

# **A Campus Strategic Framework for Information Technology Planning at UCSC**

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### **Overview**

This framework sets forth ideas, principles and guidelines as components of an information technology plan to be more fully developed at a later stage. It provides the foundation for more detailed technology strategic planning efforts. Intentionally brief, the document offers guidance on a range of information technology issues at the level of a compass rather than a roadmap.

### **The Framework**

Today, the chancellor's strategic goals and the academic plan set campus level direction and priorities as the foundation for developing the more detailed plans of the academic divisions. Similarly, this strategic framework for information technology presents a campus level statement of technology principles to inform more detailed planning within the division of Information Technology Services and to guide the optimal use of IT resources.

At the recommendation of the Advisory Committee on Information Technology (ACIT) the framework presents a general vision and foundational principles for information technology and a more focused view of three essential components of information technology on campus.

### **Vision and Foundational Principles**

#### **Vision**

In support of the campus's direction and goals, ACIT has proposed this vision for information technology at UCSC:

“Create and sustain an exemplary technology environment to continually advance UCSC's reputation as a top-ranked research university and the leading institution in the education of students.”

Achieving the vision will require cooperation, collaboration, commitment, innovation, investment and action on the part of campus constituents.

#### **Foundational Principles**

As a starting point, the following foundational principles should apply equally to the Division of ITS and all campus constituents engaged in management of information technology activities and resources across campus. These principles convey three important directives for information technology:

- Support the campus mission and vision
- Appropriately manage the technology environment
- Make communication and transparency a priority

**Support the Campus Mission and Vision** – Campus priorities must drive investment in technology. To that end information technology decisions and investments should:

- strive to provide all faculty, staff, and students with access to the technology skills and tools appropriate to their campus roles and responsibilities
- support the critical administrative and business activities of the campus
- reflect judicious and appropriate review and selection (see criteria below)
- create a secure and stable campus technology environment
- be prioritized to address most critical needs first using a set of criteria that includes:
  - centrality to the campus mission
  - internal/external demand
  - productivity – quantitative measures of performance
  - cost effectiveness
  - critical mass
  - quality
- minimize the shifting of workload from one unit to another

**Appropriately Manage the Technology Environment** –The technology environment at UCSC must be managed in a way that maximizes the value of limited resources. To that end, the campus should:

- establish and follow campus-wide policies, procedures, standards, and guidelines to ensure consistency in the use of technology across campus
- employ a standardized set of common tools and platforms
- seek out and adopt best practices
- strive for interoperability among systems
- continually enhance operational efficiency through review and realignment of functions and resources
- offer fewer, well-supported services of high quality than more services in an under-funded, under-staffed way
- design infrastructure and architecture, systems, and services to be easy to use and operate/maintain
- wherever possible, reuse, don't reinvent
- carefully evaluate 'buy' versus 'build' decisions

**Make Communication and Transparency a Priority** - Considerable effort must be applied to coordination, communication, and community building around technology issues on campus. Steps to assure appropriate communication and transparency include:

- use the representative IT governance structure (ACIT) and the Academic Senate Committee on Computing and Telecommunications (CCT) to discuss options, alternatives and priorities as related to major IT-related decisions
- effectively and widely disseminate information and communicate decisions
- require transparency in the planning and management of technology to build trust across the campus
- establish and follow service level agreements (SLAs) and operational level agreements (OLAs) to clarify deliverables and manage expectations

- Provide opportunities and reasonable timeframes for input from the campus

Adhering to these campus-level foundational principles should increase consistency and clarity while guiding the investment in and management of information technology at UCSC.

### **Essential Information Technology Components**

Three essential components form the locus of planning for technology. Those are infrastructure and architecture, systems, and services. Each component supports the elements of the campus mission and the campus's major constituent groups – faculty, students, and staff. For each component, a set of guiding principles and a number of directives form the campus-level framework.

#### **Infrastructure and Architecture**

Infrastructure includes those elements of the technology environment that provide the underpinnings for systems and services. Infrastructure includes the cable and fiber assets of the network, the physical spaces that contain technology including data centers, server rooms, communication closets, classrooms, and labs. Architecture refers to the interrelated layers of infrastructure that together create a purposeful organization in the technology environment.

#### **Guiding Principles**

- End users should not have to be concerned with infrastructure
- The needs and requirements of IT systems and services should drive IT infrastructure
- Infrastructure should be robust enough to support the needs of IT systems and services
- Continuous investment in infrastructure is necessary to deliver stable services

#### **Directives**

- Base architecture and infrastructure on standards
- Design architecture and infrastructure with integration and interoperability in mind
- Create and maintain a stable and secure infrastructure

#### **Systems**

Systems are computer applications and their platforms providing academic and administrative management, manipulation, and reporting of campus information. Proper design, implementation, maintenance, and management of systems are critical to university operations.

#### **Guiding Principles**

- Systems should be designed and maintained to assure data reliability

- Principal officers as data stewards have responsibility for the integrity of campus data
- Systems should promote/enable operational efficiency
- Systems should be designed and implemented to efficiently and effectively meet users' business needs
- Centrally managed systems should reduce the need for local development
- Systems must comply with legal requirements, policy and procedures, and campus risk management thresholds
- Manage data for operational as well as strategic use

### **Directives**

- Broaden the understanding of ACIT members of systems
- Strategically deploy and support campus systems to best meet campus needs
- Leverage/maximize infrastructure and information assets with innovation of systems at local, regional and enterprise levels
- Employ appropriate system development life cycle (SDLC) and design review practices

### **Services**

A service is a coherent, ready-to-use deliverable that is of value to the customer. Services allow customers to do business without worrying about underlying technology or IT infrastructure. Technology services at UCSC are provided through the central ITS organization as well as at the local level. Limited resources require careful consideration in identifying those services that are most critical.

### **Guiding Principles**

- Services should be clearly defined and well documented
- Services must evolve in order to continue to meet the needs of the customer and respond to technological changes and advances

### **Directives**

- Look at each service and determine what outcome is desired
- Services must be functional and adequately staffed
- Locate services conveniently and visibly
- Define and document services
- Deliver services consistently
- Consolidate redundant services
- Review campus-wide versus local versus self-service delivery
- Collect needs and convey them to systems/infrastructure for inclusion in those planning and delivery functions