Inside INFO

University of California

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University Prepares for Year 2000

For the University of California, counting down to Year 2000 involves tackling a range of challenges as broad as those faced by many governments. Will life-support equipment keep functioning at the University's medical centers? Will payroll, retirement and vendor checks be written on time? Will the retirement system know how old you are? Will student registration and financial aid be processed for the new term? Will electronic door locks open and close on cue? Thanks to a multi-year, Universitywide effort, UC is confident that the answer to questions like these will almost always be "yes." UC experienced no problems on September 9, 1999, the first date whose digits (9/9/99) were predicted to wreak Y2K havoc.

tion Resources & Communications Jim Dolgonas is responsible for coordinating and tracking the University's Y2K readiness in collaboration with campus and medical center information technology and communications administrators. Across the University, thousands of systems, facilities, and devices are affected and must be tested, upgraded, and fixed. Systems must be tested in isolation and in interfaces to other systems both within and outside the University, culminating in "integration testing" that brings all systems together. UC assurance that a system is "ready" means that both remediation and testing have been completed.

To manage a task of these dimensions, the University's technology managers identified mis-

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Acting Associate Vice President for Informa-

OP Warehouses Corporate Data

New capabilities are on the way for UCOP staff who rely on data from the Corporate Data Systems—whether to track faculty salaries, project student enrollment, or prepare financial reports for The Regents. In a multi-year project, IR&C is migrating data from the individual Corporate Data Systems to a single Corporate Data Warehouse (CDW) that will ultimately provide easy access to integrated information needed for strategic decision making.

Financial and budget data for June 1998 and June 1999 has been loaded into the CDW. User review, training and testing will begin by early November. Data from the Personnel, Student, Contracts & Grants, Facilities Inventory, and Staffing systems will become available in stages over the next several years.

A data warehouse is a read-only repository of information that has been extracted from transactional or operational systems for the purpose of analysis and reporting. Although each of the current corporate systems is a data warehouse by this definition, each is a stand-alone database whose contents cannot easily be linked to information in another database. Moreover, their proprietary database format (FOCUS) does not allow the use of easy-to-use query tools. In contrast, a modern data warehouse environment is generally built on a relational or multidimensional database that can be accessed by a wide variety of query tools. The

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sion-critical systems whose failure would interrupt major and essential functions and divided them into those that could be tested and remediated centrally and those for which work would best be managed on the campuses. They also established a reporting system to enable IR&C to track progress throughout the University and keep UC executive management and The Regents informed. In addition, both central and campus managers must work closely with major vendors and such outside partners as banks, utility companies, and local and state governments.

Mission-critical computer systems

Mission-critical computer systems were identified among campus administrative information systems, campus communications systems, medical center administrative systems, medical center communications systems, and high-risk medical devices. At the end of September, over 95% of campus administrative (e.g., payroll, student, and scheduling) systems and nearly 100% of campus and medical center communications (e.g., voice, data, paging, and radio) systems were fully Y2K compliant. Those remaining systems were scheduled for final upgrades and testing in October and November.

High risk medical equipment is equipment, such as X-ray machines and defibrillators, whose failure could endanger patients or medical personnel. By the end of September, 95% of UC's high risk medical equipment had been upgraded, replaced, or tested and determined to be Y2K compliant. No high risk equipment will be left in service after the end of December if there is doubt about its reliability. Contingency plans include such measures as stationing personnel beside each intensive care unit bed to make quick repairs and provide back-up care.

Facilities

Y2K readiness is as essential for physical health, safety, and comfort as for administrative efficiency. In coordination with Facilities Management, each campus is mounting its own program to ensure that systems controlling air conditioning and heating, elevators, security and alarms, fire alarms and suppression, and power supplies will work on January 1 and afterward. IR&C works with Facilities Management to monitor these campus efforts, which combine upgrades, vendor certification, and local testing. Most facilities systems are now Y2K compliant, with final upgrades scheduled. Testing interfaces between campus systems and such outside systems as fire departments and electric utilities is underway.

