



# Developing an Institutional Perspective on the Information Technology Function: The Case of Cornell University

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**ECAR Case Study 8, 2004**

Case Study from the  
EDUCAUSE Center for Applied Research



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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; and
- ◆ case studies—institution-specific reports designed to exemplify important themes, trends, and experiences in the management of IT investments and activities.

From its most recent research, ECAR has published a comprehensive gathering of information on IT financing in higher education in *Information Technology Funding in Higher Education*.<sup>1</sup> The study uses a multifaceted research methodology to collect and analyze quantitative and qualitative data from approximately 900 senior IT and financial officers.

## Literature Review

The study began with a review of the relevant literature on effective IT funding practices, IT portfolio management, and IT value

in order to define the study's major themes and create a working set of hypotheses to be tested.

## Online Survey

The research included two quantitative surveys. A survey of IT leaders and chief information officers (CIOs) was distributed to the entire EDUCAUSE membership, drawing responses from 482 institutions. A companion survey of chief business officers (CBOs) was distributed to the membership of the National Association of College and University Business Officers (NACUBO) and received responses from representatives of 386 institutions.

## Interviews

Telephone interviews were conducted to further explore some of the key findings derived from the quantitative research. Interviews were conducted with 13 individuals representing 11 different institutions. Interviewees were a mix of IT leaders (10), institutional financial officers (2), and financial managers of large IT organizations (1).

## Case Studies

In-depth case studies complement the core study. In addition to this Cornell University case study, case studies were conducted at Texas Tech University, Drexel University, the

Ohio Digital Commons, and the Massachusetts Networking Consortium. We assume readers of this case study will also read the primary study, which provides a general context for the individual case study findings.

### Introduction

How can a complex and decentralized university make more effective use of its IT resources? How can the administration influence the behavior of academic units that create, and then jealously guard, their isolated pockets of IT activity? Are there ways for a university to take an institutional approach to IT without evoking fears of centralization?

These questions have assumed great urgency everywhere, and the reasons are not difficult to find: IT costs continue to escalate. Maintenance of current systems consumes a growing share of the budget. Demands for both academic and administrative computing expand unabated. The need to manage IT spending grows, but many institutions have found the task difficult.

To effectively manage IT costs, we must look at more than just the central IT organization. ECAR’s survey of CIOs revealed just how fragmented IT spending can become in larger institutions. As expected, at more decentralized doctoral institutions

total IT spending far exceeds that which is controlled by the central IT budgets. For these institutions, the mean central IT budget represents only 56.3 percent of total institutional spending on technology. However, this is not just a challenge for doctoral institutions. Master’s institutions spend on average 75 percent of their total IT budget centrally, and specialized institutions spend 70 percent. For associate’s and bachelor’s institutions, the mean central IT budget contains nearly 89 percent of total IT spending.

This fragmentation means doctoral institutions face a greater challenge to optimize total institutional IT spending. Not surprisingly, when we asked respondents how successfully their institutions manage total IT spending, regardless of the budget it resides in, responses differed significantly by Carnegie class (see Table 1).

Respondents from doctoral institutions make a strong statement that the inability to coordinate or manage decentralized IT spending is a significant problem. Doctoral institutions’ mean response was 3.12, indicating that many respondents strongly or very strongly disagreed that their institutions were effectively managing their total technology spending. Conversely, respondents from

**Table 1. Leadership Management of Technology Expenditures (N = 440)**

Carnegie Class	Mean	Number	Standard Deviation
Associate’s	4.57	81	1.350
Bachelor’s	4.01	90	1.510
Master’s	3.68	145	1.437
Doctoral	3.12	98	1.473
Specialized	4.31	26	1.569
<b>Total</b>	<b>3.83</b>	<b>440</b>	<b>1.527</b>

*Q: The institutional senior leadership actively manages its total technology expenditures even if they do not reside in a single budget unit. (1=very strongly disagree, 4=neutral, 7=very strongly agree)*

associate's and bachelor's institutions felt they were able to manage total IT spending.

