

UC Santa Cruz Information Technology Strategic Plan 2015-2018

The primary mission of ITS is to provide high quality infrastructure, support, and innovation in the delivery of information technology products and services to continually advance UCSC's reputation as a top-ranked research university and the leading institution in the education of students.

Context for Planning

Over the past seven years, Information Technology Services (ITS) at the University of California Santa Cruz (UCSC) has undergone a dramatic and at times tumultuous transformation. The genesis of the transformation was a desire to extend and improve the technical environment and services on the campus. Considerable consolidation of personnel and reorganization of resources resulted in an organization more well-situated to manage infrastructure, systems, and services to meet the computing and telecommunications priorities of the campus in an environment of diminishing resources and expanding expectations.

At the same time, the world of information technology has continued to evolve. On the edge of innovation we find social networking, cloud computing, green data centers, serious gaming and virtual worlds, big data, open standards, mobile computing, 100gb networking, paperless workplace, and more. On the darker side, we live in the world of false security of public WiFi hotspots, threats of attack by intrusion, potential perils of putting data in the cloud, a variety of challenges in the exposure of personal information to identity thieves, and other vectors of mal-intent not imagined a few years ago.

There is no indication that the pace of change in the digital world will slow any time soon. The choices we make today in setting direction may be impacted by many unknown developments as we experience the continued evolution of technology in academic, administrative and social settings.

The UCSC campus has endorsed a Strategic Framework for IT Planning that sets forth a number of guiding principles and directives for the organization and management of information technology at UCSC. This ITS Strategic Plan is built on the foundational work of the framework and creates a roadmap for the ITS division.

This plan is intentionally succinct and focused on what the campus can expect from ITS.

Teaching and Learning: Deliver high quality instructional services to the campus using a shared set of appropriate technologies.

Action:

- Deliver transparent and coordinated services to meet the instructional needs of the campus.
- Offer consistent instructional computing capabilities across the campus.
- Partner with Library and academic divisions to create a common digital repository that meets faculty needs.
- Through campus-wide collaboration, leverage instructional tools to improve student, faculty, and academic support staff interaction.

Outcome:

- ITS services enhance faculty and student teaching and learning experiences.

Action:

- Coordinate support within ITS to enable seamless help for the campus.
- Provide anywhere access to licensed software and tools in support of instruction.
- Explore expanding the ITS Helpdesk into the Library.

Outcome:

- Faculty and students can easily get support either through self-help or ITS assistance.

Action:

- Provide specialized support in engineering and infrastructure, digital media, and academic research.
- Provide local authentication and hosting services, plus an accessible environment for incubation and innovation.
- Offer limited web design, branding and small application development.
- Enable access to computational clusters and localized support with specialized software in accordance with divisional priorities.

Outcome:

- Academic divisions have ready access to essential IT infrastructure.

Research: Provide the campus with the technology resources and support to take advantage of bold research opportunities for faculty.

Action:

- Identify research networking needs and proactively pursue solutions.
- Offer the campus a portion of the network reserved as a place optimized for high-performance research applications. (This place is known as a research DMZ).

Outcome:

- UCSC technology infrastructure is flexible enough to support a range of research needs.

Action:

- Extend ongoing research partnerships across academic divisions.
- Support faculty research needs through specific projects of limited duration.
- Identify external investment options to create flexible infrastructure in support of faculty research.

Outcome:

- IT support for faculty research is available through joint investment by ITS and external sources.

Action:

- Leverage commonalities through cross-divisional technical communities to develop and deliver right-sized/right-priced common services.
- Academic divisions and their ITS staff have access to common open source tools.

Outcome:

- Improved coordination among ITS staff results in enhanced services that meet common need without compromising localized commitments.

Student Engagement: Create mutually beneficial opportunities to connect UCSC students with meaningful ITS projects.

Action:

- Engage students across campus to work on ITS projects related to their academic interests.
- Recruit faculty to supervise these engagements to maximize academic benefits of the work.

Outcome:

- ITS projects are used as opportunities to engage students in "resume-building" activities as a part of their academic experience.