Because facilities operations affect health and safety, contingency planning is well advanced in this area—just in case a system fails. Systems administrators at one The University of California received a Certificate of Appreciation from the California State Assembly for IR&C's participation in the Governor's Y2K Business Council. This group of business leaders and state officials was convened by the Governor to monitor the State's preparation for the Year 2000.

campus used the 9/9/99 date to rehearse its plans for New Year's Eve inspections that would identify any failures before they caused dangerous situations.

Non-mission-critical systems

Centrally monitored mission-critical systems are not the only ones vulnerable to Y2K glitches, however. Failures at individual desktop work stations and in research laboratory equipment could cause significant local problems even though their effects would not be visible at the campuswide or universitywide level. Each campus, including UCOP, is providing information and tools to help departments upgrade software and equipment. At UCOP, the PC Center is working with department computer coordinators. Inevitably, however, one size does not fit all, and some of these "non-mission-critical" systems will experience Y2K problems. Patience and good humor will help minimize their impact.

Jim Dolgonas



Payroll operations staff, using a Y2K test system, celebrated the New Year on August 25th.

Technology Supports the California Digital Library

When the California Digital Library (CDL) officially opened its doors on January 1, 1999, a new unit was formed within IR&C as part of the reorganization of the former Division of Library Automation (DLA). California Digital Library Technologies (CDL-T) provides technology planning and applications development support for the programs developed by the CDL. CDL-T develops software, oversees the operation of complex enduser systems, incorporates information products developed by units at other UC campuses into this overall framework, and provides technical consultation and coordination to maximize the University's investments in libraries.

Major initiatives for 1999-2000 will take place in several areas.

CDL Hosted Databases

CDL-T continues to maintain and develop the system that hosts the California Digital Library's databases (formerly the Melvyl System). The system provides access to the combined holdings of the University of California Libraries and associated institutions through the Melvyl Union Catalog and California Periodicals databases. In addition, the system provides access to over 30 abstracting and indexing databases such as MEDLINE/ Health Star, Current Contents and MLA Bibliography. In this fiscal year, CDL-T will enhance and reload Biosis Previews and PsychINFO to incorporate format changes from the vendors.

More visible to users will be expansion of the Request service. UC users will be able to order delivery of individual articles by using links from CDL-hosted abstracting and indexing databases to the CDL's Request server. Currently, the automated Request service allows faculty, staff, and graduate students to use the Melvyl Union Catalog to identify and request monographs from another UC campus. The Request server automatically routes the request to the Inter Library Loan system or Request service on the patron's campus for delivery of the item.

Another database innovation is a joint project with the UC Press that will provide access to the complete text of 60 UC Press books published before 1995 through links from their catalog records in the Melvyl Catalog.

CDL Web Site and Directory

The CDL Directory of Collections and Services is the entry point for access to CDL resources. Patrons use the Directory to locate and access a wide variety of resources, including databases of citations, electronic journals, archival finding aids and campus-licensed content. Due this year is a multi-resource tool that allows patrons to search across multiple resources at the same time in order to select the most appropriate resource for their information needs. CDL-T programmers do the technical work that makes these resources operational.

New Host for CDL Databases

With the endorsement of the University Librarians, the CDL will move forward with a Request for Proposal for a commercial system to host the CDL databases. Over the next several months, CDL will carry out a detailed analysis of users' and librarians' functional requirements for such a system, while CDL-T will develop a framework for assessing the ability of vendors to meet those requirements.

Alexandria Digital Library Interface

The Alexandria Digital Library (ADL) is

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David Walker Named New CDL-T Director

California Digital Library Technologies welcomes David Walker as Director, effective December 1.

David comes to UCOP from Cox Communications, Orange County with 20 years of previous experience at the Irvine and San Diego campuses, where he developed and implemented numerous network and technical architecture plans and technical policies. David participated in the planning process that eventually led to the CDL and served on UC's Task Force on Telecommunications Needs for Distance Learning. He will report in IR&C and join the senior teams for both IR&C and the CDL.

