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Username: ERS1004
Password: ITFunding0710
Responding to Recession: IT Funding and Cost Management in Higher Education
EDUCAUSE is a nonprofit association whose mission is to advance higher education by promoting the intelligent use of information technology.

The mission of the EDUCAUSE Center for Applied Research is to foster better decision making by conducting and disseminating research and analysis about the role and implications of information technology in higher education. ECAR will systematically address many of the challenges brought more sharply into focus by information technologies.

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The EDUCAUSE Center for Applied Research (ECAR) was launched on January 1, 2002, to create a body of research and analysis on important issues at the intersection of higher education and information technology (IT). ECAR is fulfilling its mission through a program of symposia and through the publication of biweekly research bulletins, detailed research studies, occasional papers, executive roadmaps, and case studies. These publications are designed to highlight effective practices, lessons learned, and other insights from the practical experience of campus leaders. Since ECAR’s inception, 14 symposia have been held, and more than 400 research publications have been issued.

The Current Financial Crisis

In July 2007, financial ratings giant Standard & Poor’s placed 612 securities backed by subprime mortgages on its credit watch list. The U.S. Federal Reserve Bank’s federal funds rate was 5.25% per year. Later that month, Countrywide Financial warned of “difficult positions.” Bear Stearns liquidated two hedge funds that were deeply invested in subprime mortgages. By mid-August, BNP Paribas, France’s largest bank, halted redemptions on three investment funds, and the U.S. Federal Open Market Committee (FOMC) released a statement noting that the “downside risks to growth have increased appreciably.” By mid-September, the Chancellor of the Exchequer authorized the Bank of England to provide liquidity support for Northern Rock, the United Kingdom’s fifth-largest mortgage lender.

We all know the watershed events of the following months. Subprime lenders such as Countrywide, Wachovia, and others were sold to banks like Bank of America and Wells Fargo. The federal funds rate dropped to 3% by 2008 as the Federal Reserve Bank tried to create liquidity in the face of a nearly unprecedented lockup in global credit markets. The year 2008 witnessed Bear Stearns’ acquisition by JPMorgan Chase and the Bank of England’s takeover of Northern Rock. On September 15, 2008, Lehman Brothers—in business since 1850—filed for bankruptcy protection. The firm’s investment banking operation was shortly acquired by Barclay’s of England. For a short time, the U.S. Securities and Exchange Commission banned the short sale of stocks. By this time, the U.S. federal funds rate was 2%, as global lending slowed to a virtual standstill.

The near meltdown of the global financial system prompted the emergency passage of a number of initiatives. Institutions such as Sallie Mae, Freddie Mac, and AIG were deemed “too big to fail,” and many governments—
including that of the United States—found themselves the unwitting owners of majority stakes in complex—and failing—private concerns. Of course it is inconceivable that a crisis of this nature could be confined to the financial sector. Exposure to subprime risk spread quickly to industrial lenders such as General Motors and General Electric, lowering their credit ratings and prompting frightened shareholders to sell shares in a widespread panic. On September 29, 2008, alone, more than $1.2 trillion in market value of U.S. stock was erased.

Economists now agree that the world is in the deepest recession since the Great Depression that began in 1929. The economic slowdown is global in scope and cuts across every sector of the economy. The banking sector has been largely restructured and is now the subject of efforts to fundamentally change the nature of banking regulation worldwide. The auto industry in many countries, too, required multibillion-dollar government investments and for practical purposes is largely being operated under government auspices. The government of Iceland failed, and the debt level and illiquidity of Greece has destabilized the euro, requiring the commitment of one trillion euros by the eurozone and other nations. Spain, Portugal, and Italy are believed too to be in dire straits.1

The Current Financial Crisis and Higher Education

Of course, higher education has survived in its current form for a thousand years—through many economic downturns. In this recession, universities—particularly private, selective universities—are being hit very hard. Bellwether Harvard University lost $8 billion of its $37-billion endowment by December 2008.2 In the same period, the endowments of highly selective Amherst College and Grinnell College also slipped 25%. Public university endowments suffered similar losses. Lost endowment revenue was compounded by declines in tax revenues resulting from lowered corporate earnings and rising unemployment. Across all sectors of higher education, rising unemployment levels resulted in rising demand for financial aid. In some cases, prospective students are postponing or abandoning their educational dreams. The freezing of the financial markets in 2008 also brought the debt markets on which higher education depends to a halt. Higher education bond offerings were tabled, postponing or canceling capital improvement projects. Gifts to colleges and universities shrunk, were postponed, or got canceled outright. Even as credit markets began to thaw, higher debt underwriting standards coupled with endowment losses and rising financial aid have resulted in a rise in the cost of capital.

Some aspects of an economic downturn, however, presage growth in some elements of the postsecondary education mission. In the United States the economic financial collapse of 2008 has resulted in persistent unemployment at nearly 10%. For some, high unemployment and an anemic job market are signals to return to school. Online, trade school, distance education, and community college enrollments are booming in many locations as unemployed and underemployed workers—often with federal assistance—undertake retraining programs. Enrollment in California state community colleges, for example, swelled in 2009 to more than 2.2 million students, compared with 1.8 million in 2008.3 Many four-year public universities are also experiencing record demand for access.

In addition, a variety of funding measures have been passed at both state and federal levels to stimulate the economy. The Stimulus Act of 2008, the American Recovery and Reinvestment Act of 2009, and others are providing more than $1 trillion in fiscal aid to stimulate economic growth. As well, the U.S. Federal Reserve Bank has steered monetary
policy toward low interest rates as a means of keeping the flow of credit moving. These actions have promoted a remarkable recovery in global equity markets and have prevented a deepening of unemployment or deflation.

Questions to Be Asked

Despite the leavening effect of monetary and fiscal policy, there is no clear consensus among economists as to the ultimate depth or duration of the current recession. Many economists see parallels to the nearly 20 years of weakness in the Japanese economy. The three big questions for policymakers are:

- Have we hit the base of a U-shaped recession?
- How much time will pass before real recovery begins?
- At what rate will the recovery unfold (e.g., is the U really a V)?

These questions have bred a colorful new vocabulary that has meaning for educators. Chief among them—and in this study—is the question of whether the recession’s end will see a return to the economy of 2007 and earlier, or will the shock of this recession—coupled with important demographics—prompt consumers to hit the “Reset” button. Will we, the economists ask, find ourselves in a “new normal,” with new expectations about earnings, new patterns of consumption, and new notions about wealth, living well, and other key concepts?

A higher education factors importantly into any discussions about career, earnings, consumption, quality of life, and ideas about lives well lived. The question then for educational policymakers is whether the investment “arms race” that has defined higher education’s competitive landscape for the past 30 years can be or should be sustained. Blessed with decades of rising demand, universities and colleges have defined their performance not according to the quality of their graduates, but according to the cost of their programs, infrastructures, and amenities. High person-alization (e.g., labor costs) and top facilities (curricular, social, cocurricular) have led the way in creating a cost structure that depends on increasing tuition and flows from endowment, and one that leads to pricing that is increasingly out of reach to middle-income families. These behaviors also lead to costs and prices that are particularly ill suited to a “new” economic normal.

Information technology, of course, has been a beneficiary of this arms race. It is axiomatic that educational quality in the Information Age is a function of the quality of the IT environment. It is also axiomatic that quality of IT is a function of costs, since more money means more gear and more people to support that gear. Therefore, the reasoning goes, educational excellence depends on the inevitable rise in IT spending, despite the economics of Moore’s law.

This ECAR study was designed to help our community understand the nature of the effect of this recession on the IT practices in higher education. Has this recession changed our directions? Is the recession constraining our progress? Are we muddling through simply by deferring purchases, increasing useful lives, deferring maintenance, furloughing staff, and so forth, or are we rethinking how information technologies can really reform the fundamental structure of higher education? Are we virtualizing our own hardware and software infrastructures? Are we consolidating duplicate services on campus? Are we replacing bricks and mortar with clicks and mortar? Are we exploiting the potential economies of cloud services?

These and other really important questions frame the study that follows. To me, the most interesting question is whether we are going to waste this crisis. It is clear to me that higher education in the United States and in much of the developed world is encumbered by a cost structure that cannot be sustained. We are also hampered by governance that both promotes innovation and inhibits
efforts to bring about the needed structural change. A crisis, at its best, provides all of us with a common enemy and a common cause. Colleges and universities have in fact united around the common cause and have moved to protect student financial aid at the expense of all else. This is a positive affirmation that, in the end, we must protect and serve our students. It is not yet clear that we have organized ourselves against the common enemies of waste and inefficiency. Furloughs, layoffs, and deferred maintenance represent a choice of doing less for less. It seems to me that we can do better and that in the face of growing competition globally, and from commercial providers and even “edupunks,” we must do better. 4

Too Many People to Thank

The ECAR study of IT, higher education, and the financial crisis was an ambitious undertaking, and as always there are many people to thank. Phil Goldstein, this study’s author, walks the line between the IT world and the world of the business officer as well as anyone in higher education. His ability to see movement and trends amidst the smoke and fire of the crisis makes him ideally suited to this task. ECAR, EDUCAUSE, and our entire community are lucky to have him.

Phil got assistance from another stellar ECAR Fellow, John Voloudakis. John’s breadth of experience across a diversity of consulting assignments commended him perfectly to this assignment. This year, we added the Delphi process of qualitative research to the arrows in ECAR’s quiver, and John led the way with the able support of Ted Gordon, owner of Real Time Delphi. ECAR owes a particularly large debt of thanks to three people: Larry Levine, CIO of the University of Colorado; Randy Stiles, CIO of Colorado College; and Richard West, recently retired Executive Vice Chancellor of the California State University System. They gave generously of their time to meet with us in Boulder to assess our early findings and tentative conclusions.

A number of our colleagues participated actively in our Delphi process. They include Hilary Baker of CSU Northridge, John Bielec of Drexel University, Timothy Chester of Pepperdine University, Reid Christenberry of Georgia Perimeter College, Ruth Constantine of Smith College, Paul Courant of the University of Michigan, Collin Currie of Princeton University, Amir Dabirian of the California State University, David Damassa of Tufts University, Fred Damiano of Hobart & William Smith Colleges, David Gray of the University of Massachusetts, Marc Hoit of North Carolina State University, Albert Horvath of Penn State University, David Hoyt of the Collin County Community College District, Darrel Huish of the Minnesota State Colleges and Universities, Joanne Kossuth of the Franklin W. Olin College of Engineering, Bruce Maas of the University of Wisconsin–Milwaukee, Bruce Metz of Thomas Jefferson University, Fred Miller of Furman University, Ken Pflugger of Pomona College, Peggy Plympton of Lehigh University, Martin Ringle of Reed College, Fred Rogers of Carleton College, Justin Sipher of Skidmore College, David Smollen of Hamilton College, Nadine Stern of The College of New Jersey, Dinny Taylor of Williams College, and Bradley Wheeler of Indiana University.

Of course, after all of this work on content development is complete, the work of the production team begins. The care of our investigators and fellows in constructing and designing surveys and in analyzing responses and checking analyses is matched by a team of editors under the guidance of Gregory Dobbin and Nancy Hays. They are thorough people and work with a team of editors, proofreaders, digital compositors, and printers. In studies where a quarter-inch shift in a column can obliterate a careful analysis, one cannot understate the effort these people make or the successes they claim. And last, but
of course not least, Toby Sitko works at the interface of the research team and the production team and orchestrates the overall project with the skill of a symphony conductor. ECAR depends on her every day.

**Thanks to You, Too**

It should never go without saying how much ECAR and EDUCAUSE owe you, our community. This is the last foreword I will write as vice president of EDUCAUSE and director of ECAR. I have long said that I have had the pleasure of serving in the best job in the world. I have had that pleasure for 14 years—longer than anyone deserves. It has been both an honor and a delight to serve you. I have also had the nearly unimaginably good fortune to work with a group of colleagues who might put Arthur’s knights to shame. To the extent that ECAR has achieved a measure of greatness, it is due to their work and underlying excellence. I cannot thank my fellows—my friends—enough.

Ten years ago, a group of you—colleagues and friends—agreed to take a chance on a new venture called ECAR. You agreed that developing a culture of evidence within higher education’s IT community was a worthwhile mission. Our first 50 pioneering subscribers made it possible for us to tinker in the garage. What emerged is a global research enterprise that we can all take pride in. Nine years, 400 publications, and 14 symposia later, ECAR enjoys the support of nearly 500 colleges and universities throughout the world. It has been one heck of a ride. Thank you.

*Richard N. Katz*

*Boulder, Colorado*

**Endnotes**


Executive Summary

From 2007 to 2010 the United States economy experienced its worst period of decline since the 1930s. The effects of recession can be seen in examples both large and small. Stock indices lost half their value, corporate profits turned into steep losses, and many firms were forced to merge, seek bankruptcy protection, or simply go out of business. Communities have been altered by sharp declines in home values and rising rates of foreclosures. Individuals have suffered long-term unemployment or reduced wages. At the low point in the recession, there was significant fear that the banking sector could collapse and the economy would move into a prolonged depression. Fortunately, the resilience of the economy, unprecedented levels of fiscal stimulus, and continued growth in emerging economies such as China and India appear to have pulled the economy out of recession. The recovery is still relatively fragile and sensitive to world events, but the U.S. economy is growing again. Enthusiasm for the recovery is, however, tempered by persistently high unemployment and slow job growth.

The recession arrived on the doorstep of higher education in 2008. Billions of dollars were lost from institutional endowments, states cut spending on public higher education, and frozen credit markets raised the cost of institutions’ existing debt and essentially ended the prospects of obtaining any new financing for many institutions. The loss of endowment income and state support, along with rising debt costs, created a significant hole in institutional operating budgets that sent many into deficit. In October of 2008, the credit crisis in the banking industry spilled over into higher education as nearly 1,000 institutions temporarily lost access to much of their assets invested with Commonfund. Colleges and universities had used this fund to hold their most liquid assets and depended on continued access to it to fund their payroll and other near-term operating expenses.1 While institutions eventually gained access to a sufficient portion of their investments to continue to meet their short-term expenses, the Commonfund experience, coupled with the continued deterioration of the economy, sharpened the focus on the severity of the recession.

Since 2008, many institutions have experienced multiple rounds of budget cutting. Some of the cuts were in direct reaction to the lost revenue from endowment income and state support. Others cut in order to resize their expenses to be in line with more conservative assumptions about future revenues. Fiscal plans and long-range budgets were rewritten to assume lower rates of tuition increases (at private institutions), decreased state funding (at public institu-
tions), multiple years of reduced endowment earnings, and increased expenditures for institutional financial aid to offset declines in family assets and income.

Despite budget cuts and the very real impacts created by staff layoffs, salary freezes, and furlough programs, higher education has fared well during the recession, relative to other industries. We have not seen the magnitude of layoffs, consolidation, and lost revenues that have buffeted financial services, automobile companies, manufacturing, and retail sectors of the economy. Higher education entered the recession having enjoyed a prolonged period of growth fueled by increased tuition revenue, growing demand for education, and increased levels of federal and private support for research. Institutions have always benefited from countercyclical forces during periods of economic decline. Recessions swell enrollments as adult learners retool their skills and undergraduates delay entry into a soft job market by pursuing graduate degrees. Higher education is also helped by the government’s efforts to stimulate the economy. The American Recovery and Reinvestment Act (ARRA) put hundreds of millions of dollars into the economy. Some was directly granted to institutions of higher education to fund construction projects, support faculty research, and expand educational opportunities for job seekers. In technology, the funds supported expanding regional networks and helping academic medical centers implement electronic health records systems. ARRA also provided significant funding to states to close their fiscal deficits and likely forestalled the need to make even deeper cuts in support of higher education.

The central question of this study was how the recession impacted information technology (IT) organizations and operations. IT is a significant area of expenditure at most institutions, and we expected that IT organizations would be asked to absorb at least a share of institutional budget cuts. IT is also an area of investment that can be used to fuel productivity gains, create cost savings, or enable strategies to increase revenues. In this vein, we thought institutions might increase their level of investment in technology to help cope with changed financial circumstances.

We pursued the notion that a crisis is also an opportunity to take more aggressive action to introduce changes that under normal circumstances would not be politically or culturally possible. The IT community was already in significant discussion about how forces such as cloud computing, mobile devices, the explosion of data, green IT, and multi-institutional collaborations could transform how technology is used and managed. Would the economic crisis serve as a catalyst for more extensive or aggressive action to change IT?

Methodology

To study the effects of the recession on IT funding and management, we employed a multipart approach:

- a literature review to further our understanding of higher education’s present and future financial outlook and the methods organizations have employed to reduce their IT costs;
- a quantitative web-based survey of EDUCAUSE member institutions completed by 319 institutions, 83.4% of which were answered by the institution’s chief information officer or equivalent;
- qualitative interviews with 20 IT leaders to deepen our understanding of survey findings in critical areas; and
- an online, real-time Delphi process that solicited the opinions of a panel of experts on how the recession has impacted IT organizations and the potential of technology to transform higher education’s future costs and revenues.
Key Findings

Our research was framed by a series of questions and hypotheses regarding the recession’s impact on the level of IT funding, the strategies and tactics institutions employed to reduce IT costs, and the lasting impacts of the recession on the role of technology. The framing questions were translated into several different areas of inquiry within our quantitative and qualitative research. These areas include:

- **State of IT funding**—changes to IT operating and capital budgets since FY2007–2008, relationship between changes to IT operating budgets and total institutional operating budgets, and the adequacy of present funding levels to sustain secure, reliable technology, foster innovation, and meet strategic technology goals.
- **Cost management strategies**—approaches to reducing IT costs and meeting budget reduction targets, including the degree of control IT organizations had over how to cut their budgets, the scope of IT cost management efforts, the predominant cost-cutting philosophy (reducing costs by reducing service or preserving service while reducing costs by restructuring service delivery), and the outcomes achieved.
- **Cost management tactics and outcomes**—tactics employed to reduce IT costs across a broad spectrum of areas including IT personnel management, IT budget management, IT project portfolio management, support services and technology management, and the relationship of between tactics adopted and institutions’ ability to reduce IT costs and introduce substantial change to how technology is managed.
- **Positioning of IT and the IT leader**—the extent to which technology was viewed as a cost center or asset to invest in during the recession, the impact of the recession on the senior-most IT leader’s ability to influence executive decision making, and expectations for the future importance of technology to institutions and future approaches to technology management.

In the following sections we summarize our main findings.

State of IT Funding

One of the more surprising findings of our research was the shallowness of budget cuts that most respondent institutions experienced in light of the turmoil taking place in the broader economy. While a small majority of respondents (53%) reported a decrease in their central IT operating budgets from FY2007–2008 to FY2009–2010, the magnitude of the decrease for most was less than we anticipated. Nearly a third of respondents (30%) reported an aggregate change of between 0% and 4%. Even more surprising, a similar percentage of respondents (31%) reported that their central IT operating budgets had increased over this same period, including 15% who reported increases of 5% or more.

Some institutions did not fare as well. Nearly a quarter of respondents experienced reductions of 10% or more to the central IT operating budget, including 10% who experienced a decrease of 15% or more. However, the budget reduction challenges that most respondents faced were much less severe, with many experiencing flat or increasing budgets and only about a third reporting declines that exceeded 5%. We recognize that a 5% decline or even a flat budget for an IT organization whose funds may be largely committed to keeping core technologies functioning has a significant impact. On the other hand, for all but the leanest of organizations, reductions of this magnitude can be absorbed without necessitating major restructuring or significant cuts in service.

There are several possible explanations for the lower-than-expected declines in institutional and central IT operating budgets that
we observed. It is possible that institutions suffering deeper budget cuts were less inclined to complete our survey due to a lack of time or the sensitivity of the topic. It is also possible that for many respondents the recession’s impact was offset in part by the effects of government spending to stimulate the economy. It is estimated that the ARRA, when fully implemented, could provide between $50 billion and $100 billion of added funding for higher education in 2009 and 2010. Institutions also may have been able to increase their tuition revenues as more adults returned to school to retool their skills. While these new revenues were likely insufficient to offset completely the decline in endowment earnings and state support that the recession created, they likely partially offset their impacts and allowed institutions to cut less.

The timing of our research may have captured only an initial wave of budget cuts that could be followed by additional years of flat or declining budgets. We asked respondents to state their expectations for their combined central IT operating and capital budgets for FY2010–2011. A slight majority expect a major or minor decrease in total central IT budget for FY2010–2011, with most of these respondents expecting the decrease to be minor. Another quarter of respondents expect their budgets to remain flat.

In the near term, many of the respondents with central IT operating budgets that have grown expect their budgets to hold at current funding levels or grow slightly. Respondents who have enjoyed increased budgets were more optimistic than those whose IT budgets had been reduced. Among respondents who reported an increase in the central IT operating budget since FY2007–2008, 43% anticipate a minor or major increase in the total central IT budget in FY2010–2011. In contrast, only 9% of respondents who experienced a decrease over the past two years anticipate an increase in the coming fiscal year. Respondents from public institutions were more pessimistic about the next budget year. Almost three-fourths of them (73%) expect their FY2010–2011 total central IT budget to have a major or minor decrease from present levels. By comparison, fewer than a third of respondents from private institutions (29.5%) reported similar expectations.

**Why Some IT Budgets Grew**

We asked respondents who reported that their central IT budgets had increased to identify the primary reasons. The most frequently selected reasons were to sustain basic IT infrastructure, support a project already under way, or resource an increase in the scope of responsibilities of the central IT organization. Given this set of reasons, it is possible that some respondents enjoyed increased budgets as part of a multiyear investment approved and funded in the years prior to the economic downturn. If these initiatives were large infrastructure projects funded by debt already assumed by their institutions, they may have been exempted from budget-cutting exercises. Or, projects that were already under way may have been too far along to effectively halt in order to recoup any immediate savings. Given contractual commitments for equipment and services required by projects, it just may not have been practical for respondents to reduce their IT spending. It is also possible that respondents saw the investments they were making as essential and were not prepared to give them up even as budgets tightened.

**IT Cost Management Strategies**

IT cost management strategies for most focused on total institutional costs and sought to save money without affecting service. Most respondents (84%) reported that since FY2007–2008, their central IT organization had been engaged in efforts to reduce IT costs. Among the 16% of respondents who reported that no IT cost reductions were
necessary at their institutions, about three-quarters had experienced flat or increasing central IT budgets from FY2007–2008 to FY2009–2010. IT cost management efforts for most were focused on their total institutional IT costs and not just the central IT organization. Two-thirds of respondents described their approach to cost reduction as reducing costs without reducing service or service levels. A small minority (17%) said that they were reducing costs by reducing service levels, and the remainder reported that no cost reductions were necessary.

The challenges institutions faced to reduce their IT costs were primarily cultural. We asked respondents reporting a decrease in their central IT operating budget from FY2007–2008 to FY2009–2010 to identify the barriers to cost reduction that they had to overcome. As Table 1-1 reports, the issues most frequently identified as barriers limiting respondents’ ability to reduce IT costs were the unacceptability of reducing service levels (49.1%) and resistance to change from outside the central IT organization (32.5%). Some cost reduction strategies such as consolidating data centers, migrating to standard technologies (e.g., consolidating e-mail systems), or leveraging new technologies (e.g., virtual servers) require institutions to spend money in order to save money. We suspected that in the midst of declining institutional budgets and tightening credit markets, institutions might be reluctant or in some cases unable to make one-time investments even if they offered an attractive payback. For some respondents, this was in fact an issue. Almost a third of respondents with decreased central IT operating budgets (29.4%) reported that the lack of up-front funding to induce savings was a top-three factor limiting IT cost reduction.

Was the Crisis Also an Opportunity?

One of the objectives of this research study was to examine whether respondent institutions used the recession as an opportunity to implement more aggressive changes than would otherwise be possible. We found that most respondents did not believe that the economic crisis had in fact catalyzed fundamental change. We asked all respondents whether as a result of the economic crisis their institution had fundamentally changed how IT is managed, significantly reduced the cost of IT operations, or implemented technology that had significantly improved staff productivity or increased revenues. On a 5-point scale from strongly disagree to strongly agree, mean responses ranged between disagree and neutral for each statement. In fact, the lowest mean agreement

<table>
<thead>
<tr>
<th>Table 1-1. Factors Limiting Institution’s Ability to Reduce IT Costs</th>
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<tr>
<td><strong>Which of the following factors are most significantly limiting your institution’s ability to reduce IT costs in response to the budget crisis? (Select up to three)</strong></td>
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<tr>
<td></td>
</tr>
<tr>
<td>Unacceptability of reducing service levels</td>
</tr>
<tr>
<td>Resistance to change from outside the central IT organization</td>
</tr>
<tr>
<td>Lack of availability of up-front funding needed to induce savings</td>
</tr>
<tr>
<td>Insufficient staff skills in central IT</td>
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<tr>
<td>Lack of executive sponsorship for change</td>
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<tr>
<td>Decentralized nature of IT management</td>
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<tr>
<td>Institutional budget policies</td>
</tr>
<tr>
<td>Collective bargaining agreements</td>
</tr>
<tr>
<td>Resistance to change from within the central IT organization</td>
</tr>
<tr>
<td>Other</td>
</tr>
</tbody>
</table>
was with the statement that the institution had fundamentally changed how IT is managed. Respondents also disagreed on average that their institutions had significantly reduced the cost of IT operations or implemented IT that had significantly increased revenue. Respondents who experienced a decrease in their central IT operating budget did have higher mean agreement that they had fundamentally changed how IT is managed and significantly reduced the costs of IT operations. However, the mean responses were still between neutral and disagree (Table 1-2).

The results left us to ask whether there was no crisis to waste or institutions had been willing to waste the crisis they had. Perhaps the magnitude of the fiscal challenges most respondents faced never became great enough to require fundamental change as a response. As bad as things were, they may not have been bad enough to overcome higher education’s innate resistance to change that comes too fast or looks too radical. Looking beyond IT to the academy as a whole, we have seen few examples of substantial change or aggressive risk-taking. It is impractical and unwise for IT leaders to get too far out in front of their institutional leadership in calling for change. It may also be a sign that leaders are still somewhat ambivalent about the benefits of some of the more substantial changes available to them. Cloud computing, software as a service, and multi-institutional collaborations promise savings through economies of scale. But, their track records are relatively short, some are difficult to implement, and all carry risks that must be managed.

**How Cost Savings Were Achieved**

Implementing budget cuts presents leaders with trade-offs and choices. Leaders must consider not only what parts of their budget to cut but also how quickly various actions will generate savings, whether those savings are one-time or recurring, and the relative difficulty of implementing the changes necessary to bring about the savings. A strategy that focuses only on short-term measures that bring about immediate but unsustainable savings is fine if a downturn is short, but problematic if declining budgets persist. Conversely, a focus that is too dependent on implementing complex but sustainable cost reductions may not produce enough short-term savings and can quickly tax an organization’s capacity to absorb change. To understand the actions that institutions took to achieve cost savings since FY2007–2008, we asked respondents to report the state of adoption of 37 cost management actions. The actions were organized into five categories: IT personnel management, IT financial management, IT project portfolio, IT management (e.g., standards, technology adoption choices), and IT support services.

Examining the patterns of adoption across the various categories revealed that in most cases institutions took actions that would yield cost savings quickly, were largely within the control and prerogative of the central IT leader to implement, and had less direct impact on IT’s campus constituents. Many were typical early responses to budget downturns—for example, hiring freezes, cuts to travel and training budgets, spending down of reserves.

<table>
<thead>
<tr>
<th>As a result of the economic crisis, my institution has:</th>
<th>Mean*</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implemented IT that has significantly improved staff productivity (N = 317)</td>
<td>3.00</td>
<td>0.911</td>
</tr>
<tr>
<td>Significantly reduced the cost of IT operations (N = 317)</td>
<td>2.69</td>
<td>1.012</td>
</tr>
<tr>
<td>Implemented IT that has significantly increased revenues (N = 317)</td>
<td>2.56</td>
<td>0.792</td>
</tr>
<tr>
<td>Fundamentally changed how IT is managed (N = 319)</td>
<td>2.37</td>
<td>0.948</td>
</tr>
</tbody>
</table>

* Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree
and elongating replacement cycles. There were certainly some instances of institutions’ taking actions that introduced a greater degree of long-term change to technology and technology management. For example, some respondents reported consolidating multiple IT support organizations, consolidating local server management and storage into and an enterprise service, or retiring duplicative or underutilized technologies. However, adoption of these strategies was lower than for many of the actions that provided more immediate changes.

Chapter 6 provides a complete analysis of the adoption of each action. Highlights from our findings in each category are described below. All percentages reported are for the subset of respondents whose institutions were focused on IT cost management.

**IT Personnel Management**

The practices that had been adopted most frequently were reduction of travel budgets, followed by hiring freezes, the elimination of open positions, and reduction of training budgets. Each had been or was being done by the majority of respondents engaged in IT cost management. The remaining practices had been implemented by between 18% and 30% of the IT cost management subset of total respondents. Adoption was lowest for the most difficult and disruptive changes such as staff layoffs, sharing positions with another organization, or consolidating departmental IT organizations.

**IT Financial Management**

Majorities of respondents focused on IT cost management reported increased use of university-wide purchase agreements, renegotiation of vendor contracts, and the deferral of capital expenditures. Other actions that respondents had done or were doing at the time of the survey included spending down budgetary reserves (43%), increasing student fees (32%), and increasing pricing for chargebacks (11%).

**IT Project Portfolio**

Nearly two-thirds of the subset of respondents focused on IT cost management in the past two years reported that their institutions had or were placing a higher priority on projects that have a higher potential return on investment. Similar percentages of respondents (36%) reported that they had or were currently reducing the scope of active projects or were currently changing their approach to executing projects by bringing more work in house (36%). Few respondents (17%) had canceled or were in the process of canceling active projects.

