This paper was presented at CUMREC 98, The College and University Computer Users Association Conference. It is the intellectual property of the author(s). Permission to print out or disseminate all or part of this material is granted provided that the copies are not made or distributed for commercial advantage and that the title and authors of the paper appear. To copy or disseminate otherwise, or to republish in any form, requires written permission from the authors.
One Path through the Woods: Migrating the Campus to a Single Mail Program

Frank B. Olcott
User Support Coordinator
Information Technology Services

Plymouth State College
MSC #28
Plymouth, NH, 03264

frank@mail.plymouth.edu
http://oz.plymouth.edu/~frank

Plymouth State College supported six or seven different mail front-ends. These included Unix elm, Unix pine, Unix mail, VMS/PMDF mail, VMS All-in-One mail & various pop mailers such as Eudora and Pegasus. It became nearly impossible to maintain user support for these different programs. The paper will cover the various issues involved in deciding upon one mail program (Netscape Communicator), the problems encountered in implementing the new program, and, how the solutions have changed the virtual campus.
One Path through the Woods: Migrating the Campus to a Single Mail Program

Introduction

Plymouth State College (PSC) is a small liberal arts school located in the White Mountains of New Hampshire. Once primarily a teacher’s college, it now offers a full spectrum of undergraduate degrees as well as two post-graduate programs—Masters of Education and Masters of Business Administration. PSC averages 3600 full time matriculated students and also serves up to 2000 part-time and post-graduate students.

Information Technology Services (ITS) at PSC is a combination of three previously independent departments. Academic Computing and Administrative Computing departments were merged in 1994. Media Services was added in 1995. Academic Computing maintained systems and performed user support for faculty and students, while Administrative Computing focused on the offices on campus and was responsible for the on-campus network and for the off campus Internet connection. Media Services concentrated on the presentation of information. In addition to the three main departments, ITS includes a repair center and a computer “store” where PSC people can purchase everything from complete computer systems to diskettes.

ITS is split into two groups. The Operations Group employs seven persons, while the User Support Group has nine employees. In addition, User Support maintains a pool of forty to forty-five students to staff a helpdesk and to be public cluster attendants. Besides 5600 students, ITS provides computing resources and support for 183 full-time faculty, 158 part-time faculty, and a staff of 450.

What Was the Problem?

There were two major concerns with the campus email situation: too many mail programs were being used, and, some of the central servers were bogging down and running out of disk space.

For years computer users had a wide range of mailers to choose from. Most of them had been taught to use a mailer when they received their account on one of the central systems. Administrators and staff members primarily used the administrative computers, a VMS cluster of three DEC Vaxes (pooh, piglet and eeyore). The majority of them used plain VMS mail while the newer users tended to use the All-In-One office automation program. The Vax-cluster’s primary duty was to run the databases that were needed by the Registrar, Bursar and other administrative offices. By the fall of 1996, it was apparent that the cluster was becoming too slow to perform this job effectively; disk space was also running low. The mail-users became a target: the administrative offices needed the disk space and the computer power that mail-users were consuming.

Concurrent with these events, things were changing on the academic side of the campus. The majority of faculty and students were using a DEC Alpha server, called oz, running the Unix operating system, as their central system. Older users ran plain Unix-mail while more recently created accounts used one of the more user-friendly mail packages: elm or pine. In these cases, there was no disk space problem, and, the computer was more than fast enough; the problem was the emergence of new technology. There was strong interest and growing demand for a desktop mail solution. Users wanted a graphical front-end; they wanted to use their mouse to select email, and they wanted to send and receive pictures and programs, not just plain text.
In the spring of 1997, ITS installed a POP (Post Office Protocol) server on oz, as a test-only pilot project. (POP allows client/server email handling, so PC’s and Mac’s can pass mail to a central server and can receive mail from servers.) As is the case with pilot projects, usage mushroomed. Within a few months it became a basic part of the campus network and it could not be removed without repercussions from the academic user community. The administrative mail-users now saw POP as a solution to their problems, as POP mail was stored on the user’s hard disk and didn’t tie up administrative computing power.

