Appendix A

ITS Unit Briefing Documents

Each ITS technical unit director and each Divisional Liaison completed a synopsis of their area of responsibility including what's working and near and long term issues.

ITS Technical Units

- **Applications and Project Management**
- **Client Services and Support**
- **Core Technologies**
- **Customer Relationship Management**
- **Learning Technologies Group**
- **Research/Faculty Partnerships**

Academic Divisions

- **Arts**
- **Baskin School of Engineering**
- **Humanities**
- **Physical and Biological Sciences**
- **Social Sciences**
- **Library**
- **Silicon Valley Center**

Support Divisions

- **Business and Administrative Services (BAS)**
- **Chancellor's Office Administrative Support Team (COAST)**
- **Student Affairs**

Division of Information Technology Services
Applications and Project Management Briefing Paper

Prepared by: Mark Cianca, Director
Applications and Project Management, ITS

Overview/Introduction

Applications and Project Management (APM) is a unit within ITS that is comprised of four distinct groups, each with a particular focus and area of expertise. These include:

- **Academic Systems Group**, responsible for managing AIS, CCLP, MyUCSC, GARP, the web, and a large portfolio of applications that support Student Affairs' business needs.
- **Architecture and Infrastructure Group** provides such services as database management, identity management, software architecture standards, applications administration, and internal tools.
- **Business Systems Group**, responsible for managing FIS, PPS, CruzBuy, and a host of other systems that support the business side of running UC Santa Cruz
- **Project Management Group**, a small team providing project management support, methodology and standards, project analysis, and guidance.

APM has an operating budget of $6.76 million and 68 FTE.

What's Working?

APM was reorganized in FY10 to align staff to campus lines of business and away from management based on historical funding models. This realignment allowed us to discover numerous ways to eliminate duplicate or redundant efforts, to establish standards for a smaller number of sustainable technologies, and ultimately to provide staffing back up in areas where historically we have been one-deep. We are a smaller unit today than we were four years ago, but we have made significant progress toward reducing the amount of risk we carry in the support of our application portfolio.

In the last year we reframed some of our work to develop a new "service" for other application developers on campus. As appropriate to the data source, we are now able to offer "consumable data streams" from select source systems to other independent applications. One example of this service exists within the new WCMS, which uses a data stream from AIS to populate academic department web pages with live course and class information. Soon, we'll have another example—a new iPhone application will be released that streams campus directory information without having to manage that data directly. This is an example of a centrally managed service that can foster the development of lightweight, valuable applications at the divisional or departmental level.

Near Term Challenges

The single largest near-term challenge we face is that most of our current projects rely on the same relatively small number of development, technical, and functional support staff. Delays or problems in one project impact a significant number of other projects to which

these staff have been assigned. In project management-speak, most of our large projects have no "float" in their staffing resources, and as a result, projects are taking longer to complete than we originally projected.

Long Term Issues

Two issues will factor significantly into how this unit provides campus services moving forward.

The first issue stems from the July 2010 Regents' Resolution that calls upon campuses to collaborate in the deployment of common administrative systems using common best practices. Currently we have no mechanism in place to help us understand how and under what conditions we have opportunities to collaborate. With new administrative systems or upgrades to existing administrative systems, we will have to assess the opportunities these changes bring and to devise a framework for deciding how we say yes to multi-campus collaborative efforts.

The second issue is the need to have conversations across campus regarding areas where we still have large-scale duplications or vacuums in terms of specific applications. An area where we have numerous competing technical solutions is in the area of data reporting, and an area where we don't yet have a strong long-term strategy is in the area of application middleware. Middleware becomes increasingly important as we expand our "consumable data stream" service or as we expand the number and type of multi-campus collaborations.

Important Links or Appendices

Additional information about APM, including organization charts, is located online at http://its.ucsc.edu/applications_project_mgmt/index.php.

Division of Information Technology Services
Client Services & Security Briefing Paper

Prepared by: Janine Roeth , Director
Client Services & Security, ITS

Overview/Introduction

Client Services & Security (CSS) in ITS has three areas of focus:

- **Support:** The Support Center provides assistance, information, and referral for all ITS services. We connect clients to ITS technicians to provide services, answer questions, and resolve computing problems as quickly as possible. We deliver desktop support services.
- **Services** CSS Service Managers maintain the ITS Service Catalog and Service Level Agreements (SLAs), and manage changes to services such as email, calendar, desktop support, data center and wireless networks. CSS also facilitates access to software with UC educational/volume discounts.
- **Security**: CSS manages risk through development of information security policies and practices, computer security education and training, and business continuity and disaster recovery plans for ITS. Janine Roeth, the CSS Director, is the Information Security Officer for UCSC.

What's Working?

The Support Center is the primary support contact for ITS services *(459-HELP, help@ucsc.edu, itrequest.ucsc.edu)*. ITS uses a common ITRequest system to track IT requests and handled over 47,400 tickets in 2009-10 with the Support Center resolving 33,600 (70%) of those. We recently launched support tools to enable more remote assistance and remote desktop management on the nearly 4000 desktops we support.

We continue to mature the ITS Service Catalog and SLAs so clients know our services and what to expect. We use service management practices to introduce services such as secure wireless and virtual data center services, and to coordinate service changes, including last year's move of email and calendar services to external providers (Google and Berkeley).

We proactively notify campus partners and clients of changes with an outage scheduling and communication process. We publish a maintenance calendar and work with ITS staff to track changes and keep unplanned client impacts to a minimum.

We develop and maintain key IT security policies and compliance programs towards protection of sensitive data. We have regular IT security awareness campaigns and training tailored for campus system stewards, faculty/staff, students or IT specialists. We work with ITS units to document Business Continuity Plans in UCReady.

Near Term Challenges

A primary near-term challenge is the delivery of services given reduced staffing levels. The Support Center is counting on increased use of remote assistance and desktop management tools to provide support services with less staff, however there are hurdles to full acceptance. These tools shift away from the current campus culture of in-person

support. As well, we have diverse desktops due to distributed funding for hardware and software and pervasive user control, which can lead to longer support calls for old hardware or software or user-installed software that is incompatible or insecure.

Constrained staffing throughout ITS affects project timelines that keep services secure, relevant, cost-effective or free from problems and failures. This includes the resources required to expand VPN services for our increasingly mobile staff or to deploy more real-time replication disaster recovery, taking advantage of increased bandwidth and less expensive external storage options.

We have established an IT security program to focus our efforts, but chronically low investment in IT security continues to put the campus at risk in terms of adequately protecting our people and data, readiness to continue business through unexpected events (e.g., natural disaster, malicious intrusion), and ongoing ability to prevent or manage security breaches.

Long Term Issues

Longer-term issues that affect Client Services & Security extend the near-term challenges of staffing constraints and a need for standardization and also include a shifting IT landscape that affects how we provide support and services or handle security and privacy.

ITS staffing levels, often one-deep in expertise, necessitate focus on day-to-day delivery and support of services. Over time, we will see the impact of fewer service and project management resources that evaluate and measure services for performance, capacity, and stability; consolidate multiple service offerings; evolve services according to business need; retire legacy services; or make service improvements towards efficiencies.

There is a need to standardize or update campus applications and infrastructure. Conflicting browser and Java requirements, multiple ways to log on to desktops and applications, unconnected systems for storing and sharing files on a network confuse end users and complicate support. Multiple versions or types of databases, operating systems, applications and network access add areas to assess for security risks and vulnerabilities and increase the likelihood of reacting to security issues rather than preventing them.

The broader IT landscape includes a plethora of end user devices, e.g. iPads and smart phones, and incentives to use "cloud" or external service providers to deliver critical production services. Our challenge will be to adopt these devices and services in a secure and appropriate way. With providers like Google, service management becomes vendor management, with an emphasis on establishing and monitoring service levels and ensuring campus clients understand services and features that may change frequently. Additionally, there are issues of security and privacy, including predictable contract language or vendor commitments, which are still being developed as standards, policy or regulations.

Important Links or Appendices

Additional information about Client Services and Security, including organization charts, is located online at http://its.ucsc.edu/css/index.php

Division of Information Technology Services
Core Technologies Briefing Paper

Prepared by: Doug Hartline, Director
Core Technologies, ITS

Overview/Introduction

Core Technologies (CT) is a unit within ITS that is comprised of three distinct groups, each with a particular focus and area of expertise. These include:

- **Data Center**, responsible for managing the infrastructure, systems, and security in support of enterprise and departmental applications including AIS, FIS, Cruzmail, Web, etc. and for hosting major research applications such as those belonging to Astrophysics and Genomics.
- **Network Operations Center,** responsible for managing the campus telephony system, cellular system, data network (both wired and wireless), wide area connectivity, and 800 MHz emergency radio system.
- **Telecommunications Serves**, responsible for managing departmental service requests for telecommunications services, field operations maintenance, repair, and installation, and major infrastructure engineering, design, inspection, and installation for new building capital construction or major remodel projects.

Core Technologies has an operating budget of approximately $7.5 million and a staff of 54 FTE.

What's Working?