**IT Management**

The fourth category contained 14 actions that fell under the umbrella topic of changes to IT management. Patterns of adoption suggest that some institutions were engaged in practices that could be at the vanguard of changing how IT is managed in the future, such as the adoption of cloud services and the expansion of enterprise solutions for areas that benefit from scale economies. However, a significant portion of respondents had also taken actions that arguably can produce only one-time savings and may place their institutions’ technology at greater risk, including deferring hardware replacement cycles, deferring maintenance on systems, and relaxing or deferring disaster recovery plans.

Ten of the 14 actions had been adopted by nearly half or more of the respondents. They include increased use of virtual servers (84%), greater use of standard hardware (76%), extending hardware replacement cycles (73%), consolidating local storage to enterprise service (59%), retiring infrequently used technology (58%), consolidating duplicate platforms or applications (58%), reducing modifications in enterprise software (53%), increased use of open-source software (53%), increased use of enterprise server hosting (46%), and deferred maintenance on major systems/infrastructure (46%). Between 15%
and 30% of respondents reported their institutions had done or were doing the following: relaxing/deferring disaster recovery plans (30%), increased deployment of software as a service (SaaS) (28%), increased use of virtual desktops (25%), and increased use of cloud-based enterprise storage (15%).

**IT Support Services**

This category included five actions that altered what services were provided, how they were delivered, and the organizations that provided IT support. Among the five, the action that respondents had done or were in the process of doing most was to increase the use of tools to automate support (55%). A third of respondents had reduced or were reducing the number of technologies supported. About a quarter of respondents had consolidated or were consolidating departments that provide IT support (24%) or had outsourced or were outsourcing some IT support services (24%). About a fifth of respondents had reduced or were reducing service levels (21%).

**Significant Sources of Cost Savings**

We asked respondents to identify which category of cost management actions provided the largest proportion of the IT cost reductions their institutions achieved in the past two fiscal years. No single category dominated. The most frequently selected categories, personnel management and financial management, were each selected by about a quarter of the subset of total respondents, and the three remaining categories were each selected by about 15%. Institutions’ expectations for future sources of cost savings did not differ substantially from their assessment of the past two fiscal years (see Table 1-3).

We observed a relationship between respondents’ level of agreement that they had significantly reduced the costs of IT operations as a result of the economic crisis and their adoption of particular cost management actions. Specifically, we found that respondents whose institutions had taken actions to reduce travel and training budgets, freeze or eliminate open positions, spend down budgetary reserves, or extend hardware replacement cycles as part of their IT cost management strategy reported higher mean agreement that their institutions had significantly reduced their IT operating costs.

The actions that often characterized institutions with significantly reduced IT operating costs have several things in common. Each is primarily within the control of IT leaders to implement and has an impact that is localized to the IT group. The one exception could be freezing hiring or eliminating open positions, which would likely degrade service to the institution if it persisted for a long time. However, in the short run, the effect would be predominantly felt by staff members within the IT organization who are asked to increase their productivity to make up for the inability to hire. Presumably, changes that were more directly within the IT leader’s control and had a less visible or immediate impact on the IT organization’s constituents were easier to implement. The changes discussed above also all have the ability to produce cost savings that can be realized quickly, are easy to capture, and don’t require an up-front investment.

**Cost Center or Area for Investment**

IT leaders have often questioned whether institutions view technology as an asset that should be invested in to gain larger benefits or a necessary cost of operations that should be minimized to the greatest extent possible. To get a sense of which perspective prevailed during the recession, we asked respondents to express their agreement with statements that their institutions were investing in IT as a means to reduce the costs of an education, to lower administrative costs, and to increase revenues. Respondent perceptions seem to lean against the notion that institutions were
treated IT as an investment in these areas; only the item about investing in IT to lower administrative costs averaged an above-neutral response, and none rose to the level of a mean “agree” (see Table 1-4).

Among all respondents, about half (50%) agreed or strongly agreed that their institutions were investing to lower administrative costs. In comparison, 20% agreed or strongly agreed that their institutions were investing in IT as a means of reducing the costs of an education. Likewise, only a minority of respondents (32%) agreed or strongly agreed that their institutions were investing in technology as a means to increase revenues.

Respondents who agreed or strongly agreed that their institutions valued innovation also reported higher mean agreement that their institutions were investing in IT to lower the costs of administrative operations and as a means to increase revenues. These same respondents also disagreed less strongly on average that their institutions were investing in IT to reduce the costs of education. We also found a relationship between reported institutional goals for IT and mean agreement that institutions were investing in IT to increase revenues. Respondents who identified their institutions’ IT goals as either furthering strategic goals or creating institutional competitive advantage reported higher mean agreement that their institutions were investing in IT to increase revenues than did those where the goals were providing reliable infrastructure/services at the lowest possible cost or providing appropriate IT based on user needs. While the mean agreement was higher where goals were strategic or competitive in nature, it was still barely neutral and seemed to fall short of an aggressive endorsement of investment in IT as a strategic asset to grow revenue.

Adequacy of IT Funding

We asked all respondents regardless of how their central IT funding had changed since FY2007–2008 to evaluate the adequacy of their current funding for IT to meet several strategic and tactical objectives. Overall, respondents painted a fairly pessimistic view of funding adequacy. Mean agreement was highest that funds were adequate to maintain critical IT operations reliably and to keep pace with vendor-mandated upgrades. Both had means that were about three-quarters of the way between neutral and agree, however. The items with the lowest means were the

Table 1-3. Source of Largest Proportion of Realized and Projected IT Cost Reductions, by Category

<table>
<thead>
<tr>
<th>Category of Action</th>
<th>Largest Portion of Cost Savings Past Two Years (N = 221)</th>
<th>Next Two Years (N = 209)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT Personnel Management</td>
<td>27.1%</td>
<td>30.1%</td>
</tr>
<tr>
<td>IT Financial Management</td>
<td>24.0%</td>
<td>14.4%</td>
</tr>
<tr>
<td>IT Project Portfolio</td>
<td>16.3%</td>
<td>21.5%</td>
</tr>
<tr>
<td>IT Management</td>
<td>15.8%</td>
<td>16.3%</td>
</tr>
<tr>
<td>IT Support</td>
<td>16.7%</td>
<td>17.7%</td>
</tr>
</tbody>
</table>

Table 1-4. Respondents’ Investments in IT

<table>
<thead>
<tr>
<th>My institution is investing in IT as a means to:</th>
<th>Mean*</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower its administrative costs (N = 318)</td>
<td>3.24</td>
<td>1.022</td>
</tr>
<tr>
<td>Increase revenues (N = 317)</td>
<td>2.83</td>
<td>1.050</td>
</tr>
<tr>
<td>Reduce the cost of education (N = 316)</td>
<td>2.58</td>
<td>0.990</td>
</tr>
</tbody>
</table>

* Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree
adequacy of funds to respond to new user needs and interests, and researching and experimenting with emerging technologies.

Respondents from institutions that had experienced a decrease in their central IT operating budget from FY2007–2008 reported lower mean agreement that their funding was adequate to meet several of the tactical and strategic objectives included in the survey. While means were still somewhat above neutral, respondents whose central IT operating budgets had decreased over the two-year period agreed less strongly that funding was adequate to maintain critical IT operations reliably and to keep current with vendor-mandated upgrades. Respondents with decreased central IT operating budgets also reported means between disagree and neutral that they had sufficient resources to implement their institutions’ IT strategy. Those with increased budgets reported means for this statement that were between neutral and agree.

Conclusions

Our research tells a number of important stories about the state of IT funding and the impact of the recession among our respondent institutions. Participating institutions faced fiscal challenges, and many have had to sustain their IT operations with the same or fewer resources for the past two years. However, the cuts in central IT operating budgets for the majority were relatively small compared with the severity of the economic downturn, and they were of a magnitude that would not fundamentally alter how IT is managed. The tactics institutions reported employing to reduce their IT costs were in keeping with the size of the reductions that had to be made. Most institutions employed fairly traditional measures to reduce their IT operating budgets, such as hiring freezes, reduced outlays for training and travel, or deferred purchases of new hardware and software. More aggressive and admittedly less proven cost savings tactics such as outsourcing, cloud sourcing, shared services, or organizational change were pursued less frequently. As a result, most respondents felt that they had reduced their costs but not substantially changed how IT was managed.

Whether we wasted the crisis we were given or took an appropriately measured response calibrated to the severity of the budget decline is a question open to debate. Many institutions did feel that the crisis had provided them a means to make changes that otherwise would not have been possible. No doubt there are many examples of duplicate systems being eliminated, seldom used systems being eliminated, or new enterprise services being introduced that would not have happened as fast without the changed environment created by the recession. But these examples fall short of fundamental change.

The fact that more change did not occur may have several root causes. For many this was a period of belt tightening and not a crisis. IT leaders may have assessed the platform for change the crisis created and concluded that it did not give them license to move more aggressively. Or, the absence of more institutions adopting more aggressive measures might be a sign that our respondents lack confidence in the solutions themselves. Many IT leaders may have concluded that the potential for savings was too uncertain or the magnitude too small relative to the risks and costs of adoption to significantly accelerate adoption of cloud computing, outsourcing, shared services, or more aggressive standardization of services within the institution.

The more pressing question is what might happen next. There is much discussion about the economy recovering to a new normal characterized by less consumer spending, slower growth, and higher than usual rates of unemployment. There is concern that the U.S. economy could experience a “double dip” recession if economies worldwide are unable to manage their debts. What might
this mean for higher education? Before the recession began, there was concern over the long-term sustainability of higher education’s finances. The rate of tuition increases continued to outpace inflation. Institutions had taken advantage of low costs of capital to significantly expand or modernize the campus physical plan. However, this expansion has created the need to divert an increasing portion of the operating budget to service debt. State support for higher education was declining before the recession, and falling state revenues will likely acerbate this problem. While the stock market has recovered some of its value, it is expected to take many years for endowments to recover their losses. So, higher education’s revenues will be constrained, and its costs will be susceptible to increases in interest rates, energy prices, and health care and retiree benefit costs.

Persistent structural problems and a slowly recovering economy are likely to sustain higher education’s focus on its costs for many years to come. In this regard, higher education IT organizations should sustain their focus on IT cost management and prepare for budgets that will grow slowly and may endure additional cuts. However, the coming years need not be a period of decline and retrenchment for IT. The long-term fiscal pressures institutions will face should increase their interest in using technology to address their most strategic issues. IT leaders have an opportunity to convince their institutions that technology is an area of investment and not just a cost to be minimized in tough budget times. IT will be highly relevant to institutions’ efforts to

- secure new revenue streams through online learning,
- improve the utilization of assets through more efficient administrative operations,
- improve student retention and reduce the time to graduation through better systems to track academic progress and improve advising, and
- leverage data and analytics to support improved decision making.

It behooves IT leaders to seize this opportunity to help their institutions to define the future by engaging in strategic IT planning processes, maintaining effective IT governance practices, and readying the IT organization with the skills and staffing to support new strategic initiatives in technology. At the same time, IT leaders can’t take their focus off IT cost management. Ongoing efforts to manage IT costs will help IT organizations regain the flexibility to invest in innovation and to seed initiatives to improve institutional productivity or support new revenue opportunities. Efforts to manage IT costs will help institutions to continue to realign their IT spending to reduce the costs of providing commodity technologies and redistribute resources to more strategic technology projects. Finally, such efforts will burnish the credibility of the IT organization and the IT leadership and open the door to greater success in asking for resources to invest in technology.

Endnotes

Introduction

What began as a decline in housing prices fast spiraled into one of the worst economic recessions the United States has ever experienced. By most measures of impact and duration, the economic decline of the past three years has been the worst since the Great Depression. It has cost more than 8 million jobs, reduced household income, and slashed the value of homes, retirement savings, and investment portfolios. Iconic corporate names including Lehman Brothers and Merrill Lynch have ceased to exist. Absent government intervention, they would have been joined by Citibank, General Motors, Chrysler, and AIG. Three years later, as signs of recovery emerge, there is still a prevailing sense of fragility and uncertainty regarding the economy.

Higher education has typically been sheltered from the worst effects of recession. As unemployment rises, enrollments typically rise. Adult learners go back to school to retool their skills. Traditional undergraduates pursue graduate degrees while waiting for the employment market to improve. Multiyear endowment spending rules shield operating budgets from too great an impact from any one year’s fluctuation in investment earning. However, the 2007–2010 recession was too broad and lasted too long for higher education to remain unscathed. Real impacts have been felt at most institutions. Faculty salaries rose at their lowest rate in 50 years during 2009–2010. Several public systems have implemented faculty and staff furloughs. State budget cuts have forced the Nevada System of Higher Education to consider closing colleges, combining departments, and eliminating programs. They are not alone. Similar conversations are under way in public systems in California, Utah, Colorado, and many other states. Private institutions have experienced steep declines in the value of their endowments. In 2009 alone, endowments lost nearly a fifth of their value, the worst performance in 40 years. Hiring freezes, repeated rounds of budget cuts, and staff layoffs have become the norm.

Concerns over the financial stability of higher education predate the beginnings of the recession. In 2006, the Council of Higher Education Management Associations surveyed leading administrators from a broad cross section of higher education. At that time, 40% of respondents identified insufficient financial resources as one of the three largest threats higher education faced. Mounting concern over the rate of inflation of tuition, declines in state support for higher education, and rising levels of institutional debt led many to question whether higher education’s financial model was sustainable. When the recession of 2007 burst the twin...
asset bubbles of housing and equities that higher education had come to depend on to sustain its tuition pricing and plug gaps in its operating budgets, these concerns seemed well founded.

**IT Is Not Immune**

When ECAR subscribers gathered for their annual symposium in December 2008, it was clear that something was different. From presentations to hallway conversations, the economic crisis was top of mind for all attendees. Focus groups conducted during the symposium revealed that many of the institutions represented at the meeting were already reducing their budgets. Some had endured multiple rounds of cuts, and virtually all expected budgets to continue to decline in the future. Budget cuts are certainly not a new phenomenon for institutions or their IT leaders. However, the rapidity of the cuts and the bleak forecasts heightened concerns for the future beyond that of a normal period of decline.

The last time ECAR studied the state of IT funding it was in the shadows of the 2001 terrorist attacks and the recession that followed. Our study, published in 2004, found that the fates of IT budgets were linked to the overall fiscal health of institutions. For example, funding levels had declined more and respondents’ confidence in future funding was lower among public institutions than at private institutions. Many public institutions had at that time suffered greater declines in available resources due to cuts in state appropriations. There were also warning signs that the recession, combined with the pace of technology expansion, had left many institutions without sufficient funds to nurture future innovations or sustain the technology they already had in place. IT budgets were increasingly fixed and inflexible in a technology environment that was becoming more dynamic. Participants in that study were also skeptical that any significant changes were on the horizon that would lower the costs of provisioning IT services.

Since 2003, IT funding has remained at the forefront of institutions’ concerns. In fact, since that time it has ranked no lower than third among the top issues of concern to respondents to the EDUCAUSE Current Issues Survey (http://www.educause.edu/issues). Prior to the recession, concerns over IT funding were likely attributable to growing demand for technology rather than falling levels of funding. With the onset of the recession, IT organizations looked like they would be confronted with both expanding demand and declining resources.

**IT Funding 2010: Crisis and Opportunity**

The nearly unprecedented scope of the 2007–2010 recession suggested that higher education IT was in for a far more difficult time than during and after the 2001 recession. In light of this, ECAR elected to renew its study of IT funding to understand how technology organizations were affected by the recession, how they responded, and what these changes portended for the future. The research also evaluated whether the economic crisis had created a platform for respondent institutions to seek more aggressive changes that otherwise would have been culturally or politically impossible. The notion that economic crisis is also an opportunity to address fundamental, intractable problems has become common thinking in business and government. Given higher education’s strong culture and conservative approach to change, we wondered to what degree the crisis would spur institutions to address more fundamental change in their IT operations and beyond.

With these objectives in mind, we designed this study of IT funding to help us further our understanding of the following questions:

- How have IT funding levels been affected by the recession among respondent institutions?
• What strategies did institutions follow to reduce their IT costs?
• Where have IT costs and expenditures been reduced, and how were those reductions accomplished?
• Are the budget reductions that have been taken sustainable or were they the by-product of a series of one-time actions?
• To what extent did institutions attempt to leverage the recession to substantially change the way IT services are delivered and managed?
• Were efforts at substantial change successful?
• How have cuts in IT funding impacted the capacity of our institutions to sustain their technology and meet their strategic technology goals?

We used both our survey and supporting qualitative research to explore whether budget cuts were affecting how institutions perceive technology. The corporate response to an economic downturn is often to replace labor with capital (e.g., technology) in order to trim expenses, increase productivity, and grow profits. Where the corporate sector sees technology as an investment, higher education has tended to see technology as a necessary cost of operations. Given the projected severity of the recession, we wondered whether institutions would begin to change the way they thought about the role of technology in the institution.

We also explored how the focus on cost management within institutions affected the influence and authority of the senior-most IT leader. We hypothesized that the budget crisis could unleash both forces that enhance and forces that diminish IT leader influence. Would influence grow as institutions turned to their IT leader to implement strategies to improve the institution’s use of technology to address its strategic issues? Or, would influence wane if institutions cut their IT investments and curtailed their ambition?

This report is organized around the major areas of inquiry that made up the research. Chapter 3 describes our research methodology. Chapter 4 discusses how IT funding has changed from FY2008 to the present. We juxtapose changes in IT funding and expenditures with changes in overall institutional budgets. We discuss the somewhat surprising finding that respondent institutions did not cut IT spending as deeply as we had expected, why we believe this occurred, and how it may have affected institutions’ overall approach to managing IT costs. In Chapter 5, we discuss the strategies employed by institutions that did have to cut their central IT operating budgets. We examine several different dimensions of cost management strategy. The first is the degree to which institutions sought to meet their cost reduction objectives by curtailing services or by preserving services but restructuring how they were delivered. We also report on the extent to which institutions with significant IT costs outside the central IT organization were focused on managing their total costs or just those incurred and controlled by the central IT group. The chapter also looks at the projected long-term impacts of the cuts institutions have implemented to date. We report institutions’ assessment of the sustainability of the cuts they have made and the implications for the adequacy of technology funding to sustain the reliability of their technology infrastructure, to foster future innovations, and to meet their technology goals.

In Chapter 6, we report on the specific cost management actions institutions have taken in the past two years. We look at the state of adoption of 37 different actions spanning all aspects of technology operations, including personnel management, IT financial management, the IT project portfolio, IT management practices, and the delivery of IT support services. We describe the patterns of adoption institutions reported across these various actions and attempt to discern the degree to
which institutions chose to focus on changes that were more directly within their control and produced relatively immediate benefits, versus changes that were more difficult to realize and produced benefits over a longer time horizon but that might produce more sustainable and substantial change. Chapter 7 analyzes how the recession impacted institutions’ perception of technology and the influence of the senior-most IT leader. We discuss the extent to which IT was treated as a cost center or area of investment as budgets declined. Finally, we report whether senior-most IT leaders perceive their ability to influence executive decision making as having been enhanced or constrained by the recession.

Finally, in Chapter 8 we discuss what the future may hold for the economy, higher education, and IT. We posit that higher education will experience its own version of a new normal in which a muted recovery in the national economy combines with pre-recessionary concerns regarding the sustainability of higher education’s financial model to refocus institutional leaders on a sustained, long-term need for higher education to reduce its costs. We discuss the role that technology can play in enabling strategies to reduce costs, improve productivity, and provide data to support more effective decision making. We close by proposing how this shift in institutional strategies and IT priorities could impact the future of the IT organization and how IT leaders should position themselves to help in shaping this future.

Endnotes

3. Ibid.
Methodology

This ECAR research study employed both quantitative and qualitative research methods to explore how higher education’s IT organizations have been affected by the recession of 2007–2010. Through an online survey, telephone interviews, and an online Delphi process, we solicited the experiences and opinions of IT leaders from more than 300 institutions. We explored how institutions altered their level of funding for technology in the wake of the recession, the tactics and strategies institutions employed to reduce IT costs and meet budget reduction targets, and study participants’ assessment of the implications of the recession for the future of technology at their institutions.

Research Methods

Our research had four major components: a literature review, a quantitative web-based survey of IT leaders at EDUCAUSE member institutions, follow-up phone interviews with select survey respondents, and an online Delphi with leading IT executives.

The literature review helped us to understand the scope of the recession and how it was impacting higher education. We also reviewed articles that described how organizations in multiple industries were reducing their IT costs. Finally, we leveraged articles and transcripts of panel discussions to develop a better understanding of higher education’s long-term fiscal outlook and its implications for IT funding.

The quantitative survey drew from questions included in ECAR’s 2004 research study. In light of the recession’s probable impact, we augmented the survey with many new questions devoted to the strategies and tactics respondents employed to manage their IT costs. A copy of the survey can be found at http://www.educause.edu/Resources/ITFundingCrisisManagementSurvey/189901. The survey invitation was sent to EDUCAUSE members in November 2009, and surveys were completed by the middle of December 2009. Survey invitations were sent to the 1,733 EDUCAUSE member institutions in the United States and Canada. We received 319 qualified responses (an 18.4% response rate). Appendix A lists the institutions that responded to the survey.

The qualitative interviews provided additional insights and explanations that complemented the quantitative survey findings. Twenty individual phone interviews were conducted with IT executives who had responded to the survey. Phone interviews focused on how and why institutional and IT budgets changed during the recession, the actions and experiences of respondents that achieved significant cost savings or substantially changed the way IT was managed at their institution, and the recession’s impact on senior-most IT leaders’ influence and the
importance of technology. A list of individuals interviewed is included in Appendix B.

Finally, we convened an online Delphi panel of IT leaders to discuss the implications of the economic crisis for higher education and technology’s role in shaping the future of higher education. The Delphi utilized a real-time, web-based Delphi tool provided to ECAR by its developer, Ted Gordon. It augments a traditional Delphi methodology with the ability for participants to comment on each other’s responses to questions and modify their own opinions in a web-based tool as the conversation evolves. The results of the Delphi panel are presented in a case study that accompanies this report.

Classification Schemes

To permit comparisons, we grouped institutions using categories defined in the 2000 edition of the Carnegie Classification of Institutions of Higher Education. To obtain adequate numbers of respondents for statistical and descriptive analysis, we combined the Carnegie 2000 classifications into the following categories:

- Doctoral (DR) institutions group the doctoral-extensive and doctoral-intensive universities together.
- Master’s (MA) institutions group the master’s colleges and universities I and II together.
- Baccalaureate institutions combine the three Carnegie 2000 baccalaureate groups.
- Associate’s (AA) institutions are the same as the Carnegie 2000 associate’s category.
- Other Carnegie institutions include specialized institutions and U.S. higher education offices.
- Canadian institutions are tracked in a separate, single category.

As ECAR has done in past studies, we analyzed and compared results along several other dimensions. Student full-time equivalent (FTE) enrollment was used as a proxy for understanding how an institution’s scale affected its responses. We also analyzed results based on respondents’ description of the degree to which IT at their institutions is centralized or decentralized. This was defined by respondents using a 5-point scale: highly centralized, centralized, balanced, decentralized, and highly decentralized. In addition, we assessed results on the basis of participating institutions’ goals for IT. Respondents were asked to place their institution’s goals in one of the following four categories:

- Provide reliable IT infrastructure and services at the lowest possible cost.
- Provide appropriate IT infrastructure and services to different users based on their need.
- Provide IT infrastructure and services that further the institution’s strategic goals.
- Provide IT infrastructure and services to create institutional competitive advantage.

In order to have sufficient numbers of respondents for analytical purposes, we sometimes combined the first two and the last two responses to create two larger categories of respondents, one with more tactical IT goals and one with more strategic goals.

Analysis and Reporting Conventions

We adhered to certain conventions in analyzing data and reporting the results:

- Some tables and figures presented in the study have fewer than 319 respondents and have been adjusted for missing information.
- Sums of percentages in some charts and tables may not add up to 100.0% due to rounding.
- We analyzed the data for each online survey question for differences in response patterns among Carnegie classes, private and public institutions, and institutions of varying size. Institutional size is determined by the number of FTE enrollments. We also looked for associations between other combinations of variables as appropriate. We noted differences that were both meaningful and statistically signifi-
cant in the text and/or the supporting figures and tables. Note that a statistically significant relationship between variables does not necessarily indicate a causal relationship.

- The Likert scales used in the online survey are footnoted in the tables and figures that show results for those survey questions.

Survey Adjustments

Based on feedback from the initial respondents to the survey, we recognized a need to clarify four of the survey questions. The questions pertained to the change respondents had experienced in their institutional, central IT, and total IT operating budgets during the past two years. We removed from the question a parenthetical comment intended to clarify which fiscal years we were inquiring about. The change was made to the online survey within the first days of its launch, and we noted which respondents had started or completed the survey before the change. We analyzed their responses and found no statistically significant difference from those who initiated the survey after the question text was amended. Therefore, we elected to use the data from all respondents in our analysis and chose not to report responses received before the modification separately.

Overview of Respondents

We distributed our IT funding survey to the EDUCAUSE institutional representative at each member institution. In most cases this was the chief information officer (CIO) or the senior-most IT leader. Of the 319 respondents, 311 were from the United States and 8 were from Canada. Figure 3-1 compares the distribution of survey respondents by Carnegie class to the EDUCAUSE membership and all higher education institutions in each category. Among all respondents, the largest portion of respondents was from master’s institutions, followed by nearly equivalent numbers from bachelor’s and doctoral institutions.

The views reported in the study are primarily those of senior-most IT leaders. The large majority (83.4%) of respondents were
the CIO or its equivalent at their institution. Other significant roles held by respondents were the deputy CIO (4.1%), a non-CIO vice president or vice provost (2.8%), a director of academic computing (2.2%) or administrative computing (1.6%), or the director of finance or business for IT (1.6%). The remainder held other administrative, academic, or IT management positions.

Typical of most ECAR surveys, the majority of respondents were from public institutions (see Figure 3-2). In the 2004 ECAR study of IT funding, we found multiple statistically significant differences in the IT budget changes and funding outlooks between public and private institutions. In the present study, institutional control was not as significant an explanatory variable. Respondents in 2010 were predominantly from smaller institutions. A small majority were from institutions with enrollments of 4,000 FTE or fewer. We note in the report areas where institution size had a meaningful relationship to respondents’ answers to our survey questions.

**Conclusion**

We caution the reader not to extrapolate the study findings to the entire population of higher education institutions. Our survey methodology does not support a conclusion that the experiences of survey respondents are representative of the experience of all institutions. With more than 300 responding institutions of varying size, missions, and IT goals, it is, however, a meaningful population to study to gain insights into how the recession has affected higher education. The magnitude of the fiscal impacts and the tactics employed by respondents to trim IT costs are aligned with the broader literature about the impact of recessions on higher education, approaches to IT cost management, and the expectations of the higher education leaders we consulted during our research.

**Endnotes**

2. Ibid, p.10
Key Findings

- Nearly 70% of respondents reported that their total budgeted expenditures for technology were flat or had declined from FY2007–2008 to FY2009–2010.
- There was a statistically significant association between changes in respondents’ central IT budgets and changes in their institutions’ total operating budget.
- The primary reasons respondents most frequently selected to explain why their central IT operating budgets have grown since FY2007–2008 were to sustain basic IT infrastructure, to support a project already under way, or to resource an increase in the scope of responsibilities of the central IT organization.
- A slight majority (53.5%) expect a major or minor decrease in total central IT budget (operating and capital) for FY2010–2011, with most of these respondents expecting the decrease to be minor.

Economic recessions sometimes impact the finances of higher education in contradictory ways. Recessions reduce state tax revenues, and this typically foreshadows a drop in state funding for public institutions. Declines in investment returns reduce endowment income that many private colleges depend on to fund significant portions of their operating budgets. Depending on the prevailing fiscal policy, recessions sometimes result in lower spending at the federal level in areas important to higher education, such as sponsored research. Prolonged recessions are also a drag on annual giving by donors.

On the flip side, recessions can also increase federal spending for research and construction in order to stimulate the economy. Higher levels of unemployment and decline in security for the employed likewise increase the number of students seeking full- or part-time enrollment in higher education. As long as students can access loans and federal financial aid, there is an opportunity for colleges and universities to increase their revenues.

The depth of the global recession of the past two years has been well documented. The litany of depressing and declining statistics has been seared into our collective consciousness. The “Great Recession” and the resulting
efforts by government to stimulate recovery have brought to higher education all of the typical forces of an economic downturn. The deep drops in the stock market created a sharp decline in endowment income, and this has left private universities in particular confronting the loss of tens of millions of dollars of annual income. It is estimated that the value of college endowments declined by an average of 23% from 2008 to 2009, the worst results in almost 40 years. Moody’s estimates that higher education lost $120 billion of investment value in the period from July 2008 to April 2009 alone.¹

Prior to the recession, state support for higher education had been flat or growing slowly. A report published by the National Association of College and University Business Officers (NACUBO) on the impact of the recession on higher education reported that aggregate state support for higher education on a per capita basis in 2007 had increased 3.9% over 2006 levels. This increase followed a four-year period of relatively flat public support.² The sharp fall in tax revenues and increased demand for social services have stretched state budgets and accelerated this broader trend. At the time of publication of the NACUBO report, 27 states had significant budget shortfalls and 21 had implemented or proposed cuts to public university budgets of 5% to 15%.³ The net result is that many public colleges and universities have fewer resources at a time when more students are seeking enrollment.

The recession has also raised institutional costs. As the financial sector teetered on the brink of paralysis or collapse, the cost of institutions’ variable debt rose significantly. Some institutions have seen their debt ratings downgraded, and this also increases the cost to borrow. Coupled with declines in endowment values, many private institutions have begun to see the cost to service their debt rise just as the capacity to continue to borrow becomes severely constrained.⁴

Increased cost to service debt is not the only pressure point on higher education operating costs. For the years leading up to the recession, rising health care and energy costs were also straining institutional budgets. According to the U.S. Bureau of Labor Statistics, health care costs have been rising between 3% and 5% per year in the United States for the past 10 years.⁵ Given that compensation is such a significant portion of institutional operating costs, any rise in health care costs and insurance premiums likely crowds out other types of spending. In addition, although the recession may have slowed the rise in energy prices, the period prior to 2008 saw sharp increases in the price of oil and electricity.