In announcing David's appointment, Acting Associate Vice President Jim Dolgonas commented, "UC is fortunate to bring to the CDL someone with David's broad technical and management experience, successes in planning and implementing large systems, and deep understanding of the technical requirements for a digital library."

Library

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a large collection of web accessible maps, aerial photos, and earthquake and volcano information. It also includes a gazetteer of place names. CDL has formed a partnership with the ADL, based at UC Santa Barbara, that will require CDL-T to develop a web interface for this system. In addition, the ADL gazetteer will be made available as a stand-alone reference resource.

Online Archive of California

The Online Archive of California is a web accessible database of finding aids for materials housed in the special collections of UC libraries and other partners in the OAC project. Finding aids are registers, indexes, guides, and inventories created by collection curators to provide a structured description of a collection. For collections and finding aids that have been developed in widely different local libraries and institutions, technical standards are essential to ensure that the collections are digitized in standardized formats before being added to the CDL directory. The first joint digitization project will involve selective digitization of the "Japanese American Relocation Thematic Area" using technical standards developed by the CDL Technical Architecture and Standards Workgroup, one of many groups supporting the CDL.

AMICO

The Art Museum Image Consortium (AMICO) is a not-for-profit association of art-collecting institutions working together to enable educational use of their digital collections. The CDL has secured a one-year license to host and provide access to over 50,000 works of art from the collection. The CDL project will use the AMICO Collection, stored at the San Diego Supercomputer Center, to test the use of new digital technologies for image management and access.

Several technical architecture and planning activities will tie this work together to improve CDL application structure and support. As part of this effort, staffs of the Corporate Data Center and CDL-T are completing plans for a new architecture for Unix Systems that host CDL content.

Mike Berger

inside INFO: Who We Are

Information Resources & Communications (IR&C) provides computing, data management, and communications services to the Office of the President and the University and is responsible for establishing Universitywide policy in these areas. This is the first issue of our new publication, insideINFO, a newsletter published just for staff at the Office of the President. insideINFO is designed to meet three goals. It will inform you about current issues and challenges in information technology and how the University is meeting them. It will feature UC initiatives in information processing and communications. We call our third goal "useable news," for we hope to print information that readers want or need to know and can put to good use. If you have suggestions for articles you would like to see in *inside*INFO, please email our editor Martha Winnacker.

Eyes on the Web

Year 2000: UCLA's handling of medical equipment was featured on National Public Radio's All Things Considered on April 27, 1999. The program is archived for listening on the Web at http://www.npr.org/programs/atc/. Select Archives, then choose April 1999, click on 27, and, finally, scroll down to the story titled "Hospital Y2K"

Digital Library: The CDL Web Site and Directory can be found at http://www.cdlib.org/ You can find the CDL Hosted Databases at http://www.dbs.cdlib.org/

Policy: The Draft Electronic Communications Policy is online at http://www.ucop.edu/ucophome/policies/ec/

Bulletin Board: UCOP staff now have an electronic bulletin board on the web. Check out Connections at http://www.ucop.edu/ucoponly/ubb/

DataWarehouse

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CDW will allow data to be linked across subject areas for complex analysis and will support a variety of query tools that will satisfy the majority of casual, power, and expert users. Eventually, the CDW environment will provide a rich array of reports through a Web-based reporting environment.

Data Sources

The same input files that have fed financial and budget data into the current corporate system now feed this data into the CDW. For the past fifteen years or so, the campuses have created the corporate system files by extracting data from their operational systems, which IR&C has consolidated and edited. To bring each subject area into the CDW, IR&C works closely with user groups to ensure the quality of the data in that area. This is a major task that includes identifying data that: is no longer needed, is missing or otherwise incomplete or inaccurate, has integrity problems across source systems, as well as developing algorithms or techniques to clean up bad data and determining what new data is needed from campus systems and from external sources. For the financial data, considerable effort went into data cleansing and, for the first time, post-closing adjustments will be included with final year-end data.