In the fall of 1997, ITS reorganized its user support division and created a helpdesk. It quickly became apparent that a great number of help calls related to email. More email questions were coming into the helpdesk than any other class of call. Unfortunately, it was very difficult to respond to these mail questions quickly, because of the large number of different mail programs that were being used. Were they using Vax mail, or All-In-One mail? Unix mail or pine or elm? Because of the new, test-bed nature of POP, ITS had not selected a particular mail front-end, so these users were running Eudora, Netscape and Pegasus as well as other desktop mail programs!

The final straw that collapsed this house of cards didn’t occur at PSC, but at a sister campus across the state, where Netscape had been installed in public clusters. Students quickly discovered that Netscape allows the user to modify the contents of the “From” and “Identity” fields, so they were able to send mail as if it were from “santa@north.pole.com” or “god@heaven.org” or even from valid addresses. Someone at this institution sent email to their Dean and made it look like it was from a professor... the contents of the mailing were not complementary to either party involved, and consequently, Netscape was removed from their public clusters. At PSC’s public/ student clusters, Netscape was edited to remove the email portion and a safer program, called LabPop, was installed to do POP mail. (LabPop will not allow the user to modify the “From” and “Identity” fields.) The sudden influx of “What happened to Netscape?” and “How do I use LabPop?” caused ITS to step back and study the plethora of email programs, and then, to decide that something had to be done.

What Were the Migration Issues & Their Solutions?

The first issue was to decide upon a single POP-mail interface. (It was a given that oz would be the single pop server for the campus. The whole POP concept was also pre-decided: ITS did not believe it could stand in the way of POP, but rather it should get in front of the stream and settle for directing or funneling the rushing waters.)

Netscape Versus MicroSoft

Besides Netscape, the only other program that was seriously considered was the MicroSoft suite: MS-Exchange, MS-Mail & MS-Schedule. There were five reasons for the decision to go with Netscape Communicator:

1 - Multi-platform: Netscape runs on PC’s, Macintoshes, and on Unix workstations. The interfaces are very similar, so that a user who was familiar with Mac-Netscape could sit at a PC and use PC-Netscape without retraining. This simplifies both training and support.

2 - The Communicator Bundle: Netscape, version 4, includes not only the basic browser and an email interface, but also includes a calendar/schedule component, a web-page composer, an interface to USENET discussion groups, and, an address book that ties into PSC’s campus-phonobook database. These different components have different functions, but the user interfaces are similar, thus easing training. Another advantage is that only one product needs to be installed; with other packages, each program needs to be installed and licensed individually.

3 - The Price: Netscape is free for educational environments. This is a serious advantage in a public institution during these fiscally challenged times.
4 - Scalability: Netscape is Unix-friendly while Microsoft products need to run on the Windows-NT operating system. Due to the potentially large number of mail users, we would need to purchase the NT quota package, which costs more money. The Unix quota package is included with the operating system at no additional cost. NT is also limited to serving a single subnet: PSC has 5 major subnets, with another 7 minor subnets. We would need separate licenses for each subnet! Netscape services on Unix are not limited by network subnets.

5 - Server Manageability: with a Unix server, the system administrators can login remotely to add new users or to adjust user properties. With MicroSoft NT, all server administration must be done from the server console. Another concern was that with NT, each mail user would need an account on the NT server AND a separate mail-box account. With Unix, there is only one account, and, the majority of PSC users already had an account on oz.

Hardware Woes: Setting Minimum Standards

The next issue centered on hardware, specifically: what did the end-user need to have on their desktop to access this new mail system? ITS was uncomfortable with drawing a line in the sand, and stating that if your computer didn’t meet certain minimum levels, you would not be allowed or able to use the new mail system. However, after a good deal of internal discussion, minimum standards were set, with the idea that machines which didn’t qualify would be upgraded or replaced. ITS did not want to exclude users and thus continue to have to support multiple mail programs.