Finally, for reasons of mission and public perception, private institutions have tried to slow the rate of growth in tuition and increase the availability of institutional aid to help students and families to afford college. This further stresses the non–financial aid portions of the budget to produce the cost savings necessary to offset income declines and enable greater investment in aid.

The news has not all been bleak. The recession triggered increased levels of federal spending in an attempt to stimulate the economy. The American Recovery and Reinvestment Act and other federal spending programs have improved funding in several areas that impact higher education, including research, the creation of electronic medical records, construction spending, and subsidies to states to help them stave off deficits. It is estimated that the federal stimulus programs could provide between $50 billion and $100 billion of added funding for higher education in 2009 and 2010.⁶ While likely not enough to offset the impacts of recession, the stimulus has softened the financial blow.

In this chapter, we analyze how the recession’s negative and positive financial forces netted out to impact respondents’ institutional and IT spending. We examine the extent to which the fate of IT spending in recent years
has followed changes in overall institutional budgets. The chapter begins by orienting the reader to the magnitude of respondents’ current spending on IT. Then, we look at how the available capital and operating resources for IT spending have changed and how that change compares with changes to overall institutional budgets. Finally, we look at what effects the changes in available resources for technology have had on how respondents allocate their resources among the many functions and services provided by their central IT organizations.

**IT Budgets**

To put the magnitude of changes to IT spending levels that may be attributable to the recession in context, we first asked respondents to quantify their overall technology spending. Respondents reported budgets for FY2009–2010 by category. To capture the resources available for spending by the institutional IT organization, respondents reported their central IT operating budget. We also asked respondents to report their budget for institutional capital expenditures for IT or their central IT capital budget. Finally, respondents reported their total budgeted expenditures for IT for the fiscal year. This measure captures funds available for spending by all IT units from both capital and operating budgets.

Respondents predominantly represented small to medium-sized institutions and IT organizations. Half were from institutions with student enrollments of 4,000 or fewer. A similar proportion of respondents were from institutions with an annual operating budget of $80 million or less. The scale of respondents’ institutions was reflected in their IT spending. The majority (51.2%) reported total budgeted expenditures for IT during FY2009–2010 of less than $4 million, with a quarter (27.6%) of respondents reporting budgeted expenditures of less than $2 million. Technology expenses are typically funded from two primary sources: an operating budget and a capital budget. The majority of respondents reported relatively small capital budgets for technology. Central IT capital budgets for the current fiscal year (2009–2010) for the majority of respondents were less than $1 million, and three-quarters had capital budgets for technology of under $2 million.

Most respondents considered IT at their institution to be fairly centralized. About three-quarters of respondents (77.4%) described IT at their institution as centralized or highly centralized. A small minority of respondents (9.7%) described IT as decentralized or highly decentralized. In light of their structure, it is understandable that for most respondents the central IT operating budget was the lion’s share of their institution’s total IT spending. For the majority of respondents, central IT capital budgets and non-central IT budgets (capital or operating) were small in comparison. Figure 4-1 reports the distribution of respondents by the size of their central IT operating budget and their total budgeted expenditures for IT from all sources (capital, and operating for both central IT and non-central IT). Both report on the 2009–2010 fiscal year.

We anticipated that institutions would have difficulty providing accurate approximations of their total budgeted expenditures for IT. Our experience has been that few senior IT leaders have visibility into IT spending that occurs outside the central IT organization unless they have set up data collection systems specifically to track this information. Our analysis revealed that a portion of respondents reported total budgeted expenditures for IT that appeared to be less than the sum of their approximations of the central IT operating budget and the central IT capital budget. This result may be partially indicative of the challenges institutions face in providing an accurate estimate of total IT spending. However, we think that other factors contributed to this anomaly in our data. First, the way our response choices were coded might have created an appearance
that institutions were reporting a smaller total
budget when in fact they were not. Second,
it is possible that some respondents may
have focused only on operating spending and
omitted the IT capital budget when approxi-
mating their total budgeted expenditures for
IT. Regardless, we have chosen only to report
total IT budgeted expenditures as a descrip-
tive finding here. For analytical purposes we
focused on respondents’ approximation of
their central IT operating budget and their
estimate of the change in that same budget
over the past two years. It is our belief that
respondents to the survey were in the posi-
tion to provide the most accurate evaluation
of the scale of and change to this measure of
IT spending, since it is the budget they most
directly control.

Changes in IT Funding Levels
To understand how the economic crisis
affected funding for IT, we asked respondents
to indicate the cumulative percentage change
in their total institutional operating budget
and contrast that with the institution’s change
in size of the central IT operating budget7
and total IT spending from all budgets from
FY2007–2008 to FY2009–2010. We chose
FY2007–2008 as a baseline year because for
many institutions it represented the last insti-
tutional budget year prior to the recession.
Subsequent budgeting had occurred against
the backdrop of what had been until the time
of the survey a worsening economic picture.

A review of the change in central IT budgets
since FY2007–2008 confirmed that for the
majority of respondents, the past two years
has been a period of constrained funding.
Nearly 70% of respondents reported that their
central IT operating budgets were flat over the
two-year period or had declined. Table 4-1
illustrates the change in central IT operating
budgets and the change in total IT spending
from all budgets respondents experienced

Institutional differences were not a signifi-
cant factor in explaining the changes in
respondents’ central IT budgets and total IT expenditures from all sources. Carnegie classification, enrollment size, and respondents’ reported institutional goal for technology did not have a statistically significant relationship to their reported change in central IT operating budgets or the change in total IT spending. The absolute size of the respondent institution’s total IT spending (all budgets) was also not a predictor of how the central IT operating budget changed.

Why Didn’t Budgets Decline More?

The number of institutions with declining budgets and the magnitude of the decline surprised us. We did not anticipate that nearly a third of respondents (31.1%) would report that their central IT operating budget had increased. We had expected the availability of stimulus funds and increased tuition revenues to offer some cushion against the decline in institutional operating budgets, which in turn could lessen the impact on IT budgets. However, we did not expect that 30.5% of institutions would appear to have escaped cuts to their institutional operating budgets. We also expected the magnitude of the decline in institutional and central IT operating budgets for those who had experienced cuts to be even more severe.

Several of the IT leaders we interviewed concurred that absent other changes, budget cuts would have been much worse. Penny Cox, associate vice president for IT at the University of Kentucky, shared that the American Recovery and Reinvestment Act helped mitigate the recession’s impact at her institution. Cox said, “The economic downturn has had a moderate immediate impact because federal stimulus dollars have provided temporary fixes to the problems of state budget cuts.” John Dalby, chief information officer at Lewis University, echoed Cox’s observation that things could have been worse. Dalby explained, “Financially, Lewis has not felt the economic downturn as acutely as other institutions. Our leadership follows very conservative fiscal practices, and we have been careful not to become dependent on the endowment to fund day-to-day operations.”

Betsy Tippens, assistant vice chancellor for information technologies at the University of Washington Bothell, credits her institution’s enrollment strategy for lessening the impact of the recession. Tippens said, “Luckily, when the state budget crisis occurred, our institution was slightly underenrolled. We implemented an aggressive student recruitment and marketing push that enabled the institution to become fully enrolled and then slightly overenrolled. The extra income this has generated has mitigated the decline in state support.”

Some respondents faced steep cuts in funding. About 10% of respondents experienced two-year cumulative cuts of 15% or more in the size of the central IT operating budget. We are also sensitive to the fact that even a 5% cut to an IT budget that may be largely committed to keeping core

<table>
<thead>
<tr>
<th>Change in Budget</th>
<th>Total IT Spending (All Budgets) (N = 280)</th>
<th>Central IT Operating Budget (N = 305)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decrease of 10% or more</td>
<td>22.5%</td>
<td>23.3%</td>
</tr>
<tr>
<td>Decrease of 5–9%</td>
<td>14.3%</td>
<td>15.4%</td>
</tr>
<tr>
<td>Flat to 4% decrease</td>
<td>35.4%</td>
<td>30.2%</td>
</tr>
<tr>
<td>Increase of 1–4%</td>
<td>13.2%</td>
<td>15.7%</td>
</tr>
<tr>
<td>Increase of 5% or more</td>
<td>14.6%</td>
<td>15.4%</td>
</tr>
</tbody>
</table>
technologies functioning has a significant impact. On the other hand, for all but the leanest of organizations, a 5% cut in budget can be absorbed without requiring major restructuring or significant cuts in service. So, our analysis begins from a starting point at which nearly a third of respondents saw their central IT operating budgets grow and 21.3% had their budgets decrease by 5% or less over the two fiscal years. In later chapters, we discuss how the magnitude of required cuts might have influenced the range of cost reduction strategies respondents have employed.

At this point, we must caution the reader that we do not claim that our respondents are representative of what has happened across all of higher education. Our results describe only the experiences of the institutions that responded to the survey. As the opening of this chapter points out, higher education has faced and continues to face some very significant economic challenges. Some of the most well-resourced institutions have announced repeated rounds of deep budget cuts and the need to make even more reductions. Methodologically, we know that our respondents are not statistically representative of all higher education (see Chapter 3). It is also possible that our results are somewhat biased. Institutions that have experienced deeper cuts to their budget may not have had the time or inclination to complete the survey as did institutions dealing with less severe cuts. We will continue to explore other potential explanations for the changes in budgets our respondents experienced throughout the remainder of the chapter.

While changes in funding for most respondents were not too severe, they do differ from those of recent history. For example, the 2008 EDUCAUSE Core Data Survey reported that from FY2004 to FY2008, total central funding for IT for respondents had increased at a level sufficient to keep pace with enrollment growth and inflation. So, the flat-to-declining budgets that respondents to the ECAR survey reported represent a deviation from the recent past and do suggest that institutions are serving more students and absorbing inflation growth with fewer resources. Further, ECAR research conducted after the most recent prior recession in the United States found IT budgets less affected by recession than our current study has found. Among the 2004 survey respondents, 22.3% reported that their central IT budgets had declined from FY2001 to FY2003. This was the period immediately following the September 11, 2001, terrorist attacks and the burst of the dot-com bubble. The comparable percentage of respondents from the present survey population was 53.4%. While the composition of the respondents to the two surveys differs, the aggregate results suggest that the current recession has indeed had a more significant impact on institutions’ IT spending.

**Budgets Declining by 15% or More**

As previously mentioned, we found a minority of respondents who faced relatively larger declines in funding for IT. There were 31 respondents who reported a two-year decline (FY2007–2008 to FY2009–2010) in total institutional IT spending from all budgets of 15% or more. Twenty-one of the 31 reported that the decline was 20% or more. These same respondents also reported declines in their central IT operating budget of similar magnitude. The cumulative two-year decline in central IT operating budget from FY2007–2008 to FY2009–2010 for 20 of the 31 respondents was 20% or more, and none experienced a two-year decline in central IT operating budget of less than 5%.

**Institutional Budgets and IT Budgets**

IT budgets appear to have followed their institution’s overall operating budget. There was a statistically significant asso-
iation between changes in respondents’ central IT budgets and changes in their institutions’ total operating budgets. For most respondents, technology spending was not a target for deeper cuts (or greater increases), nor was it an area shielded to any great extent from the fate of other institutional operating budgets.

The percentage of respondents reporting decreases in their overall institutional budget was similar to the percentage reporting declines in the central IT operating budget. The majority of respondents (69.5%) reported that their institutions’ total operating budget had been unchanged or declined since FY2007–2008. This includes nearly half of respondents who reported a decline of at least 5%. As reported in the prior section, a portion of respondents reported two-year increases to both their institutional operating budget and their central IT budget.

Table 4-2 illustrates the extent to which respondents’ institutional operating budgets and central IT budgets changed similarly over the past two fiscal years. As one would anticipate, the vast majority of respondents (86.5%) who reported a decrease in their central IT budget also reported that their overall institutional budget had decreased. We observed a similar relationship between increased central IT budgets and increased institutional operating budgets. More than two-thirds of respondents who reported a two-year increase in the size of the central IT operating budget also reported that their overall institutional budget had increased. We observed a similar relationship between increased central IT budgets and increased institutional operating budgets. More than two-thirds of respondents who reported a two-year increase in the size of the central IT operating budget also reported that their institution’s operating budget increased over the same period. There were a few exceptions to this relationship. Twenty institutions reported that their central IT operating budgets increased at a time when their overall institutional operating budget was in decline. However, these respondents were too few for us to draw meaningful conclusions as to why their IT spending grew.

Why Have Some IT Budgets Increased?

As previously acknowledged, we had not anticipated that many of our respondents would have experienced a budget increase. We asked respondents who reported that their central IT operating budgets had increased to identify the primary reasons. For most, the IT budget appeared to have been increased to pay for required commitments to expand or sustain technology operations. From a list of seven potential reasons, respondents’ most frequently selected reasons were to sustain basic IT infrastructure, to support a project already under way, or to resource an increase in the scope of responsibilities of the central IT organization (Table 4-3). Given this set of reasons, it is possible that some respondents enjoyed increased budgets as part of a multiyear investment approved and funded in years prior to the economic downturn. If these initiatives were large infrastructure projects funded by debt already assumed by their institutions, they may have been exempted from budget-cutting exercises. Or, projects that were already under way may have been too far along to effectively halt in order to recoup any immediate savings. Given contractual commitments for equipment and services required by projects, it just might not have been practical for respondents to reduce their IT spending.

It is also possible that respondents saw the investments they were making as essential and were not prepared to give them up even as budgets tightened.

The increase in IT spending for most was not intended to catalyze cost savings in other areas. Slightly more than 10% of respondents reported that one of the top-three reasons for the increase in their central IT funding was an explicit investment designed to produce savings in other areas of the institution’s budget or as part of a strategy to reduce total institutional IT costs. For most respondents, this would seem to preclude an explanation that the IT budget was increased to enable
the organization to invest in strategies that reduce the total cost of IT such as virtualization, server consolidation, or the elimination of redundant applications. Or, if investments were made in tactics such as these, they were done under the broader rubric of sustaining infrastructure (see Table 4-3). We will examine the adoption of these strategies in greater detail in Chapter 6.

We looked beyond respondents’ stated reasons to further our understanding of why more budgets increased than we hypothesized. The way we gathered our data may be part of the explanation. We asked respondents to report a cumulative change in budgets from FY2007–2008 to the present. It is likely that for some of our respondents, FY2007–2008 and FY2008–2009 were still “normal” budget years. The recession is thought to have technically begun in December of 2007 or at the midpoint of FY2007–2008. The steep decline in the stock market began about a year later. Many institutions may have had normal budget increases to begin FY2007–2008 and did not experience budget cuts until FY2008–2009 or FY2009–2010. If this was the case, respondents to our survey may have had a year of growth followed by a flat or declining budget. However, the net impact over the multiyear fiscal period for some could still be a cumulative increase.

Interviews with IT leaders who reported that their central IT operating budgets had increased deepened our understanding of why budgets increased. These leaders spoke of the need to increase IT funding to complete major projects or to address chronic issues in technology caused in part by historical underfunding of IT. Joe Sargent, executive director for information and educational technologies at Walters State Community College, provided one such example. Sargent said, “We are focusing increased IT spending to sustain an ongoing ERP system implementation. Without incremental funds, the ERP project was going to drain our resources and curtail our ability to fund normal equipment maintenance and replacement.” Christopher Wessells, vice provost and CIO at the University of San Diego, pointed to his institution’s efforts to modernize technology as the reason for budget increases. Wessells explained,

### Table 4-2. Change in Central IT Operating Budget, by Change in Institutional Operating Budget

<table>
<thead>
<tr>
<th>Change in Institutional Operating Budget</th>
<th>Decrease (N = 148)</th>
<th>Remain the Same (N = 44)</th>
<th>Increase (N = 85)</th>
<th>Total (N = 277)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decrease</td>
<td>86.5%</td>
<td>34.1%</td>
<td>23.5%</td>
<td>58.8%</td>
</tr>
<tr>
<td>Remain the same</td>
<td>3.4%</td>
<td>40.9%</td>
<td>8.2%</td>
<td>10.8%</td>
</tr>
<tr>
<td>Increase</td>
<td>10.1%</td>
<td>25.0%</td>
<td>68.2%</td>
<td>30.3%</td>
</tr>
</tbody>
</table>

### Table 4-3. Top-Three Reasons for Increased Funding of the Central IT Organization (N = 224)

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage Selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required to sustain basic IT infrastructure</td>
<td>80.0%</td>
</tr>
<tr>
<td>Required to complete major projects already under way</td>
<td>50.5%</td>
</tr>
<tr>
<td>Scope of responsibilities of the central IT organization has increased</td>
<td>46.3%</td>
</tr>
<tr>
<td>Other</td>
<td>20.0%</td>
</tr>
<tr>
<td>Investment to enable reduction in total institutional spending</td>
<td>12.6%</td>
</tr>
<tr>
<td>Investment to enable growth in institutional revenues</td>
<td>12.6%</td>
</tr>
<tr>
<td>IT budget had already been significantly reduced prior to FY2008</td>
<td>7.4%</td>
</tr>
<tr>
<td>Investment to enable reduction in non-IT institutional operating costs</td>
<td>6.3%</td>
</tr>
</tbody>
</table>
“Previously [under a prior administration] we had underfunded technology and our infrastructure was not up to par. There was a recognition that we needed to invest to close the gap. For the past four years, the university has funded a major overhaul of the infrastructure and a complete rebuild of the wired and wireless networks. We also replaced our legacy student system and implemented many other new systems.”

John Dalby of Lewis University indicated that for his institution, increasing IT funding was a matter of strategy. Dalby told us, “We had already significantly upped our investment in technology to enable us to build a stable infrastructure. However, it became clear that we needed to increase our investment in technology again to support more mission-critical areas such as teaching and learning technologies. These investments are consistent with our institutional aspiration to be a leading Catholic university in the Midwest.”

As discussed in the introduction to this chapter, ARRA also likely muted the impact of the recession on institutional operating budgets. This in turn may have enabled institutions to forestall or reduce cuts in individual department budgets such as central IT. ARRA funds also helped states to mitigate some of their deficits and likely delayed or prevented cuts to public higher education. Finally, it is also possible that the countercyclical (or revenue-positive) impacts that recessions have on higher education outpaced the revenue-negative impacts. The increased availability of student aid, coupled with efforts to hold down tuition increases, is thought to have held enrollments stable even through the worst of the recession.11

Endowment losses were felt hardest among a relatively small percentage of private institutions. While endowment size was not a question we asked respondents, we suspect that other revenue streams were more important to the majority of our respondents.

**Allocating Scarce Resources**

Chapters 5 and 6 present a detailed discussion of how changes in IT funding affected respondents and describe the measures they have taken to reduce IT costs. In this chapter, we begin the discussion of IT’s response to the economic downturn by looking at how various components of the IT budget have fared in the past two years. We asked respondents to report how their central IT organization’s spending levels have changed for major technologies and technology services (including project spending). Specifically, we sought to understand whether respondents had treated all functions equally or had differentiated by investing more significantly in some functions while decreasing investment in others. We asked respondents to evaluate how their level of spending in 11 broad areas of technology had changed over the past two years, FY2007–2008 to FY2009–2010. Respondents were directed to include projected spending for the remainder of this fiscal year as well as actual expenditures to date.

Overall, the results suggest that with a few exceptions, declines in spending were meted out fairly evenly to all areas. We also saw evidence that respondents looked to IT administration as a place to absorb deeper cuts, presumably because it was directly under the IT leader’s control and it had the least negative impact on service to constituents. This may also have been an area that contained some of the most controllable expenditures and quickly realized sources of savings such as budgets for memberships, conferences, travel, and training. We also saw evidence that respondents tried to avoid increasing the level of risk in their central IT organizations by preserving or increasing investment in areas such as security.

**Changes in Spending Among All Respondents**

As Table 4-4 illustrates, there was some modest differentiation in spending changes among the areas. Respondents on average
increased spending on IT security, network infrastructure and services, and web support services. However, the increases were slight. No area had a mean change of greater than 3.32 (between no change and minor increase) on our 5-point scale. For the six areas for which respondents on average reported a decline in spending, the declines were also relatively minor. The greatest relative declines in spending (lowest means) were reported for help desk, administration of the IT organization, and desktop computing support. The means reported were between “stayed the same” and “minor decrease.”

Looking at the distribution of responses for each technology area among all respondents reveals that a third or more instituted minor or major decreases in spending in the areas of administration of the IT organization (35.1%), academic computing (31.0%), and desktop computing support (36.3%). For all other areas, fewer than 30% experienced a decrease in spending. We also noted a somewhat higher standard deviation for changes in spending for network infrastructure and administrative information systems. Both of these items had larger proportions of respondents indicate that they had greatly increased spending than most of the other categories. In fact, 9.8% of respondents reported a major increase in spending for network infrastructure and services, and 7.6% reported a major increase in spending for administrative information systems. These results seem to be further evidence of our hypothesis that some institutions were in the midst of significant investment in large infrastructure projects or were upgrading their technology capacity at the time of the recession.

The largest mean decline in spending was for the administration of the IT organization. This area had the highest percentage of respondents who reported a major decrease in expenditures (7.6% major decrease, 27.5% minor decrease). We have already speculated that this area was singled out by some for deeper reductions because it offered an opportunity to absorb budget cuts without directly impacting services or service levels. In addition, some IT leaders might have felt it symbolically important to extract as much budget reduction as possible from the administration of the organization before reducing any core services. Still others might have found this a place in which cuts could be accomplished quickly.

Respondents might have focused on desktop computing as a source for reduced spending because its costs are more variable and controllable than other parts of the budget. Desktop computing costs are fairly
sensitive to service levels, such as response time and hours of support. These connections provide IT leadership with the flexibility to make incremental changes in services that yield budget reductions that can be realized relatively faster than in other areas of IT.

There were four areas for which about a third of respondents reported minor or major increases in spending. Two of them, instructional technology (30.5% minor or major increase) and network infrastructure and services (39.2%), represent potential strategic investment, while a third, IT security (37.0% minor or major increase), demonstrates interest in risk management. The fourth area for which a sizable minority increased spending was administrative systems (32.7% minor or major increase). In this area, rising costs can be outside the institution’s control (e.g., contracted hardware and software maintenance). It is also a potential target for strategic investment to improve the overall institution by, for example, improving analytical capacity, automating business processes, and improving service. Investments in these kinds of improvements could be used to facilitate cost savings in other parts of the institution.

Admittedly, relatively few respondents identified investment to facilitate cost reduction as a major cause of increased central IT budgets. It is likely that the increases in spending reported here reflect a mix of intentions, including remediating older technology, extending capabilities, and investing to generate other operating efficiencies within the institution.

Changes in Allocation of Spending Where IT Budgets Declined

Among respondents who experienced a decrease in their central IT operating budgets, the changes in levels of central IT spending by area were not dramatically different from those of the survey respondents as a whole. Mean change in spending was a decline for all areas except IT security (see Figure 4-2).

Whether an institution’s central IT operating budget increased or declined during the past two years bore some relationship to how it allocated its resources among the 11 areas. The strongest associations we observed were in the areas of administrative information systems, network infrastructure and services, and administration of the IT organization (Figure 4-3). For these areas, we found a significant difference between the two-year change in spending reported by respondents with overall increased central IT operating budgets and those with declines. Respondents with overall operating budget increases for central IT reported mean changes in two-year spending for network infrastructure and administrative systems that approached a minor increase. In contrast, respondents with central IT operating budget declines reported a decline in spending for these same areas. The increase in spending for network infrastructure and administrative systems among respondents with overall increases in their IT budgets seems consistent with the early assumption that many of these institutions may have experienced budget increments because they were remediating important infrastructure or completing major projects.

The association we observed between the two-year change in spending for administration of the IT organization and the change in central IT operating budget also seems logical. Among institutions that experienced an overall reduction in central IT operating budgets, the mean change in spending for IT administration was 2.40, or between no change and a minor decline. While not as large a mean increase as in the other two areas of spending, the mean change among institutions with central IT operating budget increases was 3.31, or between flat and a minor increase. We observed earlier that administration of IT was likely a place that institutions turned to first to confront their budget reductions.
Expectations for the Future

Past is prologue for the majority of respondents when it comes to their future IT budgets. We asked respondents to state their expectations for their combined central IT operating and capital budgets for FY2010–2011 (Figure 4-4). A slight majority (53.5%) expect a major or minor decrease in total central IT budget for FY2010–2011, with most of these respondents expecting the decrease to be minor. Another quarter of respondents (24.2%) expect their budgets to remain flat. The budget speculation respondents offered seemed reasonably well informed. In fact, three-quarters of respondents (76.1%) agreed or strongly agreed that they were well informed about the fiscal outlook for their institution for 2010–2011.

In the near term, many of the respondents with central IT operating budgets that have grown expected their budgets to hold at current funding levels or grow slightly. Respondents who have enjoyed increased budgets were more optimistic than those whose IT budgets had been reduced. As Table 4-5 illustrates, among respondents who reported an increase in the central IT operating budget since FY2007–2008, 43.2% anticipate a minor or major increase in the total central IT budget in FY2010–2011. In contrast, only 9.2% of respondents who experienced a decrease over the past two years are anticipating an increase in the coming fiscal year.

Tim Chester, Pepperdine University vice provost and CIO, looked beyond one year
Figure 4-3. Two-Year Change in Selected Areas of Central IT Spending, by Change in Central IT Operating Budget (FY2007–2008 to FY2009–2010)

- Administrative Information Systems
- Administration of the IT Organization
- Network Infrastructure and Services

Central IT budget decreased (N = 161)
Central IT budget remained the same (N = 47)
Central IT budget increased (N = 93)
All respondents (N = 302)

* Scale: 1 = major decrease, 2 = minor decrease, 3 = stayed the same, 4 = minor increase, 5 = major increase

Figure 4-4. Anticipated Change in Total Central IT Budget (Capital and Operating) in FY2010–2011 (N = 318)
and saw cause for concern: “We have come through our budget cuts and are stabilized now, but I don’t believe we are through emphasizing expense reduction. I am watching finances carefully, because I recognize the tremendous pressure that higher education is under to keep tuition increases at the rate of inflation. I am also worried that a substantial increase in the rate of inflation could send the economy back into a decline.”

Respondents from public institutions were more pessimistic about the next budget year. Almost three-fourths (73.4%) expected their FY2010–2011 total central IT budget to have a major or minor decrease over present levels. By comparison, fewer than a third of respondents from private institutions (29.5%) reported similar expectations. In fact, a sizable proportion of respondents from private institutions (37.4%) expect a minor or major budget increase in FY2010–2011. The University of Kentucky’s Penny Cox confirmed that given the budget climate in her state, future cuts are expected. Cox explained, “We are estimating that our budget will be reduced an additional 10% to 12% in the next two years, and there is nothing on the horizon to suggest that this projection will be wrong. We are preparing as if budget cuts are a long-term proposition.”

Expectations for the future among public institutions are likely shaped by the outlook for individual states. For example, Anthony Adade, CIO for Elizabeth City State University, offered a contrarian view of the future. Adade told us, “I think the overall economy and the state’s [North Carolina’s] fiscal picture are improving. The worst seems to be over, and we expect budgets to stabilize and maybe even increase.” Overall, though, it appears that among our respondents the concern over continued declines in state funding trumps private institution concerns about the multiyear impact of declines in endowment returns.

**Summary**

The economic crisis has tightened budgets for the majority of respondents. Even for those who have enjoyed budgets that have continued to increase, we suspect that much of the increment was absorbed by inflation or growing IT responsibilities. In fact, we will see in subsequent chapters that some of these respondents still needed to reduce their costs in other aspects of their IT operations. However, it is also true that most of the budget cuts that had to be absorbed required the tightening of proverbial belts but fell short of requiring wholesale changes.

We know that among our respondents some experienced or are preparing for deeper cuts. These institutions have likely had to make difficult decisions. As we will see in the next chapter, some are concerned that their technology is less reliable and able to meet institutional needs as a result of their currently reduced funding levels. We are also sensitive to the fact that behind these numbers are staff who have lost their jobs, been furloughed, or had their compensation otherwise reduced. We do not seek to look past the severity of the impact that the recession has had on these institutions or individuals. The aggregate results, however, do not portray a budget crisis that in and of itself would call for radical change. Budget
cuts among our respondents are not of an unprecedented magnitude, and they can be addressed through traditional budget management techniques such as spending freezes, cuts to discretionary budgets (e.g., training and travel), or small degradations in services (e.g., reduced hours of operations). On the other hand, most respondents do not seem to feel that their budget challenges are going away quickly. A small majority anticipate further declines in funding for central IT.

In the chapters that follow, we will explore how institutions feel their technology capabilities have been impacted by the magnitude of the cuts they have absorbed. We will also discuss the strategies that institutions have used to reduce and restructure their IT costs. The aggregate budget results we see in this chapter foreshadow a relatively more conservative and modest approach to IT cost management. Whether in response to deeper cuts already absorbed, the anticipation of worsening funding levels, or a proactive attempt to leverage the crisis to improve IT management practices, we will see that some institutions have pushed a more aggressive cost management agenda.

Endnotes
3. Ibid., 4
6. Moody’s, U.S. Colleges and Universities.
7. Unless otherwise noted, “central IT budgets” as used in this chapter refers to operating budgets.
8. For example, Brown University and Dartmouth College have reported publicly on their websites the need to reduce their operating budgets substantially.
Responding to the Fiscal Crisis

Annual income twenty pounds, annual expenditure nineteen six, result happiness. Annual income twenty pounds, annual expenditure twenty pounds ought and six, result misery.
—Charles Dickens, David Copperfield

Key Findings
- To a great degree respondents and their organizations were able to influence how their IT costs were reduced.
- The majority of respondents who were actively engaged in reducing IT costs attempted to do so without reducing services or service levels.
- Issues pertaining to organizational culture were the barriers to reducing IT costs most frequently selected by respondents.
- The central IT budget decreases that respondents have experienced have had only a modest impact on their likeliness to source IT services differently, either to the cloud, another institution, or other third party.
- Most of our respondents did not believe that the economic crisis had catalyzed fundamental change in how IT is managed.
- Respondents at institutions whose central IT operating budgets had declined reported significantly lower mean agreement that funding was adequate to respond to new user needs and implement their IT strategy than those from institutions whose budgets had grown.

