Reforming IT Governance at Berkeley: Introducing an Enterprise Perspective to a Decentralized Organization

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Reforming IT Governance at Berkeley: Introducing an Enterprise Perspective to a Decentralized Organization
EDUCAUSE is a nonprofit association whose mission is to advance higher education by promoting the intelligent use of information technology.

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Preface

The EDUCAUSE Center for Applied Research (ECAR) produces research to promote effective decisions regarding the selection, development, deployment, management, socialization, and use of information technologies in higher education. ECAR research includes:

- research bulletins—short summary analyses of key information technology (IT) issues;
- research studies—in-depth applied research on complex and consequential technologies and practices;
- case studies—institution-specific reports designed to exemplify important themes, trends, and experiences in the management of IT investments and activities; and
- roadmaps—designed to help senior executives quickly grasp the core of important technology issues.

As part of its 2008 research agenda, ECAR recently published a study, *Process and Politics: IT Governance in Higher Education*, by Ronald Yanosky with Jack McCredie. The study examines the extent of participation in IT governance by campus leaders and constituents; the use of IT governance mechanisms such as IT steering committees, project review, and performance measurement; and practices associated with good IT governance outcomes.

Literature Review

The literature review helped identify and clarify issues, suggest hypotheses for testing, and provide supportive secondary evidence. Besides examining articles and studies from journalistic, academic, and IT practitioner sources, we consulted with practicing CIOs experienced in IT governance to develop study objectives and survey questions.

Online Survey

We designed and administered a web-based survey that was distributed to institutional representatives (mostly senior IT leaders) at 1,648 EDUCAUSE member institutions in June and July 2007. We received 438 responses (a 26.6% response rate to the survey). In addition, a second and shorter companion survey of non-IT executives was distributed via invitations from CIOs at 59 partner institutions; we received responses from 216 executives at 45 institutions.

Interviews

We conducted follow-up telephone interviews with 28 senior IT leaders from a mix of institutions to gain deeper insights into findings from the quantitative analysis and to capture additional ideas and viewpoints.

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Case Studies

ECAR researchers conducted this in-depth case study to complement the core study. We assume readers of this case study will also read the primary study, which provides a general context for the individual case study findings. We undertook this case study of the University of California, Berkeley, to demonstrate how a large, decentralized research university approaches a complete rethinking of a campus IT governance structure and the steps taken to initiate the transition to a new structure.

ECAR owes a debt of gratitude to Liz Marsh, IT Program Manager, Office of the CIO, for her support in coordinating the Berkeley components of the study, including the logistics of a site visit. Additionally we would like to thank Susanna (Susie) Castillo-Robson, Associate Vice Chancellor for Admissions and Enrollment; Zane Cooper, Chief Technology Officer and Director of the Haas School of Business Computing Services; Teresa Costantinidis, Acting Associate Vice Chancellor for Budget and Resource Planning; Phyllis Hoffman, Assistant Chancellor, Chancellor’s Strategy and Alignment (CSA) Group; C. Judson King, Provost and Senior Vice President (Emeritus), Academic Affairs, University of California, Professor (Emeritus) of the College of Engineering, Director of the Center for Studies in Higher Education, and Interim Director of the Phoebe A. Hearst Museum of Anthropology; Tessa Michaels, Chief Technology Officer for Administration and Executive Director for Business and Technology Solutions; Katherine Mitchell, Internal Organization Development Consultant, CSA; Costas Spanos, Professor and Associate Chair of the Department of Electrical Engineering and Computer Sciences and Chair of the Electrical Engineering Division, Jay Stowsky, Senior Assistant Dean for Instruction, Haas School of Business; and Shelton Waggener, Associate Vice Chancellor for IT and Chief Information Officer. These individuals shared their time and gave the insights into activities at Berkeley that made this case study possible.

Introduction

The organizational culture at UC Berkeley—a large, complex, decentralized public university with a very high level of research activity—favors individual initiative and local entrepreneurship. As Costas Spanos, professor and associate chair of the Department of Electrical Engineering and Computer Sciences and chair of the Electrical Engineering Division, observes, such a situation “is conducive to creativity, but its individualist nature is a problem when striving for efficient operations.”

IT is a case in point. IT services have historically been a combination of central enterprise services and substantial local services. Beginning in the 1980s, with lowered technology acquisition costs leading to the increase in distributed computing, many larger academic units, including the Haas School of Business, the College of Engineering, and the College of Chemistry, moved away from legacy mainframe models and created their own computing service facilities. Today they offer local desktop support and in many cases much, much more. This model has favored the relative effectiveness of having available locally tailored services over the institutional efficiencies gained with more centrally managed services. “We went from mainframe, to desktop, then to laptop and a move to decentralization and loss of control,” describes Jay Stowsky, senior assistant dean for instruction, Haas School of Business. “One by one the more affluent and technologically sophisticated and demanding units broke away so they could make their own investments and strategic decisions. This reflects the larger Berkeley culture, where its combination of fragmentation and decentralization enables units to be very creative and entrepreneurial.”
The price paid for this unit independence has been an IT environment characterized by considerable duplication of investments; a disparity between have and have-not units; a lack of basic technology available for both students and faculty; uneven skills, career paths, and training opportunities for technology support staff; and lack of flexibility in evolving enterprise applications and services. Added to this was a lack of transparency and understanding about where and how much Berkeley as a campus invests in IT services and support. Finally, in an environment of increasing financial exigency—at least as regards to state support—there was no way to align a pervasive and increasingly critical service, IT, with the institutional priorities.

These issues became clear to the Berkeley leadership and community as a result of a campus strategic planning effort and a subsequent IT planning effort. IT governance was identified as so convoluted that effective priority setting and campus-wide decision making were difficult if not impossible. C. Judson King, provost and senior vice president (emeritus), describes IT governance at the time as a series of “Band-Aids or gauze pads. The campus added one advisory committee after another, so eventually it was very hard to sort out the committees’ activities and their individual level of influence.” Governance was also identified as a key enabler of many of the other improvements the institution needed to make regarding IT for the future, and an IT strategic planning process was undertaken in 2005. This case study looks in depth at this process, the IT Review Committee recommendations, and the status of responses to these recommendations.

Background

The University of California started in 1868 with the merger of a private institution, the College of California, and a public land-grant institution, Agricultural, Mining, and Mechanical Arts College. Classes were originally taught in the College of California’s buildings in Oakland; in 1873 they were moved to the current Berkeley site. This became the University of California, Berkeley (henceforth referred to as Berkeley), now one of 10 campuses in the University of California. Starting in the first decade of the 20th century, as a result of an international design competition, the plan for the current 1,232-acre campus in the hills overlooking San Francisco Bay from the east was developed. In the fall of 2007, there were 24,636 undergraduates and 10,317 graduate students registered at Berkeley. Berkeley has 108 bachelor’s-level programs, 96 doctoral, and 32 professional degree programs. It has 1,723 FTE faculty members. The Carnegie classification report for Berkeley characterizes it as a large, four-year, primarily residential research university with a very high level of research activity. Of its AY 2006–07 budget of $1,685,528,000, approximately one-third, $513,654,000, came from sponsored research. Berkeley has an impressive history as a leading research university. It has 7 Nobel Prize winners currently on the faculty, 13 deceased faculty Nobel Prize winners, and 24 alumni Nobel Prize winners. Berkeley ranks first nationally in the number of graduate programs in the top 10 in their fields, with 97% of programs having that disciplinary status.¹

This history, scale, and scope of activities are reflected in Berkeley’s culture. It is highly decentralized and puts a premium on autonomy and creativity. The fact that in recent years state funding has failed to keep pace with increasing demands for IT resources has put more emphasis on such creativity, both institutional and individual. The goal has been to find ways to maintain Berkeley’s status as a great public university in a climate of great uncertainty with regard to funding sources.
Strategic Planning Underscores Need for Action

IT gained the focused attention of Berkeley’s senior leadership at four seminal moments between 2000 and 2002, setting the stage for the review and redesign of the university’s IT governance.