Cornell University has initiated an approach that may offer valuable lessons to other large institutions. The process is still unfolding, and it remains to be seen whether the university can fundamentally and permanently change people's attitudes and behaviors about IT spending. To be sure, some specific benefits, such as purchasing savings, have already been initiated. And the experiment has already achieved the crucial task of engaging the academic units in a productive dialogue about IT structures, roles, and costs.

## Workforce Planning at Cornell

In 2001, then-President Hunter Rawlings initiated Workforce Planning, a comprehensive review of nonacademic staffing across the entire Ithaca campus. The impetus for the effort arose from a challenging environment familiar to all research-intensive universities: increasingly constrained resources; expected declines in endowment payouts and in-state resources for the contract colleges; market limitations on the growth of tuition; and competitive pressure for increased investments in priority academic programs to attract faculty and external financial support. Increasing the sense of urgency was the recognition that the cost of support services was growing at a faster rate than the costs directly related to the academic mission.

Under the leadership of the vice president for planning and budget, a Workforce Planning Team was created "to best position the university for the future by establishing agile, responsive, and cost-effective support systems and structures that are scalable for anticipated growth and adaptable to changing program needs." The team was charged with three specific objectives:

- ◆ clearly define roles, responsibilities, standards of performance, and accountabilities

within each major administrative area and function throughout the university;

- ◆ realize substantial and ongoing financial savings as well as increased effectiveness and efficiency in support services across campus; and
- ◆ improve competitive market-pay position for staff.

In July 2002, the Cornell president established a goal of making \$20 million available for reallocation to institutional and unit-specific strategic priorities by fiscal year 2004–05. The savings were to be achieved through several efforts, including academic program reviews and targeted budget reductions, but workforce planning was expected to be a major contributor to the realization of the goal. To illustrate the magnitude of this expectation: \$20 million is approximately 1.4 percent of the total Ithaca campus operating budget, and 5 percent of total salaries and benefits for nonacademic staff.

The first functional areas identified for review were human resources, financial management, and development, to be followed by facilities, information technology, student services, the libraries, and procurement. Recognizing that the functional areas differed, each review, under the leadership of the vice president responsible for that function, was free to develop its own objectives, structure, and process. Each review typically involved one or more work teams of staff from across the campus who examined major policies and processes. Recommendations developed by the lead functional team were submitted to the Workforce Planning Team for review. Final recommendations were then submitted to the president, provost, and the vice president for administration for approval.

## The IT Lead Team

In the fall of 2002, Cornell Vice President for Information Technology Polley McClure initiated the IT review by appointing a six-person

Information Technology Lead Team that included herself, two faculty, an associate dean from the business school (also a member of the faculty), the associate provost for research administration, and a senior project director from the Division of Planning and Budget. The team was chosen to represent the key constituencies that would need to be involved in any meaningful solution: central administration, school administration, and faculty. Two faculty members were selected specifically to contribute their deep knowledge of computer science. Like all groups given a new task, the IT Lead Team needed to identify its objectives and its approach. Previous workforce planning teams could provide some precedents, but the team had to develop its own distinctive methodology and outcomes.

The first step was to promulgate the team's purpose, which was

to provide resources to accomplish our academic program priorities and to ensure a long-term balanced operating budget. The IT function impacts the operating budget significantly through personnel and non-personnel costs associated with ongoing IT activities. As such, the workforce planning review includes a component focused on general campus communication and computing support and centrally managed information technology support functions.

Specific objectives for this IT review were to include:

- ◆ Gathering baseline data to document the current general assignment of responsibilities, organizational structure, and staffing, and the amount of resources in terms of dollars and full-time equivalent staff members devoted to information technology functions on the Ithaca campus.
- ◆ Examining and defining roles, responsibilities, and accountabilities within an organizational structure that eliminates unnecessary or duplicative effort, achieves integrated and coordinated support where

appropriate across campus units, and results in the most effective and efficient delivery of information technology support to the campus.