Users' needs will dictate the amount of historical information available online. For financial and budget data, users determined that an unlimited number of monthly reporting cycles should be available online, and the database has been designed to handle this requirement. Since this means the database will grow at the rate of approximately one-half gigabyte of disk storage per monthly cycle, system performance and disk storage costs could

Name the Data Warehouse

The Corporate Data Warehouse needs a name. Do you have a clever idea?

Berkeley has BIS (Berkeley Information System). UCLA has the QDB (Query Database). UCI has BLISS (Business Logic Information Selection System).

Send suggestions for the name of the UCOP warehouse to Information Management at infohelp@ucop.edu.

require future reassessment of the feasibility of storing unlimited cycles.

Database

The database is the cornerstone of the CDW environment. A review of various relational database management systems and specialized multidimensional data warehouse products led to the selection of Sybase Adaptive Server IQ. The Sybase product is specifically designed for data compression and high performance data analysis and can be accessed by a large number of third-party vendor products, so that users can select "best of breed" query tools. Benchmark testing with the financial and budget data indicate that query response times are extremely fast. The database runs on an IBM (Unix) RS6000 which is supported by the UCOP Data Center in the Kaiser Building.

A number of UCOP staff have used BrioQuery Explorer to access the Berkeley Information System (BIS) and various UCOP Sybase databases. In the first phase implementation of the CDW, financial data users will evaluate BrioQuery's ease of use, functionality and performance. Many other products, such as MSQuery, Hummingbird BI/Query, and Crystal Reports, can also be used to access the CDW.

The Corporate Data Warehouse will include a central data dictionary to help users understand the contents and exploit the power of the data warehouse.

Approach

Many data warehouse projects in other organizations have failed because planners attempted to do too much and offered no value to end users until the entire warehouse was complete. The staged implementation of the CDW is intended to add value to some groups of users as soon as possible. At the same time, a high level road map or data model identifies the boundaries and linkages between subject areas in the entire data warehouse and will guide the development as various pieces are added. Implementation of the Corporate Data Warehouse, like the original development of the corporate systems in the 1980s, is a major systems development project that will take several years to complete. It is likely that the next phase will incorporate the human resources/ personnel subject area.

Judy Coy

University Upgrades Video Teleconferencing Facilities

Video conferences will be a much improved experience in the new UCOP video conferencing facilities. The Franklin building facility opened in July, and the facility in the Kaiser building will open in November. Thanks to California's new highspeed network, as many as ten UC sites can now participate in a single video conference. Each UC site can accommodate at least ten people. Additional participants may join a video conference by audio bridge if they cannot go to a video conference facility. UCOP employees may use the video conference centers for meetings that would otherwise require travel between the two buildings. In addition to allowing participants at multiple sites to see and hear one another, the new UCOP video conference centers are equipped to provide all the conveniences expected in a face to face meeting. Users may record their meeting or display graphics, including Power Point presentations, video clips, and slides.

Improved services at both UCOP locations reflect major changes taking place in UC's underlying communications infrastructure. Video conferencing used to rely on dedicated circuits which provided limited data rates for communications between sites. However, the migration to CalREN2, California's new high-speed network for higher education, will allow IR&C to double the bandwidth previously available for distance learning and administrative meetings. The result will be noticeably higher video quality and motion handling.

CalREN2, a joint project of UC, CSU, and California's leading private universities, provides the infrastructure necessary for research and experiments that use new and emerging technologies and protocols, such as video, IP telephony, streaming video, multicast, and telemedicine.

