

**UNIVERSITY OF CALIFORNIA ACADEMIC SENATE
UNIVERSITY COMMITTEE ON COMPUTING AND COMMUNICATIONS**

ANNUAL REPORT 2010-2011

TO THE ASSEMBLY OF THE ACADEMIC SENATE:

The University Committee on Computing and Communications (UCCC) is charged by Senate Bylaw 155 to represent the Senate in all matters of instruction and research policy involving the use of information and communications technology and advising the president concerning the acquisition and use of information and communications technology. UCCC held two meetings during the 2010-2011 academic year. Highlights of the committee's actions are outlined below.

Supercomputing Resources

UCCC discussed supercomputing resources. It is useful to have powerful supercomputing resources at the campuses. Existing resources are not shared in large part because the needs are different across disciplines, or because the federal funding agencies prefer to fund computing systems for particular scientific areas. One problem is that the machines require a lot of electricity including cooling, which faculty are not charged for; the money campuses put up to cover such costs are typically matching funds for equipment grants. Cheaper electricity and often better administrative support could be provided if computers were located remotely at supercomputer centers. UCSC makes limited money available for faculty to pay for charges for remotely locating computers at the San Diego Supercomputer Center at UCSD. There will be limits to where the centers can be remotely located until a new building in Berkeley is built, and it is not clear when this center will be available. At UCB there is a group looking at energy efficiency and different financial models. Faculty may be charged and these costs could be recharged to grants, although some of these costs might have to be treated as indirect costs.

Another related issue is the Shared Research Computing Project and the fact that the pilot was not openly announced. The campus Vice Chancellors for Research picked all the faculty participants, many of whom were already using supercomputing resources. UC could have provided this resource to faculty who do not currently use these resources or do not have access to them. The Shared Research Computing Project is now considering how to continue to pay for the program in the future, for example by having faculty participants pay in advance for computational nodes including administrative support and electricity for three years. It is not clear how viable this is. Faculty in some disciplines have free access to much more powerful national supercomputer systems supported by the main federal funding agencies, so perhaps these agencies will not want to support large computer systems at individual university centers.

Campus Wireless Infrastructure

UCCC discussed the fact that campuses need to be rewired both between and within buildings. Rewiring within buildings can be very expensive. An alternative is high speed wireless within buildings, although the cost savings are not as significant as some would expect. A problem with wireless is the question of who will pay for it. At UCB the Chancellor is covering the costs now but the departments will eventually be charged.

eTextbooks

The committee discussed the strengths and weaknesses of different platforms used with eTextbooks including how interactive they are. There are issues related to accessibility for disabled students. Students also may prefer being able to mark up hard copies of textbooks.

Proprietary eTextbooks are locked to particular devices, so UCCC could ask for broad format adoption so students are not required to buy any specific type of platform. The current costs of some devices may be prohibitive for some students, although campuses may be able to make deals for bulk purchases. A question is whether UC can standardize on one platform.

Remote and Online Instruction

UCCC discussed UC's online pilot project. It is not clear if or how significantly other universities have implemented online instruction. One member reported conducting online lectures and using Teaching Assistants to answer students' questions. It will be important to make sure that faculty get credit for creating and teaching the courses and that students are not penalized for taking them. There are ongoing costs associated with refreshing the courses. Another issue is the faculty may not support the courses in later years so a plan for Teaching Assistants to do this needs to be in place. It might be good to provide faculty with partial credit for teaching online courses.

UC Privacy and Security Initiative

Stephen Lau, Systemwide IT Policy Director, IR&C, joined UCCC to discuss the UC Privacy and Security Initiative. Two aspects of privacy are the issues of civil liberties and data protection. This is an 18 month initiative launched by the president to look at how UC views privacy and information security, to consider best practices and determine whether UC's policies need to be updated. Current policies and rules were written prior to things like videoconferencing and shared resources so there is a lot of conflict with new laws. Faculty, staff and students have an expectation of privacy unless there is a justifiable reason or consent has been given. Emails and web traffic are not monitored. New regulations that make UC responsible to ensure that medical information is not leaked. In industry, Social Security Numbers are monitored. UC does not monitor these things so there is a risk that this information could be leaked but monitoring runs counter to UC's culture. Two issues include the electronic aspect in terms of monitoring for privacy and the civil liberties aspect where people feel they are being watched. UCB Professor Chris Hoofnagle, a privacy expert, spoke to the steering committee members. Most academic institutions are just beginning to explore this problem. A member of the UCLA privacy board also spoke to the committee. This board looks at these issues on a campus level and UCOP is exploring whether there could be a similar board across the system and established at each campus. One situation that occurred was a computer science researcher wanted to conduct search engine research and monitor network traffic to see how people on a UC campus were utilizing search engines such as Google or Yahoo with the goal of optimizing them. UC's policies prohibited the researcher from conducting this type of monitoring. The researcher contacted the search engine companies himself and was able to purchase the data, thereby circumventing UC policy.