- ◆ Developing a proposed IT staffing plan that contributes to the financial savings goals established by the Workforce Planning Team.
- ◆ Developing a measurable standard for evaluating the quality of service delivery and procedures for regular evaluation.
- ◆ Conducting an external review of the costs (in terms of dollars and time) related to administrative system implementation and maintenance.
- ◆ Establishing a plan for a later review of the effectiveness and efficiency related to supporting, maintaining, and upgrading telecommunications systems and campus-wide technology infrastructure.

Several of the group's initial meetings were consumed with the issue of whether to identify specific cost-reduction goals, and whether, in fact, cost reduction was even desirable or feasible. University data showed that from 1996–97 to 2001–02, "computing and other technology support" had been the fastest growing job function across all units at Cornell. With a 35 percent increase over the five-year period, it far exceeded growth in human resources (25 percent), academic support (21 percent), and student services (20 percent). These data, combined with an intuitive sense that demand for IT would only increase, led some members of the team to conclude that the more reasonable goal was not cost reduction, but rather a slowing in the rate of increase. Some reportedly even argued that IT should get more resources. In the end, the team decided not to offer a specific cost-savings goal, but instead to defer the issue until they better understood the current distribution of work and use of resources.

As they worked through their objectives and desired outcomes, the IT Lead Team knew

that underlying the IT initiative—all of the initiatives, in fact—was a constellation of issues around academic distinction, autonomy, centralization, and trust. It is a firm tenet of faith at Cornell that the schools' intellectual and operational autonomy is a contributor to their academic excellence. Was workforce planning a means to encourage centralization and ultimately to stifle academic entrepreneurship? In the minds of Workforce Planning Team, this was not about centralization, but about achieving a shared understanding of the roles and responsibilities that can generate the greatest efficiencies and service. The IT Lead Team also disavowed centralizing motives, claiming that this was an attempt to get the university to work smarter and more strategically, not a power play. Dave Vernon, director of networking and telecommunications, explained, "Inefficiency is an acceptable by-product of what makes Cornell great. However, the need was to know truth about the cost of inefficiency and to explore whether there were acceptable ways to reduce those costs." But as at most complex universities, Cornell's academic units remained on their guard, and the IT Lead Team needed to find a way to overcome the suspicions.

## Data Collection

One of the IT Lead Team's first activities was to collect information on the numbers, roles, and functions of IT professionals located throughout the university. Members of the team had an intuitive sense of the situation, but they wanted to operate from a position of empirical strength. The team felt that this was especially important because of perceived credibility problems in the past and because of fears of centralization.

In February 2003 a survey was sent to all academic and administrative units on campus, asking for information on staff engaged in IT activities. While the most obvious focus was on the academic schools, there are also

a number of central administrative functions (such as finance and facilities) that employ large numbers of IT professionals.

Using data from the university's human resources system, the survey instrument provided the names of people in the "COMNET" job family, and asked unit leaders to confirm, correct, and add additional names to the roster of personnel. In addition, the survey asked managers to include individuals in other job families who spend approximately 20 percent of their time or more on IT support activities. The survey also listed the full array of IT activities and asked the leaders to apportion people's time by their involvement in:

- ◆ General workstation/end-user support
- ◆ Servers and group services
- ◆ Academic/instructional applications
- ◆ Research and other discipline-specific applications
- ◆ Administrative/business applications
- ◆ Other application/development areas
- ◆ Networking/communications support or development
- ◆ Security and related activities
- ◆ Computer operations/facilities
- ◆ Training and education
- ◆ Management and oversight
- ◆ Other IT activity

From these data, several metrics and ratios were calculated:

- ◆ The "IT FTE" (full time equivalents) was developed by multiplying an individual's overall FTE status by the percentage of time he or she devoted to IT activities. For example, a 1.0 FTE who was devoted purely to IT would be a 1.0 IT FTE; a .75 FTE who devoted only half of his time to IT was considered a .375 FTE. For each unit, the total IT FTE count was the sum of the calculations for the individuals in that unit.
- ◆ The "Survey Category FTE" sought to understand the types of IT activities on which people spent their time. Using the categories listed in the survey, the effort for each

FTE was divided among the various types of IT activities (e.g., general workstation/end-user support, servers, and group services, etc.). This enabled an understanding of how units allocated time to specific IT tasks and proved critical in making the case for a more rational distribution of IT resources across and within units.

- ◆ “Personnel expenditures” were derived from converting the IT FTE number to a rough IT-related salary figure for each individual. This was done by using median salaries (by job family and band) taken from the university personnel system. To ensure compatibility across units, no benefits were included in the figures. Where the data were available, estimates of dollars spent on student labor were also included.
- ◆ Data on “nonpersonnel expenditures” were derived from the university accounting system. Data for the three latest years available were used to construct an average annualized figure.

In addition, a variety of demographic data were collected for each unit:

- ◆ Number of employees, including both academic and nonacademic staff;
- ◆ Total population, which added the number of enrolled students to the total number of employees;
- ◆ Number of IP addresses, which served as a rough proxy for the number of computing devices in a department; and
- ◆ Budgeted expenditures for the total unit, derived from the university accounting system.

From these data, the IT Workforce Planning Team developed a comprehensive set of analytics that included aggregate and unit-level data on how IT resources are deployed and how IT money is spent. Even more important, the data contained regressions and scatter plots that enabled units to see such metrics as (for example):

- ◆ IT expenditures versus Total expenditures

- ◆ IT expenditures versus Employees
- ◆ IT expenditures versus Total population
- ◆ Employees versus IT FTE
- ◆ IP addresses versus IT FTE
- ◆ General workstation/end-user support FTE versus Employees
- ◆ Administrative/business applications FTE versus Employees

The resulting massive data file enabled the team to see several patterns:

- ◆ There is a high degree of fragmentation, with people across the units spending portions of their time on a similar array of IT activities.
- ◆ Small units, as tubs on their own bottoms, have had to maintain staff to deliver the broad range of activities within their organizations.
- ◆ From an activity perspective, numerous people are doing the same task (for example, security) in an uncoordinated way.
- ◆ There was considerable variation across units in how IT was organized and managed.

All of these had been intuitively suspected, but the data showed the magnitude of the problem. As exhaustive as the survey was, everyone knew the data were inexact and that they might have missed some people on the margins. But because the data came from the units themselves, and because they were so compelling, the accuracy of the data never became an issue. This allowed Cornell to dodge the bullet that wounds, sometimes fatally, so many “fact-based” initiatives at other institutions: the accusation that the data were inaccurate, biased, and unrepresentative of the true situation.

Importantly, *all* of the data from *all* units were released to all unit leaders. This allowed the deans to see how their schools compared with others. Significantly, the dissemination of the data was not accompanied by qualitative judgments about “good” schools or glowing commendations about “thrifty” units. Everyone knew that units are different and

that (for example) it was logical for the engineering school to exhibit a more intensive use of IT resources, or for the business school to devote more IT resources to student support. The intent, it was made clear, was not to judge or to seek conformity around a golden mean. Instead, the goal was to prompt the unit leaders—both academic deans and administrative vice presidents—to ask questions about their own situation. “It forced us to confront whether we were doing too many things on our own,” explained Cathy Dove, associate dean of MBA programs and administration.

By all accounts, it succeeded, since many of the deans especially exhibited great interest in the data and some reportedly learned for the first time just how much money they were spending on IT. Most arresting of all was the revelation that two-thirds of all IT expenditures are made by the schools. The data got their attention.