Core Technologies has taken leading system-wide steps to address business efficiencies – it initiated one of the first campus efforts to consolidate an application on another campus (Cruztime); it has outsourced student email to Google and is preparing to undertake similar actions for faculty and staff email; it was the first UC department to utilize the shared data center at SDSC and it has been a leader in virtualization technologies which has conserved data center space, power, and cooling when compared to physical server technologies. It has also recently completed the activation of the 10G dark fiber project which will enable greater research opportunities amongst campus faculty once funds are secured to distribute its power and functionality. Our coordination with PP&C and Planning and Budget on capital projects has improved significantly over the past several years, reducing the potential for costly implementation failures. The rollout of a new Data Center funding model is intended to address some of the serious financial shortfalls that have resulted in system capacity and reliability issues. Current systems are supported by very committed and dedicated staff and this certainly represents one of our greatest strengths.

Near Term Challenges

There are two primary near-term challenges: (1) We are severely understaffed to support the systems and campus infrastructure that underpins the functioning of the campus; (2) infrastructure systems are beginning to deteriorate and fail at an ever increasing rate.

We have lost critical expertise and staffing to support campus systems, security and infrastructure, placing the campus at risk to prolonged enterprise system outages and lost campus productivity. While the telecommunications master plan efforts have provided transparency to senior campus leadership as to the fragile state of the rapidly deteriorating network infrastructure, the current level of security and data center systems risk has not had similar exposure and is therefore not widely understood. The quantity of Data Center managed systems has grown by 25% in the last three years while the staff to support these systems has been reduced to well below acceptable levels. There is insufficient depth of coverage and knowledge to provide prompt response to trouble during business hours, not to mention off hours; there is a chronic firefighting atmosphere that does not nurture the deliberate operational discipline that is needed to provide robust and sustainable service; considerable staff time is dedicated to supporting complex critical legacy systems; this is at odds with our need to rapidly design, deploy, and maintain more current solutions.

Long Term Issues

There are three longer term issues that will influence Core Tech service delivery in the future.

The first issue stems from the July 2010 Regents' Resolution that calls upon campuses to collaborate in the deployment of common administrative systems using common best practices. Resolution of this could have dramatic affects on what systems we continue to support within the Data Center.

The second issue stems from a variety of external pressures including new modalities for data center services, climate control and sustainability. These pressures do intersect with planning efforts related to the Regent's resolution. We can envision an increased demand to consolidate systems within the umbrella of a regional or out of state Data Center or to leverage cloud-computing marketplace solutions or software as a service for potential cost savings. Many of these solutions are currently in the "hype-cycle" and it is premature to determine how a marketplace shakeout could influence campus application and service directions.

The third issue is in addressing the upgrade of the campus telephony and network infrastructure. While there is reasonable probability of capital funds to begin addressing the years of underinvestment it will take at least three years to execute this effort. It will be necessary to commence this year with additional staffing, planning, and contingency plans to address areas that may not make it to the scheduled capital project funding cycle.

Important Links or Appendices

Additional information about Core Technologies, including organization charts, is located online at http://its.ucsc.edu/core_tech/index.php
.

Division of Information and Technology Services
Client Relationship Management Briefing Paper

Prepared By: Peter McMillan, Andrea Hesse
Client Relationship Management, ITS

Overview/Introduction

Client Relationship Management (CRM) is responsible for managing all aspects of ITS working relationships with clients to render high quality service delivery and to maximize client satisfaction.

CRM overall is comprised of several themes:

- Understanding what the client is asking for, and needs.
- Executing or delivering what the client is requesting.
- Predicting what the client will need in the future.
- Delivering targeted communications to respond to client needs.
- Aggregating campus IT requirements and incubating services to respond to immediate needs.
- Providing high-touch and trusted inter organizational management and communication; advocating the client perspective throughout the IT organization.

What's Changed?

In the period from 2008 – present, a number of changes have taken place within the CRM unit. These include the migration of the ITS Support Center and Standard Desktop Support groups from CRM to the ITS Client Services and Security group. With the retirement of the Student Affairs Divisional Liaison and Director of CRM, we took the opportunity to reorganize the Divisional Liaisons and their LITS staff into academic and academic support groupings. In September 2009, the Physical Security Services team was also reorganized into the CRM unit.

These organizational changes coupled with budget reductions have positioned the CRM unit to continue its commitment to client needs through the pooling of resources and expertise in order to support instruction, research the businesses that support the institution.

What's Working?

One aspect of the CRM unit is the incubation of services that can respond quickly to local needs and act as prototype services that can be evaluated for adoption into the global IT service catalog. Examples of this type of work include the SoE VPN service; the ROCKS compute cluster, nagios server monitoring, Drupal web services, MySQL database services and a variety of hosting resources that support instruction and research but are not part of the ITS global service catalog. A pilot backup service at San Diego Super Computer data center is currently being evaluated and will help the campus understand how we can leverage the resources at SDSC.

Within the academic group we are pooling resources and participating in central campus projects such as WCSM and eCommons to better assist the faculty and academic units with migration into these global campus services over the next several years.

Within the academic support group we are also pooling resources to support top priorities with campus physical security and life safety systems, and new systems in the Student Health Center and OPERS.

Near Term Challenges

On the academic side, budget constraints are taking a toll on hardware investments at the local level, leading to aging infrastructure both in the server and desktop environment. Since consolidation, divisional investments in local IT support (LITS) has not kept pace with technology dependent projects and aspirations, putting increasing pressure on the local staff to add work, services to their portfolio. While there has been some success in leveraging centralized services to create capacity, the integration of global and local services to create a comprehensive computing experience remains elusive.

On the academic support side, our single largest challenge is adequate staffing to manage the portfolio of existing and planned IT systems and specialized applications within the divisions (BAS, Chancellor's Office/EVC/University Relations, Student Affairs). Increased concern about application security, compliance requirements, and aging infrastructure are prioritized against proposals for new systems and services that may have been deferred for years. Managing the balance of strategic investment with operational stability is the primary work of the DL's and the CRM unit.

Managing the balance of strategic investment with operational stability that can achieve both short terms goals and provide a migration path to take local services into the globally supported service catalog is a challenge that we continue to make progress on. Our intent is engage all aspects of the IT division to make sure that client needs are represented and that services are offered that meet the needs of our faculty, students and staff.

Long Term Issues

Longer-term IT issues facing the units that CRM supports include:

- Developing cross-divisional governance that helps prioritize efforts needed on existing and planned systems.
- Managing the balance of strategic investment with operational stability that can achieve both short terms goals and provide a migration path to take local services into the globally supported service catalog.
- Replacing aging applications and infrastructure with planned replacement cycles and funding models.
- Maintaining and managing campus investments in enterprise systems.
- Server and application consolidation across units who have not previously shared resources.
- Migrating from a unit-based view of IT to a divisional perspective.
- Unfunded mandates in the form of new systems, regulations and compliance requirements.

Important Links or Appendices

Additional information about Client Relationship Management is located online at http://its.ucsc.edu/crm/index.php

Division of Information Technology Services
Learning Technologies Group Briefing Paper

Prepared by: Jim Phillips, Director LTG, ITS

Learning Technologies manages a portfolio of broadly leveraged services and systems that enable and enhance student-centered learning. As a member of Information Technology Services (ITS) division, we are fully integrated with ITS support providers, both local and central, and report directly to Mary Doyle, Vice Chancellor of Information Technology.

Learning Technologies works with the campus community to envision, plan, and use central technology and media solutions. Learning Technologies:

- partners with faculty, departments, and divisions to achieve their instructional technology objectives in support of the academic mission
- works collaboratively with local support staff and campus-wide committees to align ITS solutions with broader campus objectives
- based on continuous interaction with partners, establishes the strategic direction for campus-wide instructional technology solutions

Organizational Structure

Learning Technologies consists of four groups: 1) Learning Spaces Operations, 2) Media Systems Engineering, 3) Computer Systems Integration, and 4) Instructional Support / Media Development. Each group is led by a manager who supervises their respective employees and attends to the day-to-day administration, procedures, and policies of the division / Staff HR. The four groups notwithstanding, Learning Technologies is committed to ITS Service Management. Thus, individual employees at a variety of levels in the organization act as service managers, oversee a service team or participate on service teams, and have responsibilities that require collaboration across our unit, our division, and may even involve support providers (both technical and functional) across the campus.

Key Services

Learning Environments

- support for classrooms and labs
- design and installation of media systems

Online Instruction

- eCommons
- webcasts (including lecture capture)
- collaboration tools (video conferencing, web conferencing, etc.)
- hosted, scalable solutions in support of instruction
- instructional design and development
- assessment and instructor evaluations support

Additional Services

- special events
- equipment loan program
- administrative video conferencing support
- media production and distribution (streaming, on-demand video, etc.)

What is Working

- **Reorganization** of Media Services and Instructional Computing into Learning Technologies (begun in FY09) has made successful progress and efforts continue to fully integrate our service provision, adopt a common support model across ITS, manage classroom and computer lab inventories in a single unified system, etc.
- Roll out of **eCommons** is going well. Web CT will be turned off at the end of September. eCommons has the potential to become a hub of student / faculty interaction, giving them access to a variety of university systems, resources, and rich media content. We were able to partner with the Library to phase out eReserves (offering eCommons as the alternative). **Opportunity:** large course redesign that leverages eCommons could dramatically reduce cost to deliver instruction (by as much as 40%) while improving instructional effectiveness.
- The newly formed **Assistive Technology Committee** will make recommendations to improve the accessibility

of campus systems and better track our support efforts.