It is little surprise that the majority of respondents have been actively engaged in IT cost management efforts. Even in the best of times, technology organizations routinely find themselves under pressure to stretch their budgets to sustain ongoing operations and meet new needs. Paradoxically, the more successful IT organizations are at promoting technology adoption, the more financially constrained they become unless they can continuously improve their efficiency. As the breadth and complexity of implemented technology grow, maintenance activities stake a greater claim to the IT budget and less is left to spur new innovation. Moore’s law mutes some of this impact, and for a long time institutions had revenue streams from telephone systems to create discretionary resources for investment. However, even before the recession, these sources were dwindling and institutions were challenged to find ways to meet new demands without increased funding. ECAR's 2004 study of IT funding found that between 70% and 90% of respondents' budgets were allocated to fixed costs.1
Declining budgets have exacerbated the need for IT organizations to make cost reduction a central part of their agenda. Many respondents to our survey took actions to meet required budget reductions. Perhaps in anticipation of future cuts, others employed cost management strategies even though their central IT operating budget had increased or remained flat. A few respondents may have seen opportunity in crisis and instigated changes that otherwise might not have been possible.

This chapter and Chapter 6 describe the steps respondents have taken to reduce their IT costs, whatever their ultimate goals or motivations. In this chapter, we report on the broad strategies employed to reduce costs. We examine the degree to which institutions controlled their own destiny in deciding where and how to make cuts. We also describe the focus of cost management programs. Was attention paid to total institutional IT costs or only to those borne by the central IT organization? Were cost savings derived only from cuts in service or are institutions finding ways to change the way services are delivered? Are institutions doing less or doing things differently? We also look at the long-term impacts of the respondents’ cost management efforts. We report respondents’ assessment of the sustainability of their cost reduction measures. This discussion of cost management strategy is followed in Chapter 6 with a detailed discussion of the particular tactics that respondents have adopted to reduce costs.

For analytical purposes we elected to use the change in central IT operating budget as the measure for how institutions’ funding for technology has changed in the past two fiscal years. We believe this is the budget about which respondents have the greatest knowledge and could offer us the most accurate picture of how it has changed.

**IT Cost Management Agenda**

Many respondents were able to influence how their IT budgets were cut. While the institution may have set the target for cuts, among respondents whose central IT operating budgets declined, the majority reported having sufficient time to plan effective cuts and a voice in the extent and nature of cuts. As Figure 5-1 illustrates, the majority of respondents who experienced a decline in the central IT operating budget agreed or strongly agreed that their central IT organization had sufficient time to plan effective budget cuts. A larger majority of respondents (67.9%) agreed or strongly agreed that their central IT organization had a voice in determining the nature and extent of its budget cuts. Respondents’ assessments did not vary on the basis of size of their central IT operating budget.

The central IT organization’s influence over how its budgets were cut had some limits. Out of 319 respondents, 231 described their institution as being focused on reducing IT costs. There were 82.0% of this subset of respondents (including those who experienced flat, declining, or increasing central IT budgets) who reported that the central IT organization was required to follow the same cost reduction strategies as the rest of the institution. This appears to contradict the notion that IT controlled its own destiny in choosing how to cut the budget. It is possible that respondents believed they were following an institutional strategy that they themselves had helped to shape. Or, respondents may have been commenting on their need to participate in broad institutional strategies such as hiring freezes or furlough programs that by their nature must apply to all budget units. Finally, the institutional strategy itself may have been flexible and provided units with discretion as to how to cut their budgets.

**Focus of Cost Management Strategies**

The majority of respondents’ central IT organizations that were actively engaged in reducing IT costs attempted to do so without
reducing services or service levels. Most respondents (83.9%) reported that since FY2007–2008, their central IT organizations had been making changes designed to reduce IT costs (Figure 5-2). Two-thirds of respondents described their efforts as trying to achieve cost reductions without degrading services, and 17.7% of respondents described their approach as reducing costs by reducing service levels. There were 16.1% of respondents who said that no cost reductions had been necessary at their institutions. Among these respondents, 29 were from institutions that had increased funding for central IT since
FY2007–2008, and another 10 were from institutions that had maintained flat budgets over the same period.

Even among respondents facing significant budget cuts, the majority described their approach as one of cutting costs without cutting service. Anthony Adade, CIO at Elizabeth City State University, described how he worked to cut his budget while leaving services intact. Adade explained, “We were expected to make cuts of 5% to 7%, and we are proud that we have been able to do so without cutting staff or service. It was particularly important to our chancellor that we preserve service. So, we explored changes that would help us cut our budget and generate savings for the university. We implemented paperless purchasing to increase productivity. We also joined collaborative projects with other campuses in the UNC [University of North Carolina] system, such as a shared DBA service.”

Nearly three-quarters (70.0%) of responding institutions that had experienced a two-year decrease in central IT budgets of 10% or more described their cost reduction approach as reducing costs without reducing service. In fact, there was no statistically significant difference between whether respondents cut costs with or without cutting service and the degree to which their budgets had decreased. It appears that the task given to most IT organizations by their institutions or their leaders was to find ways to absorb declines in budgets in ways that had the least impact on their constituents. This is consistent with the findings we reported in Chapter 4 regarding how IT spending cuts were apportioned to the various areas of the IT budget. Specifically, it helps to explain why institutions focused more of their cuts in IT administration as opposed to other aspects of the budget more directly related to service delivery.

A small majority of respondents focused on IT costs broadly within their institutions. More than half of all respondents (55.7%) described the focus of their cost management efforts since FY2007–2008 as being on reducing total institutional IT costs (Figure 5-3). Fewer than a fifth (17.8%) described their focus as being only on the central IT organization’s costs. When we exclude those respondents who reported that no cost reductions were necessary at their institution, the proportion of respondents focused on institutional IT costs increases, with 74.5% of respondents focused on reducing total institutional costs.
For many respondents, central IT costs are likely the majority of their IT costs. More than three-quarters of respondents (77.4%) described IT at their institution as centralized or highly centralized. We did not provide a standard definition of centralization to respondents. We suspect that respondents who characterized their institutional IT in this manner were at institutions where central IT is responsible for most IT services and/or has considerable influence over IT management issues. One would think that these institutions, because of their centralization, would be better positioned to focus their cost management efforts on institutional IT costs.

We once again see evidence of the range of budget challenges respondents faced in their descriptions of the focus of their IT cost management efforts. A quarter of respondents (79 institutions) reported that their institutions had not reduced IT costs. Of these 79 institutions, 43 reported that their central IT operating budget had increased from FY2007–2008 to FY2009–2010. For these respondents, the need to focus on cost reductions of any kind appear to have been forestalled by budget increases. Another 19 institutions reported that their central IT operating budgets had remained the same since FY2007–2008. These respondents might have had experiences similar to those of the respondents who had budget increases. There were 12 institutions that reported a decrease in their central IT budget but had not reduced IT costs. Perhaps these respondents were able to spend down reserves or repurpose capital funds for operating purposes. It is also possible that some of these respondents interpreted our question and response choices differently. Some may have described their institutions as not having reduced IT costs because their efforts have not yet achieved results, not because they were not focused on reducing IT costs at all.

Respondents whose central IT operating budget had declined were not the only ones focused on IT cost management. Ninety-five institutions reported an increase in their central IT operating budget from FY2007–2008 to FY2009–2010 and also responded to our question on the focus of their IT cost management. Of these 95, 54.7% reported cost management foci that were on either central IT costs, total institutional IT costs, or IT costs only outside central IT. A fairly similar proportion of respondents with central IT operating budget increases (61.3%) also described their institution’s approach to IT cost management since FY2007–2008 as “reducing costs without reducing service levels” (57 of 93 respondents) or reducing costs by reducing services or service levels (7 of 93 respondents). We infer from these responses that these institutions had active IT cost management efforts under way despite their increased central IT operating budgets.

**Barriers to Overcome**

We asked respondents to identify the three most significant barriers limiting their institution’s ability to reduce IT costs in response to the budget crisis. This question was asked only of those respondents who reported that their central IT operating budget had decreased from FY2007–2008 to FY2009–2010. Unless otherwise stated, the data in this section pertain only to these respondents.

Issues pertaining to organizational culture were the barriers most frequently selected by respondents. As Table 5-1 reports, the issues most frequently identified as top barriers limiting respondents’ ability to reduce IT costs were the unacceptability of reducing service levels (49.1%) and resistance to change from outside the central IT organization (32.5%). While respondents faced cultural resistance, fewer than a fifth (19.0%) selected lack of executive sponsorship as a top-three factor limiting ability to reduce IT costs.

The influence of cultural barriers to change can be seen among respondents who described their approach to cost reduction as reducing costs without reducing service levels.
There were 113 respondents who reported a decrease in central IT operating budgets and described their cost reduction approach as reducing costs without reducing service. More than half of these respondents (51.3%) identified the unacceptability of reducing service levels as a limit to cost reduction, and 31.0% identified resistance to change from outside central IT. This suggests that some respondents chose a strategy of reducing costs without impacting service not because it offered large potential savings but because it was more achievable than strategies that would have reduced service.

Ralph Caruso, CIO of the University of Maine System, pointed out that cultural resistance to change can occur among IT organizations as well. As the leader of IT for a seven-campus system, Caruso has worked to develop more collaborative services. He told us, “We have had challenges to work through. There is an inclination at times to view change as one organization trying to take over things from another. We have been careful to avoid removing services from the local level. Our focus is on consolidating basic back-end infrastructure to make things simpler and more efficient.”

Some cost reduction strategies, such as consolidating data centers, migrating to standard technologies (e.g., consolidating e-mail systems), or leveraging new technologies (e.g., virtual servers), require institutions to spend money in order to save money. We suspected that in the midst of declining institutional budgets and tightening credit markets, institutions might be reluctant or in some cases unable to make one-time investments even if they offered an attractive payback. For some respondents, this was in fact an issue. Almost a third of respondents with decreased central IT operating budgets (29.4%) reported that the lack of up-front funding to induce savings was a top-three factor limiting IT cost reduction.

### Changing Attitudes toward IT Management Strategies

We were curious whether the budget cuts that respondents had experienced had altered their thinking about adoption of alternative IT management and provisioning strategies. Specifically, we wondered if the cuts would affect their interest in collaborating with other institutions, adopting open-source software, or outsourcing technologies or services to third parties, including public or private clouds. Previous ECAR studies had found that adoption of several of these management strategies was retarded by the perception that they were either too risky (cloud computing) or did not present benefits that outweighed

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Table 5-1. Barriers to Reducing IT Costs (Respondents with Decreased Central IT Operating Budget)

<table>
<thead>
<tr>
<th>Which of the following factors are most significantly limiting your institution’s ability to reduce IT costs in response to the budget crisis? (Select up to three.)</th>
<th>Percentage Selected (N = 163)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unacceptability of reducing service levels</td>
<td>49.1%</td>
</tr>
<tr>
<td>Resistance to change from outside the central IT organization</td>
<td>32.5%</td>
</tr>
<tr>
<td>Lack of availability of up-front funding needed to induce savings</td>
<td>29.4%</td>
</tr>
<tr>
<td>Insufficient staff skills in central IT</td>
<td>19.6%</td>
</tr>
<tr>
<td>Lack of executive sponsorship for change</td>
<td>19.0%</td>
</tr>
<tr>
<td>Decentralized nature of IT management</td>
<td>17.8%</td>
</tr>
<tr>
<td>Institutional budget policies</td>
<td>16.6%</td>
</tr>
<tr>
<td>Collective bargaining agreements</td>
<td>15.3%</td>
</tr>
<tr>
<td>Resistance to change from within the central IT organization</td>
<td>11.7%</td>
</tr>
<tr>
<td>Other</td>
<td>11.7%</td>
</tr>
</tbody>
</table>
the cost of participation (collaborations).\textsuperscript{4} Decreases in central IT operating budgets might make institutions more willing to take risks, or they could change the calculation of the relative costs and benefits of strategies such as multi-institutional collaborations.

We asked respondents who reported a decrease in their central IT operating budget from FY2007–2008 to FY2009–2010 to tell us how budget cuts have affected the likelihood that their institution would use four different IT management strategies. We also inquired whether budget cuts had changed their willingness to accept greater levels of IT risk. Respondents reported their perception of the change in likelihood of taking these actions in the next two years, as compared with last year, using a scale ranging from much less likely (1) to much more likely (5). As Table 5-2 illustrates, the mean response for each question was between “stay the same” and “more likely.” Among the four management strategies, the highest mean was for adoption of cloud-based technologies; the lowest was for a general category of outsourcing IT services elsewhere. However, the spread of the means from highest to lowest was fairly small, ranging from 3.88 at the high end (cloud sourcing) to 3.49 at the low end (source IT services elsewhere). We did not find a meaningful difference in respondents’ assessment of change in likelihood tied to either the degree of cuts to the central IT operating budgets that they have absorbed or their expectations of how the central IT budget (capital and operating) will change in the next fiscal year.

Our qualitative interviews provided further evidence that some institutions’ adoption plans were already being influenced by the budget cuts they had absorbed. One example was provided by Henry DeVries, CIO at Calvin College. According to DeVries, “The budget cuts came at a time when we faced two software replacement decisions. One was in the library, and the other was the course management system. We opted for an open-source solution in the case of the library and will save about $300,000. We then made the same decision [open source] for our course management system because of the potential to save significantly. This is our first foray into open-source software, and we spent considerable time weighing the pros and cons. But, given our need to reduce our budget, the timing was perfect.”

Based on these findings, it appears that the central IT budget decreases that respondents have experienced have had an impact on their likelihood to source IT services differently, either to the cloud, another institution, or other third party. Reduced central IT operating budgets also increased respondents’ likelihood to adopt open-source software. For example, 71.9% of respondents reported that they were more likely or much more likely to adopt cloud-based technologies. A majority of respondents (between 51.9% and 57.6%) selected “more likely” or “much more likely” for each of the other statements. While two years is a long time and likelihood is not the same as commitment, the budget cuts appear to have had some effect on institutions’

<table>
<thead>
<tr>
<th>Compared to last year, how have budget cuts affected the likelihood that in the next two years your institution will:</th>
<th>Mean*</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adopt cloud-based technologies (N = 160)</td>
<td>3.88</td>
<td>0.804</td>
</tr>
<tr>
<td>Collaborate with other institutions on IT solutions (N = 160)</td>
<td>3.74</td>
<td>0.849</td>
</tr>
<tr>
<td>Adopt open-source software (N = 160)</td>
<td>3.63</td>
<td>0.774</td>
</tr>
<tr>
<td>Accept greater levels of IT risk (N = 159)</td>
<td>3.62</td>
<td>0.817</td>
</tr>
<tr>
<td>Source IT services elsewhere (N = 158)</td>
<td>3.49</td>
<td>0.858</td>
</tr>
</tbody>
</table>

* Scale: 1 = much less likely, 2 = less likely, 3 = stay the same, 4 = more likely, 5 = much more likely
planned adoption of each of the sourcing strategies and have emboldened or compelled them to accept greater levels of risks.

**Impacts of Budget Cuts and Cost Management Efforts**

In this section, we review respondents’ assessments of how they have leveraged the budget crisis to alter the way IT is managed. We also share their assessment of how well their present level of funding (FY2009–2010) in the central IT budget positions their organizations to meet the IT needs of the institution and maintain reliable operations. Finally, for those respondents who have experienced a decline in central IT operating budgets, we report the impact of the budget-cutting tactics that these institutions employed.

**Crisis or Opportunity?**

Leveraging crisis as an opportunity has been a popular refrain for the past two years. The theory is that the severity of the recession has created a burning platform and rationale for change that should embolden leaders to challenge historical conventions and pursue changes that would not be possible in normal times.

Most of our respondents did not believe that the economic crisis had in fact catalyzed fundamental change. We asked all respondents whether as a result of the economic crisis, their institution had fundamentally changed how IT is managed, significantly reduced the cost of IT operations, or implemented technology that had significantly improved staff productivity or increased revenues. As Table 5-3 illustrates, respondents were fairly conservative regarding the degree of change that had taken place. Using a 5-point scale from strongly disagree to strongly agree, mean responses ranged between disagree and neutral for each statement. In fact, the lowest mean agreement was with the statement that the institution had fundamentally changed how IT is managed. Mean responses were also below neutral for items stating that their institutions had significantly reduced the cost of IT operations or implemented IT that had significantly increased revenue.

Admittedly, words such as “significant” and “fundamental” set high expectations for change, and this in part could explain respondents’ disagreement with the statements. The responses are also consistent with our overall assessment that the degree of budget cuts most respondents have experienced was not significant enough to create a burning platform for very aggressive change. Respondents who experienced a two-year cumulative decrease in their central IT operating budgets (FY2007–2008 to FY2009–2010) did report higher means for the statements regarding fundamental change in how IT is managed and significantly reduced costs of IT operations. However, the means were still below neutral for fundamental change and about neutral for cost of IT operations (see Table 5-4). Likewise, only a minority of respondents (34.2%) who reported that their central IT operating budget had decreased agreed or strongly agreed that the budget crisis has enabled their institution to implement IT cost savings measures beyond those that would normally have been possible (Figure 5-4). Further, there was no statistically significant

| Table 5-3. Respondents’ Assessment of the Economic Crisis as a Driver of Change |
|---------------------------------|-----------|----------|
| As a result of the economic crisis, my institution has: | Mean* | Std. Deviation |
| Implemented IT that has significantly improved staff productivity (N = 317) | 3.00 | 0.911 |
| Significantly reduced the cost of IT operations (N = 317) | 2.69 | 1.012 |
| Implemented IT that has significantly increased revenues (N = 317) | 2.56 | 0.792 |
| Fundamentally changed how IT is managed (N = 319) | 2.37 | 0.948 |

* Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree
difference in respondents’ mean agreement with this statement and the magnitude of the decline in their central IT budget.

Our qualitative research did identify several institutions that were working to leverage the crisis as an opportunity to implement more aggressive changes. John Charles, CIO of California State University East Bay, believes his institution faces a permanent decline in state funding that requires an aggressive response. According to Charles, “East Bay’s approach to absorbing budget cuts is to preserve funding for academic programs and create the ability to invest in new priorities through cuts to administrative divisions. Our only choice is to permanently reduce our cost structures. This will require innovation. We are really taking advantage of this situation to think outside the box and radically reduce our cost structures for all of our support services. We have internalized this as our new normal.”

It appears that East Bay’s framing of the challenge it faces has created a greater imperative to act across a broad set of areas...
and initiatives. Other leaders we spoke with described how the crisis has given them leverage to make changes in particular services or areas. One example was provided by Bruce Maas, CIO at the University of Wisconsin–Milwaukee. Maas told us, “The crisis has allowed us to do some targeted things that would not otherwise have been palatable. We have closed one computer lab and turned the others into self-service operations. This has created savings of $300,000 annually that under normal circumstances we would not have been able to get traction for.” Maas went on to observe that while some real change has occurred, there are still more opportunities available. “These are changes that would require us to work differently, and they are among the hardest to implement.”

It may be that what we are seeing in these responses is evidence that it is difficult for IT to be too far out in front of the rest of the institution when it comes to making change happen. Some have criticized higher education as being too timid and incremental in its overall response to the economic crisis. An October 2009 survey and accompanying article prepared by The Chronicle of Higher Education chastised higher education leaders for offering few signs of revolutionary change even while they expected the financial crisis confronting their institutions to worsen. It is fair to ask whether it is feasible or advisable for IT leaders to be pushing for more fundamental change in technology management than institutional leaders are calling for in other aspects of the academy. IT leaders who stake out a more aggressive change agenda than their institutions’ other business and academic leaders run the risk of being out in front of executive sponsors’ willingness to support change or running afoul of peer leaders who do not aspire to similarly aggressive change agendas in their parts of the organization. Aggressive IT leaders would also be unable to capitalize on the benefit of having their changes judged in the context of a more expansive institutional change agenda. A proposal to consolidate IT organizations made in a vacuum will seem more radical than one made at an institution that is also contemplating closing down academic programs or merging departments.

Kirk Kelly, CIO of Pima College, described the virtues of staying somewhat under the radar. According to Kelly, “We have made a lot of progress through the cumulative impact of many small changes to services. We are taking an inch-by-inch approach. We realize that a lot of small changes can be made without people noticing to an extent great enough to garner resistance. If we tried for one big change, we know that we would have to spend a lot more time building our case.”

Impact of Budget Cuts on Adequacy of Funding

We asked all respondents to evaluate the sufficiency of the FY2009–2010 central IT budget to meet several strategic and tactical objectives. The objectives ranged from fundamentals such as maintaining reliable IT operations to more forward-leaning objectives such as researching and experimenting with emerging technologies. Table 5-5 summarizes respondents’ assessments.

Overall, respondents painted a mixed view of funding adequacy. There was a contrast between respondents’ generally positive assessment of the adequacy of funding to “keep the lights on” and their assessment that funding was inadequate to meet new needs or research new technologies. Mean agreement that funding was adequate was highest for the statement that funds were adequate to maintain critical IT operations reliably and to keep pace with vendor-mandated upgrades. The lowest means were reported for the adequacy of funds to respond to new user needs and interests, and to research and experiment with emerging technologies.
With the exception of funds to research and experiment with emerging technologies, respondents at institutions whose central IT operating budgets had declined reported significantly lower mean agreement that funding was adequate than those from institutions whose budgets had grown. While means were still somewhat above neutral, respondents whose central IT operating budgets had decreased over the two-year period agreed less strongly that funding was adequate to maintain critical IT operations reliably (3.65) and to keep current with vendor-mandated upgrades (3.46) (see Table 5-6). In contrast, respondents with flat or increased central IT operating budgets reported mean agreement at or slightly below agree for both statements. Respondents with increased central IT operating budgets also agreed somewhat more strongly that they had sufficient resources to implement their institution’s IT strategy. Those with flat or decreased budgets reported means for this statement that were at or somewhat below neutral.

No subset of respondents agreed, on average, that funds were adequate to respond to new user needs and interests. However, those with decreases to their central IT operating budget were in significantly greater disagreement that funding was adequate. There was no meaningful difference in respondents’ assessment of the adequacy of funding to research and experiment with emerging technologies, when analyzed against change in budget.

Our interviews with IT leaders revealed that some did try to achieve their budget reductions in ways that would not sap the IT organization of the funds it needed to meet new needs and explore new technologies. Tim Chester, vice provost and CIO at Pepperdine University, described his approach to meeting a 14% reduction in the IT budget. According to Chester, “Rather than give back all our discretionary funds and limit our future activities, we opted to absorb most of the budget reduction through a restructuring of service delivery and a corresponding reduction in force. We made the

<table>
<thead>
<tr>
<th>Table 5-5. Adequacy of the FY2009–2010 Central IT Budget</th>
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</thead>
<tbody>
<tr>
<td>The FY2009–2010 central IT budget contains adequate funds to:</td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>Maintain critical IT operations reliably (N = 319)</td>
</tr>
<tr>
<td>Keep current with vendor-mandated upgrades (N = 319)</td>
</tr>
<tr>
<td>Implement our IT strategy (N = 317)</td>
</tr>
<tr>
<td>Respond to new user needs and interests (N = 317)</td>
</tr>
<tr>
<td>Research and experiment with emerging technologies (N = 317)</td>
</tr>
</tbody>
</table>

* Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

<table>
<thead>
<tr>
<th>Table 5-6. Adequacy of the Central IT Budget, by Change in Central IT Operating Budget FY2007–2008 to FY2009–2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>-------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Decrease (N = 162)</td>
</tr>
<tr>
<td>3.65</td>
</tr>
<tr>
<td>Remain the same (N = 47)</td>
</tr>
<tr>
<td>Increase (N = 94)</td>
</tr>
</tbody>
</table>

* Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree
deliberate choice to maintain as much of our discretionary funds as possible in order to move aggressively on strategic projects such as a VoIP telephony implementation and an application and desktop virtualization initiative. We were not going to get a pass from senior administration on advancing the effective delivery and use of technology at our institution just because of the need to reduce our annual budget.

Overall, these findings depict a situation in which the average institution is somewhat confident that it has adequate funds to support the status quo, but not enough to move an agenda forward. Even among respondents who have avoided cuts to their central IT operating budget, only a few more than half (54.3%) agreed or strongly agreed that funding was adequate to implement the institution’s IT strategy. The relatively low mean agreement among all respondents with statements regarding the adequacy of funding to address new user needs or research new technologies suggests that their institutions are not well positioned financially to expand or innovate with technology. We suspect that this may have been the situation even before the recession began and that the cuts that have occurred have served to exacerbate the inadequacy of funding for purposes beyond sustaining operations.

**Assessment of Budget Reduction Tactics**

We asked respondents whose central IT operating budget had decreased from FY2007–2008 to FY2009–2010 to evaluate the persistence and sustainability of their budget reduction actions. Unless otherwise noted, the data reported in this section pertain only to those respondents who reported a decrease in their central IT operating budget over this two-year period.

Many respondents seemed optimistic that their cost reduction measures and spending reductions would persist. Respondents on average were in slight disagreement (mean of 2.857 on a 5-point scale) that their central IT organizations met budget reduction targets largely through one-time measures. There was agreement on average (mean 3.656) that the central IT organization has achieved operational spending reductions that will persist after budget recovery. In fact, more than two-thirds of respondents (69.6% of the subset of total respondents being analyzed) agreed or strongly agreed with the statement.

Respondents’ assessment of the one-time nature of their cost reduction measures and the persistence of their operational spending reductions did differ by the size of their central IT operating budget. We found a statistically significant difference based on central IT operating budget size in their mean agreement that the “central IT organization has met its budget reduction targets largely through one-time cost reduction measures” and that “we have achieved operational spending reduction in central IT that will persist after the budget recovery.” Respondents with smaller FY2009–2010 budgets—especially those with budgets less than $2 million—agreed more strongly that budget reduction targets were met through one-time measures than did those with larger budgets. Although the mean response was above neutral, respondents with smaller budgets agreed less strongly than others that their spending reductions would persist after budgets recover (Table 5.7). Smaller IT organizations likely lacked the range of potential areas to which they might turn to reduce their budgets that were available to larger organizations. A majority of their budgets are likely committed to multiple-year external contracts or were required to sustain basic infrastructure. For these organizations, there may have been no choice but to focus on one-time measures with the hope that the spending cuts could be reinstated as soon as budgets recover. We will discuss in detail in Chapter 6 the difference in cost reduction tactics employed by institutions.
with different sizes of central IT operations and different outlooks on the persistence of their spending cuts.

We also asked respondents who experienced a two-year decrease in their central IT operating budget to evaluate how their budget reduction actions had impacted service. Recall that two-thirds of all respondents described their budget reduction approach as reducing costs without reducing services or service levels. Among those who experienced a decreased central IT operating budget, 70.6% described their approach as trying to reduce costs without impacting service.

Were respondents able to realize this aspiration? The experience of this subset of total respondents was varied. Almost half (45.7%) agreed or strongly agreed that they had met the central IT budget reduction targets without curtailing service. Conversely, more than a third (38.8%) disagreed or strongly disagreed that they had. The rest were neutral. Respondents whose approach had been to avoid service cuts did have a higher mean agreement that they had met their budget reduction targets in central IT without cutting service. However, their mean response was less than halfway between neutral and agree (Table 5-8). This suggests that they were not as successful at preserving services as they had hoped.

### Summary

Chapter 4 established that most respondents have experienced incremental, not deep, declines in their central IT operating budgets. This chapter shows the effect of the shallower-than-expected cuts on how institutions approached reducing their IT costs. For most, the recession has not provided a burning platform to catalyze substantial change in how IT is managed. While it hasn’t

### Table 5-7. Sustainability of Cost and Spending Reductions, by Central IT Operating Budget Size

<table>
<thead>
<tr>
<th>Central IT Operating Budget FY2009–2010</th>
<th>The central IT organization has met its budget reduction targets largely through one-time cost reduction measures.</th>
<th>We have achieved operational spending reductions in central IT that will persist after budget recovery.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean*</td>
<td>Std. Deviation</td>
</tr>
<tr>
<td>Less than $2 million (N = 46)</td>
<td>3.28</td>
<td>1.047</td>
</tr>
<tr>
<td>$2,000,000–$4,999,999 (N = 41)</td>
<td>3.02</td>
<td>1.129</td>
</tr>
<tr>
<td>$5,000,000–$10,999,999 (N = 36)</td>
<td>2.31</td>
<td>0.822</td>
</tr>
<tr>
<td>$11 million or more (N = 32)</td>
<td>2.59</td>
<td>1.132</td>
</tr>
<tr>
<td>Total (N = 155)</td>
<td>2.85</td>
<td>1.100</td>
</tr>
</tbody>
</table>

* Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

### Table 5-8. Ability to Meet Budget Reduction Targets without Curtailing Service, by Approach to Cost Reduction

<table>
<thead>
<tr>
<th>Which of the following statements best describes the central IT organization’s approach to cost reduction since FY2007–2008?</th>
<th>The central IT organization has met its budget reduction targets without curtailing service.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean*</td>
</tr>
<tr>
<td>Reduce costs without reducing services or service levels, such as availability and responsiveness (N = 112)</td>
<td>3.29</td>
</tr>
<tr>
<td>Reduce costs by reducing services or service levels, such as availability and responsiveness (N = 39)</td>
<td>2.26</td>
</tr>
<tr>
<td>Total (N = 151)</td>
<td>3.02</td>
</tr>
</tbody>
</table>

* Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree
dramatically accelerated intentions to adopt alternative IT management or sourcing practices such as cloud computing, there is reason to believe that institutions are more inclined to adopt these practices than they were before. Respondents’ sense that institutional culture was the most significant barrier they faced to cost reduction is further evidence that the economic crisis did not rise (or has not yet risen) to the level of severity that would empower or require IT leaders to attempt very aggressive change.