## The Report and Recommendations

From the strength of the survey data, the IT Lead Team issued a set of recommendations in June 2003. These included such practices as: each unit should organize its IT personnel, support people in the units should have backups, and IT professionals should have a professional development path. Recognizing the diversity of the units and the possibility of territorial push-back, the team made no attempt to define “best” practice. It was left to the deans and vice presidents to decide what constituted “best” in their situation. The team also issued a matrix of roles, identifying in broad terms the allocation of responsibilities across central IT and the units for a variety of activities: help and support, print services, report development, network operations, and many others.

The university’s Workforce Planning Team accepted the thrust of the recommendations but pushed the IT Lead Team to come back with greater specificity around potential cost

savings. To help them develop the estimate, and to overcome any lingering doubts about the objectivity of the recommendations, the IT Lead Team secured the services of the Gartner Group to validate the results. Working over the summer, the Gartner Group supported the recommendations and concluded that potential savings in IT expenditures could total \$9.8 million if all of the IT Lead Team’s recommendations were (in the words of the IT Lead Team’s final report) “fully adopted and implemented in the most effective manner possible.” These savings were to come from

- ◆ an immediate benefit from better use of Cornell’s purchasing power (\$1.4 million a year);
- ◆ labor savings arising from more effective distribution of effort across central administration and the units (\$2.4 million a year); and
- ◆ longer-term savings through the establishment of an appropriate IT architecture across Cornell (\$6 million a year).

In its final report, accepted by university leadership in March 2004, the IT Lead Team questioned “the reality of realizing the full potential savings of \$9.8 million,” but accepted the logic that “clearly, the effective implementation of these recommendations is expected to result in significant financial savings.”

On reviewing the IT Lead Team’s report, Jeffrey Lehman, the newly installed president of Cornell, responded by suggesting that some of the recommendations should be considered less optional than others. Accordingly, the report organized the 28 recommendations into three broad categories:

*Primary Enabling Recommendations*, with which the president expected all academic and administrative units to comply. The key ones are:

- ◆ Units should create an IT organization that provides structure, more consistent services, backup support, and professional opportunity for staff.

- ◆ Units should designate a manager of IT to supervise IT staff in the unit.
- ◆ Units should adopt and support the "IT Roles and Responsibilities" matrix that had been developed by the IT Lead Team.

*Efficiency and Service Enhancement Recommendations*, which are less prescriptive and offer varying levels of opportunity across the units. Among the nine recommendations in this group are:

- ◆ Units should harvest and redeploy the "fractional IT person" and establish a review process for open IT positions.
- ◆ Units should cross-train their staff to provide backup coverage.
- ◆ Operating units should take advantage of opportunities to aggregate hardware and software purchases.
- ◆ Operating units should actively manage the life cycle of computer hardware and software.
- ◆ Units should take advantage of the institutional electronic mail and calendar services rather than their own.

*Cornell Information Technologies (CIT) and Central Administration Recommendations*, which apply mainly to the central IT organization and administration:

- ◆ Cornell should identify an executive champion for administrative systems.
- ◆ CIT should develop a plan for eliminating the mainframe.
- ◆ CIT should continue to develop benchmarks for costing administrative computing.
- ◆ CIT should offer more services to units, such as data administration, Web hosting, server administration, and desktop support.
- ◆ Technology special interest groups should be formally recognized and supported.

Following the university's acceptance of the recommendations, the vice president for information technology held one-on-one meetings with the deans and vice presidents.

Rather than being defensive, these leaders exhibited great curiosity about the interpretation of the data: Why did my data come out like this? What accounts for my unit being this far off the curve? How can I control costs in this or that area? How can I implement the recommendations? The data and report had achieved their primary purpose of raising consciousness about IT costs and creating an environment in which unit leaders were willing to discuss options and opportunities.