First, at the chancellor’s cabinet retreat in 2000, Jack McCredie, then associate vice chancellor and CIO (who had recently been added to the chancellor’s cabinet), and James Hyatt, then vice chancellor of budget and finance, proposed a cabinet-level initiative on technology. This initiative became “e-Berkeley” and was intended to use the power of the Web to transform the way the university operates, from day-to-day functions to its central mission of teaching and research.

Many consider the e-Berkeley initiative to be the precursor to Berkeley’s current IT governance structure. “e-Berkeley did not focus on central IT governance, but it functioned as a place from which IT policy could be reviewed, and it had a relatively small fund for innovative IT projects,” states Tessa Michaels, chief technology officer for administration and executive director for business and technology solutions. According to Phyllis Hoffman, then director of the Center for Organizational Effectiveness (COrE) (now Chancellor’s Strategy and Alignment [CSA] Group), over time e-Berkeley became a de facto forum for discussing campus-wide IT issues, but it also became big and unwieldy, hampering its effectiveness.

Second, in 2000, the chancellor, Robert Berdahl, and Paul Gray, executive vice chancellor and provost, appointed an Academic Strategic Planning Committee cochaired by the vice provost for academic planning and facilities and the chair of the Academic Senate. According to Hoffman, “It was a two-year planning process primarily focused on ensuring that Berkeley’s investments in academic programs and physical improvements reflected a sound, coherent vision for the campus.” When the final report was submitted in 2002, both the Academic Senate’s and the chancellor’s responses to the plan noted, “the campus needs more discussion of the future growth and planning for technology resources.”

“The academic strategic plan had discussed in depth one important infrastructure issue—buildings—but missed two other infrastructure issues—IT and staff,” says Hoffman. “IT is a huge investment and a tool for institutional change, but in its current state it was not in a position to leverage campus-wide resources, time, or talent.” Building on the responses of the senate and the chancellor, McCredie initiated a strategic planning process for IT.

Third, in this time frame, the chancellor asked McKinsey and Company consultants to examine Berkeley’s administrative structure. Although they were not asked to work on IT, they offered several observations in their exit report, specifically that things were not working well in IT as currently organized. “They flagged IT as an important issue and emphasized that it was an opportunity for the Berkeley community to get its arms around a huge expenditure and to become more strategic about investing its resources accordingly,” recalls Hoffman. “When McKinsey consultants suggested to the chancellor’s cabinet that there be more centralization of information technology,” Hoffman adds, “there was strong resistance to this idea. However, what came from these discussions was the concept of ‘build it and they will come.’”

Finally, the cabinet approved a major investment in a new computing services operations center to be housed in a seismically secure building that would be constructed in the next two years. This new facility would serve as the center
of campus-wide investments in IT—not just Information Systems and Technology (IST)—and was a perfect example of the build-it-and-they-will-come concept. The availability of this type of resource would have significant governance implications concerning space allocation and management policies well beyond IST.

These four events prompted further action. In 2003, Gray asked McCredie and Ken Goldberg, chair of the Academic Senate Committee on Computing and Communications, to undertake an IT strategic planning process for Berkeley. Katherine Mitchell, an internal consultant with then CoRE (now the CSA Group), worked with a small group to design the planning process; she facilitated the input gathering and planning meetings. Known on campus for her excellent facilitation and synthesis skills, Teresa Costantinidis, currently acting associate vice chancellor for budget and resource planning, joined the planning process, as did Shelton Waggener, currently Berkeley’s associate vice chancellor for IT and CIO. The planning team engaged cabinet members and the multiple IT advisory committees on the Berkeley campus, using the pending arrival of a new Berkeley chancellor to create a sense of urgency to articulate the current state of IT on campus and desired future directions.

Their activities created, perhaps for the first time, a common understanding about Berkeley’s IT environment. For example, one of the early exercises asked members of the various campus IT committees to choose three words to describe the current state of IT at Berkeley and three words to describe a desired future state. “It became clear that complex, confusing, and distributed described the zone we were in, compared with the collaborative, easy to use, and ubiquitous environment people desired,” states Mitchell (see Figure 1).

During this process, Berkeley’s Academic Senate Computing and Communications Committee also reviewed Berkeley’s IT governance committee structure, creating the diagram depicted in Figure 2 and dubbed “the Spaghetti Diagram.” “It revealed the faculty perception of all inputs and no outputs from IT committees and became a great reference tool to describe our unclear, unwieldy IT decision-making process on campus,” says Mitchell. The details are not important, but the sense of who might be involved in IT decisions is instructive.

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**Figure 1. Descriptors of the Current and Desired States of Berkeley’s IT**

<table>
<thead>
<tr>
<th>Current State</th>
<th>Desired State</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Complex</td>
<td>• Distributed</td>
</tr>
<tr>
<td>• Confusing</td>
<td>• Diverse</td>
</tr>
<tr>
<td>• Constrained</td>
<td>• Expensive</td>
</tr>
<tr>
<td>• Decentralized</td>
<td>• Fragmented</td>
</tr>
<tr>
<td>• Disorganized</td>
<td>• Inefficient</td>
</tr>
<tr>
<td>• Networked</td>
<td>• Siloed/stovepiped</td>
</tr>
<tr>
<td>• Siloed/stovepiped</td>
<td>• Slow</td>
</tr>
<tr>
<td>• Slow</td>
<td>• Unaligned/uncoordinated</td>
</tr>
<tr>
<td>• Underfunded</td>
<td>• Customer focused and friendly</td>
</tr>
<tr>
<td>• Accessible</td>
<td>• Easy to use</td>
</tr>
<tr>
<td>• Adequate</td>
<td>• Efficient</td>
</tr>
<tr>
<td>• Collaborative</td>
<td>• Excellent/exemplary</td>
</tr>
<tr>
<td>• Customer focused and friendly</td>
<td>• Innovative</td>
</tr>
<tr>
<td>• Cutting edge/state of the art</td>
<td>• Integrated</td>
</tr>
<tr>
<td>• Cutting edge/state of the art</td>
<td>• Seamless</td>
</tr>
<tr>
<td>• Cutting edge/state of the art</td>
<td>• Secure</td>
</tr>
<tr>
<td>• Cutting edge/state of the art</td>
<td>• Ubiquitous</td>
</tr>
<tr>
<td>• Cutting edge/state of the art</td>
<td>• Well-funded</td>
</tr>
<tr>
<td>• Cutting edge/state of the art</td>
<td>• Wireless</td>
</tr>
<tr>
<td>• Cutting edge/state of the art</td>
<td>• Wireless</td>
</tr>
</tbody>
</table>
The next step “was to synthesize all this input into a set of general, aggregated ideas that became IT Guiding Principles for UC Berkeley,” states Teresa Costantinidis. “The goal was to turn the input into guidelines for action.” Many of these guiding principles—for example, support for teaching and research, security and reliability, and ease of use—are similar to those found at many institutions. Others, such as ubiquity and alignment with campus priorities, while common at other institutions, take on special importance at Berkeley, where the historic focus on local needs and local support has led to a climate of unevenness of services and support across departments as well as alignment with departmental, rather than institutional, priorities. This change in focus is also evidenced in a principle that recognizes the need to collaborate across departments in ways that have not been previously enabled. Campus leaders coming to agreement about the IT guiding principles, and their subsequent acceptance by the e-Berkeley Steering Committee, represented an important “stake in the ground” for moving Berkeley’s IT planning forward.