- **Growth** in the **number of classrooms** with media systems installed (from 26 to 72) over the past seven years has positively impacted learning in the classroom.
- Instructional use of ten centrally managed **computer labs** continues to grow (hands-on learning)
- **Webcasting** (lecture capture) is available in 23 classrooms and will be integrated with eCommons
- **Live event video/audio streaming** is now available (up to 500+ simultaneous viewers possible)
- When select staff members from Learning Technologies move into McHenry space in summer 2011, we will collaborate with the **Center for Teaching and Learning** (CTL) to create a shared service provision for faculty support. The relationship between pedagogical support and educational technology is integral and needs to be advanced at UCSC.
- **Learning Technologies staff** are extremely dedicated to the campus mission, committed to excellent service, and adaptable in trying times.

Near Term Challenges

- Equipment refresh budget for learning spaces has been reduced and, at current levels, is insufficient for near term sustainability
- Staff morale is low due to attrition, layoffs, ongoing CA / UC budget uncertainty, and macroeconomic concerns
- Voluntary separations are having an impact and will continue as budget / Silicon Valley recovers
- Limited ability to provide technical training to staff to improve skills, keep current with trends, and / or implement the latest efficiency gaining solutions.
- Assisted listening devices in all learning spaces need to be refreshed, phase 1 beginning in FY10
- Large-scale refresh of computer labs is planned in FY11. Budget constraints may impact this schedule
- After-hours support is a challenge due to reduced staffing levels (evening classes increasing)
- eCommons has taken over all other instructional development activities in the FITC (delaying or impacting other important initiatives, such as large course redesign, etc.)
- Limited ability to achieve further efficiencies due to a lack of available resources (need additional resources to proactively address certain near term issues). Need to identify investment areas that could yield additional efficiencies or enable additional consolidation in case funding is located.
- Student and faculty engagement on critical decisions is more important than ever, yet harder than ever to come by

Long Term Issues

- Funding model associated with the learning infrastructure (classrooms, labs, video conferencing rooms, lecture capture, virtual environments) needs to be revised, expanded to adequately reflect costs and staffing needs, and integrated within the planning and budget process.
- Assistive technology improvements to all learning spaces (Registrar controlled as well as divisionally controlled learning environments) need to be considered and integrated with planning and budget process. Ideally, this should mirror a common approach to assistive technology at other UCs
- eCommons - Additional storage capacity / active user capacity needs may require more funding if eCommons is successful. Additional funding also needed for online instructor evals, Sakai 3, etc.
- Strategic collaborative opportunities that leverage shared educational technology services (system-wide) need to be considered and pursued. One example: a common web-conferencing system. The Educational Technology Leadership Group, a system wide group of directors reporting to the ITLC, is working on this and other strategic collaborative opportunities.
- Relationship between educational technology and CTLs is critical (this is common across all UCs). Opportunities for strategic, multi-campus collaborations need to be pursued.
- Strategy for online instruction needs to be developed (driven by faculty) for UCSC, including need to address copyright and IP issues, common (system-wide) tool sets, and access to shared digital content repositories. Ideally, our strategy would align with UC-wide strategy for online instruction.
- Historical cultural barriers that have existed between the UC campuses must be reduced. Need to adopt a more holistic view of the needs of all UC students and faculty

Division of Information and Technology Services
Research & Faculty Partnerships Briefing Paper

Prepared By: Brad Smith
Research & Faculty Partnerships, ITS

Overview/Introduction

One of the promises of consolidation was the ability to dedicate resources at a campus-wide level to improving the competitiveness of the academic enterprise using opportunities available to an information technology organization. First, through the development and creative application of state-of-the-art information technology, new avenues of research and approaches to instruction could be enabled that leverage the power of this technology in support of the information intensive activities of research and education. Second, by monitoring funding opportunities for the integration of information technology into academic activities and for the implementation of new IT infrastructure for society, a consolidated IT organization could help fund improvements in the campus infrastructure, alleviating some of the pressure on state and research overhead funds. The Research and Faculty Partnerships (RFP) unit was formed to deliver on these promises.

RFP is composed of 2 FTE: Brad Smith and Jim Warner. Both Brad and Jim have PhDs (Computer Science and Chemistry, respectively), and extensive experience in an R1 research environment in general, and at UCSC in specific (25 and 30 years, respectively). Brad also has an Adjunct appointment in Computer Engineering, and is funded 30% by gift funds as part of a collaboration he has developed as a part of his Adjunct appointment with Cisco Systems (the "Network Management and Operations" or NMO Lab). RFP has no operating budget.

What's Working?

RFP has undertaken a number of projects, some of which have paid off, and some of which are still incubating. Some of the more successful projects include:

- **Dark Fiber:** Soon after consolidation, RFP identified the critical need for dark fiber to the UCSC campus (the only UC campus lacking such infrastructure). With support of then Vice Provost IT (VPIT) Merkley, we launched an effort to simultaneously articulate and communicate the effort to the campus community, and to develop a viable solution. After a multi-year effort we found a solution, and the campus faculty and leadership worked with UCOP to obtain funding. We managed the project to build the infrastructure, which concluded earlier this year with the completion of this new infrastructure that is critical to the future of the campuses academic mission.
- **The Pleiades Cluster:** In early 2005, through on-going dialog with faculty, we became aware of an NSF Major Research Infrastructure (MRI) solicitation that could fund the computing needs of the Astrophysics faculty, but which they were not going to apply for due to the difficulty they'd experienced installing and managing a previous cluster they'd obtained through such a program. ITS, in cooperation with the Vice Chancellor Research and EVC, partnered with the Astrophysics faculty in what was, ultimately, a successful proposal for a new $1.2M compute cluster. As a part of this project RFP coordinated the technical support and data center renovation needed for the new cluster. At the time the pleiades cluster was provisioned (March 2007), it was ranked as the 118th fastest computer in the world on the "Top500" list (www.top500.org).
- **Hosting the CBSE Web Cluster**: Late in 2005 we became aware of on-going problems of the CBSE Web cluster (the cluster that implements http://genome.ucsc.edu, for which the CBSE group is world renown), which was having significant, on-going stability problems (mostly related to power). After some discussions, RFP coordinated the move of the CBSE cluster from a locally maintained facility in Baskin Engineering to the campuses data center. In a subsequent (approximately 1 year later) conversation with Professor Haussler he indicated that, before the move, problems with the Genome cluster were a monthly issue for him, and that since the move he hadn't had to think of it at all.
- **Optiputer Visualization Wall:** In early discussions (2007) with Astrophysics faculty and subsequent visits to visualization facilities at Stanford, NASA/Ames, and CalIT2 at UCSD, we uncovered the need for visualization capabilities by many research groups on campus, and the availability of packaged technology from CalIT2 to implement this technology. After investigation into the

possibility of funding such a facility (on the order of $150K) we became aware of Moveable Equipment funds for the Engineering 2 building, originally targeted for a graphics related facility, that were about to expire. Working with Professors Mantey and Pang and the CBSE group in SoE, RFP supported the purchase of an Optiputer cluster by SoE through the contribution of systems support expertise and time by the engineer responsible for maintaining the pleiades cluster described above. In exchange for this support SoE agreed to allow campus access to the system. Since its provisioning, users of the system have included Astrophysics, the Dance program in Arts, and History faculty from Social Sciences. Work continues to develop this facility for new uses. The pleiades system was used as a model for another cluster purchased by a group of AMS faculty.

Following are a number of projects that are still in the incubation phase:

- **Central Coast Broadband Consortium (CCBC):** Starting in 2005, RFP began representing the campus at meetings of parties interested in developing broadband in the tri-county area (Monterey, San Benito, and Santa Cruz counties), hosted by CSU Monterey Bay. In 2008 funding to leverage these meetings to a regional consortium were provided by the California Emerging Technology Fund. Brad initially served as the Chair of the Coordinating Council for the CCBC. The primary activity of the CCBC over the past two years has been to submit proposals to the National Telecommunications and Information Administration (NTIA) for American Recovery and Reinvestment Act (ARRA) funds for the development of regional broadband infrastructure. As a part of this infrastructure, UCSC would acquire the redundant dark fiber path it needs to ensure the full robustness of its network connectivity. The first proposal was not funded. However the second proposal, which was significantly improved (largely based on input which UCSC played a significant role in), has made it through the first review, and second "due diligence" phases. Final word on this funding is expected by the end of September 2010.
- **NSF Academic Research Infrastructure (ARI) Proposal:** In early 2009, NSF (as a part of the ARRA funding) issued a solicitation for proposals for funding to upgrade the research infrastructure if the nation's universities. ITS coordinated the effort for UCSC to develop a proposal for this program, and the CT and RFP units took leadership roles for this effort. The campus submitted a proposal for $2M to cover the cost of upgrading inter-building fiber and network electronics to support 1Gb/s to the office and lab, 10Gb/s between buildings, and cable-plant upgrades to a select set of research labs to provide advanced network services. Unfortunately, this proposal did not receive funding. Based on feedback from the NSF Program Officer, the proposal reviewed well however, due to the large number of proposals submitted, we did not make the cutoff. The PO encouraged us to follow up with on other programs that were being developed for further infrastructure funding, which we are doing.

RFP is currently involved in a number of strategic Core Technology projects, follow up work relating to the CCBC and NSF ARI proposals described above, and work with researchers to build on the new dark fiber infrastructure (e.g. participation in the NSF DYNES project, CENIC's COTN proposal, and a possible 100Gb/s experiment in CENIC.