The migration to CalREN2 marks the latest development in IR&C's management of the University's video conferencing network, which began in 1992. The network is comprised of equipment located at each of the campuses, the Office of the President, the three National Laboratories managed by the University (LLNL, LBNL, and LANL) and, of course, communications links between these locations. Each site can make use of a gateway provided by Sprint

Area Code Changes for San Diego Campus

Effective December 1, 1999 the 619 Area Code will be changed to 858 for all telephone numbers at the UC San Diego Campus and Medical Centers. The only exception is the Hillcrest Medical Center which will retain the 619 area code. Prior to December 1st callers may use either the 619 or the 858 area code.

We recommend that you revise depart-

mental telephone listings and reprogram telephone auto-dial buttons as well as automated FAX dial-out lists to the new 858 area code by the end of November. If you have any questions or difficulties completing calls or reprogramming your phone please contact the Telecommunications Service Desk at 7-0017 for assistance.

Pat Tilley

Communications to access sites all over the world. In order to satisfy our intersegmental requirements for administrative meetings and distance learning applications, gateways also exist between the University of California and the California State University systems.

If you have questions or would like additional information regarding video conferencing please call Michael Shannon at 7-0371 or Kim Dorsey at 7-0709.

Michael Shannon

Just Ask!

Perhaps you read newspaper articles about information and communications technology and aren't sure what they are talking about and what they have do with your work environment? Or do people you know use acronyms you don't understand? Maybe you just wonder why things work (or don't) a certain way? Chances are you are not the only one who wants to know. Just Ask! will be a regular feature of *inside* INFO, a column where you can ask questions of our in-house experts at IR&C. Email your questions to: Martha.Winnacker@ucop.edu She will search for answers among our staff and publish all that seem to be of general interest in Just Ask!

UC Addresses Current Issues in Electronic Communications

In an ambitious year-long effort, a Universitywide task force has proposed a comprehensive policy framework for the entire range of electronic communications that members of the University community rely on to carry out their academic and business functions. The draft seeks to establish common principles that reflect the increasingly unified way people use electronic communications.

The draft policy combines general principles that apply to all forms of electronic communication and more limited provisions that apply only to such specific electronic communication technologies as email, telephones, and the Web. The draft policy's core provisions were first established in the Electronic Mail Policy. Much of the Electronic Communications Policy Task Force's work was devoted to reformulating these principles in terms that would apply to all forms of electronic communication—despite the differences between electronic mail, the Web, telephones, radio, and other technologies.

The draft ECP covers four major subject areas: acceptable use, confidentiality and privacy, security, and retention and archiving. To the degree possible, the draft ECP refers to existing University policy on such matters as use of University resources; conduct; time, place and manner of speech and advocacy; and compliance with law. As do those in the Email Policy, the acceptable use provisions allow incidental personal use of electronic communications facilities that does not create noticeable additional expenses for the University or give the impression that the individual is representing an official University position. Use of University electronic communications facilities is not permitted for commercial or personal financial gain, political activity beyond incidental personal communication, or for activities that are likely to interfere with the operations of the electronic communications system. University electronic communications facilities may not be used for activities that violate the law.

Under the Acceptable Use provisions, such specific personal activities as sending and receiving personal email, visiting ecommerce Web sites, and making local telephone calls are permitted. Sending

The UC effort to bring all aspects of electronic communications together under one comprehensive policy reflects a wish to be proactive in an area where there is much confusion.

spam—the widespread distribution of unsolicited electronic mail—which may interfere with the University's network operations, infringing copyright, and hacking into someone else's computer are prohibited.

The Privacy and Confidentiality provisions reiterate those in the Email Policy that promote academic freedom and respect personal privacy by affirming that the University does not monitor or disclose the contents of communications transmitted over its networks and systems except under rigorously defined circumstances requiring a high level of approval. However, some monitoring of headers is necessary to prevent network traffic jams and intrusions, but this is limited to technical requirements and does not include inspection of content.

A proliferation of laws related to digital technologies and the explosive growth of electronic commerce challenge the University to establish policies and guidelines to guide usage where there are few commonly agreed on expectations. A recent article in the Chronicle of Higher Education noted, "Most institutions have acceptableuse policies-A.U.P.'s-that define what behaviors are appropriate or inappropriate for users of campus networks and computers ... But can any policy keep up with the pace of network computing?... As the pace of technological advances picks up, campus-network officials can find themselves facing the unexpected from an array of sources..."