With this guiding framework in place, the strategic planning process’s next phase identified six critical IT issues for Berkeley that had emerged during the discussions with the IT committees:

- **Critical issue 1: Teaching, learning.** How IT can support the teaching and learning activities at the heart of UC Berkeley’s mission.
- **Critical issue 2: Student experience, from prospects through alumni.** How technology can support the experience for prospects, students, alumni, donors, and supporters in interacting with the campus.
- **Critical issue 3: Research.** How IT can support research in all disciplines and serve to interconnect the campus with the greater Bay Area research community.
King’s past service brought extensive insight into how Berkeley worked, and how it did not, as well as considerable credibility on campus. Early on, King brought in Stowsky to serve as the principal investigator of a self-study. “We decided that a self-study conducted prior to the meetings would set a basis of fact, enabling the committee to use its time more efficiently,” recalls King. Stowsky had substantial experience in self-studies and was at the time the associate vice provost for academic planning and facilities as well as a senior research associate at the Berkeley Roundtable on the International Economy. He had prior research experience in IT governance issues in the Clinton White House.

King and Gray also identified and appointed a review committee: Half consisted of UC Berkeley faculty, staff, and students from different areas with IT involvement, and the other half of members from external entities who could bring special comparative insights into the governance organization and processes at Berkeley. The external members were technology leaders from similarly complex institutions and enterprises, including the University of Michigan, MIT, Indiana University, UCLA, and Sun Microsystems.

Stowsky and Mitchell conducted discussions during the spring semester of 2005 with the 11 standing Berkeley IT committees, which included nearly 200 faculty, staff, and students; Stowsky interviewed key senior administrators as well as select faculty members to understand IT decision making at Berkeley. The resulting Interim Self-Study of IT Governance, Funding, and Structure at UC Berkeley was presented to Gray in July and subsequently presented to

**IT Governance, Funding, and Structure Planning**

The planning group for the IT strategic planning process perceived IT governance, funding, and structure as key enablers for the other five critical issues. Thus, in early 2005, Gray appointed King “to form a high-level committee to review and make recommendations concerning the organization of information technology (IT) governance, funding, and structure at UC Berkeley,” subsequent known as the IT Review Committee. King had substantial Berkeley experience prior to his stint in the University of California Office of the President. He had been provost–Professional Schools and Colleges, dean of the College of Chemistry, and chair of the Department of Chemical Engineering. He is an emeritus professor of chemical engineering and currently director of the Center for Studies in Higher Education at Berkeley and interim director of the Phoebe A. Hearst Museum of Anthropology.

Critical issue 4: Security, reliability, access. How the IT environment can be made secure and reliable while maintaining the kind of access required of an open university.

Critical issue 5: Governance, funding, structure. How IT governance, funding, and structure can be improved to advance UC Berkeley’s IT guiding principles and effectively and optimally serve the IT needs of users for teaching and learning, research and discovery, and student services and administration.

Critical issue 6: Expertise. How to attract and retain the dedicated IT professionals needed to maintain a high-quality IT infrastructure. This issue will be addressed after the study of critical issue 5 is complete.

Costantinidis recalls, “Each issue had an existing organization that could frame and describe the issues and the solutions, with the exception of critical issue 5: governance, funding, and structure. So we wondered, How do we create a picture of this situation?” A group was convened to answer this question.
the 11 standing committees for comment and possible revision. The revised report had five major findings:5

- UC Berkeley’s CIO does not manage (or necessarily even know about) roughly two-thirds of the IT activity on campus. He is widely viewed only as the director of the campus’s large central IT unit, IST.

- The campus’s process for discussing IT needs, priorities, and potential investments (through the 11 standing IT committees) is almost entirely disconnected from the process by which the campus and its units prepare annual IT budgets.

- Decisions regarding the design, funding, implementation, and maintenance of campus-wide administrative or “enterprise” IT systems spanning multiple control units across the entire campus (such as human resources and financial management) are often left to the individual units responsible for operating them, without sufficient input from either the CIO or the vast array of academic departments and administrative units that depend on them.

- The governance, funding, and structural roles of central administrative units with respect to research computing (the Office of Research), instructional technology (the Office of Undergraduate Education and Instructional Technology), and basic computing capability and desktop support (IST) are ill defined and unclear to most people on campus.

- There are no transparent mechanisms to identify and disseminate IT best practices from any unit to any other unit on campus—for example, desktop support or customer help desk tracking software.

To stimulate additional campus insights into the issues, the committee generated five case studies describing IT initiatives that had broad support but because of IT governance, funding, and/or structural deficiencies never moved forward. An example of these initiatives is the “lack of a universal basic standard of computing capability and desktop support for all instructors at UC Berkeley.”

In October 2005, the committee met and, among other things, generated a set of values and goals. “I would get additional input or data as needed from the meeting discussions,” recalls King. “Jay [Stowsky] and I kept putting flesh on them as we went along. We kept submitting drafts to the committee in advance of the next meeting for review, inviting e-mail comments back.”

King observed that these goals provided a framework for ultimate recommendations. “It aided the committee’s efficiency because we could review these values and goals. We looked at everything with which we were struggling in regards to the recommendations and compared it against the goals.” The main gist of these goals6 can be summarized by the following themes:

- governance aligning IT with campus priorities,
- governance being clear and transparent,
- a recognition of the need to rationalize through governance local and central services and funding processes,
- the need to foster a true partnership between the CIO and the various departments served by IST, and
- the need to design governance structures so that they can evolve as conditions and technology require.

In December 2005, the review committee developed a list of specific recommendations:7

- The CIO function needs to be strengthened, defined more clearly, and distinguished from the function of running IST.
- The CIO should be involved in formulating all campus-level IT budget requests.
◆ The CIO should be the key link between input/advice from IT stakeholders and formulation of campus-level IT budgets.
◆ There should be a clear way for knowledgeable faculty to interact with the CIO and for the CIO to receive expert faculty advice and draw on highly regarded faculty partners to advocate for proposed IT investments.
◆ The Berkeley campus needs to reorganize, rationalize, and enable technology (and other complementary investments in classrooms and instructional technology support systems).
◆ The Berkeley campus needs to reorganize and rationalize its approach to hiring and training professional IT staff, encourage the development of a campus-wide community of IT professionals, and identify and disseminate best practices.

In addition, the committee outlined a series of options for implementing each of these recommendations. King posited that such a format, including the use of conjunctions in a set of implementation approaches, “was unusual, but a prescriptive report would not have worked at Berkeley. We had to leave degrees of freedom for the deans, senate, and campus administrations to mold the recommendations and thus become comfortable with them.”

In reviewing this process and report, Stowsky observed that in retrospect there were a number of notable aspects to the study.

