

III C. UNIFIED MESSAGING SYSTEM

This section summarizes the recommendations of the UMS Team¹, a task group established by the Systemwide Internal Partnership.

SCOPE AND GOALS

As part of the ITS-TII, CSU will pursue implementation of an integrated unified messaging system (UMS) environment for the CSU. The system being sought will facilitate electronic communications systemwide by CSU constituencies; enable collaborative work; and, integrate telephone, e-mail, voice mail, pagers and fax in a manner that is seamless among the technologies, applications and campus communities using UMS services and resources.

The key outcome is for the UMS system to provide the CSU with both systemwide authentication and authorization services critical to the access of today's electronic information resources. For instance, the UMS authentication and authorization services are vital to the implementation of the Unified Information Access System (PHAROS) and the Distributed Learning Initiatives within the Integrated Technology Strategy (ITS).

The near term goal, to be achieved by 2000/01, is to implement a systemwide messaging solution based on CSU adopted LDAP standards. To achieve this goal, different groups of campuses can implement a new solution or use their existing software systems if they meet LDAP standards.

LDAP stands for Lightweight Directory Access Protocol. LDAP is a protocol used to access a directory listing. LDAP support is being implemented in Web browsers and e-mail programs, which can query an LDAP-compliant directory maintained by a messaging system. It is expected that LDAP will provide a common method for searching e-mail addresses on the Internet, eventually leading to a global white pages.

The long-range goal is to ensure that CSU has a solution that provides the end user complete transparency and is the most cost-efficient to operate and manage. An assessment of the short-term implementation will determine the long-range strategy.

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CURRENT ENVIRONMENT

In 1995, a survey was administered to CSU faculty, staff and students. This survey revealed the need among members of these constituencies to have the capacity to communicate messages and documents reliably, easily and securely to colleagues across campuses, the system and beyond the CSU. This need was reaffirmed by focus groups with CSU faculty, staff and students conducted in November and December of 1997. In contrast to this need, it was learned that the current CSU messaging environment has the following characteristics:

- Messaging Systems
Campuses currently support 34 different types of e-mail systems and applications, which conform to a variety of protocols. Disparities among the 34 messaging systems often force correspondence to the lowest common denominator (plain ASCII text), causing loss of format and recourse to various means for sending and receiving messages (including multiple e-mailings and facsimile transmissions).
- Directory Services
There is no integrated systemwide directory capability. Much time is lost because it is difficult or impossible to identify recipients' addresses.
- Security
There are no systemwide standards for data security, authentication and encryption.
- Multimedia Capabilities
The CSU currently lacks resources to support various multimedia tools and applications in messaging.
- Document Collaboration
There is no systemwide capability for easily sharing documents electronically in a form that permits the recipient to open and use them. Contributing causes to this condition are inconsistent application level software, file formats and messaging infrastructures.
- Scheduling Capabilities
The CSU has no systemwide capability to check personal calendars to determine availability or to perform group scheduling.

To use information technology tools most effectively; to share resources; and, to provide distributed learning opportunities, CSU must have a coherent and integrated messaging capability.

TARGET ENVIRONMENT

The UMS Team studied the messaging needs of the campuses and the system and recommended a set of capabilities defining the unified messaging environment requirements of the CSU.

- Messaging Systems
The unified messaging system gives users the ability to send and receive e-mail. To simplify addressing, users have access to both global and personal address lists. E-mail formatting includes “rich text” to allow font specification and advanced formatting features. All system segments uniformly handle message attachments. Together with standardized desktop applications, this will mitigate the problem in which a user cannot read an attachment sent by a colleague.
- Directory Services
Clients of the UMS will have broad range ability to carry out searches to access various numbers and addresses for telephone, e-mail, voice mail, pagers and fax, and to perform authentication via CSU directory servers.
- Security
Digital signatures, digital certificates and authentication and encryption protocols will provide a secure environment for the sharing of documents, access to library resources, specialized data bases, administrative or academic information resources, etc.
- Reliability and Availability
The unified messaging system will provide guaranteed delivery between any two users in the CSU system. It will remain available to users, with acceptable levels of performance, 24 hours per day, seven days a week as maintenance and other operations allow.
- Interoperability with Legacy Messaging Systems
Legacy messaging systems include all E-mail systems currently operating on the CSU campuses. The unified messaging system will send and receive e-mail from legacy messaging systems using SMTP and other gateways, and will support the transition of users from legacy messaging systems as compatibility of standards permits by the end of FY 2000/01.
- ISP Services
The implementation of the unified messaging system provides significant potential to create an efficient low-cost, statewide ISP with the following characteristics:
 - Reliability;
 - Speed;
 - Interoperability;
 - Authentication;
 - Ease of access to information resources;

- Common platforms; and,
- Numerous CSU or vendor supplied access points.
- Multimedia
As a long-term goal (not part of the initial build-out), the unified messaging paradigm can expand to include other forms of communication such as voice and video mail and FAX. Voice mail allows the end-users to have e-mail read over the phone, as well as allowing them to send and receive voice mail from a personal computer.
- Document Collaboration
The unified messaging system allows users to share information without resorting to sending multiple e-mail messages. The system supports traditional passive file sharing, as well as more advanced groupware features such as discussion groups, document routing, task lists; and public folders. Collaboration also provides security on an individual or group privilege basis. Privileges include both read-only and write-only storage. For example, a collaborative workspace for a class would include a read-only area for course materials and a write-only area for dropping off homework.
- Scheduling Capabilities in the New Environment
The unified messaging system allows users to schedule meetings and share calendar information systemwide.

To the extent the UMS is widely adopted, CSU will achieve significant new efficiencies in the ability of the campuses to provide support services, including technical training, enhanced information access, academic program sharing and shared institutional management functions.

Standards

The standards adopted to guide this effort to develop and implement the unified messaging system are fully compliant with the desktop hardware/software standards in the Workstation Environment section entitled, "Messaging Protocols" (Section III A; page 5).

IMPLEMENTATION

Design and implementation of the UMS will be a collaborative "systemic" effort on the part of the CSU and potentially with industry participants. Components of this work include:

Phase I - November 97 through September 98

- Completed Needs Analysis:
 - a. Conducted focus groups for faculty, staff and students

b. Conducted an E-mail Survey

- Completed identification of workstation standards.
- Completed desktop office suite survey.
- Adopted LDAP standards as the CSU standards in accordance with needs analysis and focus groups.
- Determined Microsoft Exchange meets LDAP standards enabling self-selected campuses to proceed with joint implementation.

Phase II – October 98 through June 99

- Design a project plan for self-selected campuses prepared to jointly implement Microsoft Exchange as their unified messaging system.
- Explore the messaging systems used by the other CSU campuses to determine compliance with the CSU/LDAP standards and the viability of integrating them with Microsoft Exchange based campuses. Campuses running systems that are not LDAP compliant will be expected to select a migration path to an LDAP compliant messaging system.

Phase III – July 99 through June 2000

- Implement Microsoft Exchange at the self-selected campuses as a consolidated project.
- Design an integration plan for the remaining campuses' directory and authentication services based on CSU/LDAP standards.

Phase IV – July 2000 – June 2001

- Implement the integration plan for the remaining campuses' directory and authentication services.

Phase V – July 2001 – June 2002

- Assess the implementation of the overall project.
- Develop a plan of action for the next steps.