Near Term Challenges

Not surprisingly, the near term challenges facing RFP involve resource constraints resulting from the current budget challenges. The loss of Project Management support to RFP in the last round of budget cuts will impact our future efforts. This support was critical in the success of all phases of the dark fiber project, and in the data center renovation for the pleiades cluster. Additionally, as a result of budget cuts, RFP staff is filling in on strategically important projects in Core Technology. While clearly the right thing to do given current constraints, this will impact our ability to make progress on strategic opportunities.

Long Term Issues

Longer term the primary challenge facing RFP is how to achieve the "academic intimacy" required for the kind of collaborations envisioned for the unit across the broad range of disciplines on campus. This requires a high level perspective from both an academic and an IT perspective. It's probably not appropriate nor realistic to think of growing the unit with permanent staff. If there is interest in growing this function some discussion will be needed on the most effective and appropriate way to proceed.

Arts Division IT Briefing Paper

Prepared by Scotty Brookie, Arts ITS Divisional Liaison, September 2010

Overview

Over the last 20 years or so, the disciplines within the Arts have become **increasingly reliant on information technology**. The UCSC Arts Division has responded by reorienting some of its academic program, adding new programs, building new and repurposing existing physical plant, and by **investing considerable resources** in IT staff, facilities, equipment and software. Arts Dean David Yager is strongly committed to preserving technical resources, even in a difficult budgetary environment.

The Arts Division is comprised of **five academic departments**: Art, Film and Digital Media (FDM), History of Art and Visual Culture (HAVC), Music, Theater Arts. It is the home of **one interdisciplinary masters program**, the MFA program in Digital Arts and New Media (DANM). The division currently offers **six graduate programs** (Film PhD, Music DMA, Music PhD, Visual Studies PhD (HAVC), DANM MFA, Music MA). An MFA in Social Documentation is expected to move to Film and Digital Media in Fall 2011. Arts collaborates with the School of Engineering on the undergraduate Computer Game Design program.

The Arts Division is home to **Shakespeare Santa Cruz**, a nationally-known company with NEA, foundation and campus funding (total about $1.5M) which sold about 24,000 tickets in 2010. It is also home to the **Sesnon Gallery**, and maintains an active Visiting Artists program. The division recently celebrated the opening of the **Digital Arts Research Center** (DARC), a $20 million, 25,000 ASF building which is the new home of DANM and parts of Art and Music.

During the IT consolidation process (roughly 2003-06), the Arts Division's investment in IT was largely preserved. Organizational relationships of Arts IT staff changed, but the duties, relationships with faculty, staff and students, and physical locations changed relatively little. More and more, the consolidation is bearing fruit for Arts, as the ITS organization delivers increasingly professional services and Arts leverages these central resources.

Arts Computing provides an extensive catalog of services to the division, and manages the division's computing budget.

Staff

There are 5.87 FTE Arts IT career staff located physically in Arts areas and administratively in ITS:

- Scotty Brookie	Divisional Liaison, 1.0 FTE
- Tristan Carkeet	FDM Local IT Specialist, 0.5
- Peter Harris	Art, LITS, 0.62
- Eric Mack	Theater LITS, 0.25
- Julie Rogge	Web developer, 0.5
- Angie Steele	FDM LITS, 1.0
- Lyle Troxell	DANM LITS, 1.0
- Dung Wong	Divisional LITS, 1.0.

All career staff report directly or indirectly to the divisional liaison. There is typically a close working relationship between technical staff funded by/reporting to departments and ITS staff assigned to the division/department.

Funding and Budget

The annual Arts Division computing is approximately $35K. From this, the Division funds and maintains individual and shared equipment and software for all faculty and staff, along with specialized servers. Departments fund discipline-specific facilities, hardware and software, often with some difficulty.

Prior to IT consolidation, many IT facilities and services were funded *ad hoc* from salary savings. Now however, salary savings accrue to ITS, not to Arts, so this is no longer possible. Counterbalancing this is the increasing number of quality central services (though not equipment) provided by ITS.

Strengths

- Skilled **Local IT Specialists are well integrated** with their departments and in the division. Each department except HAVC has dedicated, co-located IT staff support. In most cases, staff are active practitioners of the art forms they support. Long-term IT staff retention creates **strong client relationships** at both the department and division level, and a strong sense of teamwork. IT staff **morale is generally high**.
- As noted, Arts Computing offers an extensive but manageable **catalog of discipline-specific services**. Continual discussion, and strong backing from the Arts dean and chairs, is required to bound this cata-

log within available resources, and to align it to the division's priorities.

- **Outstanding local facilities**. All Arts departments have dedicated IT facilities. DANM's "Dark Lab" and "Light Lab," in the DARC, are excellent, robustly equipped, easily reconfigurable spaces. The Art Department's Digital Photo Lab ("The Cellar"), also in the DARC, is absolutely state-of-the-art. Film and DANM have excellent equipment checkout programs, Electronic Music and Film have high-end individual workspaces; Theater uses IT heavily in its Experimental Theater and in streamlined simultaneous control of multiple projectors; HAVC has an active image digitization lab. All of these spaces were designed either exclusively by, or with significant input from, Arts Computing staff.
- **Web Presence**. Arts IT staff are just finishing a major 2+ year project to overhaul, and convert to a WCMS, the entire divisional web presence, nine unique sites in all. The sites are visually distinctive, as befits an arts organization, but are also visually tied to the evolving new campus web look. Response by faculty and staff has been enthusiastic, and engaged.
- **Creative staffing solutions.** ITS has used staff attrition, in part, to manage its budget cuts. Thus, in 2009 Arts lost a 0.3 FTE LITS position to attrition (Angela Thalls). However, when a LITS in Film departed, rather than lose the position and its services, ITS reoriented the duties of Soc Sci LITS Tristan Carkeet, augmented his hours, and assigned him to both Arts and Soc Sci. Film was made whole and Tristan is flourishing in this new arrangement. In general, ITS has been consistently supportive of Arts IT staffing needs.
- **Desktop services work very well**. Arts has relied increasingly, and with success, on the "standard desktop support" service from the ITS Service Center. Tier 2/Tier 3 support is provided by Dung Wong. This works largely due to Dung's deep technical knowledge and strong customer orientation, and because of the productive relationship that has been forged between Dung and SDS staff.
- **Increasing numbers of central services**. The roll-out this fall of the eCommons learning management system is an important milestone. eCommons joins the help desk and standard desktop support in the list of services that now provided centrally, which have been provided locally by Arts, and can now be reduced or phased out by Arts over time. Centralized streaming and webcasting services are also close to rolling out. **Collaborative working relationships are developing** among LITS within and outside of Arts, especially in Learning Technology and the Library, around common services and technologies.
- **Mac standardization**. Arts has always standardized on the Mac. (Faculty with PC's are given incentives to switch.) A recent push has brought all divisional computers within standards. This keeps support costs down.

Issues and Challenges

- **Network infrastructure.** Several Arts facilities are still served by 10 MBit, half-duplex network connections, an increasingly substandard level of service. We look to the current Telecommunications Master Plan work to surface these needs more comprehensively, and suggest solutions.
- **Delay in implementation of key back-end services**. The Arts Division provides its own account management, backup, mass storage, file and streaming services. Centrally-provided, locally-available identity management, backup and mass storage, especially, could free up considerable local resources and provide a more enterprise-class level of service.
- **Staffing impacts**. The division has added a major new building with multiple IT facilities, has added two graduate programs, and is about to add a third. In the meantime, career staffing levels have dropped by about 1/3 FTE. **Loss of student staffing** for Tier 2-3 support, due to budget cuts, means that some service levels are reduced, and that workload of career staff must be carefully monitored and managed. Some **pay equity issues** remain to be resolved.

Projects *(a small sampling)*

- **Rapid Prototyping Lab.** (DANM).
- **Digital Assets Management System** (Division)**.**
- **Build-out of Digital Photo Lab** (Art).
- **Ramp-up of graduate program support** (Film).
- **Finish redesign of Music website**, the final departmental website.

Division of Engineering
ITS Divisional Liaison Briefing Paper

Updated: 8-30-10
By: Terry Figel
Divisional Liaison
School of Engineering

Overview/Introduction

The School of Engineering (SOE) is composed of 6 departments (CS, CE, EE, AMS, BME, TIM). Based on the technological aspects of CS and CE, SOE has always had a large dependence on IT, and has historically invested in it's infrastructure. Due to this investment, SOE enjoys a computing environment that is more modern and feature rich than what the general campus enjoys. This environment is needed to continue to allow research into newer technologies.

The SOE Techstaff (LITS Local ITS) is comprised of 9 FTE that support faculty, staff and students. On the non-ITS side there are some research ORUs that provide their own IT support: CBSE (3 FTE), Citris(1-2 ugrads).
We provide local services such as file servers, backups, compute servers, web servers, network support, cluster computing, account management, server hosting and printing. To see a list of services, refer to SOE's SLA at
http://its.ucsc.edu/service_catalog/sla/SOE_SLA_0708.pdf.