For PCs the minimum acceptable chip was a 486 running at 50 Megahertz. The computer had to have a minimum of 16 Megabytes of RAM, and would need at least 50 Megabytes of free disk space to install Netscape. For Macintosh’s the acceptable level was similar except that the minimum RAM was 24 Megabytes.

Hardware Woes: Who Has What?

The next process was to identify the machines that needed upgrading or replacing. Fortunately, there was an existing ITS project, dubbed the “Inventory Job” which included all the necessary information. The data was loaded into a database and made accessible from a web page (see: http://www.plymouth.edu/inventory/list.html) so it was a simple matter to check the hardware for an individual or for an entire department.

Hardware Woes: Money, Money & Money

Obvious to people who work for academic institutions, there is always the matter of funding. Buying and upgrading computer equipment involves fairly large amounts of money. PSC was fortunate to have the support of the principal administrators; moneys had already been put aside for this purpose. ITS merely had to identify where the funds should be spent. Below are some guidelines that may help:

1 - Administrative “Buy-in”: Gain support from Deans, department chairs and from the financial managers. The institution must be willing to follow-through with funding for technology.

2 - Inventory Project: Doing a full inventory has several advantages; the largest is it enables the hardware upgrades to be planned and budgeted. Financial managers have a real aversion to projects without scope; these are seen as never-ending fiscal hemorrhages that are to be avoided. With an inventory, one can present an estimated total cost and even an estimated date of completion.

3 - Timing: Strike early in the fiscal year, then, try again near the end of the year. Often there are unspent moneys that must be used or they are reclaimed.
4 - In-house Spending: PSC was fortunate to have its own Repair Center which bought bulk quantities of computer components, which lowered the price per unit. In addition and equally important, the actual upgrades were done without any labor charges being added to the bill.

5 - Upgrade older computers: Many slow computers had their mother boards and CPU chips replaced, so their memory, hard disks and peripherals were reused. Also, a good deal of swapping was done: when an eight Megabyte memory chip was replaced with a 16 Megabyte chip, the smaller chip was given to another machine, perhaps in a different department.

6 - Discourage or carefully evaluate the “hand-me-down” approach: Traditionally, when a full professor got a new computer, their old machine was given to a lecturer. ITS was able to intervene in these cases to decide if the older computer was worthy of continued use, or if it should be dismantled for parts.

The Switch - Installation

Once an individual computer, or an office of computers, was capable of running the new mail system, the next step was to install the software. For new or upgraded computers, Netscape was installed by personnel in the Repair Center. Other machines had to be visited on-site. Because a reboot was needed, the visit had to be coordinated with the end-user; ITS was willing to do this during the lunch hour, or near the end of the work day. A key element was the timing: while the software was installed and configured, it was not activated until after the user had been trained. (The Netscape browser could be used, but no mail was sent to the POP server until the end-user was ready for the switch-over.)

The Switch - Who’s On First?

ITS first focused on administrative users as they were the heavier VMS mail users, utilizing a top-down approach: key departments were identified, and then key-users within the department were contacted. These people were converted and trained first, so they would be able to assist others in their area, and so they could give glowing reports of how wonderful the new system was to the rest of the office. Then once the ground had been prepared and the software had been installed throughout the department, ITS presented workshops where the majority of department employees were shown how to use the Netscape browser, email and the address book. After the workshop/demonstration everyone returned to their computers and sent test messages and attachments to each other while ITS personnel hovered around to assist.

Faculty members were less receptive to workshops and group demonstrations as their schedules are centered around their classes. However, they were in general more interested in the new package. Typically an ITS employee would make a brief presentation during a faculty department meeting, after the department chair had introduced the idea - usually mentioning their Dean’s enthusiasm for the new system as part of the introduction. ITS would then contact the individual faculty members and set up appointments to do a combined install and tutorial, in the user’s office, where they felt most comfortable.

