint's "architected messaging" approach addresses tasks associated with varied user classes, such as provisioning, directory services, user changes, and single sign-on. It allows its customers in the education space — including Wayne State University, James Madison University, University of Illinois, University of Georgia, and California State University Northridge — to offer advanced messaging services such as student collaboration tools, distance learning, and integration with a variety of communications devices to a broad community of users.

WAYNE STATE UNIVERSITY

Located in Detroit, Wayne State University (WSU) is an urban research university with approximately 10,000 employees. It is made up of 13 schools and colleges and offers over 350 major subject areas to its more than 31,000 undergraduate and graduate students.

VENDOR SELECTION AND IMPLEMENTATION

WSU had what could be considered a successful email system. The framework of an Lightweight Directory Access Protocol (LDAP)-based X.500 directory and SMTP email positioned the university well to integrate with most email products and systems. WSU's IT department supported many email clients, including Microsoft Outlook, Netscape, and Eudora, and allowed all WSU users to choose their preferred interface.

As user demands and needs increased, however, the existing system struggled to meet several new challenges, including the following:

- ☒ **Increasing system complexity.** Primarily due to the underperformance of various hardware and software products, the number of machines required had grown beyond what was originally planned.

- ☒ **Legacy software incompatibility.** The task of keeping numerous different software components up to date and working properly with each other had become very difficult.
- ☒ **User demand for personalized IDs.** Users wanted personalized email addresses like the ones offered by commercial Internet service providers (i.e., name@wayne.edu) rather than the LDAP-based Common Names addresses.
- ☒ **Increased demand for bulk mail services.** The existing system was not built to handle simultaneous messages sent to all 70,000 entries in the LDAP directory and was severely taxed when bulk mail was attempted.
- ☒ **Increased need for administration resources.** Because of the greater number of machines needed to support the old SMTP-based system and the increased incompatibility issues, four to five full-time employees were dedicated to administering the system. Much of the administrators' time was consumed by putting out fires and dealing with frequent system crashes, leaving no time for the development and enhancement of additional functionality.

WSU's IT department knew that email is the most important service it provides to its students, faculty, and alumni. Therefore, it made the decision to investigate alternative and replacement systems.

DECISION-MAKING PROCESS

Over the past few years, WSU looked at alternatives from vendors such as IBM (Lotus Domino/Notes) and Hewlett-Packard (OpenMail), but initial costs as well as associated hardware costs were very high and neither alternative demonstrated a great improvement over the current system.

WSU narrowed its search down to two vendors: Mirapoint and an SMTP email server software vendor. Both vendors offered products that support SMTP, IMAP, POP, and other email and Web standards. Both products store messages in a centralized database rather than within the operating system, as had been the case.

Both promised increased efficiencies, less time devoted to software maintenance, and an end to most of the software incompatibility issues. Of the two, Mirapoint initially looked more attractive, as it promised lower hardware costs in the long term, very few potential system software issues, and a higher degree of reliability. To further compare the two systems, WSU arranged for the loan of a Mirapoint M200 server and installed the other vendor's software on a Linux server as a backup plan.

WSU conducted three load tests comparing the difference between sending 27,000 simultaneous emails using the existing system and sending the same load using the Mirapoint system. Results were as follows:

- ☒ Using LISTSERV, WSU sent the 27,000 emails to its existing system. It took four hours to complete and slowed down all other processing during the four-hour time period.
- ☒ Using LISTSERV, WSU sent the 27,000 emails to one Mirapoint server. It took one hour and 22 minutes to complete.
- ☒ Using Mirapoint's built-in distribution list system that distributes multiple pointers to a single message, WSU sent the 27,000 emails to one mail server (half of the proposed Mirapoint solution). The result was that the mail distribution list was built in three seconds. The message was then delivered to all 27,000 addresses in about the same time it took LISTSERV to do so, but the system load was less

than one-tenth of what was needed to run LISTSERV. In addition, since only one copy of the message was actually created and messages were never retrieved by users, there is less of a burden on storage capacity.