Long Term Issues

- Funding issues – SOE initiated recharging research for IT services (Disk space, server hosting) The idea is to fund computing infrastructure, passing the cost back to the research that requires it. This is being done in response to large state budget cuts.
- SVC Support- Silicon Valley Center (SVC) is located in Moffett Field in Mountainview. Currently, 3 departments: TIM, CE and EE are teaching classes there that are broadcast to campus. ITS support for this facility is still an ongoing issue for SOE.
- Server Room Space- Computing environments continue to grow in SOE, the current campus plan is to push future expansion to the super computer center SDSC (450 miles away). Is building out at SDSC viable, separating researchers from their computer environments? We are in the process of moving a single SOE server down to SDSC, to see if this is the long term solution to handle growing needs for Server room space in SOE.
- Which services provided by LITS will roll into centrally supported models, freeing up LITS resources to provide Research support? On the other hand, which SOE services will roll out to other campus divisions?
  VPN, LDAP, HPC, backups are a few that are being provided now from SOE LITS
  ITS is defining the process allowing LITS in the divisions to bring up local services, push them to a campus level, with the end goal of moving those services out of the division to central support. This process is not defined yet, and SOE LITS are active in rolling out the above services that are in use across UCSC.

Important Links or Appendices

http://www.soe.ucsc.edu
http://planning.ucsc.edu/budget/reports/birdseye Planning and Budgets Birdseye view of UCSC, includes divisions budgets, enrollment numbers.

Division of Humanities
ITS Divisional Liaison Briefing Paper

Prepared for Vice Chancellor Mary Doyle
By: Andrea Hesse
Divisional Liaison
Humanities Computing Services

Overview/Introduction

Anchored in the founding colleges, the humanities faculty includes campus pioneers with a deep understanding and appreciation for campus lineage and heritage. This demographic is in some respects reflective of the division's recent emergence as a consumer of technologies, as new faculty bring new thinking to their research modes and instructional methods.

The Humanities Division is constituted of nine academic departments and programs of instruction and several research projects and initiatives. It is comprised of approximately 98 ladder rank faculty, 90 lecturers, and 40 staff. The division also employs 151 teaching assistants annually. It supports 1,200 declared undergraduate majors and 200 graduate students distributed among its five graduate programs (History, History of Consciousness, Linguistics, Literature, and Philosophy). More information on the division's departments and programs can be found at http://humanities.ucsc.edu

The Humanities Division is home to a variety of research centers, projects, and initiatives. The largest is the Institute for Humanities Research (IHR) founded in 1999. IHR provides infrastructure in support of all manner of research initiatives.

IHR administers 7 research centers (Center for Cultural Studies, Center for Jewish Studies, Center for Mediterranean Studies, Center for the Study of Pacific War Memories, Center for Labor Studies, Center for World History, Institute for Humanities Research), 2 cross-divisional initiatives (Digital Humanities, Rethinking Capitalism), UC Press book series *FlashPoints* and 13 research clusters whose faculty span Humanities, Social Sciences, Arts and Engineering Divisions. IHR and the centers under its umbrella sponsor or administer over 100 events each year ranging in size from research colloquia to the 4-week long seminars sponsored by the National Endowment for the Humanities (NEH). Research funding in the humanities leads to 30-50 academic appointments annually, in the form of visiting scholars, GSRs, Graduate and Faculty Fellows, and Postdoctoral Researchers.
IHR is a part of the University of California Humanities Network.
For details visit ihr.ucsc.edu

The Humanities Division in 2009-10 offered 538 undergraduate courses, enrolling approximately 25,895 headcount students and 55 graduate seminars enrolling 508 graduate students. Enrollment in the Humanities accounts for 20% of total campus enrollment. The Humanities houses the campus writing program which supports the campus and university writing requirements. In 2009-10, the Division of Humanities awarded 600 Bachelor degrees, 63 Minors, 20 Masters degrees, and 20 PhDs.

Humanities Computing Services (HSC) is comprised of 2.5 FTE, supporting faculty, staff and graduate computing within the division, and representing the division's interests in central IT projects and governance. Beginning in July 2010 the Humanities Divisional Liaison assumed an extended organizational role, heading up Academic Client Relationship Management and overseeing the IT operations for seven of the campus divisions. Therefore, one of the 2.5 fte is no longer fully dedicated to the division. While every effort will be made to do no harm, the implications for humanities computing are not yet understood.

In meeting the business, research and instructional computing needs of the division, HCS manages the divisions annual allocations for hardware and software, provides in-house computer repair, web and instructional design services. HCS also hosts local web, file, database and backup servers. The division is standardized on Mac OSX. The Humanities Computing Services local service level agreement cam be found at http://its.ucsc.edu/service_catalog/sla/Humanities_SLA_0708.pdf

What's Working?

- **Resource Management**—Division understands its investment and is realistic about service expectation based on resources.
- **Desktop Services**—Because the division had already centralized and standardized hardware and software it has been relatively easy to integrate help desk and standard desktop services.
    - Many users (both faculty and staff) have come to use and trust the help desk.
- **Instructional Design and Support**— Local instructional support is with better articulated coordination with centralized services supported by Learning Technologies, including eCommons.
- **Coordination with other IT** units is improving as CRM/Learning Technologies, and CRM/APM partnerships begin to deliver stable and aligned services that support the division's operations.
- **Centrally supported IT projects** are such as CCLP, DivData, VPN, secure wireless, WCMS and new directory services have stabilized and improved basic tools available to divisional staff.
- **Local Server Infrastructure** was refreshed in preparation for "the long winter." Consequently, there is sufficient storage, managed on up-to-date infrastructure to meet the division's near term local needs.
- **Web services** – The division is participating in the pilot of the new campus web content management system. While this effort has time bound workload impact for both division and local IT staff, it will be aligned and supported by the campus standard moving forward.

Near Term Challenges

- **Hardware refresh**—due to budget constraints the division has principally moved to a "break/fix" position for desktop computing. Some workstations are now outside supported standards. The division is applying resources surgically to mitigate this, such as replacing G4 processors for lecturers.
- **Departmental application support** – There is still no defined support for locally hosted filemaker applications.
- **Standard Desktop Services** are tightly bound, requiring local investment in work that is just outside the service definition. The central imaging process, for example, does not fit the local computing environment, requiring HCS to retain image managment and deployment to the desktop.
- **Lack of clear service definitions** from other IT departments reflected in a pubic service catalog.
- **Off Site Backup –** There is still no off site backup solution for local servers. Will be working to participate in the SOE pilot of remote backup at SDSC.

Long Term Issues

- **Research computing and increased demand for LITS support**– In the last five years, the humanities division has added three research labs in linguistics, in addition to a media and learning lab in languages, each with IT dependencies. HCS has added to its portfolio of services some limited support for dynamic content (php and mysql). To date, the shedding of standard desktops services, cooperation with other local IT units and careful regulation of service boundaries has enabled us to absorb the new work. At some point, the need for additional technical fte is anticipated.
- **No backup power supply for local servers**. When the building goes dark, access to all local services is lost.

- **Section 508 compliance for faculty websites –** migration of divisional and departmental sites to the new campus wcms will mitigate most, if not all, accessibility requirements. Faculty pages (personal, course and project website) outside of the scope of this work.
- **Security and compliance** for local systems is an increasingly demanding enterprise. Central interpretation security /risk management guidelines have complicated movement on important central services that could capture efficiencies and support local service development (such as LDAP and group management).

Prepared By: Stephen Hauskins
PBSci, ITS

PBSci Overview 9/10

ITS Staffing: 6 FTE (3 PAIV, 1 PAIII, 2 PAII) We lost 1.8 FTE in the last year.

non-ITS Staffing: Unknown total but exist across the division, e.g. Genome, RNA Center, EPS, SCIPP, MCDB, Astronomy

Client Population: 135 Faculty, 110 Admin Support Staff, 500 Graduate Students, 300 Research Staff

Local projects

- Cluster deployments and support as required (Physics, SCIPP, EPS/OS, Chemistry)
- Filestore/Fileshare server with 16TBs of disk space
- Thin client research and instruction labs, expand and enhance
- Consolidate research web sites and provide robust web capabilities (php, mysql, perl, etc)- in progress
- Migrate main department homepages to the WCMS or other.

· **Services**

- Backup in the form of push for academic side, admin side has desktop backup along with file share
- Web services (research and instruction), host main department pages as well on various servers
- Cluster support and deployment (ROCKS, OSCAR, SunGRID)
- System administration for UNIX, Linux, Windows Server, and MacOS 10

- Limited instructional support, e.g. instructional labs, computer based instruction in courses, websites

• Desktop support (includes attached research equipment systems)

• General multi-user UNIX/Windows servers

• Department based directory services (LDAP), Astronomy, Physics, EPS
• DCE for UNIX and Linux environments (NIS+), shared storage

• Cooperative support for research servers, genome, HPC, Chemical Screening Center and various fileshares. Cooperative means between ITS and non-ITS staff.

• Install and maintain scientific software per client and pooled

• Printing support per client (networked and non-networked) and pooled, i.e. CUPS

• Departmental email and mailing lists. These will migrate to campus list server

• Flexlm license servers (Mathematica, Matlab, IDL, et al)

• Administrative desktop support is done by the SC in general, but augmented when needed by LITS

· **Current Challenges**

• Adequate computing infrastructure support, e.g. campus power and cooling along with robust networking.

• Assessing depth of need for computing support, i.e. programmers, system admins, scientific computing

• Staying synced with various software packages and their application

• PBSci is very decentralized in budget and decision processes. This creates a condition of having to interact with 10 different departments rather than an overall unified division.