Once the computer user was trained, mail was automatically forwarded from their old system into the POP server. This forwarding meant that their old email addresses continued to function; no one would have to replace business cards or unsubscribe and re-subscribe from mail-lists. Users were strongly encouraged to propagate their new addresses, but this was not a necessity and there was no deadline on doing so.

The Switch - Die Hards and Stragglers
Occasionally, end-users had to be convinced that the conversion was a good thing. Due to “buy in” from the principal administrators, employees in administrative offices could be told that they would have to learn the new system, period; however, when resistance was encountered, ITS employees used this approach: “Yes, we know that new is not necessarily better, but there are more than enough features in the new package to justify the change-over. Your boss will give you time to come up to speed, and, we will work with you, to help in any way we can, to get you comfortable using the new system. Try it, you will like it.”

An ITS employee would schedule an appointment with any user who felt additional help was needed, and typically spent 20-40 minutes doing a one-on-one how-to session, at the user’s computer.

The Switch - Ongoing Support

While ITS personnel could leave their office phone numbers behind, users were generally encouraged to contact the helpdesk when, or if, they had questions after their training session. ITS also offered an Advanced Email workshop that covered the less often used features of Netscape mail.

Results of the Switch

Training

Everyone follows one path through the woods; the type of computer on their desk doesn’t matter. New employees are now taught to use Netscape. The introductory workshop is nearly mandatory and covers the browser, basic email and the address book. There is an optional Advanced Email session, as well as separate Netscape Calendar and Web-page Composer series.

Usage: Advantages of Universality

ITS has noticed two major benefits when everyone is using the same software. First, users are able to help each other: department secretaries (formerly All-In-One users) no longer stare at a faculty member’s (formerly mostly Unix elm users) screen and say, “Sorry, I can’t help you with whatever that is.”

The second change concerns the glory of email attachments. PC users are able to send MS-Word, MS-Excel and other files to Mac users, and vice versa. Gone are the days of passing floppy disks around and of searching for a computer which can read both formats. This has not only saved time and frustration, but it has put the computer in the background - what counts is the contents of the file.

Support: The Helpdesk

The Helpdesk is now able to respond faster to email questions. No longer are operating system specific experts needed to deal with the various mail programs. It has also simplified training of helpdesk personnel.

Side Effects

The administrative central systems (the VMS boxes that run the large POISE databases) have become somewhat faster and are no longer loosing disk space to users storing old email.

The most noticeable side effect concerns the setting of hardware standards for desktop computers. There are now faster and more capable machines all over campus. While the intent was to allow users to run Netscape mail, they do other things faster as well. This has increased user satisfaction with computing in general and enabled computer users to do more in less time.
Finally, the “big fuss” over email has increased overall interest in computing and in the Internet, campus wide. ITS sees this as a serious benefit. Paper memos and yellow post-it notes may someday become only memories as electronic versions replace them. Faculty members who never used a computer are not only surfing the Net, but there is now interest in Internet-based distance learning programs.

**Conclusion**

At the time of this writing, the conversion is still in progress. Roughly 70% of administrative offices have been switched, while only 30% of the academic areas have been converted. ITS admits that “one path through the woods” is an ideal that will not be fully realized. The student public clusters use LabPop to read mail (due to security reasons). Consequently, many of the faculty members who teach students how to use e-mail, feel they need to know all the ins-and-outs of LabPop, so they use it too.

Another problem concerns users who connect to PSC from their homes via modem lines. If they have an Internet Service Provider, they use Netscape. But while PSC subsidizes these connections, many users can’t run Netscape over modem lines, so they have been funneled into using elm on oz.

Even with the conversion only half concluded, and, despite the above exceptions, the idea of one mailer is a worthy goal. The chaos of multiple mail interfaces on multiple platforms caused massive support headaches and user-level confusion. While it has been an enormous effort (and it continues to tie down ITS personnel) the long term benefits far outweigh the temporary discomfort caused by the actual switch to the campus standard.