First, the self-study was widely viewed as important, but there was a lot of cynicism as well. That it was viewed as important is notable, given the fact that many units basically took care of IT for themselves; nevertheless, they recognized the institutional shortcomings and impact of such a distributed model. The cynicism was due, in part, to the fact that Berkeley does a lot of self-studies, often with little resultant action. Also, there were a lot of issues that came down to personal interactions, or lack thereof. Another surprise for Stowsky was that everyone was willing to talk about the issue. This wasn’t a “leave me alone to do my business” matter for the members of the community.

Next, the fact that Berkeley didn’t have a fully empowered CIO came to the fore as a result of this investigation. It turns out that the CIO was not broadly perceived as acting on behalf of the community as a whole, but was perceived to be acting on behalf of the large central IT unit, IST, which was funded in part centrally by the campus budget and in part by campus recharge activities. Thus the CIO was perceived as a competitor for IT funds with other campus units. “IST did compete sometimes for business with other areas on campus, and consequently it was not viewed as a tool for the chief information officer to implement strategic IT decisions campus wide,” explains Stowsky.

Also, everyone was surprised at the disconnect between strategic priority setting for IT investments and the campus budget process. “They were two different sets of conversations with almost entirely different sets of people,” states Stowsky. “Ultimately, the conversations converged with the executive vice chancellor and provost, and it is too much to ask one person to marry both sets of information.” No one really knew what was being spent on IT across the institution. Estimates that only one-third was spent centrally were also a surprise.

Finally, no good mechanisms existed for migrating best practices across the campus. “So you re-create the fragmentation,” states Stowsky. “You might have an incredible help
desk system in a unit, but there was no way
to scan the campus to identify and migrate
it as appropriate to other units. It was a real
problem of ‘haves’ and ‘have nots’—some
good systems and good people, yet some
places not well served at all. There was no
mechanism to pull it all together.”

Zane Cooper, chief technology officer
and director of the Haas School of Business
Computing Services, also observed that the
lack of communication vehicles led to signifi-
cant misunderstandings about who did
what. As an example, during budget cuts
in the 1990s, IST decided to focus on infra-
structure and enterprise services and drop
end-user customer service. This change was
not well communicated externally, or even
internally to IST. As a result, internal staff
tried to be responsive without the resources
to succeed, and external customers had
expectations that could not be fulfilled. This
communication disconnect came out in the
review process.

In summarizing the process, King said that
the mix of internal and external committee
members worked very well. Getting good
external members was key to the committee’s
success. With only an internal committee,
it would have been hard to benchmark
Berkeley in comparison with successes or
failures elsewhere. An external committee
would not have gained institutional buy-in
for the outcomes. Susanna (Susie) Castillo-
Robson, associate vice chancellor for admis-
sions and enrollment and a UC Berkeley
self-study committee member, concurs. “The
external members highlighted the fact that
Berkeley was not so different from the other
institutions. A lot of times you think you are
unique, but I was reassured to know that this
is something that IT professionals struggle
mightily with at many institutions.” Several
people observed that the continual vetting
of the ideas, process, and recommendations
throughout the planning effort was critical
to gaining community buy-in overall.

**Moving from Recommendations to
Actions**

Recall that the IT strategic planning process
was initiated in 2003, the IT critical issues
were developed in 2004, and the IT Review
Committee report is dated January 2006.
During that period several important contex-
tual changes took place at Berkeley. A new
chancellor, Robert Birgeneau, took office in
September 2004 and subsequently formed
a new senior management team. The asso-
ciate vice chancellor and CIO, Jack McCredie,
who had initiated the IT planning process
and raised many basic questions about IT
governance at Berkeley, announced his retire-
ment upon the selection of a successor. That
successor, Shelton Waggener, took office in
late fall of 2005.

Happily, all of the new players in leader-
ship roles at Berkeley were fully committed
to maintaining the priority of solving the IT
governance issues at Berkeley, supported
the planning and processes that were under
way, and were engaged in moving the
recommendations into an action plan. With
similar good fortune, Waggener had been the
Central Computing Services director within IST
during 2003–2005 and was an active internal
participant on the IT Review Committee. “It
was not designed as such, but it helped in
that the IT governance review study occurred
simultaneously with a search for a new CIO,”
states King. “We had one of the prime candi-
dates sitting on the IT Review Committee,
and when he was eventually selected as CIO,
it enabled us to have a degree of comfort
about his buy-in of the committee’s recom-
recommendations. There would not be any question
of his looking askance at the report when he
assumed the CIO position; instead he ended
up with a document with which he could
move forward.”

Today, Waggener has done just that.
“We use the IT Review Committee report
as a guideline for our current action plans,”
states Liz Marsh, IT program manager, Office of the CIO. “Part of the reason is the process incorporated so many people, including the breadth of the IT community and high-level cabinet members. It was vetted and agreed to at a fundamental level on campus; you cannot just ignore it. Rarely do you get a report so soundly supported from which to work.”

These senior leadership changes offered an environment in which to establish new relationships and to move away from previous ways of doing things. Many interviewees during the campus visit made observations regarding the emergence of a new culture on campus favorable to working through the issues of changing IT governance.

Creating the Office of the CIO

In response to the IT Review Committee report’s first recommendation, to strengthen and clearly define the CIO function, two of Waggener’s first initiatives were to create the Office of the CIO (OCIO) and restructure IST starting in 2006. With the intent of giving the CIO an institution-wide perspective and allowing him to be perceived by the entire community as the cabinet-level IT leader for the campus, he completely rethought the structure of the OCIO. Today, IST employs a deputy CIO to manage day-to-day IST operations, thus separating the CIO and his functions as well as enabling him to focus more strategically, both internally on the campus and externally on partnerships. This structure appears to have markedly improved the previously perceived conflict of interest related to funding.

The OCIO is designed to provide a vehicle for understanding campus “demand” through community input and for meeting that demand with the development or acquisition of services; it also provides a framework architecture for campus IT and a way to oversee campus IT investment through the use of sound project management methodologies. The new organizational units of the OCIO reflect this:

- Financial Planning and Technology Investment Services promotes the strategic investment of campus IT resources by offering financial management and technology acquisition services, as well as supporting the Associate Vice Chancellor for IT and CIO (AVC–IT/CIO) through organizational budgeting, financial control, and review services.
- The Security, Privacy, and Policy Office is responsible for the development and oversight of technology-related policies with specific emphasis on privacy and security.
- The Technology Program Office plans, fosters, and coordinates IT projects that serve the needs of the campus community; provides expert project management for campus-wide technology implementation; and brings together people and resources to create innovative ways to apply technology to support the campus mission.
- The Technology Staff Development Office develops, promotes, and oversees technology staff positions across the campus; defines job families; establishes career development and training programs; creates internships and mobility among technology staff; and implements performance-based incentive and recognition programs.
- The Technology Standards, Practices, and Architecture Office acts as the steward of the UC Berkeley Enterprise Architecture (EA) and develops information, applications, business processes, and technology infrastructure road maps for integration into the campus EA.

Restructuring IST into a Service-Oriented Organization

In further support of the recommendation from the IT Review Committee calling for a differentiation of the CIO role from the func-
tion of running IST, Waggener restructured IST in tandem with the creation of the OCIO.

His strategy was to move central IT from a focus on systems to one of services. In fact, “IST,” which had previously meant “Information Systems and Technology,” was renamed “Information Services and Technology.” The units in IST prior to the reorganization were largely arranged by distinct categories, some based on technology and some based on customer group. They included Administrative Systems, Central Computing Systems, Student Information Systems, Communications and Network Services, Systems and Network Security, and some laboratory and workstation support services.