The ECP Task Force, which took on the challenge of developing a comprehensive policy, included representatives from every campus and from faculty, staff, and student constituencies. Members of the Task Force contributed experience in and knowledge of distance learning, network management and systems administration, intellectual property, records management and other specialized areas. The Office of General Counsel assisted the Task Force in understanding recent laws and court cases that are setting precedent in the use of electronic communications media.

The draft Policy has been distributed for official comment by the campuses and the Academic Senate. Individual faculty, staff, and students are also invited to comment on the Policy and may send email to ecp@ucop.edu. The draft ECP is available on the Web.

Martha Winnacker

OP Gets Corporate Time: New Calendar Service

To provide Office of the President staff with the ability to schedule meetings and activities electronically, IR&C is implementing the CorporateTime calendar service provided by Corporate Software and Technologies. The cost of this service to users is yet to be determined but will likely involve a nominal monthly fee, similar to that for UCOP email services.

CorporateTime allows users to maintain individual, computer-based date books known as "agendas." These agendas can be accessed from office computers connected to the UCOP network, from computers with dial-up (or ISDN, cable, DSL) access to the Internet via Internet Service Providers (ISPs), or from Palm Pilots. With the appropriate setup, users can view the agendas of others, determine dates and times when all participants are available to attend a meeting, and issue an invitation to that meeting through the calendar program. Each user determines the levels of access that other users are granted to his/her agenda.

Three campuses have already chosen CorporateTime for campuswide deployment and four others are currently evaluating this product for possible implementation. Factors involved in choosing CorporateTime as the calendar solution for UCOP included:

Clients. Corporate Time supports connection from Windows 95 and NT workstations, Macintosh computers, and Palm Pilots.

Scalability. While many LAN-based calendar servers exist, they typically work well only for small groups of people (a few hundred users maximum). CorporateTime provides a server that will work well with over 1,000 simultaneous users.

Performance. CorporateTime uses a client/server solution running on a high-

end server system to avoid the slowdowns associated with high volume usage that occur with some calendar systems.

Standards. Internet-based standards for calendar systems have been evolving rapidly into a core of protocols that will allow interoperability among a variety of products. CorporateTime complies with these standards, which will yield increased functionality and interoperability with other systems over time.

The introduction of this calendar service throughout UCOP will be coordinated by IR&C Workstation Support staff and departmental PC Coordinators. PC Coordinators for most departments are already using CorporateTime themselves as test users and have taken a training class on the features of CorporateTime. UCOP staff who are interested in obtaining calendar service should contact their departmental PC Coordinators. If you don't know who your PC Coordinator is, you can view a current list of PC Coordinators on the Web at http://www.ucop.edu/ pccenter/pccoords.html or you can send an email note to Workstation Support at pchelp@ucop.edu.

Sherilyn Evans

Electronic Bulletin Board

In 1998 Cynthia Shuman in UCOP Human Resources won the UCOP Suggestion Box Prize. Her idea? An electronic bulletin board where Office of the President staff could share information and post classifieds. The result? At the UCOP picnic this fall, HR/Benefits announced the start-up of the bulletin board, which is called Connections.

Development of Connections was a joint effort by HR/Benefits and Information Resources and Communications. The two offices collaborated first on guidelines for use of the bulletin board and then on the list of categories for posting items and instructions. HR designed the graphics for the site, while IR&C selected bulletin board software and customized it for UCOP use. HR is responsible for supporting and monitoring the site.

See our Eyes on the Web column for the bulletin board's URL and bookmark the address in your web browser. Check it out frequently to see the most recent postings and, of course, feel free to post your own offerings there. Remember, the electronic bulletin board is like a traditional bulletin board—you have to go to it because it can't come to you.

Judy Coy

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