Most respondents seemed very engaged in determining how they would implement cuts in budgets. Whether through their ability to influence institution-wide discussion of budget reduction strategies or because of the authority delegated to the IT organization to implement cuts, respondents felt they had sufficient voice in how to cut and sufficient time to plan the cuts they needed to make. Perhaps because the cuts they had to make were relatively shallow or cultural resistance to change was still anticipated to be high, most respondents tried to achieve budget cuts without impacting services or service levels. Some were able to achieve this objective, and others reported minor declines in service resulting from budget cuts. If cuts were not severe enough to engender support for fundamental or substantial change to how IT was managed and respondents sought to cut costs without impacting service, it seems likely that most reduced their budgets by cutting deeper in areas not directly related to service or through a traditional set of budget reduction techniques that cut expenditures but didn’t reinvent how the underlying service is delivered. While there were notable exceptions, we will largely confirm this assertion in Chapter 6.

The recession has likely worsened an already challenging budget situation for respondents. Since ECAR first studied IT funding in 2004, most central IT budgets have been challenged to find sufficient resources to support innovation or sustain technology once it has been implemented. The budget cuts that respondents did experience seem to have left most IT budgets with inadequate funds to pursue new technologies, respond to new needs, or in some cases implement the institutional IT strategy. While most reported adequate funds to keep their operations running and meet their maintenance requirements, there were a few among those respondents who faced steeper decreases in central IT budgets with inadequate funds.

The paradox facing IT organizations is that their need to restructure how IT is managed to free up resources for strategic investments or to find new ways to apply technology to institutional challenges may be greater than the pressure to restructure to meet short-term budget cuts. Regrettably, we may have missed the opportunity at some institutions to try to leverage the short-term budget crisis into a larger agenda for more aggressive change. Such change might have reduced the costs of sustaining commodity technology operations and reinvested those savings into the deployment of technology to support generating new revenue, reducing non-IT costs, or enabling innovations in teaching and research. These are resources institutions may need in the future if the long-term economic prospects for higher education worsen further or the competitive forces that were present before the recession continue to pressure institutions to contain the cost of an education.

Endnotes
2. We note that there was a discrepancy in the number of respondents we reported in the initial paragraph in this who found that no cost reductions were necessary at their institutions (49) and the number identified here (79) as reporting that IT costs had not been reduced. One possible explanation is a difference in wording of the response choices for the two questions from which the data are drawn. In one case our wording was that “no cost reductions were necessary” and in the other that “we have not reduced costs.” It is possible that some respondents
for whom cost reductions were not necessary had still begun to pursue IT cost reductions for other reasons and therefore identified themselves as being active in our second question.


5. The phrase “never waste a crisis” is generally credited to Stanford University economist Paul Romer, who used the phrase in a speech to a group of venture capitalists in 2004. The phrase was picked up by White House Chief of Staff Rahm Emanuel, who shortly after the 2008 election told an interviewer that “you never want a serious crisis to go to waste.” (See New York Times, On Language column, Jack Rosenthal, July 31, 2009, http://www.nytimes.com/2009/08/02/magazine/02FOB-onlanguage-t.html).


8. N = 161, standard deviation = 0.875.
6

IT Cost Management Practices

If you would be wealthy, think of saving as well as getting.

—Benjamin Franklin

Key Findings

- Respondents who had employed more of the cost management changes named in the survey on average agreed more strongly that they had reduced the costs of IT operations at their institutions.
- No single category of cost management actions appeared to be a dominant source of cost savings.
- The practices in IT personnel management that had been adopted most frequently (actions done and being done) among the subset of respondents focused on IT cost management in the past two years were reducing travel and training budgets, and hiring freezes and the elimination of open positions.
- In IT financial management, the actions done in the past two years or being done now by the largest proportion of respondents were the increased use of university-wide purchase contracts, the renegotiation of vendor contracts, and the deferment of capital expenditures.
- In IT project portfolio management, 35.6% reported that they had reduced or were currently reducing the scope of active projects, and 35.8% had changed or were currently changing their approach to executing projects by bringing more work in house.
- More than 45% of cost management–focused respondents had deferred or were currently deferring maintenance on systems, and nearly 30% reported that they had deferred or were deferring disaster recovery plans as part of their IT cost management efforts.
- In IT support services, more than half of respondents had increased or were in the process of increasing the use of tools to automate support.

The recession has engendered institutional responses that cover a fairly broad landscape of practices. In the past two years we have seen staff furloughs at California’s public institutions, plans to discontinue entire academic programs at several of Nevada’s public institutions and elsewhere, and the implementation of voluntary and involuntary layoff programs at many private institutions. Some institutions have gone so far as to reduce the temperature in buildings to save energy costs. Even with enrollment growth...
and economic stimulus funding muting the recession’s impact, many institutions have still sought to trim expenses, forestalled plans to invest, slowed hiring, or otherwise curtailed discretionary spending. Higher education is not unique in this regard. For much of 2008 and 2009, fiscal caution and conservatism swept over the broader economy.

Within this broader context, how has IT responded to the cost reduction pressures it faced? In this chapter we will report the tactics taken by respondents who considered their institutions to be focused on IT cost management over the past two years. Within our survey we asked respondents to report on their adoption of 37 different tactics that could potentially reduce IT costs. Tactics ranged from relatively immediate and controllable steps such as freezing travel budgets to more complex and politically difficult measures such as consolidating organizations. Tactics also included less desirable but at times necessary responses such as deferring maintenance on technology or relaxing disaster recovery plans. We present the state of adoption of each tactic and report on relationships we observed between the set of tactics institutions employed and their assessment of the success of their cost management efforts.

Unless otherwise indicated, the findings and analysis in this chapter relate only to the 235 respondents (out of 319) who reported that their institutions have been focused since FY2007–2008 on IT cost management, as well as five others who did not know the focus of their IT cost management actions. This excludes respondents reporting that their institutions had not reduced IT costs.

Overview of Cost Management Tactics

Our survey asked about the state of adoption of 37 cost management actions organized into five categories. A complete list of the actions can be found in Table 6-1. IT personnel management included actions that institutions might adopt to reduce IT staff costs, including freezing open positions, shifting the composition of the workforce, or consolidating departmental IT organizations. The second category included actions that pertained to changes in IT financial management. This category included changes that would increase IT’s revenue, such as increasing technology fees, reducing expenditures (say, by renegotiating vendor contracts), or deferring capital expenditures. The third category, changes to the IT project portfolio, included actions that altered the cost, scope, or mix of technology projects. The fourth category, IT management, asked about the adoption of a variety of activities including changing equipment replacement cycles, altering disaster recovery plans, and adopting alternative sourcing strategies. The fifth category was changes to IT support services. It included steps institutions may have taken to alter service levels, automate the support function, or otherwise reduce the complexity of what its IT organization supported.

Framework for Understanding Cost Management Actions Employed

We recognized that the actions included in the survey varied along two important dimensions. Each action presented its own time horizon for realizing costs savings and its own degree of difficulty to implement. Degree of implementation difficulty itself had several dimensions, including cultural resistance to change, breadth of constituents impacted, the need for up-front investment to realize longer-term benefit, and the likely extent to which the decision could be made at the IT leader’s sole discretion.

Figure 6-1 captures the two dimensions of difference in a framework that we utilized to interpret the patterns of adoption we observed among the IT cost management changes included in the study. The quadrant
Table 6-1. Cost Management Changes, by Category

<table>
<thead>
<tr>
<th>Category of Action</th>
<th>Cost Management Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT Personnel Management</td>
<td>Reduce travel budgets</td>
</tr>
<tr>
<td></td>
<td>Reduce training budgets</td>
</tr>
<tr>
<td></td>
<td>Freeze hiring/eliminate open positions</td>
</tr>
<tr>
<td></td>
<td>Furlough staff</td>
</tr>
<tr>
<td></td>
<td>Lay off staff</td>
</tr>
<tr>
<td></td>
<td>Share positions with other organizations</td>
</tr>
<tr>
<td></td>
<td>Employ contractors or consultants instead of full-time staff</td>
</tr>
<tr>
<td></td>
<td>Consolidate departmental IT organizations</td>
</tr>
<tr>
<td>IT Financial Management</td>
<td>Spend down budgetary reserves</td>
</tr>
<tr>
<td></td>
<td>Increase pricing for chargeback services</td>
</tr>
<tr>
<td></td>
<td>Defer capital expenditures</td>
</tr>
<tr>
<td></td>
<td>Renegotiate vendor contracts</td>
</tr>
<tr>
<td></td>
<td>Increase use of university-wide purchasing contracts</td>
</tr>
<tr>
<td></td>
<td>Increase student fees</td>
</tr>
<tr>
<td>IT Project Portfolio</td>
<td>Cancel active projects</td>
</tr>
<tr>
<td></td>
<td>Reduce the scope of active projects</td>
</tr>
<tr>
<td></td>
<td>Bring more project work in house</td>
</tr>
<tr>
<td></td>
<td>Place greater priority on projects that have a higher potential return on investment</td>
</tr>
<tr>
<td>IT Management</td>
<td>Implement greater use of standard hardware</td>
</tr>
<tr>
<td></td>
<td>Extend hardware replacement cycles</td>
</tr>
<tr>
<td></td>
<td>Defer maintenance on major systems/infrastructure</td>
</tr>
<tr>
<td></td>
<td>Relax/defer disaster recovery plans</td>
</tr>
<tr>
<td></td>
<td>Increase use of enterprise server hosting</td>
</tr>
<tr>
<td></td>
<td>Consolidate local storage solutions into an enterprise service</td>
</tr>
<tr>
<td></td>
<td>Increase use of open-source software</td>
</tr>
<tr>
<td></td>
<td>Increase use of virtual servers</td>
</tr>
<tr>
<td></td>
<td>Reduce modifications in enterprise application software</td>
</tr>
<tr>
<td></td>
<td>Increase use of virtual desktops, including labs and classrooms</td>
</tr>
<tr>
<td></td>
<td>Increase deployment of software as a service (SaaS)</td>
</tr>
<tr>
<td></td>
<td>Increase use of cloud-based enterprise storage</td>
</tr>
<tr>
<td></td>
<td>Retire infrequently used technology</td>
</tr>
<tr>
<td></td>
<td>Consolidate duplicate technology platforms/applications</td>
</tr>
<tr>
<td>IT Cost Management</td>
<td>Reduce the number of supported technologies</td>
</tr>
<tr>
<td></td>
<td>Reduce service levels, such as hours and response time</td>
</tr>
<tr>
<td></td>
<td>Consolidate number of departments providing IT support</td>
</tr>
<tr>
<td></td>
<td>Increase use of tools to automate support functions, such as managed desktops</td>
</tr>
<tr>
<td></td>
<td>Outsource some IT support services to a third party</td>
</tr>
</tbody>
</table>

names are provided as a shorthand to identify the characteristics of the changes mapped to that quadrant. They also convey our expectation for the way an IT leader might view the prospects for implementing the changes within the quadrant. For example, changes that produce savings fairly immediately and have a low degree of difficulty to implement (quadrant III) might be viewed as “quick wins” that help to reduce budgets right
away. Conversely, an IT leader might view changes in quadrant II as ones to “defer for now” because they are very difficult and don’t produce immediate savings that can be applied to budget deficits. Quadrant I contains changes that produce savings later but can be implemented with relatively less difficulty. Leaders might begin to make these changes and view them as “laying the groundwork” for future savings. Finally, quadrant IV contains changes that produce immediate savings that could alleviate current deficits but are more difficult to implement. These changes might be ones that leaders “pursue selectively,” with a focus on those that offer the greatest magnitude of potential savings relative to the difficulty of implementation.

This framework was not embedded in our survey instrument, so the characterization of the degree of difficulty and timing of savings that we present in the following analysis is not based on survey results. Rather, we assigned each action to a framework quadrant based on our judgment of its characteristics, in order to provide a mechanism for categorizing and understanding the adoption decisions respondents reported.

The timing of savings and relative degree of difficulty to implement are understandable but not the only determinants of how institutions choose to reduce budgets. Some changes are worth pursuing regardless of difficulty or length of time to realize benefits because of the magnitude of savings they can create. For some, the need to reduce IT costs might merely accelerate adoption of a strategic direction that the institution was already headed toward. Still others might pursue some changes in the “pursue selectively” quadrant because they are in the institution’s long-term interest, and the need for IT cost management might lower otherwise insurmountable barriers.

**Adoption of Cost Management Actions**

In this section we report on the state of adoption of each of the IT cost management actions incorporated in the study. We asked
respondents to report for each action whether they had done it in the past two years, were doing it now, were planning to do it, or were not planning to do it as part of their institutional IT cost management efforts. The discussion is organized around the five categories of actions introduced at the outset of this chapter and described in Table 6-1. Throughout, we will make use of the IT cost management framework defined in the preceding section to help analyze the patterns of adoption we observed. The data provide insight into a respondent’s adoption of a change, not the magnitude or duration. For example, we can report only whether an institution has implemented a hiring or travel freeze in the past two years. We can’t tell if that freeze lasted a few months or continued for a year or more. The impact on the institution could be quite different, depending on the duration.

**IT Personnel Management**

This category consisted of eight different actions, organized according to our sense of being progressively more difficult and potentially disruptive. We believed the easiest and most rapidly implementable actions in the category were reducing travel budgets and reducing training budgets. The next two—freezing hiring/eliminating open positions and staff furloughs—are likely to be more disruptive to the organization. The most potentially difficult changes in the category were staff layoffs, sharing positions across organizations, employing contractors or consultants instead of full-time staff, and consolidating departmental IT organizations.

The practices that had been adopted most frequently (actions done and being done) among the subset of respondents focused on IT cost management in the past two years were reducing travel budgets, reducing training budgets, and freezing hiring/eliminating open positions (see Table 6-2). Each had been done in the past two years or was being done at the time of the survey by more than 60% of the subset of respondents engaged in IT cost management. The remaining practices had been implemented by between 17% and 30% of the subset of total respondents. Adoption was lower for the most difficult and disruptive changes. About 20% to 25% of respondents had taken steps such as staff layoffs, furloughs, or consolidating departmental IT organizations.

James Avery, executive director, Information Systems, at Southwest Tennessee Community College, described the benefits and pitfalls of generating cost savings from personnel management changes such as hiring freezes.

<table>
<thead>
<tr>
<th>Framework Quadrant</th>
<th>Change</th>
<th>Done in Past Two Years</th>
<th>Doing Now</th>
<th>Planning to Do</th>
<th>Not Planning to Do</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quick Wins</td>
<td>Reduce travel budgets (N = 236)</td>
<td>27.5%</td>
<td>52.1%</td>
<td>7.2%</td>
<td>13.1%</td>
</tr>
<tr>
<td>Quick Wins</td>
<td>Reduce training budgets (N = 234)</td>
<td>22.6%</td>
<td>41.5%</td>
<td>5.6%</td>
<td>30.3%</td>
</tr>
<tr>
<td>Quick Wins</td>
<td>Freeze hiring/eliminate open positions (N = 237)</td>
<td>28.7%</td>
<td>46.4%</td>
<td>5.5%</td>
<td>19.4%</td>
</tr>
<tr>
<td>Lay the Groundwork</td>
<td>Employ contractors or consultants instead of staff (N = 226)</td>
<td>8.0%</td>
<td>22.1%</td>
<td>11.9%</td>
<td>58.0%</td>
</tr>
<tr>
<td>Pursue Selectively</td>
<td>Furlough staff (N = 225)</td>
<td>5.8%</td>
<td>16.4%</td>
<td>2.2%</td>
<td>75.6%</td>
</tr>
<tr>
<td>Defer for Now</td>
<td>Consolidate departmental IT organizations (N = 220)</td>
<td>10.9%</td>
<td>13.2%</td>
<td>24.1%</td>
<td>51.8%</td>
</tr>
<tr>
<td>Defer for Now</td>
<td>Share positions with other organizations (N = 220)</td>
<td>5.9%</td>
<td>11.8%</td>
<td>14.1%</td>
<td>68.2%</td>
</tr>
<tr>
<td>Pursue Selectively</td>
<td>Lay off staff (N = 217)</td>
<td>13.8%</td>
<td>7.4%</td>
<td>9.7%</td>
<td>69.1%</td>
</tr>
</tbody>
</table>
and early retirement programs. He explained that his college used incentives to induce early retirements, curtail expenditures, and keep the budget in balance. “Our institution implemented a planned strategic buyout of staff members throughout the institution, including IT. It worked very successfully and afforded the institution-wide reduction of more than three dozen positions. It absorbed a net reduction of 19% of the IT staff through early buyouts and natural attrition. We really had to push hard to find productivity gains to offset this loss. Now, we are at a place where we have to start cutting muscle—services and offerings—to absorb additional cuts.”

Some of our respondents reported plans to consolidate departmental IT organizations and to share positions with other organizations, evidence of some institutions taking steps to adopt more difficult changes with a longer time horizon to realize cost savings. However, the majority had no plans to deploy several of the more difficult and potentially disruptive changes. Small majorities had no plans to consolidate departmental IT organizations or shift the composition of the workforce to replace full-time staff with contractors or consultants. Two-thirds or more reported no plans to lay off staff, share positions with other organizations, or furlough staff. We suspect that in many cases there were no plans for these more dramatic changes because the budget cut required of the respondents could be met by other means.

Nonetheless, there were some respondents who were confronted by the need to reduce staff in order to balance their budgets. Tim Chester, vice provost and CIO at Pepperdine University, reported that his organization, when faced with the reality of needing to lay off staff, tried to do it in the most strategic manner possible. “We were asked to absorb a 14% reduction in our budget, and we chose to achieve most of our cuts through a reduction in force. We knew that layoffs would be disruptive to the organization and painful to the individuals affected, but we tried to take a long view and implement changes that would be more aligned with the kind of organization we were becoming. We were de-emphasizing transactional IT services and enhancing consultative and advisory services. Therefore, we tried to end up with a workforce that was more versatile, better able to communicate with our community, and willing and able to help faculty, students, and staff be more effective with technology.”

**IT Financial Management**

The study included six financial management actions that institutions could take as part of their overall IT cost management strategy. The six included budgetary changes, such as spending down reserves, increasing student fees, or increasing pricing for chargeback services; and managerial changes, including renegotiating vendor contracts, deferring capital expenditures, or increasing the use of university-wide purchasing contracts. We recognized that not all actions in this category would be relevant to all institutions. The use of chargebacks or student fees to fund IT is not a standard practice at all institutions. Typically, chargebacks are more prevalent at research universities, and using student fees to fund IT is a more prevalent practice at public institutions. We expected adoption and planned adoption to be lower for these items among respondents whose budget philosophies did not include chargebacks or fees as sources of IT funding. The category also included actions that provide short-term financial relief but have long-term negative consequences; we hoped to find adoption of such actions to be low.

Among the subset of respondents focused on IT cost management, three of the six actions pertaining to financial management had been adopted (actions done or being done) by more than half of respondents. The actions done in the past two years or being done now by the largest proportion of respon-
dents were the increased use of university-wide purchase contracts, the renegotiation of vendor contracts, and the deferment of capital expenditures. The change done or being done the least was increased pricing for chargeback services (see Table 6-3). There were also three actions that 48% or more of the respondents focused on IT cost management had no plans to take. These included spending down reserves, increasing student fees, and increasing chargebacks. As we observed earlier in this section, not all of these actions are relevant at all institutions. This may suggest that increased student fees and increased chargebacks might be very prevalent among institutions for which they are relevant. Perhaps more importantly, these are actions that in and of themselves do not alter the fundamental cost model for providing IT services. Rather, they either delay investments or shift how IT is funded to other institutional budgets or to students. In this regard, the rather small overall number of respondents taking these actions is a positive sign.

In our judgment, all of the actions fell into the “quick wins” or “pursue selectively” quadrants of the framework. While not strategic, spending down budgetary reserves or deferring capital expenditures produces immediate savings, and both are largely within the control of the IT leadership. The other actions require more effort to build consensus or require agreement from third parties (e.g., vendors). Some, such as increased use of university-wide purchase agreements, have somewhat longer time horizons to produce benefits. The savings from improved pricing would accrue only as the institution makes future purchases. Changes of this kind also tend to produce savings that become highly fragmented across all the institution’s budgets, absent some other form of intervention (see the sidebar “CSU East Bay Consolidates Hardware Purchases”).

Deferring capital expenditures, which had been done or was being done by nearly 60% of this subset of respondents, produces immediate savings and in the short term is relatively easy to do. An IT organization could defer expenditures by extending replacement cycles for equipment or merely delaying the start of a project. While some technology users would no doubt be disappointed, the resistance to this type of change in the short term would likely be low. Deferring expenditures has the virtue of making every dollar not spent immediately available to close budget deficits or other priorities for capital expenditures.

The two items done or being done by the lowest proportion of respondents are also among the most difficult IT financial management actions to implement. An increase of chargeback pricing requires the consent of the institution’s financial leadership and likely the

<table>
<thead>
<tr>
<th>Framework Quadrant</th>
<th>Change</th>
<th>Done in Past Two Years</th>
<th>Doing Now</th>
<th>Planning to Do</th>
<th>Not Planning to Do</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pursue Selectively</td>
<td>Increase use of university-wide purchasing contracts (N = 234)</td>
<td>15.8%</td>
<td>50.4%</td>
<td>18.8%</td>
<td>15.0%</td>
</tr>
<tr>
<td>Pursue Selectively</td>
<td>Renegotiate vendor contracts (N = 233)</td>
<td>17.6%</td>
<td>42.1%</td>
<td>26.2%</td>
<td>14.2%</td>
</tr>
<tr>
<td>Quick Wins</td>
<td>Defer capital expenditures (N = 234)</td>
<td>15.4%</td>
<td>41.9%</td>
<td>21.4%</td>
<td>21.4%</td>
</tr>
<tr>
<td>Quick Wins</td>
<td>Spend down budgetary reserves (N = 222)</td>
<td>14.9%</td>
<td>27.9%</td>
<td>9.0%</td>
<td>48.2%</td>
</tr>
<tr>
<td>Pursue Selectively</td>
<td>Increase student fees (N = 210)</td>
<td>11.9%</td>
<td>20.5%</td>
<td>12.4%</td>
<td>55.2%</td>
</tr>
<tr>
<td>Pursue Selectively</td>
<td>Increase pricing for chargeback services (N = 229)</td>
<td>2.6%</td>
<td>8.3%</td>
<td>7.0%</td>
<td>82.1%</td>
</tr>
</tbody>
</table>
support of many leaders with responsibility for budgets. Likewise, increasing student fees requires broad support from institutional leadership and in many cases the approval of regents or trustees.

**IT Project Portfolio**

The third category of cost management actions focused on the mix of IT projects the institution had under way and how it pursued completing them. The category included four actions: canceling active projects, reducing the scope of active projects, bringing more project work in house, and placing greater priority on projects that have a higher potential return on investment (ROI). Our hypothesis was that the economic downturn had caused a fiscal conservatism that led to postponement or cancellation of IT projects that were not yet under way and the scaling back of those that had already begun. As we reported in the preceding subsection, a slight majority of respondents focused on IT cost management did report that they had deferred or were deferring capital expenditures. For some respondents, this likely included the cancellation or postponement of projects that they had planned to start. So, we expected to see further evidence of scaling back capital projects in this category as well.

This turned out to be the case for only a minority of respondents. Within this subset of all respondents, fewer than a fifth had canceled or were currently canceling active projects (see Table 6-4). A larger percentage of respondents (35.6%) reported that they had reduced or were currently reducing the scope of active projects. A similar percentage of respondents focused on IT cost management (35.8%) had changed or were currently changing their approach to executing projects by bringing more work in house. This presumably implies that they were reducing their use of contractors and consultants and

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**CSU East Bay Consolidates Hardware Purchases**

Like many public universities, California State University East Bay has faced continual pressure in the past few years to reduce expenses to offset cuts in state allocations to higher education. According to East Bay CIO John Charles, collaborative IT procurement has been an important part of the institution’s overall IT cost management strategy. Charles says that in the past, academic areas purchased approximately 500 computers annually in dribs and drabs. This piecemeal approach prevented academic areas from purchasing their PCs at volume discounts. Charles approached the deans with a plan to coordinate PC purchases university-wide from a centralized fund that was financed by the academic areas’ equipment budgets. The centralized purchasing lowered PC purchase prices from $1,500 to $1,100 each. Each academic area contributed the discounted cost per PC ($1,100) to the fund. The plan let the academic areas keep the cost savings per PC ($400). The benefit Charles described was that “they never had to buy another computer [themselves] again and were left with a couple hundred dollars in their budget that they no longer spent on computers. When the deans saw this discretionary funding being left on the table for them, they viewed the plan as a win.”

Eventually Charles did the same thing for servers, showing academic areas how they were wasting resources by purchasing $5,000 servers that registered peak utilizations of only 3%. Charles proposed a program of virtualizing servers in a centralized data center, abolishing the need to purchase servers locally and freeing up more money for the academic areas. “They liked the opportunity. It was the time to create a data-driven approach to show when win-win scenarios could be built around this type of centralization of infrastructure for things like computers and servers.”
allocating more of their own staff resources to completing project work. While this approach may expand the duration of projects or put staff in roles that stretch their skills, it can also conserve funds by decreasing payments to third-party consultants and contractors.

Interestingly, the action in which the most respondents are or had been engaged involved changing the prioritization of the IT projects in their portfolio. More than half of the subset of respondents focused on IT cost management in the past two years reported that their institutions had or were placing a higher priority on projects that have a higher potential return on investment.

Penny Cox, associate vice president for IT at the University of Kentucky, described a process instituted to place a greater focus on return on investment in IT projects. “We have an enterprise architecture review process to scrutinize every hardware or software replacement request whether it originates within IT or elsewhere on campus. The governance group evaluates the case for each investment. The process is steeped in financial evaluations including return on investment, net present value, and total cost of ownership. The expectation is that new proposals will be accompanied by a thorough analysis of what we spend today, the available options, and the cost savings associated with each.”

Return on investment in IT projects has long been a difficult topic for higher education. The challenges run the gamut from how to calculate a discrete return on an investment in a common good like the network to how to place a valuation on noneconomic benefits of IT, such as improved scholarship. Our question did not provide a specific definition for return on investment. Some respondents may have interpreted it as placing greater priority on projects that facilitated cost savings within the institution. Others may have taken a more expansive definition of return on investment and are reflecting a tendency at their institution to place more scrutiny on the benefits of any IT investment and to favor those that promise greater magnitude of either financial or nonfinancial benefits.

We plotted the four activities within the project portfolio category in our adoption framework to see if they too followed the pattern of greater adoption of actions that offered the most immediate realization of cost savings. Two of the four actions in our estimation fall into the “quick wins” quadrant (III) because they provide an immediate cost savings and are relatively easy to implement. We considered the cancellation of active projects to be in the “pursue selectively” quadrant (IV) because it offers immediate cost savings but is harder to implement. Once a project is under way, there are often contractual commitments, technical dependencies, and stakeholder expectations that would all have to be altered in order to permanently stop work. Finally, we saw placing greater priority on projects that offer a higher return on investment as an activity that belonged in the “defer for now” quadrant (II) of the

<table>
<thead>
<tr>
<th>Framework Quadrant</th>
<th>Change</th>
<th>Done in Past Two Years</th>
<th>Doing Now</th>
<th>Planning to Do</th>
<th>Not Planning to Do</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lay the Groundwork</td>
<td>Place greater priority on projects with higher potential ROI (N = 225)</td>
<td>14.7%</td>
<td>48.9%</td>
<td>28.4%</td>
<td>8.0%</td>
</tr>
<tr>
<td>Quick Wins</td>
<td>Reduce the scope of active projects (N = 236)</td>
<td>6.8%</td>
<td>28.8%</td>
<td>22.9%</td>
<td>41.5%</td>
</tr>
<tr>
<td>Quick Wins</td>
<td>Bring project work in house (N = 221)</td>
<td>14.5%</td>
<td>21.3%</td>
<td>11.8%</td>
<td>52.5%</td>
</tr>
<tr>
<td>Pursue Selectively</td>
<td>Cancel active projects (N = 230)</td>
<td>3.9%</td>
<td>13.0%</td>
<td>7.4%</td>
<td>75.7%</td>
</tr>
</tbody>
</table>
framework. Our reasoning was that it takes relatively longer to realize any cost savings because they accrue only after an initial period of investment and implementation.

Respondents had done and were doing additional changes in the “quick win (III)” and the “lay the groundwork (I)” quadrants. Respondents were actively bringing more project work in house to decrease expenditures on consultants and contractors. Some also had taken or were taking the step of trimming their ambitions and reducing the scope of active IT projects. This action likely is allowing the projects to continue, creating some benefit while conserving financial resources. Many were engaged in altering how they prioritize their IT projects. This is a potentially positive development and suggests that some respondents were able to take a longer-term view and use their cost management efforts as a way to focus on some higher-value IT investment opportunities. Lastly, relatively few respondents reported canceling active projects. This is probably both a testament to the difficulties of producing cost savings through canceling projects and a lack of necessity to take such drastic action to address budget shortfalls.

**IT Management**

Our fourth category contained 14 actions that fell under the umbrella topic of changes to IT management. The category included changes that would alter the risk profile of an institution’s technology, its sourcing strategy (e.g., use of enterprise server hosting), its use of standards, and its technical directions (virtualization, SaaS). The specific actions included in this category are listed in Table 6-5 along with respondents’ reported adoption of each action. Among the 14 changes to IT management, half had been done in the past two years or were being done by a majority of this subset of respondents. Three actions—increase use of virtual servers, greater use of standard hardware, and extended hardware replacement cycles—had been done or were being done by more than 70% of respondents.