Action:

- Identify disciplines where students acquire skills and expertise that qualify them for work on ITS projects.
- Build relationships with faculty in these disciplines who specialize in these areas of expertise and who are interested in supervising student participation in these projects.
- Identify tasks on projects that students can be expected to have the skills necessary to complete.

Outcome:

- Talented and motivated students assist in making progress on ITS projects.

Action:

- Identify ITS positions for which UCSC graduates could be qualified.
- Consider successful interns (see the above objectives) as likely candidates.

Outcome:

- ITS successfully places UCSC graduates in open ITS positions.

Infrastructure: Provide UCSC with a stable, secure, robust and modern IT experience.

Action:

- Bring campus technology environment up to contemporary research university standards.
- Maximize UCSC's network capacity and availability.
- Protect university assets through the design and deployment of secure public and private networks.

Outcome:

- UCSC's technology environment is competitive with like institutions.

Action:

- Create a cyber-infrastructure (CI) plan that prioritizes faculty needs and takes advantage of new developments in computational science.
- Evaluate emerging technologies such as Open Flow, COTN, GENI for integration into the campus CI plan.
- Design and implement Data Center research DMZ (see research actions above).

Outcome:

- UCSC faculty have access to a network that supports leading edge research across the academic divisions.

Action:

- Move from legacy telephone and cable television services to IP-based services.
- Offer enhanced features and functions to the campus within the IP-based services.
- Adopt fixed-mobile convergence strategy for future voice service.

Outcome:

- UCSC campus is served by a modern telecommunications environment.

Administrative Applications: Deploy a diverse portfolio of applications that efficiently address system, campus and local needs and priorities.

Action:

- Eliminate outdated technologies.
- Develop applications that are accessible, mobile, and device agnostic.
- Fully implement Business Continuity/Disaster Recovery plan for enterprise applications.
- Investigate and recommend open-source, vendor-delivered, or university-developed systems as appropriate.

Outcome:

- The campus has a portfolio of administrative system applications that are supportable, sustainable, accessible and meet campus needs.

Action:

- Select system development or acquisition projects that offer the campus reductions in effort or cost and/or increases in productivity.
- Offer appropriate levels of support to accompany the release of any new system.

Outcome:

- ITS deploys and supports systems that effectively address business needs within available resources.

Action:

- In consultation with advisory groups, identify priorities and create roadmaps to guide use of available resources.

Outcome:

- Application work is aligned to campus priorities.

Campus Support: Provide the campus with access to clearly defined support and services that fit their needs.

Action:

- Assure that it is easy for the campus to make requests through an automated service request system.
- Present self-help information that is helpful, easy to obtain and accessible.
- Create opportunities for user-to-user peer support and interactions.

Outcome:

- Campus easily finds help via the ITS service catalog, self-help, consultation and/or user-to-user information.

Action:

- Ensure that all services are accurately described and delivered as described in the ITS service catalog.
- Track campus use of and satisfaction with offered services.
- Identify and implement metrics to track client feedback and adapt accordingly.

Outcome:

- Services meet campus needs and are improved based on campus input.

Action:

- Inform the campus of upcoming changes in campus or vendor services and support in a timely manner.
- Provide appropriate documentation and support for the campus during key service transitions.

Outcome:

- The campus is aware of and supported through service changes with minimum impact on work.

Action:

- Provide divisionally-aligned IT support for faculty, staff and students in accomplishing the academic mission.
- Offer access to consulting services to inform IT requirements for projects.
- Access to specialized desktop support for essential services that are outside of the standard desktop service.
- Divisions are represented in ITS decisions to insure that project planning is informed by the local context.

Outcome:

- The campus has easy access to nimble, localized support for their evolving IT requirements.

Security: Protect campus information assets through security awareness and education, secure working environments, and appropriate controls and practices to manage critical risk.

Action:

- Use partnerships, e.g., Police, ResNet, Office of Research, to enrich campus information security awareness and training with expanded reach and topics.
- Engage stewards in protecting most sensitive data.
- Technical staff have access to security training and resources appropriate to their role.
- Educate the campus community so they are active partners in security.

Outcome:

- Members of the campus community have access to security training appropriate to their roles.

