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Using Computer Networks, Internet And Email As Productivity Tools For Education

Tan Cheen Chong
Product Manager
Microsoft Singapore

Switch on the computer, it's lecture time
The Plan

- To get NUS students, faculty staff and administration into one connected academic community

"We are not only communicating as a group of 27,000. We are talking about communicating with the world."
Dr Thio Hoe Tong, Director, NUS Computer Centre

Virtual Learning Environment

- Beyond strong foundation of connected community
- Creating an integrated synchronous and asynchronous learning environment

"The system must be easy for all to learn and use"
Plug-n-Play Network

- Facilitate mobility and collaboration between staff and students

"The system must be easy for all to learn and use"
Multi-purpose Mailbox

- Familiar environment
  - Universal interface
  - Immediate use
  - No training

Multi-purpose Mailbox

- For communication & to access work
- Mailbox as central repository for information
  - emails
  - documents
  - calendar
  - contact management

Multi-purpose Mailbox

- For collaboration
  - Discussion groups
    - for exchange of ideas
  - USENET news folders
    - participate in international issues
  - Future collaborative applications
    - engage in workflow and campus processes
Question & Answer

Summary

- Virtual learning environment
  - Network as a medium for education
- Campus-wide network
  - Easy to get connected
- Universal mailbox
  - One-stop place for information
"We've saved many, many man-hours, as well as hardware deployment, compared to MS Mail. In total, we have saved about five days per week or a 90 percent savings in administrative effort. We feel more confident in accomplishing tasks on time."

— Mr Tan Khon Han, Principal Systems Engineer, National University of Singapore.

NATIONAL UNIVERSITY OF SINGAPORE DEPLOYS MICROSOFT EXCHANGE

Enhanced communication for 27,000 users in a connected academic community

In early 1997, the National University of Singapore, a prestigious tertiary institution in South East Asia, prepared a momentous plan to get its 27,000 students, faculty staff and administration into one connected academic community. The university has a very huge user population with over 4,000 staff members and 23,000 students — 18,000 undergraduates and 5,000 post-graduates.

UPGRADING MICROSOFT MAIL

With such a large user community, there were many different flavours of e-mail being used, including Microsoft Mail which had been the corporate e-mail platform for the whole NUS community.

So when NUS decided to consolidate all these different types of e-mail onto one common infrastructure, it was looking for a communication system which was easy for its users to learn and use; and for administrators to maintain and support. As Dr. Thio Hoe Tong, Director of the NUS Computer Centre, aptly puts it, "We are not only communicating as a group of 27,000. We are talking about communicating with the world."

VIRTUAL LEARNING ENVIRONMENT

Not only was NUS looking for something that would provide a strong foundation for the concept of a connected academic community, it was looking for something that could grow into a strong virtual learning environment. As with any major infrastructure implementation, all options had to be considered and evaluated, before a final decision can be justified. That final decision was Microsoft Exchange.

Explains Dr. Thio: "When we looked at Microsoft Exchange, one of our key requirements was that it must provide a seamless upgrade for our MS Mail users. With the ubiquitous interface of Exchange and the Office suite of products, there was indeed no learning curve. Exchange is not just a powerful e-mail system. It has a robust messaging engine which allows groupware applications to be developed on top of it. Its conducive environment facilitates our vision of creating an integrated asynchronous and synchronous learning environment, where students can learn both on-line, when lectures or tutorials are being conducted; or offline, to get access to supporting materials."

The network group at the Computer Centre is also in planning stage for a plug-and-play, secure NUS network. This network will facilitate mobility and collaboration between staff and students with notebook computers. With Microsoft Exchange, Dr. Thio envisages a day when staff and students can connect their notebook computers into one of the many network access points campus-wide to access their work. Their electronic mailboxes can contain e-mails, documents, calendar items, list of contacts and even journals.
This kind of environment needs a strong messaging system that will accommodate users plugging from anywhere and accessing their work. "We feel that Exchange is a forward-looking move for NUS towards a connected university," Dr. Thio commented.

ENHANCING STUDENT-STAFF INTERACTION

NUS believes that Microsoft Exchange will make life easier for the students. The communication system is already being used for collaborative work. Discussion groups for students and staff have been set up for exchange of ideas. Administrative staff reserve meeting rooms and other campus resources using the scheduling facilities within Microsoft Exchange. On top of that, workflow applications are being rolled out using the open platform provided by Microsoft Exchange. "The strength, the power, and the robustness of the messaging engine is critical for a smooth implementation of Microsoft Exchange," stresses Dr. Thio.

PLANNING FOR A SUCCESSFUL DEPLOYMENT

Explaining the rational of engaging Microsoft Consulting for the roll-out of the system, Dr. Thio says: "Microsoft Consulting was brought in to help us size and plan the task of upgrading from MS Mail to Exchange." His team believed that for a successful implementation of this new system, a good comprehensive plan was crucial. Through the exercise, a lot of contingencies could be anticipated from Day 1.

Dr Thio also attributed the success of the Exchange deployment to his team of very committed, dedicated people. Initially a 6-month project, it started in March 1997 and with the right plans and tools, was completed by July that same year. Dr. Thio says: "I wanted everything to start at the right time. The academic year starts in July and I felt that we had to complete the migration by that time."

WORRY-FREE SYSTEM

The networking group at the NUS Computer Centre is made up of 10 people. Three personnel take care of the day-to-day running of the network for 27,000 people. The hardware requirements for the Microsoft Exchange implementation includes 14 Compaq Proliant 5000 servers with dual Pentium Pro 200 CPUs and 22GB of storage each.

"The administration of a distributed system with 76 post offices is a really tough job, but with Exchange you have central administration where everything can be done from a central console. You don't have to log on 76 times to make small changes. That's a major difference between a distributed MS Mail and a central Microsoft Exchange," describes Mr. Tan Khon Han, Principal Systems Engineer at NUS.

Explaining further, Mr. Tan says: "We've saved many, many man-hours, as well as hardware deployment, compared to MS Mail. In total, we have saved about five days per week or a 90 percent savings in administrative effort. We feel more confident in accomplishing tasks on time." Administration of Microsoft Exchange is centralised, where changes are replicated throughout the whole system. Microsoft Exchange also allows delegation of system management to other administrators in distributed manner, without compromising on overall system security.

THE YEAR 2000 AND BEYOND

The future is about growth for NUS. "We expect the student population to reach about 30,000 in the year 2000 with faculty and staff growing accordingly. There is no problem for Microsoft Exchange to support that huge user population. It is a matter of hardware capability. Exchange will also continue to evolve with richer groupware functionality," concludes Dr. Thio.
Day Three
November 18, 1998