Campus Gmail

UCCC discussed the email systems used by students and faculty. UCD and UCSC switched all students to Gmail last year and it was a success. The students are reportedly very happy with Gmail. UCR students have switched to Gmail. UCSD provides and manages a centralized exchange server to students but this has not resulted in notable cost savings. UCSB has not changed its email system. UCB runs its own in-house email and it is an inexpensive solution. UCM has not switched to Gmail and there is no plan to do this in the near future.

The discussions between UCOP and Google about moving to Gmail for faculty and staff have apparently now been successfully concluded. UCD has a small pilot with a few hundred faculty and staff. The goal of immediately transferring all faculty and staff has been postponed. At UCD, there are 100 different email systems being used by different departments. There was a push from students and staff to use tools like Google documents, calendaring, and other applications. The campus is concerned about Google mining information if it is used for everyone. Other concerns are that emails could be leaked out and that the servers are outside of the US.

Office 365 guarantees that emails will be hosted in the US whereas Google would charge UCD to host the emails in this country. Faculty doing certain types of research will be restricted by ITAR from using email providers with servers outside the US. UCD will continuously monitor whatever system is used if the email is ultimately outsourced. A member commented that it is important to have flexibility to accommodate different types of usage. UCD's campus wide email will exclude the medical center but will share feedback on the experience with the center's leadership. Office 365 allows users to have emails hosted locally and the basic service is free. This system also offers larger mailboxes than Google and it also allows for larger attachment sizes. The advantage to Google for hosting faculty and staff email is not obvious. One question is whether UC or Google would be liable for the unauthorized release of emails.

Consultation with the Administration

David Ernst, Associate Vice President for Information Resources and Communications (IR&C), and Stephen Lau, Systemwide IT Policy Director, IR&C served as consultants to UCCC. The committee received updates about the Shared Research Computing Services pilot project. AVP Ernst reported that the new LBNL building would open in late 2014 if it is built at LBNL but if it is built on another site it would open in 2015. It is not clear if the facility will be in a new building or in an existing space. UC needs to determine its longer term plan to provide research and general computing resources in secure regional facilities at a lower cost than would campuses would have to pay. Regional UC facilities may be a transitional step toward doing most of the computing in the cloud instead of at UC. The supercomputer centers will probably be full in two years. The center at UCSD is not a long-term solution for UC. Commercial co-location is being discussed and CENIC may be the middle man between Amazon and the CENIC partners. There is interest at UCOP to move toward regional computing outside of or at UC sites. By the end of the calendar year there will be a proposed strategic plan that will be evaluated by the system. There is willingness at UCOP to invest in strategies that will offer savings in the longer term.

Budget Cuts

The committee discussed the cuts to UC's budget and concluded that it is not clear what will happen with respect to IT in order to manage the budget cuts. Currently faculty have equipment in closets so UCB is looking at creating a number of tiers of data centers in terms of reliability, availability and power utilization efficiency. There would be incentives to move equipment to the campus data centers. The campus data center has not been very reliable and it is close to the limit in terms of thermal cooling so new facilities would need to be built. UCSC is also running out of space at its center and there is a pilot project to remotely place data at UCSD. Shipping containers are being used as pods at UCB. A significant investment by UCSC would be required for their remote facility to be used but these investments would result in savings in the future. Vice Chair Anderson noted that there are loans through UCOP that might be used by campuses

for this type of work. According to Chair Primack, as much money will typically be spent on electricity, including cooling, as is spent on hardware over the course of three years.

Additional Business

UCCC devoted part of each regular meeting to reports on issues facing local committees. Discussions included UC's budget and computing space.

Representation

The UCCC Chair, Joel Primack, was not invited to be a faculty representative to the Information Technology Leadership Council, apparently due to an error that may be rectified in 2011-12. He served as an *ex officio* member of the University Committee on Library and Scholarly Communications.

Acknowledgements

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