In the new model, IST became a broad campus service supplier with four departments: Client Services, Application Services, Data Services, and Infrastructure Services. “It became clear that we could choose to become a customer-siloed model, or IST could move to being customer agnostic or independent and focus on services, and then add a customer layer above the services,” explains Waggener. “The customer layer could mix and match services as needed. That is a far more extensive and flexible option when it comes to collaboration and responsiveness.”

Restructuring IST from “systems” to “services” was much more difficult and much more stressful than expected, both internally and externally. The historic “systems” view of the organization was siloed not only technologically but also financially and in terms of staff orientation. “At Berkeley, we followed the funding,” explains Waggener. “Each major initiative on the campus came with a technology component, the project was funded based upon its initiative, and our organization was created or mapped to the initiative. Different administrative initiatives each had their own project team, which would ultimately become an unwieldy group of IT teams. The problem was the transitional stages never matured past the cultural model of ownership of funding.” Historically, a project such as a student information system would be funded for initial development and implementation, but no thought was given to ongoing funding for maintenance or upgrades. Departments felt that since they paid for a system or service initially, they deserved lifetime free support. Staff resources were aligned with single-served departments. There were close working relationships and insights, but IST staff resources were fragmented and bound to legacy systems.

The new model broke these historic relationships and ties to technologies by having the staff focus on core services with, as noted earlier, the idea of building a layer of customer service above these services. Waggener said that the cost of running IST is the same, but the new model allows much faster evolution of core technology. Additionally, IST staff members were no longer perceived as “owned” by individual departments; they became campus resources.

These changes had many ramifications, and the transition has not been easy, according to Waggener. The radical change in the support-staff-to-customer relationship was difficult and initially not well accepted by either side. Castillo-Robson said that Student Affairs staff noted “that the closely coupled alignment of central IT staff with the admissions and enrollment staff was torn.” IST staff have been reassigned, and the new people don’t know all of the details that previous staff had developed through years of working with Student Affairs. On the other hand, she felt that Berkeley needed a “big shake-up, and we will survive.”

Internally to IST, “the transition is an exceptionally difficult thing to do,” states Waggener. “It is not about boxes on a chart; it is about culture, decision-making matrices, and empowerment of the organization. The technology managers are now accountable for the financials, the staff, and the technolo-
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Institutional Technology—as well as the customer. That adds layers of dimension to the organization that did not exist before.” Staff members were reluctant to give up exclusive “ownership of their long-held customers.” In addition to comfort in long-established relationships, staff members were comfortable with legacy systems and legacy skill sets. The new model changed all of this. Also, staff members were hired on the basis of their technical skills and not for their ability to steward resources. Finally, when one has only a single customer to please, there is no need to market your services. All of this must change, though with difficulty, in the move to the new model. In assisting this transformation, several offices within the Office of the CIO—the Technology Staff Development Office, the Technology Program Office, and Financial Planning and Technology Investment Services—play a role.

“The only way the model works is if you are more transparent in your activities,” continues Waggener. “Your customers get more engaged because they see all the options, and you are no longer just a single point. Now staff members are beginning to realize their broader options: They are no longer constrained by the legacies that they were providing to one customer. They see new customers coming into the fold who were previously unavailable. So now staff members add value to the whole enterprise, the whole of the institution.”

As an example of the new process at work, Waggener points to Restarting Berkeley (recently renamed as the Berkeley Business Continuity Planning Tool). In the new model, the CIO’s role is to be an advocate for the technology needs of the community as a whole and for the best solution to a problem. Applications are designed in full partnership with functional owners and with the expressed view that IST will develop and support them, but they are conceived to be able to be adopted broadly. In the case of Restarting Berkeley, this application was designed to meet the needs articulated by Berkeley’s Office of Business Resumption to assist Berkeley’s 300-plus departments in developing business continuity plans. With the view of developing tools that would suit multiple customers, IST created a tool that has subsequently been adopted by all of the University of California campuses and in fact can be downloaded by any institution and customized for local use. Waggener notes that “in the past when [one developed] for one customer, [the result] was often proprietary.”

Aligning IT Governance and Campus Budgeting

In response to the IT Review Committee report’s second and third recommendations about the CIO’s involvement and an input link for IT stakeholders in campus-level IT budgets, two activities are under way.

Campus Technology Council

The Campus Technology Council (CTC) was created in 2006 as a vehicle for community input into IT-related decision making. The CTC is chaired by the CIO with a mission to identify and prioritize campus-wide IT needs and opportunities in ways that optimize the benefits of IT investments for the campus and beyond, to provide input opportunities for campus constituents, and to communicate about prioritization and final decisions. “It is mostly a forum to provide rationale, support, and recommendations to the CIO for decision making,” states Spanos. “It is campus based, looking beyond the needs of the individual units and instead analyzing the project’s alignment with the whole campus.”

CTC membership consists of 10 associate CIOs who are staff in and representatives of local functional units (colleges, library, professional schools, and administrative offices). Additionally, the chairs of two Academic Senate committees, the Committee on Academic Planning and Resource Allocation
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and the Committee on Research, represent the university senate on CTC. The mix of representatives creates “an interesting tension,” Spanos says. “Some represent campus-level organizations with footprints across the campus. Others represent departments with specialized needs. There is always a healthy tension between what IST provides versus what the units need to provide on their own or adapt to the campus.” The group typically meets monthly, but more frequently during the IT funding request review process, which aligns with the Berkeley budget cycle.

The design for campus-wide IT investment planning, prioritization, and funding follows a process of associate CIOs working with local analysts in identifying IT needs and then developing and analyzing proposals. These are brought to the CTC, which uses the priorities set out in the campus-wide IT strategic plan to review and recommend proposals for funding. This list of nonbinding recommendations is submitted to the CIO, who creates a set of recommendations for the chancellor’s cabinet. “The CTC evaluates each proposal to determine whether our investment supports the entire campus, uses aligned technologies, and benefits the broadest constituencies possible,” explains Waggener. “The CTC associate CIOs prioritize the proposals and make recommendations, and the CIO makes the decisions. It creates an institutional agenda, with the CIO presenting recommendations that are considered to be the most significant and impactful to the chancellor’s cabinet.”

The first year of the new process was considered relatively successful, with the chancellor establishing an IT Bank and providing initial funding of $6 million in seed money in 2007. These funds were identified from resources that would have previously been provided to fill many small individual requests across departments. The creation of a common IT Bank was intended to fund projects that had been recommended by the CTC and CIO through the IT funding request process. The goal of the fund is to help align Berkeley’s technology innovative investments with the highest campus priorities that have the broadest impact. In its first year, the CTC evaluated more than 35 proposals, including one to update a database for all research accounts and another to implement a wireless network for half the campus. Although the IT Bank comes from the chancellor’s funds and is not in the regular budget, to the extent that the chancellor has available funds, he has indicated a continued willingness to invest in the IT Bank, and the bank has been extended into the FY 2008–2009 budget process. This year’s budget cycle included an additional 24 proposals, many of which resulted from partnerships between several campus units that banded together because of common needs identified by their respective associate CIOs.

This IT funding request process is still under development. In the first year of operation, the CTC spent time on developing its own processes and trying to understand the scope of IT investment at Berkeley. “We are still struggling to try to capture the picture of Berkeley and try to put some guidelines around it,” states Spanos. “It is a moving target. The first year we were groping in the dark. The second year we have a better process in place because the committee members are learning, and as we understand each other’s perspectives, we come together more cohesively.”