The only actions that a significant proportion (40% or more) of respondents had no plans to adopt were deferring maintenance on major systems or infrastructure, relaxation or deferral of disaster recovery plans, and the increased use of cloud-based enterprise storage. For the first two of these three actions, it is arguably a very positive result that a majority or large minority of respondents had no plans to adopt them. Both the deferral of maintenance and the relaxation of disaster recovery plans increase IT risk and can threaten an institution’s ability to operate.

On the other hand, it is cause for concern that more than 45% of cost management–focused respondents had deferred or were currently deferring maintenance on systems and nearly 30% had deferred or were deferring disaster recovery plans as part of their IT cost management efforts. An additional 10% were planning both actions for the future. Not surprisingly, deferring maintenance on major systems or infrastructure as part of IT cost management strategies was more prevalent among respondents who had experienced larger reductions to their central IT operating budget. Among the 63 respondents who experienced a 10% or greater reduction to their central IT budget, 44 reported that they had deferred, were deferring, or were planning to defer maintenance (32 of 45). The proportions were lower for respondents who had flat to 4% decreases in central IT operating budgets (31 of 67) or had experienced budget increases (22 of 51). While we have no insight into how significant a risk these deferrals pose to individual respondents, it is not a good sign that nearly half of those respondents whose central IT operating budget increased in the
past two years believed it had been or was becoming necessary to defer maintenance of major systems or infrastructure. We did not find a similar relationship between change to the central IT budget and the decision to relax or defer disaster recovery plans.

The actions in this category covered all four quadrants of the framework we developed. Among the actions that promised quick savings with relatively easy implementation paths ["quick wins" (III)], there was significant adoption of extending hardware replacement cycles and deferring maintenance on major systems and infrastructure. For the former, nearly three-quarters of respondents reported that they had done it or were doing it. For the latter action, slightly fewer than half of the respondents focused on IT cost management reported that they had done it or were doing it now. Pima College implemented a series of measures designed to meet budget reduction targets without losing staff positions. Among them was extending hardware replacement cycles. Pima CIO Kirk Kelly told us, “We are not facing giant budget cuts, but we are constrained. I have extended all of our replacement cycles to the maximum length of time. This has cut our costs by 10% per year.”

Respondents also were engaged in actions that had longer timelines to realize benefits and were harder to do but that could offer long-term strategic benefit. For example, more than half of the subset of respondents had consolidated or were in the process of

<table>
<thead>
<tr>
<th>Framework Quadrant</th>
<th>Change</th>
<th>Done in Past Two Years</th>
<th>Doing Now</th>
<th>Planning to Do</th>
<th>Not Planning to Do</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lay the Groundwork</td>
<td>Increase use of virtual servers (N = 237)</td>
<td>30.0%</td>
<td>53.6%</td>
<td>15.2%</td>
<td>1.3%</td>
</tr>
<tr>
<td>Lay the Groundwork</td>
<td>Greater use of standard hardware (N = 234)</td>
<td>31.2%</td>
<td>44.4%</td>
<td>14.5%</td>
<td>9.8%</td>
</tr>
<tr>
<td>Quick Wins</td>
<td>Extend hardware replacement cycles (N = 237)</td>
<td>24.5%</td>
<td>48.1%</td>
<td>14.3%</td>
<td>13.1%</td>
</tr>
<tr>
<td>Defer for Now</td>
<td>Consolidate local storage to enterprise service (N = 226)</td>
<td>18.6%</td>
<td>40.7%</td>
<td>24.3%</td>
<td>16.4%</td>
</tr>
<tr>
<td>Pursue Selectively</td>
<td>Retire infrequently used technology (N = 230)</td>
<td>18.7%</td>
<td>39.6%</td>
<td>35.2%</td>
<td>6.5%</td>
</tr>
<tr>
<td>Pursue Selectively</td>
<td>Consolidate duplicate platforms/applications (N = 219)</td>
<td>19.2%</td>
<td>38.8%</td>
<td>35.6%</td>
<td>6.4%</td>
</tr>
<tr>
<td>Quick Wins</td>
<td>Reduce modifications in enterprise application software (N = 226)</td>
<td>21.7%</td>
<td>31.4%</td>
<td>15.5%</td>
<td>31.4%</td>
</tr>
<tr>
<td>Pursue Selectively</td>
<td>Increase use of open-source software (N = 223)</td>
<td>16.6%</td>
<td>33.2%</td>
<td>23.8%</td>
<td>26.5%</td>
</tr>
<tr>
<td>Defer for Now</td>
<td>Increase use of enterprise server hosting (N = 224)</td>
<td>12.9%</td>
<td>33.5%</td>
<td>28.6%</td>
<td>25.0%</td>
</tr>
<tr>
<td>Quick Wins</td>
<td>Defer maintenance on major systems/infrastructure (N = 233)</td>
<td>15.5%</td>
<td>30.9%</td>
<td>10.7%</td>
<td>42.9%</td>
</tr>
<tr>
<td>Quick Wins</td>
<td>Relax/defer disaster recovery plans (N = 230)</td>
<td>9.6%</td>
<td>20.0%</td>
<td>10.4%</td>
<td>60.0%</td>
</tr>
<tr>
<td>Defer for Now</td>
<td>Increase deployment of SaaS (N = 211)</td>
<td>9.0%</td>
<td>18.5%</td>
<td>44.1%</td>
<td>28.4%</td>
</tr>
<tr>
<td>Pursue Selectively</td>
<td>Increase use of virtual desktops, including labs and classrooms (N = 222)</td>
<td>3.2%</td>
<td>22.1%</td>
<td>50.0%</td>
<td>24.8%</td>
</tr>
<tr>
<td>Defer for Now</td>
<td>Increase use of cloud-based enterprise storage (N = 211)</td>
<td>2.8%</td>
<td>12.3%</td>
<td>41.7%</td>
<td>43.1%</td>
</tr>
</tbody>
</table>
consolidating local storage to an enterprise service. A similar percentage was consolidating duplicate applications and technology platforms. Both these items are difficult to do because they require stakeholders to give up a service they have grown accustomed to or let go of local control. However, they offer the promise of better long-term utilization of resources. A small majority of this subset of respondents was also engaged in reducing the modifications in their enterprise systems. This is also often politically difficult to do because it requires additional change to business practices or greater acceptance of a standard practice, but it has the promise of reducing the cost of future upgrades to those systems.

We also saw movement by some respondents to adopt server and desktop hardware virtualization as part of their IT cost management actions. Adopting virtualization can be fiscally challenging because it requires up-front investment, technically challenging because it requires IT organizations to develop new skills and create new services, and politically challenging because in order to harvest the benefits, campus organizations need to accept change (e.g., closing down a computer lab or giving up local departmental servers).

For example, California State University East Bay is piloting the use of virtualization for its computer lab. According to CIO John Charles, the solution is part of a private cloud being developed by the CSU system. “Rather than doing a virtual computing lab infrastructure here at East Bay, it scales much better if 12 or 15 campuses contribute. It becomes a much bigger win for Cal State than we could ever achieve here at East Bay.” Charles anticipates closing, consolidating or virtualizing a third of East Bay’s computer labs by fall 2010.

Adoption of server and desktop virtualization holds the promise of reduced costs for future hardware acquisitions, increased staff productivity, and better use of campus space. More than three-quarters of respondents (83.6%) had adopted or were adopting virtual servers, and about a quarter (25.3%) had adopted or were adopting virtual desktops in labs, classrooms, and elsewhere. The large difference in adoption between virtual servers and virtual desktops suggests that respondents saw desktop virtualization as a more emergent technology and server virtualization as more proven. We note that half of respondents were planning to adopt virtual desktops.

It appears that some respondent IT organizations were using the funding decline to spur or accelerate their adoption of technologies and sourcing strategies that have the promise to reduce the costs of sustaining IT in the long term. Adoption of technologies such as virtualization may also be a precursor to more organizational change. For now, some institutions are more focused on deploying technologies (e.g., virtual desktops, virtual servers, enterprise storage) that promise to reduce the costs of sustaining the IT infrastructure. However, these changes also aggregate responsibility for delivering technologies in a central or perhaps college IT group and away from local IT units. As such, these changes, if adopted on a large enough scale, could lay the groundwork to further change the focus of departmental IT staff or enable consolidation of local IT groups.

**IT Support Services**

The final category of cost management actions pertained to IT support services. It included actions that altered what services were provided, how they were delivered, and the organizations that provided IT support. The category included five actions: consolidating departments providing IT support, outsourcing some IT support services, reducing service levels, reducing the number of supported technologies, and increasing the use of tools to automate support. Among the five, the action that respondents had done or were in the process of doing most was to
increase the use of tools to automate support (see Table 6-6). Only about one in four respondents reported consolidating IT support departments. Presumably, this entailed bringing together local and central IT support units in some way. About a quarter of respondents also reported that they had outsourced or were in the process of outsourcing some IT support services.

A minority of respondents reported having curtailed support services as part of their IT cost management efforts. Almost a third had reduced or were reducing the number of technologies they supported, and about a fifth had reduced or were reducing service levels. We suspect that these changes include some instances of reductions in service that the campus needed and valued and some reductions that were deemed to be luxuries or unnecessary.

Once again, we looked at respondents’ adoption patterns in light of the framework we created to understand the relative difficulty and timing of realizing cost savings that each action presented. Many respondents took a long view in this category and focused on increasing the use of tools to automate support functions. A minority of respondents had pursued or were pursuing a more aggressive course of change and took actions to consolidate departments or outsource parts of the IT function. Presuming these changes are creating reductions in staffing, the savings would come quickly. However, we suspect that the implementation challenges and cultural changes encountered have been significant. Finally, a minority adopted changes that would produce more immediate and perhaps harvestable savings by cutting services.

**Breadth of Adoption**

Nearly all the respondents who were focused on IT cost management had adopted multiple tactics. In fact, the majority (52.8%) had deployed or were in the process of deploying between 16 and 34 of the total of 37 changes included in the survey (see Figure 6-2). Fewer than 5% of this subset of all respondents had adopted four or fewer changes.

Not all of the changes we listed were likely relevant to all respondents or held the same potential to reduce costs. There was a relationship between the size of respondents’ central IT budgets and the number of changes adopted.

**Breadth of Adoption and Reduction in IT Costs**

We observed a relationship between the number of changes that had been or were being adopted and the respondents’ mean agreement that their institutions had significantly reduced the cost of IT operations as a result of the economic crisis.

**Table 6-6. Status of Adoption of Changes Related to IT Support Services (Institutions Focused on IT Cost Management since FY2007–2008)**

<table>
<thead>
<tr>
<th>Framework Quadrant</th>
<th>Change</th>
<th>Done in Past Two Years</th>
<th>Doing Now</th>
<th>Planning to Do</th>
<th>Not Planning to Do</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lay the Groundwork</td>
<td>Increase use of tools to automate support (N = 225)</td>
<td>12.0%</td>
<td>43.1%</td>
<td>33.8%</td>
<td>11.1%</td>
</tr>
<tr>
<td>Quick Wins</td>
<td>Reduce the number of supported technologies (N = 225)</td>
<td>12.4%</td>
<td>20.9%</td>
<td>26.7%</td>
<td>40.0%</td>
</tr>
<tr>
<td>Pursue Selectively</td>
<td>Outsource some IT support services (N = 214)</td>
<td>10.7%</td>
<td>13.6%</td>
<td>17.8%</td>
<td>57.9%</td>
</tr>
<tr>
<td>Pursue Selectively</td>
<td>Consolidate departments providing IT support (N = 219)</td>
<td>11.4%</td>
<td>12.3%</td>
<td>18.3%</td>
<td>58.0%</td>
</tr>
<tr>
<td>Quick Wins</td>
<td>Reduce service levels (N = 231)</td>
<td>6.5%</td>
<td>14.7%</td>
<td>14.3%</td>
<td>64.5%</td>
</tr>
</tbody>
</table>
Respondents who had employed a large number of the changes agreed on average more strongly that they had reduced the costs of IT operations at their institutions. We can’t conclude any causality from this relationship. It is possible that pursuing more changes had the benefits of a portfolio diversification strategy and improved chances of hitting upon a tactical change that significantly reduced expenditures. Or, greater volume may have created a cumulative effect that was greater than those benefits experienced by respondents who attempted fewer changes.

Sources of Cost Savings, by Category and Action

We asked respondents to identify which category of cost management actions provided the largest portion of the IT cost reductions their institutions achieved in the past two fiscal years. Categories consisted of the cost management actions described early in this chapter and listed in detail in Table 6-1. No single category appeared to be a dominant source of cost savings. The most frequently selected category, personnel management, was selected by about a quarter of respondents.

Pepperdine University Outsources Help Desk

As part of its IT cost management strategy, Pepperdine University outsourced a portion of its help desk function. According to vice provost and CIO Tim Chester, the change was part of a broader restructuring that the IT organization underwent to meet budget reduction targets without sacrificing its discretionary resources. To cut costs and preserve the ability to innovate, the IT organization had to change the way it operates. Chester reported that the IT leadership decided to outsource transactional services such as the help desk to a third-party vendor with call centers in New York and Florida for tier 1 support, maintaining an on-campus team for tier 2 support. The move, Chester said, has saved Pepperdine about $10 per call. Given a historical call volume of 30,000 calls annually, this move has saved $300,000 per year. Pepperdine has reinvested these savings in new positions in the technology and learning center to engage the faculty on technology pedagogical issues.
Financial management was selected by only slightly fewer respondents, and the three remaining categories were each selected by about 15% of the subset of total respondents (see Table 6-7).

Using the same categories of actions, we asked respondents which they anticipate will provide the greatest portion of future IT cost savings for their institutions. Expectations for the future did not differ substantially from respondents’ experience from the past two fiscal years: personnel management was selected by the largest proportion of respondents. Slightly more respondents expected that changes to the IT project portfolio (scope and timing of projects) would be the most significant portion of cost savings in the next two years than reported that it had been in the past. Finally, there was a small decline in the percentage of respondents who anticipate that changes pertaining to the financial management of IT (fees, chargebacks, use of budget reserves, purchase agreements) would produce the largest proportion of cost savings in the next two years, compared with the percentage of respondents who reported it had been the largest proportion of savings in the past.

A look at how institutions had adopted the individual actions within the categories provided greater insight into respondents’ approach to cost management. For example, we observed an association between respondents’ level of agreement that they had significantly reduced the costs of IT operations as a result of the economic crisis and their adoption of particular cost management actions. Specifically, we found that respondents whose institutions had acted to reduce training budgets, freeze or eliminate open positions, or renegotiate vendor contracts as part of their institutions’ IT cost management strategy reported higher mean agreement that their institutions had significantly reduced their IT operating costs. Institutions that had done these changes in the past two years or were doing them now reported mean levels of agreement around neutral that their institutions had significantly reduced the costs of IT operations. In contrast, institutions that were planning these changes or had no plans to employ them averaged between disagree and neutral. Of the changes we included in the survey, these were the only ones that had a relationship to respondents’ assessment of their cost reduction outcomes statistically strong enough to report.

**Summary**

The sparse number of respondents who felt that they had fundamentally changed how IT is managed, as reported in Chapter 5 (Table 5-3), and the lack of many relationships between change and particular actions taken are consistent with our overarching observation that most respondents’ financial situation has engendered more incremental change. Certainly, some respondents adopted relatively more aggressive measures, such as consolidating organizations or outsourcing

<table>
<thead>
<tr>
<th>Category of Action</th>
<th>Provided Largest Portion of IT Cost Savings</th>
<th>Past Two Years (N = 221)</th>
<th>Next Two Years (N = 209)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT Personnel Management</td>
<td>27.1%</td>
<td>30.1%</td>
<td></td>
</tr>
<tr>
<td>IT Financial Management</td>
<td>24.0%</td>
<td>14.4%</td>
<td></td>
</tr>
<tr>
<td>IT Project Portfolio</td>
<td>16.3%</td>
<td>21.5%</td>
<td></td>
</tr>
<tr>
<td>IT Management</td>
<td>15.8%</td>
<td>16.3%</td>
<td></td>
</tr>
<tr>
<td>IT Support</td>
<td>16.7%</td>
<td>17.7%</td>
<td></td>
</tr>
</tbody>
</table>
functions. Others adopted changes that may have laid the groundwork for more change in the future, such as centralizing important but commodity computing services including storage or increasing their use of virtualization for desktops and lab computing.

In fact, the actions that the majority of respondents had done, were doing, or are planning to do are a diverse mix of short-term, one-time changes and long-term restructuring that could produce recurring savings. Among the 11 actions that three-quarters or more of respondents had done, were doing, or were planning to do were four changes that we would deem “quick wins,” two actions that we deemed “laying the groundwork” for longer-term benefit, two that we forecasted that respondents would “defer” because they are difficult and produce savings in the long-term only, and three that we mapped to our “pursue selectively” quadrant also because of the difficulty to implement. Specifically, significant numbers planned to adopt or had adopted short-term, one-time changes such as freezing travel budgets or extending replacement cycles. However, majorities of respondents also were planning to automate support, consolidate storage to an enterprise service, and increase use of virtual desktops or had done so already.

We do not know the magnitude of savings that respondents realized from any of the particular actions they have taken. Likewise, we can’t tell if the economic crisis has significantly increased rates of adoption of the changes that we would deem to have the potential to remake how IT is managed (e.g., outsourcing, virtualization, cloud computing). Many respondents are active in these areas, but we don’t know if as a result of the recession these activities have become more integral to IT operations. Institutions may have already been on a path toward the piloting and adoption of many of these changes before the budget crisis hit. Given that respondents were conservative in their assessment of whether they had fundamentally changed how IT is managed, we suspect that rates of adoption and the relative importance for many of the long-term changes may have increased only incrementally.

As we observed in our analysis of each category of actions, there were many who adopted changes that provide short-term budget relief but not sustainable cost reduction. Travel, training, and hiring freezes or deferring maintenance and equipment replacement can be sustained only for a relatively short time before they threaten the performance of IT organizations and the reliability of technology. If respondents realized the majority of their savings from actions such as these, the cost reductions will be very difficult to sustain.

If we are nearing the end of higher education’s fiscal difficulties, the majority of respondents took the actions they needed to take to weather the storm. If, however, there are more declines to come or if IT organizations are left to find sources of funding for innovation without significant future budget increases, then it is likely we have only made a down payment on the cost reduction actions that may ultimately be necessary.

Endnotes
1. Pam Arroway and Bahwna Sharma, EDUCAUSE Core Data Survey Fiscal Year 2008 Summary Report (Boulder, CO: EDUCAUSE), 16–18.
2. The survey instrument was designed to include 15 actions; however, due to an error, one action was repeated. Therefore, we have reported on only 14 actions.
The Impact of the Financial Crisis on IT’s Institutional Positioning

Never discourage anyone...who continually makes progress, no matter how slow.
—Plato

Key Findings
- Among all respondents, about half (50.4%) agreed or strongly agreed that their institutions were investing to lower their administrative costs.
- The majority of respondents disagreed that their institutions were investing in IT as a means of reducing the costs of an education.
- Only a minority of respondents agreed or strongly agreed that their institutions were investing in technology as a means to increase revenue.
- Respondents who agreed or strongly agreed that their institutions valued innovation also reported higher mean agreement that their institutions were investing in IT to lower the costs of administrative operations and as a means to increase revenues.
- Nearly two-thirds of all survey respondents agreed or strongly agreed that IT would be viewed as a more strategic element of their institution’s cost management apparatus in the next two years.

To this point, this study has analyzed IT as an institutional cost that needed to be cut as the recession reduced institutional revenues and challenged institutions’ ability to maintain balanced budgets. We have chronicled the degree to which the institutions we studied cut their IT budgets and how they went about changing the way they managed technology. IT budgets are typically among the largest nonacademic operating budgets at an institution and, after facilities, one of the largest items of expenditure in institutional capital budgets. We readily understood and expected that many institutions would look to the IT budget as a contributor to their overall expense reduction strategies.

However, technology is also a significant asset for institutions. Increasingly, the knowledge that higher education creates is stored, disseminated, and preserved in its digital form. Technology innovations such as the ability to move, manipulate, and visualize large data sets are enabling researchers to study problems in new ways. Technology enables institutional distance-learning programs and has become part of the core infrastructure used in classroom-based teaching. Most campus administra-
tive and student support processes are delivered, accessed, or tracked at least partially with technology.

In this regard, technology is more than an institutional cost center; it is also an area of investment that undergirds the strategies and programs of the institution. Investments in technology can boost staff productivity, expand access to courses, provide important infrastructure to new research programs, and facilitate the development of new revenues. So, in the face of the economic crisis, we wondered if institutions focused only on trimming technology’s expense or if they also looked for opportunities to invest.

In this chapter, we report on the degree to which respondents invested in technology as a means to create broader institutional benefits such as enhanced productivity, new revenues, or cost savings outside the IT budget. We also describe the degree to which respondents believe the economic crisis has changed the outlook for technology at their institution. Finally, we look at what repercussions, if any, the economic recession has had for respondents’ sense of their ability to influence decision making at their institutions.

**Technology—Cost Center or Area for Investment?**

For some time, growth in the U.S. economy has been driven in part by firms’ ability to increase productivity. Today, economists see gains in productivity as a leading indicator that the economy is emerging from recession and remaking itself as one that can be competitive in the postrecession, global economy.1 As in the past, technology and innovation are expected to play a large role in spurring future productivity gains and economic growth. Technology corporations Cisco Systems and Intel, which some consider to be bellwethers for the overall economy, were reporting upticks in sales and revenues by the first quarter of 2010 that suggest companies are once again investing in technology in part to boost productivity and reposition themselves for growth.2

To get a sense of whether higher education viewed technology only as a cost to be managed or as an investment that could produce broader returns, we asked respondents to indicate their level of agreement with three statements regarding their institutions’ IT investments. Specifically, we asked respondents if their institutions were investing in IT as a means to reduce the costs of an education, lower administrative costs, and increase revenues. We saw these three objectives as proxies for broader changes that could be facilitated by technology and that would improve an institution’s overall financial performance. Table 7-1 summarizes respondents’ mean agreement with each statement.

On average, respondents were in slight agreement that their institutions were investing in IT to lower administrative costs. Among all respondents, about half (50.4%) agreed or strongly agreed that their institutions were investing to lower their administrative costs. Bruce Maas, CIO at the University of Wisconsin–Milwaukee, provided an interesting example of how his organization had invested in skills rather than technology within the IT organization to create a greater capacity to reduce administrative costs. Maas explained, “Simplifying and standardizing processes on the campus can really net

<table>
<thead>
<tr>
<th>My institution is investing in IT as a means to:</th>
<th>Mean*</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower its administrative costs (N = 318)</td>
<td>3.24</td>
<td>1.022</td>
</tr>
<tr>
<td>Increase revenues (N = 317)</td>
<td>2.83</td>
<td>1.050</td>
</tr>
<tr>
<td>Reduce the cost of education (N = 316)</td>
<td>2.58</td>
<td>0.990</td>
</tr>
</tbody>
</table>

* Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree
tremendous efficiencies. We can also save money by using technology more effectively to eliminate time-consuming manual processes. To help get at these opportunities, we formed within IT an office of process management. The staff in this office have proven that they can lead cross-functional teams to make processes more efficient or, more recently, to reduce the long-term total costs of ownership for business projects by using a commonly accepted and understood requirements methodology.”

While a sizable proportion of respondents said their institutions invested in IT to reduce administrative costs, one might reasonably expect that it would have been even higher, given the focus that institutions have had on reducing administrative costs in the past two years. The fact that it wasn’t could be attributable again to the broader theme of our study that for many respondents, budgets did not fall substantially. Or, it could be an indicator that institutions were focused on other means to reduce costs that did not require an up-front investment of time or money. Finally, it could stem from perceptions that investments in technology may boost productivity but infrequently generate direct cost savings. Certainly, much of our analysis in Chapter 6 of changes that were made to IT operations to reduce costs corroborates this hypothesis.

A bare majority of respondents disagreed that their institutions were investing in IT as a means of reducing the costs of an education. For example, technology could be used to address two pressure points on the cost of education. As the economy worsened, private institutions for reasons of both competitive necessity and public perception began to slow the rate of growth of tuition and increased financial aid. At the same time, public institutions have been under the twin pressures of falling state allocations and increased demand for education from the populations they serve. Institutions might be more likely to increase their investment in online or hybrid courses to allow them to enroll more students, reduce the time required for a student to achieve a degree, and better leverage their fixed costs (faculty and classrooms). However, just over half of respondents did not report that their institutions are making IT investments designed to lower the cost of providing an education. For many respondents, either the pressures had not grown great enough to spur investments that could reduce the cost of an education or institutions saw no obvious technologies to invest in that could bring about that result. A third possibility, of course, is that institutions simply did not have the funds available to make investments.

Likewise, only a minority of respondents agreed or strongly agreed that their institutions were investing in technology as a means to increase revenue. The proportion in agreement or strong agreement was larger than reported for reducing the cost of education and amounted to just under a third of all respondents (31.6%). Examples of technology investments we had in mind for this question included expanded distance-learning offerings to capture new student markets or the implementation of new technologies such as social networking to support fund-raising strategies. The category could also include investments in research computing infrastructure as part of strategies to increase success in recruiting researchers or competing for grant awards. Given that research funding is a major mechanism through which institutions benefit from federal stimulus spending, we thought this might motivate some research universities to expand their investments in technology. However, we found no statistically significant relationship between respondents’ level of agreement that their institutions had invested in IT as a means to increase revenues and institutions’ Carnegie classification, or the respondents’ description of the importance of research to the institution.

In our qualitative research, we did find examples of institutions that invested in IT as a strategic necessity to protect enrollment reve-
nues and position the institution to increase revenues in the future. Joe Sargent is the executive director for information and educational technologies at Walters State Community College. Sargent told us that Walters invested in IT as a means to remain competitive in a crowded market. “As a community college, it is important that we enable our students to work remotely. Our students are highly mobile and frequently conduct their academic work while off campus. We have to match competitors’ ability to facilitate students’ working and learning anywhere and at any time. We have invested in technology to help us compete with a variety of educational delivery methods.”

Brian Rudolph, director of information services at William Penn University, offered a similar example. Rudolph felt the economic crisis spurred his institution to move more aggressively to use technology in instruction. “Executive management is looking to IT to support expanded delivery of online courses, certificates, and degrees. The economic pressures have helped to accelerate our overcoming historical mistrust [of technology] and made leadership more open to proactively including the IS department when seeking solutions to management problems.”

Except for those institutions investing in IT to reduce administrative costs, it did not appear that most respondents felt IT was being treated as an investment area. As we speculated above, many respondents may have had their hands full responding to the immediate cost reduction needs. From this standpoint, we may have asked our questions too soon. It may be that institutions will turn to an investment agenda only after making cuts to bring budgets back into balance. It is also possible that the outcomes we inquired about could be accomplished with existing technology. In a recent article published in NACUBO’s Business Officer magazine, EDUCAUSE Vice President Richard Katz pointed out that higher education has in place today much of the technology it needs to facilitate substantial change. So perhaps what we see is not evidence of unwillingness or inability to invest but rather a hunkering down to try to take best advantage of what institutions already have. For example, John Dalby, chief information officer at Lewis University, described to us how his job is shifting to emphasize the effective use of technology. Dalby told us that Lewis has been fortunate to be able to continue to invest in IT even as the economy worsened. However, as he completed projects to upgrade the university’s IT infrastructure, he shifted the emphasis of his job. Dalby told us, “As infrastructure investments have stabilized, my role has changed from one primarily focused on IT operations to a more externally focused role. Now, I spend more of my time working with users and departments to better understand their needs and make sure that they use our technology more effectively. This external focus makes our institution more effective and it builds allies to support future requests for IT investment.”

A lack of financial means could be a more obvious explanation for why some respondents agreed less strongly that their institutions were investing in technology. However, we found no meaningful relationship between the change respondents reported in their central IT operating budget from FY2007–2008 to FY2009–2010 and their mean agreement with each statement regarding IT investment. One might have expected institutions that experienced deeper cuts to be less able to invest in technology. Alternatively, those who were experiencing deeper cuts and who saw technology as an asset that facilitates new revenues or lower costs may have had a more urgent need to invest. Neither explanation appeared to have been the case.

We did observe a relationship between respondents’ assessment of the value their institutions place on innovation in administrative operations and their agreement that
their institutions were investing in technology to facilitate cost savings or new revenues. As Table 7-2 illustrates, respondents who agreed or strongly agreed that their institutions valued innovation also reported higher mean agreement that their institutions were investing in IT to lower the costs of administrative operations and as a means to increase revenues. These same respondents also disagreed less strongly on average that their institutions were investing in IT to reduce the costs of education.

It makes sense that institutions that value innovation in administrative operations would create an organizational climate that encourages and expects leaders to attempt different approaches to improve operations. At a time of worsening budgets, it is not surprising that these same institutions would be more active in investing in technology as a means to reduce costs. Respondents from institutions that place a high value on innovation in administrative operations may also find themselves in an organizational culture that is more tolerant of experimentation and risk-taking in general. This may explain why these respondents also reported higher mean agreement that their institutions were also investing in IT to reduce the cost of education and to increase revenues.

We also found a statistically meaningful relationship between the goal respondents reported that their institutions had for IT and their mean agreement that their institutions were investing in IT to increase revenues. We asked respondents to indicate which of the following four statements best described their institution’s goals for IT:

- Provide reliable IT infrastructure and services at the lowest possible cost.
- Provide appropriate IT infrastructure and services to different users, based on their needs.
- Provide IT infrastructure and services that further the institution’s strategic goals.
- Provide IT infrastructure and services to create institutional competitive advantage.