### **An Ongoing Process**

The IT workforce planning initiative is very much a work in progress. The deans and vice presidents were given until early November 2004 to respond to the report and to identify how they expect to implement the recommendations in their individual units. These leaders also have the option of presenting their reasons why compliance would not work or would be undesirable. But the dynamic has been created, in part by the strong presidential support for the initiative, that compliance is the default option. CIT is making itself available to work with the units on the development of their plans, although it remains to be seen how much support, and of what kind, the central CIT organization is in a position to provide.

The units' responses will go to the vice president for information technology for evaluation. This, too, has created a new kind of dynamic. While the vice president has nominally had oversight over all IT activities at Cornell, her actual responsibilities have been largely limited to the central IT organization, which (as the survey showed) accounts for only one-third of IT personnel. According to Jim Lombardi, assistant vice president for information technology, an important and intended by-product of workforce planning was "to reestablish the CIO position's authority to lead on campus-wide technology issues."

By positioning herself as the recipient of the unit plans, the CIO has assumed *accountability* for institutional IT, while continuing to maintain very tenuous *authority* over the units that do most of the IT spending. Her strategy is to use data, influence, and presidential backing to change the behaviors of the academic and administrative units. Confident that implementation of the recommendations will serve the units well, she is relying on the deans' and vice presidents' self-interests to maintain the momentum.

To assist her, McClure created a new full-time position, the director of distributed support. This person's job is to facilitate productive discussions and projects among IT people across the university. Because the effectiveness of the position hinges on personal credibility, the first incumbent is someone from one of the units who is respected around campus. One of his first challenges has been to establish and manage an IT Managers Group, composed of the IT leaders designated by each of the units. Per the report's recommendations, this group is intended to serve as a forum for seeking central-to-unit and unit-to-unit collaboration.

The units themselves are keeping an open mind. One school business officer has expressed the opinion that the IT workforce planning initiative has not changed the school's behavior, but that it has led them to question what they do, and why. She was most approving of university efforts to put pressure on IT vendors, but was more skeptical about the schools' having the time or incentive to engage in a multitude of new cooperative ventures.

Part of the challenge will be to introduce the IT Managers Group into the existing nexus of unit relationships. At the beginning of the project, the IT Lead Team had to decide what to do about the existing College Officers Group, the standing committee of business officers from the schools, most of whom over-

see IT. While consulted during the process, the College Officers Group had no formal role. There is a diversity of opinion about whether the College Officers Group should have been more actively involved, and the nature of their ongoing participation in the process is still an open question. But minimally, they will need to be supportive of the IT Managers Group if it is to play a significant role in changing the units' IT behaviors.

## Lessons Learned

Part of the reason the Cornell experience has been successful so far has been the strong backing of the president and provost. It was the provost, for example, who facilitated the first plenary meeting between the vice president for information technology and the deans to discuss the report. The presidential directive that some recommendations were to be considered obligatory also created the right environment. It would not be difficult to imagine another institution, seeking to replicate the Cornell experience, foundering through lack of senior-level support.

Still, the Cornell experiment offers lessons to any university that wants to develop greater institutional perspective on IT.

- ◆ *Use data to make the case.*

Within universities, discussions about IT (or any) resources are often couched in terms of "my anecdote versus your anecdote," with years of history being dredged up to support one position or another. The IT Lead Team had a good intuitive grasp of the university's fragmentation, duplication, and inefficiency, but it relied on hard data to validate its assumptions and to draw the unit leaders into the conversation. "Higher education does not often manage with data, and when you use it, you surprise people," commented McClure. Asking the units to provide their own data also gave the exercise greater credibility.

- ◆ *Don't frame the issue as centralization versus decentralization.*

The "C" word is guaranteed to raise people's hackles and defenses. By framing the issue as "how do we work smarter?" the IT Lead Team positioned the exercise in a more positive way. This approach also made sense because many opportunities for collaboration are likely to be between the units themselves, not just between the central IT and the unit IT organizations. The IT Lead Team also served itself well by acknowledging up front that in some areas, such as support, control of resources needs to be situated at the local level. In fact, one of Cornell's surprises in this process was how receptive decentralized IT managers were to the analysis and potential changes. It turns out that this group was feeling isolated and overwhelmed, and welcomed the chance to connect to one another and central IT.