Enhanced analytical information for the associate CIOs is another new feature in year 2 because they articulated a need for more information about the proposals’ technical, project management, and financial soundness. The general criteria for funding are the ability to leverage unit funds or make savings for the campus, alignment with the IT strategic plan, and how the proposal might help the campus as a whole. In support of the analysis, three groups from the OCIO—the Financial Planning and Technology Investment Services group, the Technology Program Office, and
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the Technology Standards, Practices, and Architecture Office—created criteria and analyzed each proposal accordingly. The associate CIOs use the additional input when reviewing each proposal. The OCIO plans to solicit the associate CIOs’ feedback after the year-2 proposal review cycle to determine whether benefits derived from the additional information outweigh the OCIO’s time and resource investment.

New Budgeting Initiatives

Berkeley is struggling, as are many public institutions, with a broad erosion of state funding for higher education. Although the IT Bank is viewed as an incentive for innovation, its $6 million is not significant relative to the estimated $140 million that Berkeley spends overall for IT. In addition, there are a number of services considered essential to the campus—for example, campus security operations and the Educational Technology Services group, which provides classroom technology and manages the campus learning management system—that are still without permanent funding. These services have continued to be funded out of the IT Bank innovation funding while alternative sustainable funding models for them are developed. The challenge at Berkeley is to address this issue in a variety of ways.

First, Berkeley is trying to establish activity-based budgeting in many areas in order to bring the budget into line with institutional priorities. The new budget method analyzes the activities that support Berkeley’s five broad programs of instruction, research, public service, institutional support, and student experience. Because the chart of accounts is not designed for activity-based costing, Constantinidis has budget analysts doing analyses of budget proposals via reporting tools. IT is one activity that spans all of the programs and is one of the first activities for which Berkeley has adopted activity-based budgeting. “I am adopting it early on because IT fits very nicely in this new budget model, and the campus IT organization’s efforts have gained credibility with the chancellor’s cabinet in our ability to engage in new partnerships,” states Waggener.

Second, an attempt has been made to tie IT investments to the campus’s overall priorities during the budget process. One of the difficulties in accomplishing the alignment objective is the timing gap between departmental planning for IT needs and the annual budget cycle. Departmental budgets are prepared up to 18 months prior to an expenditure in the budget process, but departments cannot easily decide that far in advance exactly what their IT needs will be. IT spending is more fluid and dynamic than allowed by traditional budget processes. The hope is that departments will make more effort to plan for major investments two years out.

Another difficulty is to ensure that the CTC proposal review and IT Bank allocation process coordinates with the campus budgetary process. Berkeley is not alone in this; among the respondents to ECAR’s IT governance survey, only 58% said IT governance participated in institutional budgetary processes. Those that did, however, tended to report significantly better IT governance outcomes. Berkeley’s CIO is actively working with the Campus Budget Office on its activity-based budget rollout on campus and anticipates that IT will be the first large activity on campus to have a fully transparent activity-based budget in place for FY 2009–2010.

Berkeley’s new IT governance structure directly links IT governance with the campus budgetary cycle. “There is a risk that the IT Bank allocation process could become a separate activity,” explains Constantinidis. “The CTC could easily spend more time on proposal review, throwing the process out of sync. We have to keep the pressure on to ensure this disconnect does not occur.”

Finally, the Campus Budget Office is trying to assess all funds used for IT at Berkeley, not just state funds. This is difficult, and departments
have traditionally had little incentive to make local funding sources and uses visible to the rest of the campus. Waggener hopes that with the new enterprise perspective, new incentive funds, and transparent processes, those who proposed an IT Bank project will more clearly define the resources they are willing to invest. Additionally, this year the provost has asked Waggener to review all budget requests for academic units that involve IT. Of course, this affects only requests for state budget funding, and one-third of Berkeley’s budget comes from sponsored research.

Adopting New Software Development Models

Another component in Waggener’s overall strategy is to move to “community-sourced” software, that is, software built by higher education institutions for the collective use of higher education institutions. He feels that many commercial software products are designed for other markets initially, then modified in an attempt to meet the wide range of higher education’s needs. This makes the products difficult to adapt for both campus-wide and distributed departmental use. Also, the traditional software business model focuses considerable investment on marketing and sales to growth industries, with the intent of locking customers into long-term contracts and ongoing maintenance fees. Commercial proprietary solutions that are not truly designed from the ground up to support higher education tend to reduce an institution’s ability to be nimble and flexible.

Although Waggener as CIO feels strongly about the long-term benefits and impact of community-sourced software development, there is some disagreement among members of the CTC and others in the community about taking this approach. The CTC’s discussions and recommendations are ultimately advisory to the CIO; therefore, when different constituent groups on campus believe in different courses of action, there are still tensions to be worked out in the evolving governance process. These issues go far beyond budget allocation and involve architecture and policy decisions that can have far greater impact than any single IT project.

The Kuali Student Services System and Restarting Berkeley are examples of the community-sourcing philosophy currently taking hold at Berkeley. Castillo-Robson pointed out another perceived advantage of this approach. Previous implementations of purchased commercial enterprise resource planning (ERP) modules had to be highly customized to meet Berkeley’s unique needs. Even when the packages offered full functionality, required upgrades became expensive and unmanageable. With the Kuali Student Services System, Berkeley intends to design customizability into the software architecture to make it more maintainable in the long run. Waggener believes that not only will higher education’s needs be better met, but also the total cost of ownership will be less over the life of community-sourced applications than that of commercial proprietary applications. Castillo-Robson also believes that the cutting-edge work associated with the Kuali Student Services System, combined with Waggener’s vision of retooling and refreshing IST, is beginning to attract the attention of the programmers around campus. “They see this as next generation and want to be part of it,” she states.

On the flip side, several of those interviewed complained that the Kuali Student Services System will not be operational for several years and the existing homegrown system is increasingly out of date relative to Berkeley’s needs. Waggener says that in the emerging network-based applications environment (software as a service, or “cloud”), all institutions will increasingly have to decide what is on the campus and what is supplied by someone else, somewhere else. Governance and financial models have to support a new paradigm of not everyone owning
everything they use. He feels the new model will enable services to be quickly accessible when needed, allowing services to be acquired and expenses paid for over time. On the other hand, many established vendors may resist this trend, since it requires them to develop new architectures, new offerings, and, most significantly, new business models that may impact traditional revenue streams.

**How Well Is It Working?**

There was common agreement on several points among those interviewed, even though the transition to fully implementing the new governance model is only in its second year.

First, the CIO is widely considered to be the institutional leader in technology matters. He has buy-in from the chancellor and cabinet. Whether campus units totally agree with the changes under way or not, they respect the efforts at outreach and transparency. It was observed that in IT, Berkeley needs a strong leader who can make decisions but do so in a transparent manner.

The CIO has also experienced successes in facilitating new approaches to IT projects. Historically, schools and departments viewed IT as an expense item, not as an institutional strategic advantage, and they tackled IT needs at the smallest local level possible. Today, more and more local units realize they cannot afford to think that way anymore. As an example, last year the CTC received two proposals requesting funding for high-performance computing clusters (HPCCs). Instead of funding each of the requests individually, the OCIO instead chose to develop an HPCC service for the campus in partnership with Lawrence Berkeley National Labs (LBNL). LBNL had experience in building and maintaining HPCCs, and Berkeley had capacity in its data center to accommodate new clusters. IT Bank funding was therefore used to help underwrite LBNL recharge costs for the maintenance of the clusters.