Our hypothesis was that institutions that held the latter two goals would be more likely to see IT as an investment and not just a cost. Those who saw their institutional IT goals aligned with the first two statements would more likely view IT as a cost center that needed to be reduced like any other large budget during a downturn in revenues.

| My institution places high value on innovation in administrative operations. | My Institution Is Investing in IT as a Means to: |
|---|---|---|
| | Reduce the Cost of Education | Lower Its Administrative Costs | Increase Revenues |
| Strongly disagree or disagree | Mean* | 2.20 | 2.77 | 2.38 |
| | N | 56 | 57 | 56 |
| | Std. Deviation | 0.980 | 1.086 | 1.001 |
| Neutral | Mean* | 2.41 | 3.10 | 2.71 |
| | N | 92 | 93 | 93 |
| | Std. Deviation | 0.891 | 0.979 | 0.984 |
| Agree or strongly agree | Mean* | 2.81 | 3.49 | 3.07 |
| | N | 167 | 167 | 167 |
| | Std. Deviation | 0.987 | 0.943 | 1.036 |
| Total | Mean* | 2.58 | 3.24 | 2.84 |
| | N | 315 | 317 | 316 |
| | Std. Deviation | 0.988 | 1.016 | 1.046 |

* Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree
We found some evidence of this relationship. Respondents who identified their IT goals as either furthering their institution’s strategic goals or creating institutional competitive advantage also averaged higher agreement that their institutions were investing in IT to increase revenues and lower administrative costs (Table 7-3). We note that a small number of respondents identified creating competitive advantage as their institution’s goal for IT. This low number of respondents may partially explain why their mean responses are higher than those provided by other respondents.

**Outlook for IT**

Based on the responses reported in the preceding subsection as well as our broader findings, we conclude that for many, IT seems to have been treated primarily as a cost center to be managed and not as an asset to be broadly invested in during the downturn. This is likely nothing more than a continuation of the historical perceptions of IT held by many institutions. It may have been too much to expect that views would change remarkably in the midst of an economic downturn that was bad enough to consume management attention, but not so bad as to motivate substantial changes in behaviors or beliefs.

The relatively tactical treatment of IT during the crisis as well as the budget cuts that IT organizations have absorbed have not made their leaders pessimistic about IT’s positioning within the institution. In fact, two-thirds of all survey respondents agreed or strongly agreed that IT would be viewed as a more strategic element of their institution’s cost management apparatus in the next two years. Further, a large majority of respondents (86.4% disagreed or strongly disagreed) rejected the notion that IT at their institution would diminish in importance in the next two years.

As Table 7-4 illustrates, respondents also on average were between neutral and agree that within the next two years IT at their institutions will have significantly restructured service delivery. A slight majority (54.0%)

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**Table 7-3. Investment in IT, by Respondents’ Goals for IT**

<table>
<thead>
<tr>
<th>What best describes your institution’s goals for IT?</th>
<th>My institution is investing in IT as a means to lower its administrative costs.</th>
<th>My institution is investing in IT as a means to increase revenues.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide reliable IT infrastructure and services at the lowest possible cost</td>
<td>Mean* 3.02 2.63</td>
<td>N 43 43</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation 1.144 0.976</td>
<td></td>
</tr>
<tr>
<td>Provide appropriate IT infrastructure and services to different users, based on their needs</td>
<td>Mean* 3.03 2.39</td>
<td>N 38 38</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation 1.000 0.946</td>
<td></td>
</tr>
<tr>
<td>Provide IT infrastructure and services that further the institution’s strategic goals</td>
<td>Mean* 3.24 2.90</td>
<td>N 216 215</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation 0.995 1.023</td>
<td></td>
</tr>
<tr>
<td>Provide IT infrastructure and services to create institutional competitive advantage</td>
<td>Mean* 4.05 3.38</td>
<td>N 21 21</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation 0.669 1.322</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Mean* 3.24 2.83</td>
<td>N 318 317</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation 1.022 1.05</td>
<td></td>
</tr>
</tbody>
</table>

* Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree
agreed or strongly agreed with this statement. In perhaps a related observation, 46.1% of respondents agreed or strongly agreed that IT would be more centralized in the next two years. This opinion may be derived from changes brought about to save money as well as the natural evolution of technologies such as cloud computing and server virtualization, which favor aggregation of computing into larger units. Of course, this assumes that central IT is the aggregation point as opposed to a third party. In this respect, the cloud could create a greater dispersion of technology. Despite the challenges of the past two years, respondents on average were between neutral and disagree that in the future IT will have fewer staff, provide less service, or diminish in importance. Respondents’ lowest reported mean was for the assertion that IT would diminish in importance. The mean response was just below disagree.

Institutional IT goals bore a relationship to the role respondents anticipated that IT would play in future cost reduction efforts. Respondents who described their institution’s goals for IT as furthering the institutional strategic plan or creating competitive advantage reported higher mean agreement (3.86) that IT would be viewed as a more strategic element of institutional cost management in the next two years than did all other respondents (3.30). This seems further evidence of a view among a subset of respondents that technology is an asset that can be leveraged to accomplish broader goals.

We also found evidence to suggest that those institutions reporting that they had changed the most in the past expected to continue to change more in the future. Respondents who agreed or strongly agreed that as a result of the economic crisis their institutions had fundamentally changed how IT is managed, reported higher levels of mean agreement that in the next two years IT would become more centralized, and would undergo a significant restructuring of service delivery (Table 7-5). Interestingly, these respondents also agreed more that IT would diminish in importance in the next two years. Mean responses from respondents who reported fundamental change in the past two years were still well below neutral.

There was a similar statistically significant relationship between respondents’ assessment of the changes and cost savings that they have achieved and their expectations for the future of IT at their institutions. Respondents who agreed or strongly agreed that they had significantly reduced the costs of IT operations as a result of the economic crisis agreed on average more strongly that in the next two years they would have fewer IT staff and would have significantly restructured service delivery. They were in less disagreement than other respondents on average that their institutions’ IT would provide less service in the next two years as well (see Table 7-6).

The relationships we observed between respondents’ assessment of the changes and cost savings that they have achieved and their

<table>
<thead>
<tr>
<th>Table 7-4. Respondents’ Assessment of the Future of IT at Their Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within two years IT at my institution will:</td>
</tr>
<tr>
<td>Be viewed as a more strategic element of the institution’s cost management apparatus (N = 308)</td>
</tr>
<tr>
<td>Have significantly restructured service delivery (N = 302)</td>
</tr>
<tr>
<td>Be more centralized (N = 306)</td>
</tr>
<tr>
<td>Have fewer staff (N = 305)</td>
</tr>
<tr>
<td>Provide less service (303)</td>
</tr>
<tr>
<td>Diminish in importance (309)</td>
</tr>
</tbody>
</table>

* Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree
expectations for the future suggest on average that those who have changed the most in the past expect the most change in the near future. This may indicate a greater perceived need for change at these institutions that has not been addressed by the actions taken to date. These respondents may be preparing for a further worsening of their budget climate. Or, some may have put in place changes in the past two years that will continue to create change into the next two. It may also suggest that these respondents may be predisposed

<table>
<thead>
<tr>
<th>Change in Central IT Operating Budget</th>
<th>Diminish in Importance</th>
<th>Provide Less Service</th>
<th>Have Fewer Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decrease 10% or more</td>
<td>Mean*</td>
<td>1.94</td>
<td>2.61</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>68</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>0.896</td>
<td>1.086</td>
</tr>
<tr>
<td>5–9% decrease</td>
<td>Mean*</td>
<td>2.15</td>
<td>2.77</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>46</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>1.010</td>
<td>1.020</td>
</tr>
<tr>
<td>Flat to 4% decrease</td>
<td>Mean*</td>
<td>1.69</td>
<td>2.24</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>89</td>
<td>88</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>0.701</td>
<td>1.017</td>
</tr>
<tr>
<td>Increase</td>
<td>Mean*</td>
<td>1.64</td>
<td>2.10</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>92</td>
<td>91</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>0.872</td>
<td>0.955</td>
</tr>
<tr>
<td>Total</td>
<td>Mean*</td>
<td>1.80</td>
<td>2.36</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>295</td>
<td>289</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>0.870</td>
<td>1.042</td>
</tr>
</tbody>
</table>

* Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree
to pursue technology and managerial change more aggressively. Still others may hold the opinion that IT will become more centralized, have fewer staff, and restructure services for reasons beyond cost savings alone. They may expect technological change, greater commoditization of technology, and growth of alternative sourcing strategies (e.g., cloud, shared services) to be additional forces that will change how IT is staffed, organized, and operated at their institutions.

Outlook for the IT Leader

The future of the CIO role was a frequent topic of discussion long before the onset of the economic crisis. Discussions of the ebbs and flows of the authority and influence of the position are not unique to higher education either. In 2003, CIO Magazine wrote about the “incredible shrinking CIO,” whose authority and resources were being outsourced away. Later that same year, Nicholas Carr wrote “IT Doesn’t Matter.” Carr relegated CIOs to becoming managers of commodity technologies that provide little strategic differentiation for their institutions or corporations. The rise of cloud computing has led Carr and others to envision a future in which the enterprise IT organization of the near future is a much smaller and less relevant part of the organization. So, CIOs had a lot to ponder about their roles before the past two years added budget cuts, staff furloughs, and cost management to the leaders’ to-do list.

To borrow a phrase from Mark Twain, the pre-recession reports of the CIO’s demise were greatly exaggerated. In ECAR’s 2008 study of IT leadership, we found that the majority of the senior-most IT leaders who participated had a very positive assessment of their influence. Significant majorities of respondents reported that they sometimes or often participated in discussions and decisions that set the academic and administrative direction for the institution. So, many senior-most IT leaders came into the recession still feeling fairly confident in their positional authority and influence. It seemed plausible that the recession could take IT leaders’ authority and influence in either direction. Some could see diminished authority if IT budgets were cut dramatically and institutions viewed technology as just a cost to be managed, or the crisis could present IT leaders with an opportunity to enhance their ability to influence institutional directions. The financial pressures could cause institutions to empower IT leaders to rationalize technology management across the whole institution, find ways to apply technology to generate operational savings beyond the IT budget, and make strategic investments in technology to facilitate growth in revenue.

We asked respondents to evaluate how the economic crisis affected the senior-most IT leader’s ability to influence executive decision making regarding academic directions, administrative directions, and IT directions. The large majority of respondents to the survey were their institution’s CIO or equivalent (83.4%), deputy CIO or equivalent (4.1%), or a non-CIO vice president or vice provost (2.8%). This seemed to put respondents in a reasonable position to evaluate their own or their senior-most IT leader’s ability to influence decision making.

The results suggest little perception of diminished influence. As Figure 7-1 illustrates, “stayed the same” was the most common assessment of the change attributable to the economic crisis in respondents’ ability to influence each of the three types of decision making. The economic crisis did change some IT leaders’ influence, especially in setting IT directions. In fact, 46.5% reported a minor or major increase in the ability to influence IT directions. Perhaps this indicates institutions’ vesting more authority in their IT leaders to oversee IT spending or to optimize the division of responsibilities for IT services in order to reduce costs. A comparable number of respondents experienced a minor or major increase in their ability to influence administra-
tive directions. This could be attributable to some institutions’ engaging the IT leadership in greater discussion of how to apply new or already implemented technology to achieve greater administrative efficiencies. Nearly a third of respondents said their ability to influence academic directions had undergone a minor or major increase as well.

Some senior-most IT leaders felt that their influence had increased across all three categories, and others only in one or two. In fact, 25.7% of respondents reported a minor or major increase in influence in all three categories. An additional 17.6% of respondents experienced a minor or major increase in two of the three categories of executive decisions. Relatively few respondents reported a decrease in influence in any of the three categories. In fact, 86.8% reported that their influence had not decreased in any of the areas.

Interestingly, respondents’ assessment of the change in their ability to influence executive decision making did not vary significantly based on the magnitude of reductions the respondents’ central IT operating budgets had experienced. We also found no statistically significant relationship between respondents’ assessment of changes in their ability to influence decision making and where in the institution (e.g., to the president, provost, CFO, or other executive) the IT organization reports. While the reporting relationship could influence the senior-most IT leaders’ absolute influence, it appeared to have no role in determining how influence may have changed due to the economic crisis.

We did note a statistically significant relationship between institutional student FTE size and respondents’ reported change in influence over executive decision making for administrative directions and IT directions.
Respondents from institutions with higher student enrollments reported a greater mean increase in the senior-most IT leader’s ability to influence decision making for IT directions and administrative directions (see Table 7-7). Larger institutions are more likely to have decentralized IT to a greater degree than smaller institutions. If a significant portion of these institutions are empowering their IT leader to play a greater role in influencing or even directly managing these distributed resources, it might explain why they perceive a greater level of influence for IT directions. For example, Don Spicer, associate vice chancellor and CIO for the University System of Maryland, described how his position was being reshaped by the recession. According to Spicer, “The economic crisis has encouraged people within our system to say ‘I don’t have to do this myself anymore.’ Instead of doing something 11 or 12 separate times, we can do it once in a more scalable way. If I left [the CIO role], the institutional CIOs would insist that the position be filled. They see value in someone looking beyond a single institution and facilitating collaborations that are hard to accomplish in a bilateral manner.” Enrollment may also be serving as a proxy for general administrative complexity. These institutions may have been spurred by the economic crisis to launch more initiatives to find ways to boost efficiency in IT and other areas. If the IT leader is playing a central role in selecting and executing these initiatives, it might also explain respondents’ greater sense of influence. It is also possible that IT leaders at smaller institutions already felt a great deal of influence over decision making. The fact that the economic crisis did not increase their influence should not be taken as a sign that IT leaders at smaller institutions were necessarily less engaged in shaping their institution’s administrative and IT response to the recession.

While an analysis of the individual leadership traits of the senior-most IT leaders is beyond the scope of this study, we suspect these traits had a bearing on how their influence was affected by the economic crisis. ECAR’s 2004 and 2008 studies of senior-most IT leaders both confirmed that IT leaders with more effective leadership styles as measured by an established leadership questionnaire achieved better outcomes. It seems likely that these personal attributes,

<table>
<thead>
<tr>
<th>Student Enrollment (FTE)</th>
<th>How has the economic crisis affected the senior-most IT leader’s ability to influence executive decision making regarding:</th>
<th>Administrative Directions</th>
<th>IT Directions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1–4,000</td>
<td>Mean*</td>
<td>3.26</td>
<td>3.37</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>155</td>
<td>155</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>0.853</td>
<td>0.846</td>
</tr>
<tr>
<td>4,001–15,000</td>
<td>Mean*</td>
<td>3.61</td>
<td>3.65</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>98</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>0.892</td>
<td>0.914</td>
</tr>
<tr>
<td>More than 15,000</td>
<td>Mean*</td>
<td>3.75</td>
<td>3.92</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>52</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>0.711</td>
<td>0.788</td>
</tr>
<tr>
<td>Total</td>
<td>Mean*</td>
<td>3.46</td>
<td>3.56</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>305</td>
<td>307</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>0.866</td>
<td>0.881</td>
</tr>
</tbody>
</table>

* Scale: 1 = major decrease, 2 = minor decrease, 3 = stayed the same, 4 = minor increase, 5 = major increase
which include effectiveness at communication, collaboration, and motivation, would only be magnified in importance during challenging economic times. We suspect that IT leaders with these innate skills were able to grow and exert their influence during the economic crisis.

This is not to suggest that there is nothing IT leaders can do to improve their influence during difficult times. Several of the IT leaders we interviewed pointed out that there are actions that they and their colleagues can take to burnish their influence during challenging economic times. Specifically, multiple interviewees called out the need for CIOs to strengthen their alliances with CFOs. For example, Betsy Tippens, assistant vice chancellor for information technologies at the University of Washington Bothell, described how important a good relationship with the CFO has been to the success of IT at her institution. “We work really hard at collaborating with our CFO. I try to make sure she understands what we do, why we do it, and why investing in IT is so important to the future of our institution. My goal is to tell a technology story in the financial language of the CFO. We bring lots of data and articulate a practical, economic argument for what we need to do.” Christopher Wessells, vice provost and CIO at the University of San Diego, agreed with Tippens about the importance of the CIO-CFO relationship. However, Wessells also urged CIOs to increase their knowledge of finance. He identified this as the single largest lesson he has learned during the economic recession. Wessells told us, “The financial aspect of IT has become critical. A CIO must be well versed in how to understand and evaluate a variety of financing options and be able to disaggregate the financial trade-offs between consortia or going on your own.” Wessells went on to observe, “CIOs can’t set their institutions up for success unless they can build a model to fund technology replacement cycles.”

IT leaders we spoke with also stressed the importance of sustaining effective communications and active IT governance. While these are always important elements of successful IT organizations, they can be overlooked while organizations are in the throes of responding to challenging times. Brian Rudolph of William Penn University observed that it’s at just such a difficult juncture that leaders need to be their most visible. Rudolph told us, “It may be a cliché, but communications is vitally important. When your organization and institution is facing a challenge, people need to know you’re around and available.”

Summary

The importance of IT to institutions appears to have been neither magnified nor marginalized by the economic crisis. For the majority of institutions, the economic crisis did not appear to substantially alter their precrisis course when it comes to whether they view technology as a cost or an investment. Those that held more strategic goals for technology were more likely to invest in it as a means of addressing some of the crisis’s impact. However, this may have been a course that they would have taken regardless of the recession’s impact. Institutions that were more amenable to and expectant of administrative innovations were also more inclined to invest in IT as a means of producing administrative cost savings. Again, we assume that for many in this category, this was likely a path they were traveling even before the recession. Lastly, those that have changed the most in the past two years expect IT to continue to change more in the next two years. We can’t help but hypothesize that some significant portion of those who have changed the most and expect to change more would have taken a more aggressive posture toward IT change even without the catalyst of budget cuts.

Not all pursued the status quo. There was a contingent of respondents who reported that they had seen their institutions increase investment in IT to increase revenue or to reduce administrative costs. Qualitative interviewees expanded on this finding, and several described situations in which their
institutions were spurred to increase investment in technology particularly to expand online and hybrid offerings. While we can’t measure the magnitude of these investments or the degree of change they created for these institutions, the investments demonstrate the strategic value that some institutions are placing on IT.

Most respondents reported minor to no change in the influence of the senior-most IT leader at their institution. While about half reported that their influence on executive decision making remained the same, a sizable minority saw their influence undergo a minor or major increase. This included nearly a fifth of respondents who reported a major increase in their ability to influence IT directions at their institutions. Qualitative interviews confirmed that especially among very decentralized institutions and multicampus institutions, IT leaders were increasingly empowered to lead discussions and make changes to optimize the balance between centralization and decentralization.

For some institutions, more change is afoot. Among those that have fundamentally changed how IT is managed, more change is expected. These respondents expect to emerge in the next two years with fewer staff and having substantially restructured IT services. However, these were a minority of the overall respondents.

Finally, we were struck by the generally optimistic view respondents had of the importance and strategic value that technology would have at their institutions in the near future. Despite the fiscal challenges and cost management tactics that respondents have had to adopt, most did not agree that IT would diminish in importance or be a lesser part of their institutions’ cost management apparatus in the future. While a sense of optimism is welcomed, we must wonder if absent further change, some of it might be misplaced. The optimistic view of the future stands in sharp contrast to the pessimistic view respondents offered about the adequacy of their funding to meet their institutions’ strategic objectives for technology or to foster innovation (Chapter 5). It is difficult to see how IT organizations can sustain or enhance technology’s importance to their institutions with inadequate funding. Realizing the optimism of the majority would require either a sharp upturn in the size of future budgets or more aggressive engagement in the significant restructuring of IT. So far, this degree of significant restructuring has been realized by only a minority of respondents.

Endnotes
7. Both studies used the abbreviated version of the Multifactor Leadership Questionnaire developed by Bass and Aviolo.
8. Goldstein, Leading the IT Workforce, 70–75.
The Economy, the Academy, and the Future of IT

To discern the “Great Recession’s” lasting impacts on higher education and its implications for information technology and IT funding is a daunting task. The ink has not yet dried on the analysis of the past two years, and the present still feels very fragile and fluid. The economy is showing substantial signs of recovery, but few are ready to predict that we are completely out of danger. The consensus outlook seems to be that we are returning to a “new normal” that will usher in times that will not be as bad as the past two years, but nowhere near as good as the economic expansion of the 1990s or the growth that occurred after the 2001 recession.

So, how should an IT leader (or a college president, for that matter) be thinking about how higher education will fare in the “new normal” economy? Relative to many other industries, higher education has weathered the recession fairly well. Institutions had to reduce expenditures, but with the exception of some state systems, the magnitude of the reductions has been challenging but not debilitating. IT units have done their part to absorb budget cuts, and some have had to make significant changes in services and staffing levels. However, if our respondents are indicative of the experience of the majority, these changes have not produced a substantial change in how we use and manage IT.

On the other hand, there were pre-recession warning signs that higher education was headed for rough times regardless of the changes in the broader economy. State support for public education had already been in decline for several years, and the rates of tuition increases were gathering closer scrutiny. Many universities had significantly increased the level of debt they carried to add research space, enhance student support, and construct recreational facilities and new academic buildings.

Having survived the challenges of the past two years, should we pat ourselves on the back for the changes we have made, be concerned about the opportunities that may have been missed, or be planning for more uncertainty and change? In this chapter, we discuss how the emerging economic recovery may affect the fiscal outlook for higher education. Based on these observations, we speculate on its effect on institutions’ demand for technology and the capacity to finance those needs. Finally, we suggest what IT leaders can do to prepare their organizations and institutions to meet the challenges of the future.

Economic Outlook

If anything, the past two years have demonstrated how intertwined and interconnected economies have become. It is not
too far-fetched to assume that the fate of an individual IT budget is connected to the debt crisis in Greece. There is a fairly direct line that runs from these macroeconomic concerns through the equity and credit markets to endowment earnings, families’ ability to fund education, and ultimately the ability of an institution to fund its technology budgets. So, our discussion of the future of IT funding must begin with a discussion of the future of the broader economy.

The beginning of 2010 has provided signs of hope and reason for optimism about the U.S. and global economies. The U.S. economy grew at a rate of 3.2% in the first quarter of 2010. The stock market has begun to rebound. The value of the Dow Jones Industrial Average has recovered to around 10,000 and at times has approached 11,000. This is a significant increase from the month-end close of just over 7,000 in February of 2009. Globally, corporations appear to be focused more on growth, and increasing numbers expect to attain higher profits through expanded sales.

Despite these positive signs, significant problems still persist. Paradoxically, while the economy has begun to add new jobs at its highest rate in four years, the unemployment rate has remained persistently high. Economists estimate that more than 8 million jobs were lost during the recession and predict it will take years to regain that level of lost employment. The steep decline in property values will also take years if not decades to be recovered. Expectations for growth in developing economies, including China and India, are significantly greater than for Europe and the United States. States such as Arizona, California, Nevada, and Michigan face potentially longer recoveries due to the decline of key industries (e.g., autos), steep declines in property values, and the structural deficits faced by their state governments.

There is also concern that winding down of the federal stimulus program and the increasing levels of government debt will curtail the federal government’s ability to be a source of economic stabilization and growth in the future. The ending of the American Recovery and Reinvestment Act spending holds particularly profound implications for state budgets. Stimulus funds provided more than $150 billion of fiscal relief to state budgets during the recession. According to the Nelson A. Rockefeller Institute of Government, the removal of this revenue source combined with the normal lag between economic recovery and increasing state tax revenues could cause states to face a 2011–2012 fiscal deficit of more than 6% of state general expenditures. This does not portend well for the future financial stability of many state governments and will likely result in further tax increases and spending cuts, including for higher education.

**Outlook for Higher Education: New Normal or Old Problems?**

Higher education entered the recession from a position of strength, relative to many other industries. As a sector, its economic activity was creating more than 10,000 jobs per month in the pre-recessionary period and was a growing segment of the U.S. economy that had doubled in size in 10 years, as measured by annual spending. It is emerging from the recession roughly as it entered it. While there are certainly institutions that have struggled with their finances, we have not seen anything approximating the consolidation and change that has affected and is still affecting financial services, publishing, airlines, and auto manufacturing.

To assume higher education will continue unchanged is to ignore the warning signs that predate the recession. In 2003, the National Center for Public Policy and Higher Education reported that higher education’s share of state budgets had begun to fall in the 1990s, though this decline had been
masked by the overall growth in state budgets. In the 2000s and beyond, the report warned, higher education would garner a decreasing share of budgets that themselves would be in decline.\textsuperscript{10} While much less sensitive to changes in the health of state government, private institutions faced their own set of warning signs. The sustainability of tuition pricing was called into question even before the job losses and decline in home values severely limited the ability of many families to afford tuition. Many institutions had taken on significant debt in the pre-recessionary period.

Even as the economy recovers, higher education should anticipate that these pre-recession warning signs will continue to emerge as long-term threats. A 2009 discussion held by the Forum for the Future of Higher Education and the Brookings Institution characterized the outlook for higher education as troubled even as the recession was ending. Panelist Mark Zandi of Moody’s saw slow recovery of endowment values, diminished ability of families to finance higher education, and reduced government spending as all significant drags on the financial health of institutions.\textsuperscript{11} Municipalities struggling to balance their own budgets will likely ratchet up pressure on higher education to increase payments in lieu of taxes. Demographic trends and inflation will cause health and retiree costs to increase. Colleges and universities remain quite susceptible to spikes in energy costs. Finally, there are deferred investments to make up for in buildings and grounds, faculty compensation, and academic programs that were placed on hold during the recession.

While we are no longer staring into the abyss, it seems premature to declare an end to the crisis. We may in fact have just reached the end of the beginning of higher education’s response to the economic downturn. Any planning for the future of technology and technology funding seems likely to need to flow from the following assumptions:

- Institutions’ capacity to take on more debt will be constrained.
- Attempts to reduce the costs of operations will continue to occupy institutions’ attention.
- More priority will be placed on finding new or enhanced revenue streams from research, new markets for educational programs, or new programs for existing markets.
- Institutions will collaborate more extensively to share the costs of operations or to gain the scale required to compete successfully.
- Significant expenditures will face greater scrutiny and higher hurdles before being approved.

**Impact on IT**

The implications for IT of a muted, slowly developing recovery and higher education’s persistent fiscal challenges have two aspects. Lingering financial changes will influence both what an institution can invest in technology and its priorities for the spending it can afford. In this section, we consider the implications of higher education’s fiscal outlook from both of these perspectives.

**Implications for IT Funding**

IT organizations should be prepared for a continued institutional focus on cost reduction that will impact the IT operating budget as a need to either reduce costs or at least constrain their rate of growth. Large capital investments in technology will have to compete with other campus priorities for scarce capital budgets and institutional debt capacity.

There are likely to be more subtle or secondary implications of continued institutional financial constraint. More institutions may move to budget models that fully allocate to academic and administrative units all of their revenues and expenses. Some believe that these budget models, often called responsibility center management (RCM),...
provide better incentive to budget executives to increase revenues and control costs. A shift to RCM has implications for how technology is funded and the IT organization is perceived. It broadens the use of chargebacks as a funding mechanism for technology and encourages IT organizations to be more transparent about their costs. If pricing levels are set realistically, RCM creates revenue streams that are better aligned with the true cost of delivering services. It also encourages budget units to place greater scrutiny on IT costs and greater pressure on IT organizations to demonstrate that their services are cost-effective and of high quality. In the long term, this creates a healthy dynamic. In the short run, it can be a jarring change for IT organizations to work through.

Another implication is that all dollars—or, more specifically, all funding sources—may not be created equal in the future. An institution with significant constraints on its ability to borrow money may come to favor solutions that increase long-term operating costs but avoid significant one-time investments. It may be more willing to adopt cloud-based solutions because they enable institutions to buy capacity only as they need it and avoid significant one-time investments. Conversely, those with capacity to borrow but a conservative outlook toward recurring costs may need the promise of greater cost savings before they are willing to move from building their own infrastructure to buying or leasing it from others. Some institutions may favor solutions that add nonpersonnel costs (e.g., outsourcing) over those that require adding full-time staff. They may view fees for external services, contractors, or consultants as costs that can be readily discontinued should the economy worsen. As IT leaders take their institutions through these kinds of sourcing decisions, it will be important for them to be able to present the financial trade-offs as well as discuss the implications for technology operations and risk.

**Implications for IT Priorities**

Higher education's changed fiscal outlook should result in a shift of priorities for technology toward investments that enhance institutions’ short- and long-term financial footing. Persistent financial challenges could do what the shock of the financial crisis did not. It may spur higher education to more significantly embrace technology for its potential to increase productivity, support strategies to generate new revenues, and improve leaders’ ability to use data to better manage the institution. While higher education may never invest in technology to the extent that other sectors do, its persistent financial challenges seem formidable enough to assume that it will at least step up its level of investment.

Differences in institutional mission, culture, and current technology capabilities will continue to significantly influence future technology investment priorities, and we are not suggesting that every institution will follow a similar course. We do expect to see institutions place a higher priority on technology projects and investments that they deem will create or support a positive financial return. Participants in our study suggest that this trend is already beginning to take hold at some institutions. More than half of respondents reported that their institutions had made a minor or major increase to the importance that they place on IT investments that reduce institutional operating costs (57.9%) or increase staff productivity (64.8% minor or major increase) as outcomes. To a lesser degree, respondents also reported that ability to increase institutional revenues (41.1% minor or major increase in importance) had also become a more important outcome that they sought from their IT investments (see Table 8-1).

There are many ways in which technology investments could improve an institution’s financial performance. Most will emanate from institutional strategic directions. Outside
improving the efficiency of technology management itself (e.g., server consolidation), there will be few ways in which a technology investment alone will improve the fiscal health of an institution. The opportunity that will be created for most IT organizations is to work with their institutions to recast and expand their IT investment portfolio in terms of projects’ ability to impact institutional revenues and costs. The following are examples of how this re-sorting of institutional priorities in favor of those that impact the economic well-being of the institution could manifest itself.

**Investments That Facilitate Improved Student Retention and Reduced Time to Graduation**

For tuition-driven institutions, the ability to efficiently move students from admission to graduation is vital to their fiscal performance. There are numerous ways in which technology investments could further institutional goals of improved student retention and reduced time to graduation. Data warehouses and analytical tools can be enhanced to provide better insights into the root causes of retention. Improved student advising systems can aid students’ ability to plan their academic career and monitor their progress. These systems can also help academic advisors or counselors identify students who are potentially at risk of leaving the institution or hindering their ability to graduate on time. Finally, expanded online course offerings can expand the institution’s capacity to offer courses that are required to enable students to graduate on time.