• Creating the right interface between ITS and local computing support staff

ITS/Social Sciences Computing
Briefing Paper

Prepared for: Vice Chancellor Mary Doyle

Michael P Edmonds
Divisional Liaison – Division of Social Sciences
Information Technology Services

Overview

The social sciences faculty includes campus innovators who seek to leverage leading edge technologies in support of teaching, research, and public service centered around the disciplines and research centers. Social Sciences has had a significant history in technology, in all disciplines, by virtue of the strong methodological pluralism with special emphasis on statistical and econometric modeling. Superimposed on this significant modeling perspective are the more rigorous and challenging demands of the more technologically oriented faculty, including geographic information systems and digital media. Further, it is the Dean's intention to use technology as a strong attractor for new faculty and graduate students.

The division is composed of nine academic departments, Colleges 9 and 10, several organized research units, the Geographic Information Systems lab, and the Social Sciences Media Lab.

What is Working

The focus of ITS services in support of the Division of Social Sciences is on the development of a stable, robust infrastructure that will support the current and expected instruction, research, and administrative needs of the faculty, staff, and graduate students of the division and its departments, research centers, and programs.

The faculty, staff, and graduate students of the division generally understand and support ITS. They have seen some of the fruits of the consolidation (example: cFile, the division's file storage and back-up solution that resides in the data center; and Shoestring, the division's compute server that also resides in the data center). However, perhaps because they are social scientists, they are particularly concerned with not losing the human side of IT support, both for themselves and those providing the services.

The thing that works best is the people -- the dedication and tireless efforts of Tristan Carkeet, David Carlson, and Paul Sosbee (ITS/Social Sciences Computing), as well as Ken Garges and Mikey Orr (ITS/Core Technologies) – as they are the "root-cause" of the successes the division has enjoyed.

Early on in he consolidation, ITS/Social Sciences Computing began migrating those locally-provided services that could be more cost-effectively (in terms of money and staff resources) provided centrally, while minimizing impacts on service recipients. This work began with migrating to what is now ITS/Applications and Project Management, responsibility for most database and web site development and support, and to ITS/Core Technologies responsibility for file storage and back-up services. Within the last year, this work also included migrating desktop support for all staff to ITS/Support Center (SDS).

These migrations have allowed local staff (known in Social Sciences as Academic Computing Experts, elsewhere as LITS) to focus on face-to-face interactions and problem solving, at a variety of levels, with the faculty, staff, and graduate students of the division. This has also allowed for support of those applications and services that are unique to social sciences. Some of the key projects ITS/Social Sciences Computing has been able to undertake as a result include:

- Development and implementation of cFile, the division's (currently) 14TB file storage and back-up solution residing in the data center. cFile also provides LDAP services (via Apple's Open Directory) for the division's servers.

- Development and implementation of cTrack, the division's hardware asset management system. cTrack complements cKey; together they provide a more complete computing asset (hardware and software) management system.

- Development and implementation of cKey, the division's software asset management system (a "key server" and license tracking/management solution). cKey complements cTrack; together they provide a more complete computing asset (hardware and software) management system.

- Development and implementation of Shoestring, the division's "compute server" solution. Shoestring will support both econometric and statistical modeling, as well as other compute-intensive applications. This project is the result of the joint efforts of ITS/Social Sciences Computing and ITS/Core Technologies.

Near Term Challenges

The lack of central resources to provide the support for database development that used to be done with local resources (that were moved to the "central" organization in the consolidation) is causing us to have to pick up the slack with no resources.

Additional space in the data center will be needed to accommodate the planned growth of cFile as well as the installation of the GIS Lab servers.

Two challenges related to cFile are:

- The division will need to determine how to pay for the systems administration support that is provided by ITS/Core Technologies to cFile and Shoestring. If the division cannot afford to pay these charges as they relate to cFile, an alternative design for cFile that can be supported by the ACEs must be developed. If the division cannot afford to pay these charges as they relate to Shoestring, it may have to shut down.

- A replacement for cFile needs to be developed, as the current hardware is five to seven years old. This work has been started, and will include one or more alternatives that do not require systems administration support from ITS/Core Technologies.

Long Term Issues

The development and implementation of a secure/encrypted communications link is one part of the solution envisioned for providing adequate and appropriate security for the access and storage of information (confidential and otherwise) of the division. It is expected that a secure/encrypted communications link, coupled with encrypted file storage on desktops and laptops, and file servers appropriately located with the data center, will form a more complete security infrastructure for the division.

Improving the network infrastructure is critical to the ability of ITS to support the mission of the division. The bandwidth available in various buildings used by the division (especially College 8 and Oakes College) is extremely low – on the order of 4.5Mb/s – 6.0Mb/s, half-duplex.

Staffing levels need to be increased, given the increased demand for computing and networking services resulting from increases in faculty, staff, and graduate student headcount over the years, as well as the increased numbers and complexity of computers used within the division. While there have seen some reductions in the numbers of faculty and staff, they have been offset by the implementation of new initiatives and increased sizes of some of the cohorts. This point is underscored by the Dean's intent to use technology as a strong attractor for new faculty and graduate students.

Important Links or Appendices

For more information concerning the division, please refer to: http://socialsciences.ucsc.edu/. For more information concerning the budget and other measurement metrics comparing this division to the others, please refer to: http://planning.ucsc.edu/budget/Reports/profile2009.pdf.

Division of University Library
ITS Divisional Liaison Briefing Paper

Prepared for Vice Chancellor Mary Doyle
By: Eric Mitchell
Divisional Liaison
University Library

Overview/Introduction

Virginia Steel, the University Librarian often describes The University Library as having three branches, McHenry Library, Science & Engineering Library and the Virtual Library via the Internet. The University Library has about 140 staff computers and 250 public computers. The University Library is currently running 33 severs to sustain and support the Library and the Integrated Library System.

What's Working?

- Communication and cooperation between ITS and the University Library have improved. Some examples include
    - University Library and ITS Partnership Steering Committee
        - ITS/Library Information Commons/Help Desk Collaborative Work Group
        - ITS/Library Instructional Materials Development Working Group
    - Learning Technology Group has sought input and collaboration with the Library
    - Instructional Computing and the Library
- Campus wide Service Level Agreement has managed to create a baseline of expectations. I would say that it is viewed with a bit of skeptical understanding. As all the Library has had to adjust services based on limits to resources, Principal Officers are aware that ITS has to do the same. It doesn't make it any easier.
- A few Librarians have taken the Project Management Classes developed by ITS with very positive feedback. We will see how it impacts next years library project Cycle.
- Standard Desktop Support has been rolled out and accepted. The change from 4 hour to 8 hour response time has been a minor issue but library staff has adjusted to it and LITS still pick up the cases that need special service.
- The Library created a governance committee, Library Technology Coordinating Group comprising the Associate University Librarian for Collections and Librarian Information Services, the Digital Initiatives Librarian, and the ITS Divisional Liaison to the Library. This has provided approvals and guidance for Library IT projects and services.
- Library public printing provides student direct billing using their Gold Passwords and still supports the card system for staff, faculty and community borrowers.

Near Term Challenges

- The foremost challenge facing ITS for the University Library will be providing the support for the digital portions of the Grateful Dead Archives.
- The library will also be facing another building move into the completely renovated McHenry Library in the early summer 2011.
- Science & Engineering Library is still running less than Cat 3 networks that average at about 6MegaBits. We have upgraded some areas as small wiring projects but the rest of the Library needs to be addressed.

- The University Library has several major projects in the queue for the next few years. These will better position the Library to provide modern services for instruction and research. Implementing most these projects have and will continue to put a strain on the Library LITS.
    - Grateful Dead Archive digital storage and delivery
    - Mobil Applications for library services
    - Cruzcat Acquisitions bursar interface to Banner
    - Digital Streaming and Podcasting
    - Electronic Resource Management System module for the ILS
    - Institutional Repository
    - Shibboleth Authentication for of campus access to electronic recourses

- Leveraging and supporting system wide technologies from California Digital Library

- Expanding technologies in learning and libraries will create logistical, technical and infrastructure challenges. They will also create additional strain on LITS as we redefine a service catalog to support them.

Long Term Issues

The role of ITS is to facilitate Chancellor Blumenthal's vision of a nationally recognized research university, I see my role as the University Library Divisional Liaison to facilitate and support the University Librarian's vision of an Academic Research Library. This would be an important part of a research university. We need to continue to move forward on creating the infrastructure to support the electronic research required for an ARL.

The changing role of the Libraries continues to push the technology envelope in bandwidth, data storage and performance. These technologies also require human resources to support them. Budgets have given one time funds to implement some of them but ongoing funding doesn't exist to support them. Service level choices will have to be made as we redefine the Local IT Service Catalog for the Library and evaluate resource capacities.

Division of UCSC Extension / Silicon Valley
ITS Divisional Liaison Briefing Paper

August 2010

Prepared for Vice Chancellor Mary Doyle
By: David Klein Divisional Liaison
UCSC Extension / Silicon Valley

Overview/Introduction

UCSC has consolidated into two main facilities in Silicon Valley: UCSC Extension in Santa Clara and Silicon Valley Center at the NASA Ames research Center in Mountain View. UCSC Extension (UNEX) provides continuing education aimed primarily at working professionals looking to move up in their careers through job-related skills improvement. Silicon Valley Center at Moffett Field (NASA) brings campus classes to UC students in Silicon Valley as well as supporting research activities in conjunction with NASA and other universities.

