Academic Senate Berkeley Division
Committee on Computing and Communications (COMP)

IT Strategic Planning for Research at UC Berkeley: Categories and Issues

(identified at the 5/12/04 COMP meeting, edited by Ken Goldberg and David Messerschmitt)

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Context

IT and Research intersect in many ways. UC Berkeley's campus-wide IT Strategic Planning process will focus on categories #1 through #4 below.

1. Basic IT resources used for research by faculty from all disciplines

- "IT Resources" includes hardware, software, networking, technical support, system administration and management, data backup, security, and maintenance.
- "Research" refers to a wide range of research-related activities including email, scholarship (web/library access), mentoring/training, experimentation, publications/reporting, presentation, data collection, archiving, fundraising, administration, and budgeting. However, IT resources will often be shared among research, teaching, and service.
- "Faculty" also includes graduate and undergraduate students working on research.
- Most essential (but not the only) element is a personal computer (desktop, laptop, etc) for access to the network and to various networked resources, storage of personal data, and personal productivity applications.

2. Ultra-high performance computing

- Includes remotely accessible resources such as supercomputing, gigabit networking, grid computing, visualization, supporting computational techniques in modeling and simulation in a variety of disciplines (for example the physical sciences, engineering, economics, and financial engineering).

3. Stewardship of research data

- Includes remotely accessible resources such as repositories for data sets collected in research projects (experimental and computational) and software artifacts, and the organization, metadata, and policies necessary to preserve this information over long periods of time and facilitate its conditional access (for computation, visualization, and

examination) by researchers around the world. This shares characteristics with and overlaps the role of museums and libraries.

4. Advanced collaboration and communication via networks

- Includes facilities and capabilities supporting research collaboration and virtual communities on and off campus (such as collaborative authoring, geographically distributed meetings, remote visualization, "collaboratories", research administration across units, etc.)

5. Research on or about IT

- Includes IT resources used by EECS, SIMS, and other Departments that study IT and its uses as a subject

Current status of IT for Research at UC Berkeley

- Almost all faculty now require IT resources for aspects of their research
- There are real and perceived disparities across departments in funding and support for category 1.
- Except for networking, there is limited central campus support for categories 1, 2, 3, 4 (especially 3 and 4)
- Category 5 is supported by departments and is in relatively good shape

Foci for IT Strategic Planning: Categories 1-4

Category 1:

- Defining basic "vanilla" standards for IT resources made available to all faculty (example: see Haas)
- An evolving set of recommended standards, updated at start of each semester, defined for three or more operating system types.
- Potential for economies of scale: purchasing agreements, coordinated software licensing, centralized vs decentralized technical support, maintenance and upgrade, security standards.
- Incentives in terms of cost and technical support, not mandatory standards (faculty should be free to exceed vanilla standards).
- Others to be defined

Categories 2-4: Goals to be developed