Second, the campus accepts that year 1 was an education process for the CTC and for the community. Year 2 will be critical to see if the priority-setting and decision-making processes really make a difference. “The first year was an exercise in setting up a process,” states Spanos. “Now a year later, we are revisiting the projects to see how they are doing. The task this year will be to establish systematic mechanisms to measure the funded projects’ progress, success, and effectiveness.” Stowsky concurs: “There seems to be no clear sense as to who is ultimately responsible and accountable that projects are going to happen. There is still fuzziness around the process.”

Several people mentioned a general “wait and see” attitude around the campus. “I personally measure the effectiveness of a process by whether or not the inputs are paid attention to in decision making,” states Constantinidis. “We make sure the CTC and CIO’s input is placed in front of the chancellor and the chancellor’s cabinet. If the input does not influence decisions that are made, we will stop placing the input in front of them. I do not want people to go to a lot of effort for no reason.”

Third, while everyone knew that at an institution as large and complex as Berkeley any transition would be difficult, Waggener indicated that several things were much more difficult than expected. The financial transformation is taking much longer than predicted. It will take at least two years from the start of the process—six months longer than previously estimated—to get a handle on many financial issues. Previously there was no sense of long-term resource stewardship of campus-wide projects, and instilling that remains a work in progress.

Staff-related issues have also proven to be harder than expected. It is a matter of attitudes, comfort with the way things had always been, technical skills, and asking staff to think about customers and service in entirely new ways. To begin to address this issue, the OCIO
partnered early with the campus Office of Human Resources in defining the IT job families and leading the mapping of old jobs to new for the campus. This is part of the larger campus project to redefine and remap all jobs to better align with industry classifications. In the end, this is a critical systemic issue that underpins overall success. Still, King observes, “There is a diffusional process emanating from the CIO. You can watch it go down one level to another in IST. It is not all the way down, but it is moving.”

Fourth, there is common agreement that visible gains have been made in the first two years of the governance transition. “The associate CIO structure has given a semblance of governing by the 30,000-foot level in terms of direction,” states Castillo-Robson. Berkeley is an immensely complex organization. Another interviewee observed that success will depend on money, people, and technology. As described earlier, the resources available in each of these areas are marginal, and gains are fragile. Still, there appears to be widespread desire for some governance transformation to be successful, just as there was widespread dissatisfaction with the previous, somewhat chaotic go-it-alone environment. In the meantime, many units have the resources to provide local IT services, and they will continue to do so until the new governance approach makes other options more apparent.

Fifth, it is unlikely that every unit will be able to have its needs fully met in the new campus IT organization. The main thrust of Berkeley’s efforts is with the undergraduate and doctoral programs. The professional schools have a different culture and many different needs. That a central organization such as IST can ever meet those more specialized needs appears to those involved to be unlikely at present. For example, Haas School of Business’s Cooper says, “I can make technology decisions that are not confluent with the standards for architecture at the central campus level. It is tolerated because the central campus cannot meet the specific functional and service levels of the professional schools. IST has made significant progress in setting up the framework to bring about more capabilities, but they are not developed enough.” Still, there is an associate CIO representative for professional schools on the CTC, and the professional schools participate in the process.

There is also recognition that some services, such as security and procurement, can likely be done better centrally than by individual units. However, even in these areas, the process of setting clear standards and enforcing them centrally is a work in progress. But progress is slowly emerging. For example, Marsh noted that one 2008 proposal for CTC review presents a plan for baseline computing across the campus. Computer Operations is another area where a central service may do better than decentralized approaches. However, a central unit will undertake operations using professional staff, whereas local units often depend on faculty and students. Getting the price/performance equation to be generally acceptable is a challenge.

Sixth, there is at least one example where the campus IT governance activities are creating pockets of local IT governance, which facilitate more strategic thinking and eventually feed back into the CTC project review process. For example, in Student Services, Castillo-Robson believes that “it [campus IT governance] has helped organize our own thinking in the student arena because of the fact that we must articulate clearly what our IT needs are, what deliverables we want, and what kind of functionalities are needed. It has provided us with a required frame of reference that has forced those of us in Student [Services] to think about how IT can assist us in service delivery.”

Eventually the Student Services area created an Executive Governance Committee with the initial purpose of delineating its new Kuali Student Services System require-
ments. Members consist of the five vice chancellors through which various departments providing student services report. The Executive Governance Committee submitted a proposal to CTC for its student system, and it was among the first of the approved IT Bank investments. Castillo-Robson felt that with the historic fragmentation of budget streams, a new student system might never have been funded in the old model. “We would not have received the investment in the Kuali Student Services System or other projects without that structure,” she states. “We [now] have ways of calibrating whether or not we are [moving] in the right direction. Now we can form a sense of coordination towards the same end.”

Finally, two challenges do remain. The first is to avoid the misperception that Berkeley’s IT governance restructuring is only about funding. “I have to keep all our activities moving because I don’t want the Berkeley campus to think our new model is dependent upon IT Bank funding,” states Waggener. “This process is not about how much money exists in that one piece of the overall governance structure.”

The second is to keep the IT governance structure nimble, avoiding the unwieldiness that eventually hampered the e-Berkeley initiative’s activities and preventing the paralysis depicted in the infamous “Spaghetti Diagram.” If the local units perceive that the current structure is ineffective, additional venues may emerge to circumvent it. For example, calibrating the CTC membership to ensure optimal representation is important. Some have articulated a sense that the CTC membership did not evolve quite as originally envisioned. Associate CIOs come from different levels at the university—deans, faculty members, IT managers of large organizations. It is unclear to some whether all the associate CIOs feel comfortable and empowered to provide adequate representation and contribute equally to the governance process.

**Looking Beyond IT Governance**

Berkeley leadership wants to apply the principles of its IT governance restructuring effort to other areas as well. “I think IT was the first area in this institution where we created a decentralized governance structure because of its expense, pervasiveness, and rapid evolution,” states Hoffman. “But we can use the model in other infrastructure areas that have both centralized and decentralized voices.”

One area of focus is Berkeley’s institutional data management and governance initiative, which was launched in fall 2007. Its goal is to make campus data easily accessible, reliable, consistent, and secure. The institutional data involved are data relating to applicants, students, faculty, staff, alumni, and donor prospects. These data are currently hosted and stored in more than 300 sites on the campus. Many elements overlap the two governance projects. Common issues include institutional and local ownership as well as the lack of alignment with institutional priorities. Some participants serve on both projects. Task force members include Castillo-Robson, Hoffman, and Waggener; Mitchell is involved in designing the process and facilitation. When Mitchell met with 22 deans to engage them in the data governance initiative, she noted that several had worked with her before in IT governance restructuring. When they discussed the data governance initiative, Hoffman, Mitchell, and Waggener all remarked on how the IT governance initiative helped to smooth the data governance effort. They find members of the Berkeley community more willing to share their experiences about data management; they are more accepting and more engaged in the process. Perhaps this willingness and engagement are the best assessment measures of Berkeley’s IT governance restructuring effort.

**Lessons Learned**

Berkeley is at the far edge of the spectrum regarding organizational complexity, its culture of decentralization, percentage
of campus IT resources that are not centrally managed, and encouragement for local entrepreneurship. Still, many of the lessons from Berkeley’s study of IT governance and its first steps toward initiating a new governance model can be broadly applied.