WSU also performed a number of tests to evaluate the Mirapoint server's performance in the WSU environment, including client compatibility, dynamic account creation, catastrophic power failure, throughput under load, and the ability to integrate with Campus Pipeline, WSU's student portal used for grades, classes, scheduling, and so forth.

According to WSU's IT staff, the Mirapoint server passed all the tests and was found to have the following advantages:

- ☒ **Reliability.** The proposed Mirapoint system, consisting of the existing switch, two Solaris directory servers, one M2000 server cluster with failover, and two M200 mail routers, provided 24 x 7 protection with the uptime of a server-redundant environment, but required fewer resources than before. WSU determined that it could lose a router and a server with some performance impact but no loss of service.
- ☒ **Simplicity.** The proposed Mirapoint system consisted of only four machines as opposed to the four email servers, eight Distributed File System (DFS) servers, and two Distributed Computing Environment (DCE) servers that WSU was currently using — in which the failure of any of those 14 machines affected the delivery of mail. The Mirapoint system also used a single integrated suite of applications and required no local modification. All local parameters were set via a Web interface or a command line interface.
- ☒ **Lower support requirements.** WSU's current system required the attention of system programmers who had knowledge of (open source) Sendmail and other mail-specific software. Competition for resources had many times led to mail system upgrades being deferred for months at a time. The proposed system could regularly and automatically be updated remotely by Mirapoint during off-hours. WSU would also be trading multivendor support for the different hardware and software pieces for a single vendor that had very strong service agreements, ensuring that all components would work.
- ☒ **Lower costs.** The cost of Mirapoint's recommended software and hardware configuration was equal to the cost of upgrading the SMTP-based existing system. In addition, the Mirapoint solution would enable WSU to cut administrative support costs associated with the existing system.
- ☒ **Integrated virus filtering.** At the time WSU bought the system, Mirapoint's servers were bundled with Trend Micro's antivirus software.

IMPLEMENTATION

Once all the testing was completed, WSU's decision to implement Mirapoint was an easy one. In August 2001, WSU deployed a Mirapoint system that consisted of one M2000 server cluster with failover, one M2500 clustered failover mail store, two M200 mail routers, and two MD300 mail routers.

The implementation was very successful and was described as being "very smooth and seamless." Besides some expected planning and LDAP adjustments that occurred just prior to implementation, the email conversion was done online, and WSU did not experience any downtime.

As a result of the tight Mirapoint–Campus Pipeline portal integration, WSU anticipated that students' email usage would triple. Therefore, WSU made the decision to add an additional server and router before going live. The WSU IT staff also wanted to give each user additional storage capacity, increasing each mailbox from 10 megabytes to 30 megabytes.

Additionally, WSU chose to purchase Mirapoint with both the new antispam and antivirus functionality (provided by Trend Micro) bundled in. Since the time of purchase, Mirapoint has written its own antispam program and supports Sophos antivirus product — both of which WSU use through separate license agreements.

INTEGRATION WITH EXISTING SYSTEMS

The Mirapoint system is fully integrated with WSU's LDAP directory that contains approximately 100,000 entries, including 50,000 active accounts, belonging to students, faculty, retirees, applicants, and guests. When users log in for the first time, they are assigned an LDAP account, with the option of creating an email account on the Mirapoint server.

Usage is currently close to 100% as a result of the tight integration with the Campus Pipeline portal. When users click on "email," a separate window pops up and brings them to the Mirapoint client.

Although Mirapoint also offers calendar and scheduling functionality, WSU did not implement it. The university continues to utilize Campus Pipeline's elearning bulletin board system to allow professors and students to schedule classroom appointments and meetings. Because these functions within Campus Pipeline were already tightly integrated into WSU's systems, administrators did not see a reason to transition it to Mirapoint.

RELIABILITY

After more than one year, WSU has only experienced one outage, which was caused by a power loss experienced by the entire university. During the power outage, Mirapoint shut down gracefully and brought itself back up with no lost messages.

In addition, WSU's virus problem has decreased dramatically. After being accustomed to receiving many calls per day regarding viruses, the IT help desk today rarely receives any virus-related calls.