Action:

- Capture meaningful data about network and connected devices to quickly evaluate security risk and inform response.
- Leverage security tools and external security communities to identify and block known attackers and malicious activity.
- Provide vulnerability management tools and services to enable ITS service providers to identify highest risk vulnerabilities.
- Improve security of privileged access and related accounts.
- Prioritize implementation of security controls for critical and/or sensitive systems and networks.

Outcome:

- Security controls are applied to highest risk in a complex security landscape.

Action:

- Develop secure deployment practices for sensitive or high availability systems.
- Assess and track progress against SANS 20 Critical Controls, which emphasizes security controls that have demonstrated real world effectiveness.
- Improve reporting and response time for security incidents.
- Increase use of encryption in databases, laptops and web communications to protect information from compromise, loss or theft.

Outcome:

- UCSC environment includes more security by design or automatically as part of service offerings.

Accessibility: Create a fully accessible technology environment that serves the needs of the UCSC campus.

Action:

- Understand campus need for technology-based accommodations.
- Track needs for accommodation and respond in a timely manner.
- Work with appropriate UCSC offices to jointly address accessibility needs.
- Develop campus accessibility policy to align with UCOP directives and serve campus needs.
- Work with appropriate UCSC offices to develop and offer accessibility training programs.

Outcome:

- Campus understands and embraces need for technology-based accommodations.

Action:

- Offer accessible web sites throughout UCSC.
- Improve campus web accessibility through corrective action based on findings of annual web site scanning process.
- Implement accessibility tracking into ITS tools (IT Request incidents & service requests).
- Identify and select appropriate remedial tools and techniques (such as SensusAccess).

Outcome:

- UCSC scores high marks for accessible sites as measured by website scans.

Action:

- Offer administrative and instructional facilities equipped with accessible technology features.
- Evaluate and rate facility accessibility features for effectiveness and cost.
- Identify most appropriate solutions to meet accessibility needs.

Outcome:

- All campus constituents have full access to classrooms, labs and administrative spaces.

Action:

- Design and deploy systems that meet the assistive technology needs of the campus community.
- Apply accessibility touch points in the system development process.
- User-test applications for accessibility.

Outcome:

- Campus users have full access to systems they need to for their roles.

Cloud Services: Define and deploy cloud services that best fit campus needs and align with campus priorities.

Action:

- Evaluate the offerings of available cloud service providers.
- Evaluate campus need and gather requirements for cloud services.
- Identify areas where ITS can provide value in moving to the cloud.

Outcome:

- ITS offers a menu of cloud service options to provide right-sized solutions for a range of campus needs.

Action:

- Provide campus with pros/cons of available cloud service offerings (including CENIC, Internet2, and commercial vendors).
- Communicate to the campus cloud service considerations such as security, privacy, cost and back out planning in selecting cloud service providers.
- Offer guidelines for service selection (e.g. dashboard or selection engine).
- Create an ITS team to assist in deploying cloud services.
- Clearly define the service ITS will provide to the campus.

Outcome:

- Campus has a clear process for requesting, selecting, and quickly receiving cloud-based service.

Action:

- Negotiate with providers for most cost-effective offerings.
- Work with strategic sourcing at UCOP to leverage system resources.

Outcome:

- Campus has access to cost-effective cloud services.

Mobility: Offer secure and robust mobile access to campus data.

Action:

- Identify campus highest priorities for mobile applications.
- Develop strategies to most efficiently and securely craft mobile versions of applications.
- Implement UC mobile web framework to facilitate mobile development work.
- Integrate mobile-ready functionality into app development.
- Develop and deploy high priority applications.

Outcome:

- Campus has mobile access to all high-priority applications.

Action:

- Adopt and promote preferred device solutions while also aligning to policies for use of personal devices for university business (privacy, security, etc.).
- Develop polices around data management for web services.
- Educate the campus on best practices for use and access of university data on mobile devices.

Outcome:

- Use of mobile devices to access campus data is secure and well managed.

Action:

- Offer the campus a web/mobile service team to support use of mobile devices.
- Develop and offer services to support BYOD (bring you own device).
- Implement web services.
- Ensure that ITS services and support for the use of mobile devices are included in the service catalog.
- Implement services that support BYOD, including potential use of application virtualization and mobile device management services.

Outcome:

- Campus has support and service for mobile access to campus data and applications.