In terms of IT support, Silicon Valley has a support staff of 9, offering almost all services provided by campus ITS, only at a smaller scale. UNEX has a staff of 40, all "information workers". We also have 15 classrooms and 6 computer labs with over 100 Macs and PCs. SVC has a staff of over 20 plus ASL researchers, faculty and graduate students. SVC also has 130 UARC researchers at various locations within NASA, but these require no IT support from UCSC. SVC has 3 distance education classrooms with the various PC labs now consolidated into one.

UNEX moved into a new facility in Sep 2009, with a completely new infrastructure. It now has a very fast network connected to campus over a 1Gb CENIC link, providing high bandwidth to campus and the outside world.

What's Working?

- Classroom support at all sites is well managed and adequately staffed for now. SVC has declining course offerings and students for Fall 2010, freeing up resources to assist at UNEX.
- Desktop support for staff and labs responds to tickets within SLA requirements.
- Network, phones, infrastructure – we are secure and have high uptime. We regularly pass TrustKeeper audits and are ahead of the curve on PCI compliance. We will be adding more security features this year to further prevent unauthorized access to the network.
- Server support – Over 35 servers that run almost all IT services we offer. We are taking the first steps toward virtualizing both servers and desktops and plan to move to VM ware in 2011-12.
- Sakai LMS, deliver by rSmart, has been a very successful migration from WebCT. UNEX offers about 70 online course per quarter.
- Distance education at SVC works well but has a higher incident of recording failures than I'd like. Media Services is aware of the issues. This may be moot if the classes move to Santa Clara (see below)
- DBA support – Campus ITS is now providing DBA support at 20% FTE. This is a welcome addition to our team and will help us with both improving OneCE performance and with the selection of a replacement SIS.

Near Term Challenges

- Complete the deployment of physical security upgrades at UNEX – we are in the process of installing several security measures in the Santa Clara facility: 27 cameras, 6 card-key door locks, phone recording software, new badging system with integrated wireless credentials. Staff training is a key component of this work.

- Enterprise Student information System – After a campus audit told us what we already knew – that OneCE was not adequate for our long-term needs – we embarked on a process to replace it. The RFP, based on UC Berkeley's RFP for a similar system, is in the final stages of tuning with Purchasing and will be issued to the public on Sep 10. Responses from vendors are due Oct 8.
- Providing stable IT services at SVC – We need to move SVC staff to standard PC models so they can be supported by the campus Support Center. They are planning on buying new PCs but feel that someone else is supposed to buy them.
- Scaling up the online Course team as the program expands – Planned growth in online courses will soon exceed the team's capacity. Since ITS is not hiring, UNEX is willing to hire the person, but this makes supervision by IT a challenge.
- Getting in proper sync with campus services – a combination of setting up our own services in some cases (LDAP), and moving to central systems (CruzMail on Gmail) in others.
- Upgrading Lab 133 – when UNEX moved into Santa Clara, one lab inherited older gear from Cupertino. This year we are bringing this lab up to the standards of the other labs.
- Assisting with the radio link to Mt. Hamilton – UCOLick will be testing a radio link from the roof of the Santa Clara building to Mt. Hamilton in the next few months. If it goes well, we will install the antenna permanently and provide the network connections to campus.
- Expanding ITS role in class support – Fall is proving to be a challenge with new classes on Linux and ESX (VMware) platforms. We are offering the VMware class online, forcing us to develop a virtual lab environment that can be accessed by students remotely.

Long Term Issues

- Virtualizing UNEX servers and desktops – In preparation for an equipment replacement cycle in 2011, we need to test a VMware proof of Concept system to verify the viability of moving to a virtualized server environment, reducing our server count from almost 40 to less than 10.
- Preparing for the deployment of the new Enterprise SIS is the major project for ITS in Silicon Valley for this fiscal year. Key activities include: planning, testing, data migration, changing business processes, communication, LDAP integration, and setting up the infrastructure.
- Third floor of the Santa Clara facility – This is still undecided, but it seems likely that the academic programs now running at SVC will move to Santa Clara in the longer term. Having built out the first 2 floors, the ITS team will be heavily involved in any build out, both with the physical infrastructure and the IT support for the new tenants and classes.

Important Links or Appendices

UCSC Extension: http://www.ucsc-extension.edu
Silicon Valley Initiatives: http://svi.ucsc.edu
Advanced Studies Lab: http://asl.ucsc.edu/affiliates.html

Division of Business and Administrative Services
ITS Divisional Liaison Briefing Paper

Prepared for Vice Chancellor Mary Doyle
By: Peter McMillan
Director
Client Relationship Management

Overview/Introduction

Business and Administrative Services (BAS) is a division comprised of three thematic collections of units; Internal Control and Business Services, Physical Environment and Auxiliary Services and Life Safety.

Functional areas include business contracts, mail services, purchasing, receiving, temporary staffing, printing services, risk management, transportation and parking, payroll, travel, payments/reimbursements, cash handling, sponsored awards, equipment management, financial systems and management, internal audit, divisional resource planning, human resources, labor, benefits, capital project planning and construction, real estate, building and utility services, custodial, grounds, energy management, sustainability, police, fire, environmental health and safety.

Information technology consumption in BAS units ranges from standard desktop support through the management of specialized departmental applications to enterprise level systems. Specialized departmental support examples include Parking Permit sales (TAPS), Online Tag Program, Chemical Inventory (EH&S), Title and Pay Plan, Events Manager, Facilities Management Information System (FAMIS) and the web-based Emergency Operations Center (Fire). The division has approximately 600+ workstations, 300+ databases, 30 servers and is supported by 3.0FTE (BAS LITS) and 1.0FTE (Divisional Liaison).

A number of enterprise systems are stewarded by VC BAS including the Financial Information System, Payroll/Personnel System, CruzBuy, CruzPay, and Recruitment Management System. These systems are supported using a model that splits the functional and technical work between the host unit and ITS.

What's Changed?

In the period from 2008 – present, a number of changes have taken place within BAS and ITS. Retirements, workload reassignments and budget reductions have resulted in reorganizing functional units within BAS. The retirement of the University Business Services Director position resulted in a collection of BAS units to be reassigned to existing functional areas within Financial Affairs, Physical Plant and Office of Resource Management.

Within the BAS LITS staff, we saw one retirement (Fromwiller). Her workload was reapportioned to Applications and Portfolio Management along with .60FTE of the position. This reassignment of workload has been very successful and resulted in no service interruptions to Physical Plant or the FAMIS system, which generates $40M in recharge billing annually.

Within the Client Relations Management unit, the Support Center and Standard Desktop Support functions we're migrated to the new Client Services unit. With the retirement of the existing CRM Director (Hyder) and the Student Affairs DL position (Mikawa), portions of that workload have been assumed by me.

In September 2009, the ITS Physical Security Systems group began reporting to me. This move has resulted in a number of organizing initiatives to improve the service and plan for growth anticipated by McHenry Library and Biomedical facilities. We are further bolstering this service area with the addition of staffing from LITS (Rocchio, Gunther).

What's Working?

Our strategy for maintaining IT support is to utilize standard desktop support services ("global services") as the first tier of our support model. Our LITS are positioned to handle escalated issues but are primarily focused on managing servers and services that provide added value to various BAS units ("local services") at low cost.

In addition to the LITS acting as the escalation point for standard desktop issues, they are able to plan and manage a variety of Class 1 and 2 projects, and manage a very large portfolio of custom and proprietary departmental applications. Each BAS LITS is located adjacent to (or within) their former unit and retains the ability to be the "go-to" person, even if the task is to refer a problem into IT Request

On the whole, desktop support continues to be a service area that adds value to the BAS operation by providing services that would otherwise be escalated to LITS for resolution. While the number of staff performing desktop support has decreased, we are confident that expanding the use of remote management tools will provide equivalent levels of service.

BAS LITS continue to manage the operations at the 2008 level and have absorbed portions of work formerly performed by Fromwiler. This includes providing support for specialized services that run the gamut from secure check printing and banking transactions to supporting file servers and web application development.

Reorganizing what had been unit-managed IT staff into a divisional resource has proven effective for the division and the individuals. Taking an individual who previously had supported 40 people in one functional area and exposing them to the hundreds of business processes and staff within BAS has made LITS work more interesting. However, BAS is understaffed to support the breath and depth of IT services provided by LITS staff.

Near Term Challenges

Our single largest challenge is adequate staffing levels to manage the portfolio of existing systems and applications within the division. Increased concern about application security, compliance requirements, and aging infrastructure are prioritized against proposals for new systems and services that may have been deferred for years. Managing the balance of strategic investment with operational stability is the primary work of the DL. While we have been successful in making the total amount of IT work visible to VC BAS, we are still in the process of quantifying the shortfall in IT staffing necessary to support the BAS division. This shortfall will need to translate into costs that BAS units may or may not be able to fund.

Historically BAS did not have a centralized divisional IT support model and units self-managed and prioritized their IT needs individually. Managing expectations, priorities and response time on new and operational work continues to be a challenge.

One deep. In nearly every service supported by LITS, we are staffed with a single individual. While we have made some effort to cross-train in areas such as web development, File Maker Pro development and server management, BAS functional units continue to be at risk due to staffing levels.

Long Term Issues

Longer-term IT issues facing Academic Support units include:

- Developing divisional and/or unit-based funding models to support the breadth and complexity of the existing Academic Support IT portfolio.
- Replacing aging applications and infrastructure with planned replacement cycles and funding models.
- Maintaining and managing campus investments in enterprise systems.
- Server and application consolidation across units who have not previously shared resources.
- Migrating from a unit-based view of IT needs to a divisional perspective and prioritization.