**Investments That Help Increase Revenues**

The effects of the recession will lead many institutions to seek to increase their revenues in ways that have broad implications for their future technology priorities and investments. Efforts to expand revenue from instruction could reshape the IT agenda in several areas. Institutions may need new or expanded platforms to support online programs. Significantly expanded continuing education offerings may require enhanced admissions systems or constituent relationship management applications to support more sophisticated marketing and recruiting efforts. Institutions that expand their offerings to other geographic areas may need investments in technology to enable more academic and administrative support services to be delivered virtually.

Efforts to increase research activity may require institutions to expand the infrastructure to support the conduct and administration of research. These institutions will likely seek ways to provide their faculty with greater access to tools that facilitate research collaborations across institutional boundaries. Depending on the institutions’ areas of research strength, they may need greater access to high-performance computing, data visualization tools, and

<table>
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<th>How has the economic crisis affected the importance your institution places on the following outcomes from IT investments?</th>
<th>Mean*</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase staff productivity (N = 318)</td>
<td>3.79</td>
<td>0.752</td>
</tr>
<tr>
<td>Improvement of service to students (N = 316)</td>
<td>3.69</td>
<td>0.831</td>
</tr>
<tr>
<td>Reduction of institutional operating costs (N = 316)</td>
<td>3.66</td>
<td>0.893</td>
</tr>
<tr>
<td>Improve service to faculty (N = 315)</td>
<td>3.51</td>
<td>0.796</td>
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<tr>
<td>Increase institutional revenue (N = 304)</td>
<td>3.47</td>
<td>0.708</td>
</tr>
<tr>
<td>Mitigation of risk (N = 314)</td>
<td>3.20</td>
<td>0.752</td>
</tr>
<tr>
<td>Keep pace with technology developments (N = 318)</td>
<td>3.12</td>
<td>0.868</td>
</tr>
</tbody>
</table>

* Scale: 1 = major decrease, 2 = minor decrease, 3 = stayed the same, 4 = minor increase, 5 = major increase
improved infrastructure to manage, store, secure, and transport large data sets. They will also need access to technology support staff with the skills to customize and support research computing applications.

Finally, efforts to enhance institutional success in fundraising also hold implications for technology priorities. Institutions with this focus will need to enhance their capabilities to evaluate the success of fund-raising campaigns and to enable fund-raising staff to tailor their appeals on the basis of a more granular understanding of donor interests. They will also be likely to turn their attention to more and more varied experiments with social media as mechanisms to increase engagement with alumni and donors.

Investments That Reduce Operating Expenses

It is hard to imagine a scenario that would cause any institution not to become more focused on reducing operating costs and improving the productivity of its workforce. The initiatives that an institution might pursue to reach this goal can be further subdivided into actions that improve the ability to measure and manage costs and actions that improve the efficiency and productivity of operations.

As institutions become more focused on cost reduction as a continuous exercise, it seems likely that they will want better data about their costs. Institutional leaders should become more sophisticated and demanding consumers of cost and performance data at the level of a program, an activity, or a process. Most institutional financial and reporting systems are designed to capture and report data about individual transactions or to aggregate activity for an entire department, division, or college. As the questions that administrators ask about costs shift, institutions will need to make investments in technology to augment how data are captured and reported. An investment agenda could include dashboards to display management information in ways that make it more actionable, changes to transactional systems to capture more data about the programs an expenditure supports, new systems to monitor process performance and efficiency, or enhanced tools (e.g., data warehouses, access to data via web services) to enable more sophisticated and varied mashups of data across transactional systems.

An institutional cost management agenda is also likely to focus on those areas that drive operating costs—people, buildings, and utilities. Technology can help institutions to better understand and manage all three of these expenditures. Position management systems help institutions to manage their personnel budgets. Succession planning and workforce development needs can be tracked in many human resource systems to help organizations raise the productivity of their current workforce and proactively plan for the skills sets and positions they require in the future. Institutions increasingly leverage technology to reduce the costs of operating buildings by monitoring and controlling the use of heat, power, and cooling. Technology also helps institutions to monitor how their space is being utilized and to better plan the nature and timing of the kinds of spaces they will require in the future. The process of managing construction and renovation activity itself is becoming more technology dependent as software is used to track capital projects and monitor the maintenance of buildings and the systems within them. All of these areas are potential avenues for greater investment in technology that could yield a long-term reduction in operating expenses.

Finally, we expect institutions to continue their long-term interest in improving the efficiency of administrative processes. For more than 15 years, institutions have taken various approaches to create more efficient processes. Total quality management, process redesign, six sigma, and other methods have
been employed to improve administrative productivity and in some cases to reduce administrative costs. These initiatives have often occurred in conjunction with or in preparation for the introduction of new technology. Institutions have experienced varying levels of success with past efforts at process improvement. ECAR’s own research in this area found that most institutions rated their process performance as good, but not great. For the most part, they pushed process improvement efforts up to the point where the potential incremental efficiencies that could be gained were outweighed by the cost, effort, and political capital required to capture the improvement.12

We suspect that the budget reductions institutions have had to make and may still need to make in the future will spur a renewed look at processes. From an IT perspective, several things could differentiate the next round of process improvement work in higher education. First, many institutions may begin by looking at how they could better utilize the technology they already have in place to improve efficiency and productivity. IT organizations may have opportunities to work with administrative departments to redesign workflows, question the necessity for historical modifications, and explore how to more fully utilize the capabilities of existing software. Second, there may be a greater opportunity and willingness to consider software applications that are narrower in scope. The increased availability of software via SaaS offers institutions the ability to more rapidly deploy a technology to support a specific process. SaaS solutions offer the promise of much quicker and less costly deployments than a large ERP implementation. Institutional efforts may also come to view the more limited configuration options of SaaS solutions as a positive contributor to their efforts to standardize practice, especially in less strategic or differentiated processes. A move in this direction will challenge IT organizations to integrate applications from many different providers into their environment and still sustain a cohesive experience for users and an effective means to move data among these different providers and applications.

A final difference in this round of process improvement could be a more serious consideration of collaborative administrative services that span multiple institutions. Institutions have flirted with such solutions in the past only to draw back from their pursuit because of the perceived and real challenges and costs required to create and sustain them. The budget constraints institutions will face combined with further developments in cloud technologies may trigger a renewed interest in such multicampus collaborations.

**Summary**

The precise mix of technology investments institutions will make to support their financial stabilization strategies will vary. However, there are some common threads across the various areas to which we speculate institutions will look to create new revenues or better control their expenses, and these common threads indicate a general direction for IT priorities. At the heart of many of the strategies is the ability to capture, analyze, and provide more data to support strategic and operational decision making. In addition, many revenue strategies are predicated on having a solid platform in place to support a more extensive online presence for new and existing programs. Finally, while the particular focus will vary, most institutions seem poised to explore how they can leverage existing technology coupled with more narrowly scoped and more rapidly deployable point solutions to improve process performance. Of course, all of these potential investments must build upon a reliable underlying technology infrastructure. In fact, one of the most significant strategic challenges for IT organizations will be to find ways to sustain...
and enhance the core infrastructure and support strategic expansions of technology in an era of constrained resources.

**Implications for IT Organizations**

Technology is becoming more relevant than ever to the future of higher education at a time when most IT budgets have been sapped of their ability to experiment and innovate (see Chapter 5). Inevitably, more resources will be required. However, the IT community collectively faces a credibility gap in the eyes of many institutional leaders for the failures of past waves of technology investments (e.g., ERP) to deliver promised benefits. Even institutions that believe strongly that they must step up their investment in technology will face competing demands to invest in other areas. In this section we will explore how IT organizations can position themselves to fare better in the internal competition for resources, improve their readiness to support institutional strategies, and enhance their credibility within the institution. The primary focus of the discussion is the central, enterprise IT organization. However, many of the observations we make could be applied to a collegiate or even a departmental IT group.

Our prescription for the IT organization encompasses actions designed to free up more resources to seed innovation, to create more capacity to invest incremental capital in more strategic technologies, to enhance the influence of the IT organization by building greater trust, and to prepare the IT workforce to support the future. Most of these ideas are not new, and they have been written about by ECAR and others as essential to the future of higher education IT on numerous occasions in the past two years. The financial crisis has not created new solutions and strategies for the future. However, it has fastened the urgency and improved the opportunity for IT organizations to act.

**Source Commodity IT Services Differently**

In order to regain the capacity to invest in the strategic IT agenda and to seed new innovation, institutions need to reduce the costs of operating their commodity technologies. The options to do so are emerging, but not all are proven. The tactics will likely involve a mix of traditional outsourcing of services (e.g., first-level help desk), cloud-based services (e.g., e-mail, storage), and collaborative efforts to gain economies of scale but still meet the unique operational or compliance requirements of higher education (e.g., regional data centers, shared disaster recovery strategies). These tactics carry risks as well as benefits. Institutions will need to carefully weigh the data security risks, the implications of becoming locked into a single provider, and the complexity of integrating these solutions into their environment before proceeding.

While the risks are significant, they are worth taking. The alternative of continuing to create and manage all services at a single institution is financially unsustainable. Few institutions will have the means to create whole new data centers, meet all their institution’s storage requirements, and operate all the common application software that has become so widely used within an institution. Even if the financial means are available, the opportunity costs of a go-it-alone strategy are high. It leaves few if any resources available to invest in technologies that could differentiate the institution or support important strategies to increase revenues or manage operations better.

Solutions that source services to the cloud or multi-institutional collaborations have not had much time to mature and even less time to prove that they can produce cost savings. It is very likely that many will fail until the best models for realizing promised economies of scale become apparent. For this very reason, some institutions may choose to be late
adopters of new sourcing strategies while others engage in many pilots and experiments until the market matures.

**Operate with Maximum Transparency**

In a time of constrained resources, the credibility of the organization asking for the resources can often determine the success of the request. Technology organizations have the added challenge of requesting resources for technologies that are not well understood and whose cost drivers are often difficult to describe. IT organizations rarely control all the decisions that determine whether an institution effectively applies the technology it invests in and therefore feel they are ill positioned to promise a particular return on investment. Moving forward, IT organizations will find themselves disadvantaged in the internal competition for resources if they are not more assertive in discussing the qualitative and quantitative outcomes of the IT investments they request.

Financial constraint will heighten institutions’ focus on holding departments accountable for continuously examining their own operations and finding ways to trim expenses each year without sacrificing the breadth and quality of services. Others will move toward budget models that require institutions to identify and allocate all revenues and costs to the individual departments responsible for consuming services and generating revenues. Either approach creates a great deal more scrutiny on the costs and quality of IT services.

Clear and credible cost and performance metrics will be critical to IT organizations. Organizations that proactively provide metrics will build trust and understanding that will positively influence technology investment decisions. Getting there will be challenging. Culturally, there is often a reluctance within institutions to provide too much data about costs or service quality for fear that it will be used to “punish” the organization and not as a tool to build understanding and measure the effectiveness of operational strategies. Analytically, most IT organizations lack the data-gathering systems and processes that are required to capture comprehensive measures of costs and performance. Many organizations do not allocate staff time to particular activities or projects. Few capture comprehensive data about the performance of IT services or technologies. Larger, more decentralized institutions lack the governance mechanisms, executive sponsorship, or data to create a comprehensive picture of institution-wide IT investment and outcomes. Finally, few IT organizations have positions dedicated to financial analysis and measurement.

This is not to suggest that IT organizations are devoid of operational and cost data that can be used to report performance and buttress the case for investment. Many IT organizations participate in the EDUCAUSE Core Data Service and use its benchmarking tools to create peer comparisons of IT staffing and spending. Institutions that have embraced the Information Technology Infrastructure Library (ITIL) have increased their use of data to measure and improve performance of their services. Indiana University has long reported detailed IT costs by activity as part of its effort to make its IT organization transparent to the institution. Regardless of an institution’s starting point, we anticipate that the need to provide and track more measures of cost and performance will only increase moving forward.

**Reinvigorate IT Governance**

Most institutions have some form of IT governance in place. However, past ECAR studies have reported that the majority of institutions believe that their governance structures and practices are relatively immature. We suspect that at many institutions the focus of IT governance discussions in the past 24 months has drifted to what the
institution won’t do because of dwindling resources, rather than being on a proactive agenda of where technology can serve the strategic goals of the institution as it recovers its financial footing. So, IT leaders may need to reinvigorate and reengage their governance groups in a more future-oriented conversation.

As leaders think about how their IT governance structures should evolve to meet the challenges and opportunities inherent in the next three to five years, we suggest keeping the following diagnostic questions in mind:

- Do IT governance groups have sufficient scope and authority to oversee all the significant IT investments of the institution?
- Are IT governance groups sufficiently linked to institutional planning and budgeting processes to align IT investments with institutional priorities?
- Are IT governance groups effectively advocating for investment in technology?
- Are governance groups setting measurable objectives for technology?
- Are IT governance groups charged with monitoring the outcomes accomplished with technology? If not, who is?
- Are IT governance groups well situated to guide the IT organization’s decision making about the appropriate levels of risk it should take in order to reduce IT costs?

As these questions suggest, we envision a future in which institutions need their IT governance structures and processes to continue to mature. We anticipate that institutions and their IT leaders will be more engaged with their governance processes and committees to make decisions about the optimal balance of local and central services, sourcing strategies, and investment priorities that will be critical to managing the cost-effectiveness of IT. We also foresee IT governance playing a more active role in measuring the value and performance of IT investments. The effective IT governance of the future will not just prioritize IT investment opportunities. Additionally, once an investment is made, it will prod the institution to maximize its benefit.

**Develop New Organizational Competencies**

A final aspect of positioning the IT organization for the future entails recognizing where new competencies and skills will need to be developed. More intricate and varied sourcing strategies, greater use of metrics, and an enhanced focus on the successful application of technology have implications for the composition of the IT workforce, as do the strategic and managerial changes introduced by the shift in institutional financial circumstances. We anticipate that the future will create three new demands on the IT workforce:

- an increased need for business analysts to produce metrics and analysis of IT costs,
- a need for greater competency in negotiation and contract management, and
- broad needs to improve the skills of the IT workforce at helping users apply technology effectively.

**Business Analysts**

IT organizations will require greater staff expertise for implementing processes and practices to gather metrics on IT costs, service quality, productivity, and outcomes. Business analysts’ skills will also be required to help IT organizations evaluate the comparative costs of alternative sourcing strategies and to work closely with the CFO to develop sustainable funding models for IT infrastructure. In larger IT organizations, we expect to see director-level positions focused on IT’s funding, metrics, and long-range budget planning become a norm. These individuals would need to bring a blend of finance, accounting, planning, and technology experience to the IT organization. They would serve as primary financial advisor to the senior-most IT leader,
support IT governance groups, and oversee a small staff of analysts. In smaller IT organizations, many of these functions and skills will have to be embodied in a member of the senior staff working in partnership with other administrative units (e.g., budget, finance, procurement).

**Negotiations and Contract Management**

Closely related to the need for more financial management and business analyst skills is the need for enhanced negotiation and contract management skills. In the future, IT organizations will be engaged in much greater numbers of sourcing arrangements with a variety of commercial, consortia, and institutional partners. Each sourcing arrangement represents a contract that must be negotiated and monitored and an administrative relationship that must be tended to over the life of the agreement. The negotiation of these highly specialized agreements is often beyond the experience and expertise of an institution’s procurement office and general counsel. IT organizations planning to engage in many agreements would benefit from having dedicated, experienced staff within their own organization or hired jointly with procurement to lead these negotiations.

**Consultative Skills**

As IT organizations shed some responsibility for provisioning commodity IT services to the cloud, they will have the chance to align their missions with broader efforts to improve the underlying financial stability of their institutions. Traditionally, IT organizations have focused on deploying and sustaining technology and have been less directly engaged with the effective use of technology. There are some exceptions to this, of course. Academic computing organizations are engaged in technology’s role in enabling new pedagogy. Some administrative computing organizations work with users to define business requirements for new systems and in so doing influence not only what technology they need but also how they will use it. In the future, IT organizations can take up the mantle of improving institutional effectiveness in the use of technology as a more central part of their mission. This would serve the broader institutional need to derive greater value from investments and create a raison d’être for an IT organization that may see much of its historical role being sourced outside the institution. While the change may not be instantaneous or dramatic, we would expect to see many organizations shift some of their focus from providing technology to offering services that make technology more effective.

This rebalancing of mission could take many forms. It might mean changing the focus of in-house IT training from technology tools, to the application of the technology, to the work being performed. It could entail the creation of process improvement teams within IT organizations. These staff could become an embedded part of projects to deploy new technology or work postimplementation to improve the utilization of technology. It might mean a continued evolution of academic technology groups to become more skilled and conversant in how a particular technology could promote better learning outcomes rather than just explaining how the tool itself works. It could also mean rebalancing the skills of staff in the user support organization to better enable them to understand what users are trying to accomplish with technology when responding to their questions.

The general implications of increased consultation are twofold. First, it suggests that over time many IT organizations could see a shift in the balance of their workforce from internally facing staff who primarily manage technologies to externally focused staff who provide direct support, training, and advice to the users of technology. Second, a shift to a more consultative role for IT organizations also requires an
increased emphasis on the “soft” skills of the workforce. More extensive written and verbal communication skills, active listening, analytical thinking, and project management will become core skills required in all of the externally facing IT staff.

**Implications for IT Leadership**

In Chapter 7, we speculated that declining budgets and financial uncertainty could tip the balance of CIO influence in either direction. The majority of the participants in this study say that the recession has left their influence either unchanged or increasing. If, as we suspect, the future holds more financial constraint and uncertainty, how will the influence of and demands on the IT leader change? Given the expanding importance of technology to institutions’ strategic and financial well-being that we anticipate, the future should be one of increasing influence and importance for the role of IT leader. On the other hand, the warning signs of diminished importance were visible before the recession and continue to the present time. A recent article in *The Chronicle of Higher Education* pointed out that several prominent universities have downgraded their CIO positions from vice presidents to directors or otherwise restructured to remove the position from the institution’s senior leadership table. The article questioned whether these organizational changes were signs of the further shrinking of importance of the CIO’s role.14

The economy is only one of the forces that will directly or indirectly affect the authority and influence of IT leaders. The commoditization and commercialization of technology is making “users” at all levels within an institution less directly dependent on the central IT organization for data, services, and applications. As technology becomes more ubiquitous, it also becomes less mysterious, and institutional leaders may feel it less important to have the senior IT leader around the decision-making table as an interpreter of technology issues. Other members of the senior leadership team have also become influencers of the institution’s use of technology, including the chief business officer, the chief academic officer, the vice president/vice provost for research, and the dean of the library. Institutional history is also a factor. Often, the influence and authority of incumbent IT leaders reflect the successes and failures of their predecessors. While an incumbent can reshape these beliefs (positively or negatively), changing institutional memory can be an excruciatingly long process.

There are systemic actions that IT leaders can take to build their influence, increase the relevance of their organizations, and make the case for technology’s strategic importance to the institution.

The first is planning. The issues and challenges that will persist even after the immediate effects of the recession fade require ongoing institutional planning led by the senior-most IT leader. Strategic IT planning serves several important objectives. It provides a forum to build support for investment in technology. It engages institutional leadership in conversations about the relationship between institutional goals and strategies and technology. Leading planning discussions that look at technology from an institutional perspective enables the IT leader to be seen as proactively engaged in helping the institution wrestle with the challenges and opportunities it faces and not just as a manager of technology operations.

Active engagement in planning also provides a context for IT spending. As Penny Cox, associate vice president for IT at the University of Kentucky, observed, strategic planning is essential to position technology as an investment area for the institution. Cox told us, “Active strategic planning is essential to becoming a world-class IT organization. IT leaders must continue to look to the future
even if the level of available funding is uncertain. A well-articulated longer-term plan that has been sold to the senior leadership repositions IT funding requests as investment loans, not gifts. In the current fiscal climate, IT organizations are not going to receive gifts.”

The second area of focus for senior-most IT leaders is proactive engagement with the institution’s chief fiscal officer. Given constrained resources and small margins for financial surprises, IT leaders need to work closely with their CFOs to develop multiyear forecasts for technology investment requirements. If the institution does not have a multiyear IT capital budget linked to the IT strategic plan, this would be an opportune time to develop one with the CFO. A capital budget for IT provides an important placeholder for technology in the institution’s capital budget, its plans to use its remaining debt capacity, and priority setting for new fundraising.

The senior-most IT leader and the CFO have several other areas of common interest. CFOs and IT leaders have joined interests in leading efforts to optimize institutional operating efficiencies through process and technology change. The CFO can be an important ally of the IT leader in promoting the most effective use of data in institutional management and decision making. Finally, the CFO can assist the senior-most IT leader to sponsor efforts to design and deploy more effective methods to measure institution-wide IT costs and use that data to optimize the balance of responsibilities between local and central IT.

The third area of action relates to the senior-most IT leader’s leadership style and rhetoric. IT leaders should continue to spur their institutions to act with urgency. Even if the immediate crisis has passed, IT leaders should seize on the underlying fiscal challenges that institutions face and the strategic opportunities that the effective use of technology could support as reasons not to allow their institutions to slip back toward the status quo. This research study reveals how difficult it is for IT leaders to spur significant action even in the midst of a nearly unprecedented economic downturn. With the immediate pressures of the national recession abating, progress and change will continue to come incrementally. Removed from the immediacy of the crisis, leaders will have an opportunity to rebalance their message between fear and hope. The necessity for change can be established in part for the opportunities it will create for the institution’s strategic agenda and part as an ongoing response to the fiscal challenges that institutions will continue to face.

**Conclusion**

We began the chapter by questioning whether higher education should emerge from the recession grateful that a difficult situation was behind it and assume a return to normal, or see the recession as a warning sign that should spur a sustained agenda for change. It is our hope that most institutions adopt the latter view. Higher education is still an area of strength in the U.S. economy and a valued export to the world. However, its underlying financial model feels unsustainable. The lesson from industries is that change from a position of strength is more desirable than change dictated by external forces that quickly spiral beyond organizations’ control. Higher education is still in a position of strength and should dictate the terms of its own restructuring and reinvention.

The fate of higher education’s technology organizations is aligned with that of their institutions. Most IT organizations have emerged from the recession having overcome the immediate fiscal challenges that faced them. While near-term actions have addressed immediate budget problems, the long-term financial footing of IT organizations remains precarious. Technology’s success is also its challenge. The ever-broadening adoption and utilization of technology has created an increasing financial requirement to sustain it. Finding the financial resources within the IT
budget to sustain present capabilities is challenging and risks crowding out the ability of all but a few institutions to invest in new capabilities and innovations.

Technology in and of itself will not be higher education’s savior. However, it can make important contributions that directly impact the strategic issues and opportunities that confront institutions. It is therefore imperative that IT organizations find ways to rethink how they source, deliver, and manage IT services in order to make them as efficient as possible. Institutions must take reasonable risks and explore new sourcing strategies such as the cloud that promise but have not yet proved their ability to deliver greater technology capabilities at lower costs. IT leaders must refuse to become “shrinking CIOs.” It is essential that their voices establish the importance of technology in shaping the future of higher education.

Endnotes
9. Ibid.
Appendix A
Institutional Respondents to the Online Survey

Adelphi University
Allegheny College
Armstrong Atlantic State University
Atlantic Cape Community College
Auburn University
Azusa Pacific University
Baker University
Barton County Community College
Bates College
Benedictine University
Berry College
Bethany Lutheran College
Black Hills State University
Blinn College
Bluefield College
Boise State University
Bowdoin College
Brenau University
Bridgewater State College
Broome Community College
Brown University
Bucknell University
Caldwell College
California Institute of Technology
California Lutheran University
California State Polytechnic University, Pomona
California State University, Chico
California State University, Dominguez Hills
California State University East Bay
California State University, Fullerton
California State University, Monterey Bay
California State University, Northridge
California State University, Sacramento
California State University, San Bernardino
Calvin College
Camosun College
Canisius College
Cardinal Stritch University
Carlos Albizu University
Carthage College
Case Western Reserve University
Cedar Crest College
Central Connecticut State University
Charles Drew University of Medicine & Science
Chesapeake College
The Citadel
Clark University
Clarkson College
Colby-Sawyer College
Colby College
College of Mount Saint Joseph
The College of New Jersey
College of the Holy Cross
Colorado State University
Columbia College Chicago
Columbia State Community College
Columbus College of Art and Design
Community College of Rhode Island
Connecticut College
Corban College & Graduate School

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Cornerstone University
Dalhousie University
Dartmouth College
Davenport University
Dean College
DePaul University
DePauw University
Dominican University of California
Drury University
Eastern Oregon University
Edinboro University of Pennsylvania
Elizabeth City State University
Emory University
Emporia State University
Fairfield University
Fielding Graduate University
Florida State College at Jacksonville
Foothill-DeAnza Community College District
Framingham State College
Franklin and Marshall College
Franklin University
Franklin W. Olin College of Engineering
Frostburg State University
Genesee Community College
George Fox University
Georgetown College
Georgetown University
Georgia State University
Granite State College
Greenville College
Guilford College
Gwynedd-Mercy College
Hamilton College
Harrison College
Harvey Mudd College
Hastings College
Haverford College
Highline Community College
Hillsborough Community College
Hollins University
Holy Family University
Hudson Valley Community College
Humboldt State University
Hutchinson Community College & Area Vocational School
Idaho State University
Illinois Valley Community College
Indiana State University
Indiana University East
John Tyler Community College
Johns Hopkins University
Keene State College
Kennesaw State University
Kenyon College
Lafayette College
Lander University
Lehman College/CUNY
LeTourneau University
Lewis & Clark College
Lewis University
Lincoln Memorial University
Linn-Benton Community College
Louisiana Community & Technical College System
Loyola Marymount University
Luther College
Luther Seminary
Lutheran Theological Seminary at Gettysburg
Lynn University
Macalester College
Madonna University
Mansfield University of Pennsylvania
Marietta College
Massachusetts College of Liberal Arts
McDaniel College
McGill University
Mercyhurst College
Meredith College
Metropolitan State College of Denver
Metropolitan State University
Miami University
Middle Tennessee State University
Middlesex County College
Millsaps College
Mississippi College
Mississippi Valley State University
Missouri University of Science and Technology
Montana State University—Great Falls, College of Technology
Montana State University Billings
Montcalm Community College
Montgomery College
Moravian College
Mott Community College
Mount Mary College
Nevada State College
Nevada System of Higher Education
New Mexico State University
North Shore Community College
Northeastern Junior College
Northeastern Ohio Universities College of Medicine and Pharmacy
Northern Arizona University
Northern Illinois University
Northern Michigan University
Northwestern College of Iowa
Northwestern University
Norwalk Community College
Norwich University
Oakland University
Oberlin College
Oglethorpe University
Ohio Northern University
Oklahoma State University
Pacific University
Peirce College
The Pennsylvania State University
Pepperdine University
Pima County Community College District
Pittsburg State University
Pomona College
Presentation College
Princeton University
Purdue University Calumet
Queens University of Charlotte
Rampgo College of New Jersey
Randolph College
Reformed Theological Seminary
Regis University
Rhodes College
Robert Morris University
Rollins College
Roosevelt University
Rosalind Franklin University of Medicine and Science
Rowan University
Rutgers, The State University of New Jersey
Saint Anselm College
Saint Louis Community College
Saint Mary’s College
Saint Mary’s College of California
Saint Mary’s University of Minnesota
San Francisco State University
Santa Clara University
Savannah College of Art and Design
Seattle Pacific University
Seattle University
Shenandoah University
Shepherd University
Sheridan College
Siena College
Simmons College
Sinclair Community College
Sonoma State University
South Dakota State University
Southern Connecticut State University
Southern Illinois University Edwardsville
Southern Methodist University
Southern Oregon University
Southside Virginia Community College
Southwest Minnesota State University
Southwest Tennessee Community College
Sowela Technical Community College
St. Cloud State University
St. Francis College
St. Louis College of Pharmacy
St. Mary’s College of Maryland
State Fair Community College
Stephen F. Austin State University
SUNY College at Cortland
SUNY College at Oswego
SUNY College at Plattsburgh
SUNY College of Environmental Science & Forestry
SUNY College of Technology at Delhi
Sweet Briar College
Tacoma Community College
Texas A&M University at Galveston
Texas A&M University–Corpus Christi
Texas Lutheran University
Texas Wesleyan University
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Appendix B
Participants in Qualitative Interviews

Allegheny College
Richard Holmgren, Chief Information Officer

California State University East Bay
John Charles, Chief Information Officer

Calvin College
Henry DeVries, Chief Information Officer

Elizabeth City State University
Tony Adade, Chief Information Officer

Hillsborough Community College
R. Bruce Judd, Vice President for Information Technology

Lewis University
John Dalby, Chief Information Officer

Pepperdine University
Timothy M. Chester, Vice Provost and Chief Information Officer

Pima College
Kirk Kelly, Chief Information Officer

Southwest Tennessee Community College
James Avery, Executive Director, Information Systems

UCLA
Jim Davis, Chief Information Officer

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University of Kentucky
Penny D. Cox, Associate Vice President Information Technology

University of Maine System
Ralph Caruso, Chief Information Officer

University of San Diego
Christopher Wessells, Vice Provost and Chief Information Officer

University of Vermont
H. David Todd, Associate Vice President and Chief Information Officer

University of Washington Bothell
Betsy Tippens, Assistant Vice Chancellor for Information Technologies

University of Wisconsin–Milwaukee
Bruce Maas, Chief Information Officer

University System of Maryland
Donald Z. Spicer, Associate Vice Chancellor and Chief Information Officer

Walters State Community College
Joe Sargent, Executive Director for Information and Educational Technologies

West Virginia University
Rehan Khan, Associate Provost and Chief Information Officer

William Penn University
Brian A. Rudolph, Director of Information Services
Appendix C

Bibliography


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