**Leadership is critical.**

That Berkeley engaged in this self-study and sustained the effort over several years has required the recognition by two chancellors that IT services are critical to the future of the institution; the historic model would not serve the campus into the future, and while moving to a new model would be difficult, the effort to do so must be made. “You need to hook to a leader who is ready to make change,” states Hoffman. “And that leader needs broader support in the organization. There was a compelling problem statement that motivated our senior administrative and IT leadership to action.”

While the governance recommendations required broad community input, implementing the transition requires a strong CIO. It is critical that the CIO be fully engaged with the chancellor’s cabinet, since IT cuts across all units of the institution and the transition will require partnerships and shared leadership. “The biggest challenge is that it takes a strong CIO model,” states Waggener. “If the CIO does not have a seat at the table, it would be virtually impossible to implement this kind of model at the scale and scope as we have.”

*If possible, link the activities to an institutional activity, goal, or objective.*

The IT Strategic Planning Committee purposely linked its activities with the arrival of an incoming chancellor. “We chose our entry points: What is the mission of the university and how can technology enable that? The need to articulate an IT vision for the new chancellor created a sense of urgency and focus that helped us to overcome campus resistance,” states Mitchell. “It was a pull factor instead of a push factor. That option does not always exist, but it worked to our advantage.”

**A serious self-study is necessary for success.**

The general fact that there was a problem in campus IT was broadly recognized at Berkeley, but just how broken the system was and the resultant impact on aligning IT with institutional goals was not fully recognized. That governance was itself a critical issue came to the fore in the IT strategic planning process. The Spaghetti Diagram brought home to many at Berkeley that there was no effective decision-making process. Also, the extent of what Berkeley was spending on IT across the campus and the lack of alignment with budget processes were a revelation to many. Finally, undertaking a self-study with broad stakeholder involvement was by itself an important aspect to gain community buy-in for the outcome. That Berkeley had a group of professional facilitators in COrE (now CAS) appears to have been very helpful in getting difficult issues out in the open and moving from broad dissatisfaction to a commonly accepted set of outcomes.

The other factor that was perceived to be important to the success of IT governance planning was the presence of internal stakeholders and external experts. The first group provided campus buy-in and the second provided context on the basis of experience elsewhere. “Hearing what peer institutions had done provided us a mirror that reflected back into ourselves,” states Castillo-Robson. “That was helpful for the body politic. I don’t believe we would be as far along in our discussion if we had not done that.”

**Third-party facilitation moves the process along.**

Throughout IT strategic planning, IT governance review, and governance structure design, a third party organized meetings,
facilitated discussions, and eventually helped to create the appropriate organizational and governance processes. This outside resource ensured that each effort advanced in a timely manner, did not become mired in political issues, and did not get put on the back burner. Today, it helps to tweak the process on the basis of participants’ experiences and feedback. As noted earlier, Berkeley relied on its internal CoE organization, but an outside consultant or an appropriate institutional retiree could fulfill this role. It is important that the facilitator be perceived as neutral and trustworthy.

Change, especially in higher education, takes time.

Those leading the transition in governance structures at Berkeley knew that they were involved in changing deeply ingrained cultural attitudes. They were prepared to sustain the effort over several years. That there were so many interlocked moving parts, any one of which might slow the whole process, means that even conservative estimates were too optimistic. “We are engulfed in a huge cultural transformation, and you have to be as flexible as possible and understand that you are not going to know it all up front,” states Marsh. “Consequently, you have to understand that you are not going to draw lines and they will stay that way forever. You will need to keep repainting the lines. You need a flexible attitude up front.”

Broad communication is imperative.

IST has lacked the bandwidth and staff for extensive communications, and consequently many felt that communications about the CTC’s objectives and IST’s transformation could improve—to the campus, to the CTC members, and to the local IT organizations. Typical media outlets—blogs, newsletters, and web pages—were used, but it was felt the messages were not crisp and consistent, and that they failed to reach a broad audience. For example, Michaels observes, “The functional managers in administration are unfamiliar with the CTC. I asked someone if he submitted a proposal to the CTC and the person did not know what it was.” Marsh concurs with this assessment. “The people directly involved in the various phases understand the goals and the inner workings, but as you get lower in the organization, they became less known and less clear to people. Shel [Waggener] communicates well with cabinet members, but we found that it was ineffective to rely on his messages to trickle down farther into the organizational layers. We have to adapt the messages to ensure relevancy for the different layers, too. If we had the time and resources at the beginning of the process to create a communications or marketing plan, campus awareness and understanding would be better.”

Clearly define governance roles.

In the eagerness to implement the new IT governance, the CTC’s associate CIO roles were not fully fleshed out before its commencement. Members understood they would review IT proposals for funding, but they spent the first year finding their fit in an overall process. “There was a bit of a disconnect between what some associate CIOs thought their roles were and what Shel thought their roles were,” states Marsh.

Align IT governance with budget processes.

Although Waggener makes clear that the Berkeley governance transformation is not just about how to spend new money (the IT Bank), the chancellor and cabinet recognized that in order to stimulate the willingness to undertake change, it is important to provide some incentives. Even in difficult financial times, initial funding was found to give support and validity to the IT governance transformation. The longer-term strategy is to use available monies more efficiently, and that is what the alignment between IT plan-
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Realigning and institutional budget processes hopes to accomplish. The governance component is critical to ensure that budget realignments are perceived as both equitable and transparently matched with institutional priorities.

Realignment of an institution’s IT organizations requires effective governance processes.

One objective of the transition at Berkeley was to realign the central and distributed IT support and service organizations. Because such a change requires buy-in by many segments of the campus community, it also requires widely accepted governance processes to be successful. This is an evolutionary process built on establishing trust. Governance plays a continuing role in providing the processes that structure such an evolution.

Conclusion

Strategic planning is often considered to be an abstract exercise that yields a document that sits on shelves. At Berkeley, IT strategic planning identified several issues critical to the future of the institution and focused on IT governance as the key enabler of the other identified critical issues. After a nine-month broad campus-wide self-study of IT governance, funding, and structure, the Berkeley IT Review Committee came up with a broadly accepted set of recommendations and a set of options to deal with each recommendation. The Office of the CIO and the institution as a whole are now in the throes of implementing the transition to a new governance structure that should better align IT services with the needs of the campus community and with the chancellor’s priorities for the institution. There are many moving parts to the changes in governance, and such change is particularly challenging, given Berkeley’s decentralized culture.

Still, many are optimistic about the outcome. There is now a defined process in place to address campus IT issues. “Now I know a forum exists to bring these issues [to] and the right people will be there to hear about them,” states Spanos. And more people are beginning to view IT as a strategic and unifying force. “The CIO used to be perceived as a defender of his organization,” states Waggener. “But this model separates IT’s supply side from the demand side as well as focusing my CIO role as the advocate for the technology community for the entire campus and as the primary technology business partner for all the cabinet members. Consequently, we have seen a sea change in discussions and collaboration. Now when an initiative comes forward, my advocacy is for the best-positioned solution—either locally or centralized.”

Endnotes

1. See http://berkeley.edu/about/rank.shtml.
2. The complete description of these can be found at http://technology.berkeley.edu/planning/strategic/principles.html.
5. Ibid., p. 4.
7. Ibid., p. 6.
9. See http://administration.berkeley.edu/idmg/about.htm.

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