- Unfunded mandates in the form of new systems, regulations and compliance requirements.

Important Links or Appendices

http://bas.ucsc.edu - Divisional web presence
http://peterm.ucsc.edu - Divisional Liaison site

Division of Chancellor's Office Administrative Support Team

ITS Divisional Liaison Briefing Paper

Prepared for Vice Chancellor Mary Doyle
By: Bomi Patel
Divisional Liaison
Chancellor's Office Administrative Support Team

Overview/Introduction

The Chancellor's Office Administrative Support Team (COAST) is an ITS team created to support the needs of campus senior management and the units reporting to them.

- Academic Personnel Office
- Arboretum
- CPEVC Units
  - Administrative Records
  - Academics Affairs
  - Academic Senate
  - Campus Provost/EVC Office
- Chancellor's Office
  - Chancellors Office
  - EEO Diversity
  - Ombudsman
  - Title IX
- Vice Chancellor of Business and Administrative Services
- Vice Chancellor of Planning and Budget
- Dean of Graduate Studies
- Vice Chancellor of Research
  - Office for Management of Intellectual Property
  - Office of Research
  - Office of Sponsored Projects
  - Institute on Science for Global Policy
- Vice Chancellor of Student Affairs
- Vice Provost and Dean of Undergraduate Education
  - Center on Teaching Excellence
  - International Education
  - Summer Session
- Vice Provost for Silicon Valley Initiatives
- Vice Chancellor of Information Technology Services
- Vice Chancellor of University Relations

Information technology consumption in COAST units ranges from standard desktop support through the management of specialized departmental applications to enterprise level systems. The units vary in the degree of IT adoption and technical sophistication.

At the enterprise level, a number of systems are stewarded by various Vice Chancellor functional areas. These include systems such as Data Warehouse, Administrative Records document management system (DMS), Santa Cruz Tickets, University Relations Banner/ADFS Portal and giving.ucsc.edu.

What's Changed?

In the period from 2008 – present, a number of changes have taken place within COAST and ITS. As resources have become constrained due to budget cuts, we have had a reduction in the number of staff within the COAST unit. In order to continue providing services with reduced staff, we have had to work with our client units to help them take advantage of "global services" where this was feasible.

Examples of recent changes include them migration of all units to the campus email and calendar systems. This resulted in the retirement of duplicated systems and the expenses to maintain them. University Relations staff were recently migrated to use the campus standard desktop support.

In June 2010, COAST has been combined into a single organization unit focused on providing support to all academic support units within the divisions of Business and Administrative Services, Student Affairs and Chancellor's Office units listed above.

What's Working?

Our strategy for maintaining IT support is to utilize standard desktop support services ("global services") as the first tier of our support model. Our LITS are positioned to handle escalated issues but are primarily focused on managing servers and services that provide added value to various BAS units ("local services") at low cost.

In addition to the Local IT Specialists (LITS) acting as the escalation point for standard desktop issues, they are able to plan and manage a variety of Class 1 projects, and manage a very large portfolio of custom and proprietary departmental applications. Each COASTS LITS is located adjacent to (or within) their former unit and retains the ability to be the "go-to" person, even if the task is to refer a problem into IT Request

Reorganizing what had been unit-managed IT staff into a divisional resource has proven effective for the division and the ITS individuals. Taking an individual who previously had supported a few clients in one functional area and exposing them to all the departments and staff within COAST have made LITS work more interesting and efficient.

Near Term Challenges

Our single largest challenge is adequate staffing levels to manage the portfolio of existing systems and applications within the division. Increased concern about application security, compliance requirements, and aging infrastructure are prioritized against proposals for new systems and services that may have been deferred for years. Managing the balance of strategic investment with operational stability is the primary work of the DL.

Physical locations. The recent UR move of its staff to 2155, has created a temporary challenge in providing consistent support for their various needs. Some of issues associated with physical location will be resolved through the increased use of 'remote support tools" that allow technicians to make repairs in real time without having to be on-site with a client.

Another challenge we face is the perception that local units contributed their technical staff to ITS and ITS has not been able to provide support at the level they feel they require. In some cases, the pace of technology adoption may exacerbate this; as new requirements and opportunities for operational streamlining within a local unit may be in conflict with IT resources already committed to other projects and priorities. In other cases, their client relations and expectations that need to be managed.

Long Term Issues

Replacing aging applications and infrastructure consistent with planned replacement cycles and funding models. Units supported by COAST not only maintain a number of information systems that serve users campus-wide, these units make extensive use of information technologies (both on the desktop and via server-based applications) to carry out their responsibilities. These require LITS based desktop support.

COAST maintains a broad range of office productivity, collaboration, and web services tools that have not been upgraded in a number of years; in addition, the COAST-supported units are licensed for desktop and server management tools that will help streamline COAST support tasks. As part of the partnership with COAST, these units have acquired the most up-to-date licenses (and appropriate hardware) for these applications and tools and are depending upon COAST/ITS to partner with them in upgrading this local infrastructure.

Server and application consolidation across units who have not previously shared resources; and migrating from a unit-based view of IT to a divisional perspective.

In the units served by COAST are also those at the cutting edge of implementing or dealing with new policy, regulation, and compliance/security issues as they come down from the Office of the President (and other external agencies), they look to partner with COAST (as well as other ITS units) in developing information technology-based ways to address or monitor such requirements.

Important Links or Appendices

The following documents/resources provide additional context:

- Service Level Agreement for the Chancellor's Office and affiliated units (http://its.ucsc.edu/service_catalog/sla/COAST_SLA_0708.pdf)
- Web sites for each of the units supported by COAST (these are linked to the unit names on the first page of this report)

Division of Student Affairs
ITS Divisional Liaison Briefing Paper

Prepared for Vice Chancellor Mary Doyle
By: Peter McMillan
Director
Client Relationship Management

Overview/Introduction

Student Affairs is a division comprised of units designed and devoted to serve all campus students and to make sure that the learning and living environment on campus is conducive to attaining their academic goals.

Functional areas include Colleges and University Housing (CUHS), Campus Life and Dean of Students, Enrollment Management and Student Affairs (SA) divisional administration.

Information technology consumption in Student Affairs units ranges from standard desktop support through the management of specialized departmental applications to enterprise level systems. Specialized departmental application and systems examples include Student Elections, Student Housing Online, Career Center, Dining Services, Student Health Center, and OPERS.

The division has approximately 800 workstations, dozens of custom and proprietary applications and 24 servers. Another 200 workstations and several servers are supported by various means including self-support or contact services.

What's Changed?

In April 2010, the Divisional Liaison for Student Affairs retired. As part of a larger reorganization with CRM, the academic support units of BAS, Chancellor's Office/EVC and Student Affairs have been combined to provide institutional support.

In Fall 2010, ITS will begin working with a new governance committee with the purpose of providing oversight on the programming staff who write and maintain applications on behalf of Student Affairs. This committee will consist of SA and ITS staff who will prioritize and plan projects as they arise.

What's Working?

Our strategy for maintaining IT support is to utilize standard desktop support services ("global services") as the first tier of our support model. Our Local IT Specialists are positioned to handle escalated issues but are primarily focused on managing servers and services that provide added value to various SA units ("local services") at low cost.

In addition to the LITS acting as the escalation point for standard desktop issues, they are able to plan and manage a variety of Class 1 projects, and manage a very large portfolio of custom and proprietary departmental applications. Examples of this work include the new ActiveNet system being implemented in the OPERS unit and the Student Health Center's Point 'n Click system; LITS assist and/or lead project management efforts, play a liaising role between various ITS service groups and the local clients.

On the whole, desktop support continues to be a service area that adds value to the Student Affairs operation by providing services that would otherwise be escalated to LITS for resolution. While the number of staff performing desktop support has decreased, we are confident that expanding the use of remote management tools will provide equivalent levels of service.

Other service areas supported for the division include file server services for the SACOMP domain (account management, backups, etc.), server hosting and management, ResNet management, web services and client relationship management.

Near Term Challenges

Our single largest challenge is adequate staffing levels to manage the portfolio of existing systems and applications within and across academic support divisions. Increased concern about application security, compliance requirements, and aging infrastructure are prioritized against proposals for new systems and services that may have been deferred for years. Managing the balance of strategic investment with operational stability is the primary work of the DL and Local IT staff.

The prioritization of new initiatives across the division has an impact on resources. Client units do not necessarily consider the impact on the few IT staff. As new projects surface they are in competition for LITS staff or other IT resources and need to have their needs understood in the larger context.

One deep. In nearly every service supported by LITS, we are staffed with a single individual. While we have made some effort to cross-train in areas such as web development, File Maker Pro development and server management, SA functional units continue to be at risk due to staffing levels as we pool resources across all academic support divisions.

Long Term Issues

Longer-term IT issues facing Academic Support units include:

- Developing divisional and/or unit-based funding models to support the breadth and complexity of the existing Academic Support IT portfolio.
- Replacing aging applications and infrastructure with planned replacement cycles and funding models.
- Maintaining and managing campus investments in enterprise systems.
- Server and application consolidation across units who have not previously shared resources.
- Migrating from a unit-based view of IT needs to a divisional perspective and prioritization.
- Unfunded mandates in the form of new systems, regulations and compliance requirements.
- Several SA units were exempted from the IT consolidation (EPC, UCCP) and as outliers have periodic security issues that require ITS assistance.

Important Links or Appendices