FINANCIAL MEASUREMENTS

From a financial perspective, WSU found Mirapoint to be very cost effective. WSU paid a regular license fee, including maintenance. The initial rollout of the Mirapoint solution cost \$250,000, including software, hardware, and Mirapoint Professional Services for the conversion process.

The previous system's software was less expensive than Mirapoint because it was public domain software. However, the previous system's hardware was more expensive than Mirapoint, and the indirect costs, such as personnel, were much higher.

To further demonstrate the return value of the Mirapoint investment, WSU calculated the total cost of ownership (TCO) associated with its implementation of the Mirapoint system. The resulting cost, which includes fixed costs such as licensing, hardware costs for a three-year life cycle, and a separate Sun SunOne LDAP-compliant directory running on a pair of Sun E450 servers for a three-year life cycle, was estimated by WSU at approximately \$6 per user per year.

FUTURE OUTLOOK

Items on WSU's future project plan include the following:

- ☒ **User growth.** WSU's IT department is speaking to the WSU medical school about adding its students and faculty to the Mirapoint mail system. If this group of users is added, WSU will consider purchasing additional storage hardware.
- ☒ **Instant messaging.** Although WSU has started to look at using Mirapoint's instant messaging (IM) product, nothing concrete has been decided. There is uncertainty on how it would work since many WSU students currently use consumer providers such as AOL and Yahoo!, and any IM product purchase would have to include the implementation of an IM gateway or client aggregator.
- ☒ **Hardware upgrade.** WSU plans to upgrade two mail servers this year and several routers next year. WSU does not view this upgrade as a burden since the Mirapoint hardware is relatively inexpensive and based on Intel processors.
- ☒ **Additional storage.** WSU has tentative plans to upgrade to new storage hardware to give more disk space to users for individual mailbox storage capacity.

ESSENTIAL GUIDANCE

- ☒ **Technology replacement cycles will yield opportunities.** Companies often face the decision to investigate a new messaging system as the direct result of the "complexity crisis" that results from having back-office computing environments cluttered with lots of incompatible software and hardware that require integration to make the environment operate efficiently. Firms should recognize that server and storage hardware purchased more than three to five years ago has become obsolete and should be replaced to be able to provide end users with the latest messaging functionality with minimal demands on IT.
- ☒ **Recognize the benefits of viewing IT systems holistically.** Instead of viewing IT operations as assemblages of hardware as well as customized and off-the-shelf software applications, universities and businesses such as WSU have come to think of IT operations as a series of ecosystems consisting of subsystems. Messaging, for example, can be viewed as its own ecosystem. As business needs lead to purchase decisions, firms should look for complete solutions made of components to provide one vendor and product for purchasing, deployment, administration, technical support, maintenance, and upgrades. Consider server appliances that are preconfigured and optimized for maximum performance and reliability as well as minimum administration.
- ☒ **Buyers need to make an up-front needs assessment.** Buyers should consider following WSU's example in developing a benchmark of current system performance and evaluating new systems across a variety of measures. Because it clearly defined the cost and simplicity it required in a new messaging solution and made replacing its legacy email system a top priority, WSU was able to choose and deploy a solution that provided the best fit.

LEARN MORE

RELATED RESEARCH

- ☒ *Worldwide Messaging Applications Forecast, 2003–2007: Mix of Mature and Emerging technologies Drive Growth* (IDC #28996, March 2003)

- ☒ *Worldwide Email Usage Forecast, 2002–2006: Know What's Coming Your Way* (IDC # 27975, September 2002)

COPYRIGHT NOTICE

This IDC research document was published as part of an IDC continuous intelligence service, providing written research, analyst interactions, telebriefings, and conferences. Visit www.idc.com to learn more about IDC subscription and consulting services. To view a list of IDC offices worldwide, visit www.idc.com/offices. Please contact the IDC Hotline at 800.343.4952, ext. 7988 (or +1.508.988.7988) or sales@idc.com for information on applying the price of this document toward the purchase of an IDC service or for information on additional copies or Web rights.

Copyright 2003 IDC. Reproduction is forbidden unless authorized. All rights reserved.

Published Under Services: Collaborative Computing; Messaging Applications