- ◆ *Communicate openly and well.*

The sharing of all the data across all the units created an environment of openness. Through the distribution of the regressions and scatter plots, the IT Lead Team communicated the message that "we all have our way of doing things, but we're all in this together, and we need to cooperate." In addition, by avoiding prejudicial judgments about the units' relative effectiveness and efficiency, the team made it easier for the deans and vice presidents to engage in the discussion.

- ◆ *Provide ongoing support.*

It remains to be seen just how much support and consultation, and of what type, the central IT organization will provide to the units as they formulate their IT plans. But the appointment of the director of distributed support sends a strong signal that the CIT is willing to play a focal role in the ongoing implementation, and has its own skin in the game.

- ◆ *Build organizational capacity in the units.*

The management of IT in a decentralized environment necessitates some method of organizing distributed staff. Without such organization, it is difficult to know with whom to begin a dialogue. This challenge permeates discussions of effective cost management and operations. Again, the diversity of staff sizes, reporting relationships, and activities dictated that there is no single right way to structure the unit IT organizations. Leaving these decisions in the hands of the deans and vice presidents also contributed to a reduction in the level of anxiety.

- ◆ *Think carefully about how you measure success.*

Cost savings is the most obvious and quantitative measure, but at many institutions it has proven to be elusive. Cornell took the approach that doing the right things inevitably will lead to greater effectiveness and efficiencies, even if it is difficult to demonstrate the benefits in hard-dollar terms. This approach also helped relieve some of the anxiety that the workforce planning effort was intended to eliminate positions.

- ◆ *Obligate people to respond.*

The deans and vice presidents have the option of explaining why a given recommendation is not in their interest. If sufficiently compelling, the rationale will be accepted. But the unit leaders do not have the option of disengaging from the process. Thanks to presidential and provostial support, the vice president for information technology has a platform for continuing to engage the leaders in the discussion. But this imposes its own obligations on McClure: to maintain communication, to understand the unit leaders' distinctive needs, to provide productive consultation, and to demonstrate that the process is delivering real value.

Ultimately, the real test of the value of the Cornell experiment will be its success in forcing the university to confront the issue of total IT costs, i.e., that expenditures made by the central unit are a relatively small portion of total IT spending and that the units bear considerable responsibility for managing IT and for reining in costs. This, in turn, demands that the schools critically examine how they are organized, how they prioritize, how they cooperate with each other and with central administration, and how they respond to the demands of their faculty and staff. In the absence of that critical evaluation, Cornell, like all decentralized institutions, may find that it is addressing only a part of the problem.

## Conclusion

Cornell has successfully instigated a sensitive but important conversation about its IT costs and the best way to manage them. It has done so in an environment that is very proud of its decentralization and that had a historical suspicion of IT. While not every large

institution needs to copy Cornell's approach, all need to arrive in their own way at the same conversation.

The status quo will not be able to prevail. Institutions both large and small are facing growing costs to maintain already implemented technology. At the same time, there are increasing needs to invest in new solutions for instruction and research. Significant new resources are not forthcoming. Unless universities change their approach to managing their IT costs, we will face two unacceptable choices: the erosion of performance of existing technical infrastructure, or the inability to invest in the future. Cornell has provided an effective roadmap that can be followed by others who need to engage their institution in an effort to more effectively manage total IT spending.

## Endnote

1. P. Goldstein, *Information Technology Funding in Higher Education* (Boulder, Colo.: EDUCAUSE Center for Applied Research, Research Study, Volume 7, 2004), <<http://www.educause.edu/ers0407/>>.









