By Thomas A. Warger

Today’s college and university IT leaders have one of the toughest challenges in the history of the profession: how to deliver, concretely and decisively, on the ever-mounting investments that most of their institutions have made in information technology. With the rationalizations of IT expenditures in the commercial world over the past several years, this need has been building in higher education. But it has been given a sharper point by the severe and lasting effects of the recent economic recession. Senior campus leaders now want to know why IT activity is not yielding stronger benefits for and reduced costs in its own operations, as well as those of the offices, departments, and programs that rely on information technology.
Institutional leaders need to deliberate how to innovate, how to discover the risks that lie ahead along the possible paths, and how to model alternative scenarios.

A historic opportunity is at hand. Colleges and universities need to gain better insight into their own circumstances. The immediate need is to close the gap between mounting costs and diminishing revenues. In the longer run, many institutions will need to transform themselves in order to thrive. Institutional leaders need to deliberate how to innovate, how to discover the risks that lie ahead along the possible paths, and how to model alternative scenarios. Nobody is better situated to integrate these efforts and take on the job of building cooperative analysis environments than the IT leaders.

But how can CIOs and IT leaders prepare themselves for the challenge and opportunity of a more central role in strategic decision-making? First, they must make sure they understand the needs and expectations of other campus leaders. For example, they need to closely align with the vision of their presidents, and they need to ally with chief financial officers (CFOs). In addition, they need to be aware of the current education concerns and views not only of the wider higher education community—including faculty, librarians, and fellow IT leaders and senior campus administrators—but also of non-academic CIOs and the general public.

To help CIOs and IT leaders gain the needed understanding and awareness, this article highlights data and information gathered by organizations that are making significant headway in studies of information technology and higher education: the Pew Research Center, together with the Chronicle of Higher Education; the American Council on Education (ACE); ITHAKA; the National Association of College and University Business Officers (NACUBO); IBM; and EDUCAUSE. These groups have conducted surveys and studies on the value, quality, and mission of higher education, on current concerns in higher education, on digital forms of academic publication and communication, on the primary issues facing CFOs, on organizational objectives in relation to the CIO position, and on questions of IT cost and productivity. Together, these studies and surveys offer a view toward the current higher education IT landscape.

Doubts and Diverging Views

In the spring of 2011, the Pew Research Center conducted two surveys on the value, quality, and mission of higher education. A nationally representative sample of 2,142 adults aged 18 and older were surveyed by telephone. A companion survey of 1,055 college presidents was conducted online and in association with The Chronicle of Higher Education.

An overwhelming majority (86%) of college graduates surveyed say their education has been a good investment for them. On average, they estimate they earn $20,000 more per year because of the degree. Nearly all parents (94%) expect their children to attend college. But there are also substantial signs of concern in public attitudes as well. The public is divided on the mission of higher education, with 47% saying that its primary purpose is to teach work-related skills and knowledge and 39% noting that personal and intellectual growth is most important. Slightly more than half (57%) of the survey respondents say that higher education fails to provide good value for students and families. Nearly half (48%) of graduates with college loans say that paying back the loans puts a strain on their ability to make ends meet. And fully one-quarter say those loans make it harder to buy a home. Three-quarters of the public say that the cost of college exceeds what most people can afford to pay, an increase from 60% in a 1985 survey.

Although college presidents are not as concerned as the general public about affordability, 57% agree that the cost of higher education is beyond what most people can pay. Presidents have other reservations. A substantial number (38%) feel that the system of higher education in the United States is headed in the wrong direction. Only 19% rate the U.S. system the best in the world, and only 7% think that this rating will climb in the next ten years. Half the presidents (51%) give the quality of U.S. higher education a ranking of among the best. And nearly two-thirds (64%) doubt the United States will reach President Barack Obama’s goal of having the world’s highest share of adults with a college degree or certificate by 2020. Still, 65% of presidents think higher education is a good value today, but that number is turned on its head in the public view, with only 35% sharing that assessment. Like the general public, presidents are about evenly divided on the mission: Half say it is to promote intellectual growth and maturity, whereas 48% cite skills and training for work.
The value, affordability, and mission priorities are topics of debate on the national scene, driven by difficult economic times, increasing global competition, and changing needs of the workforce. While the general public and college presidents share concerns, there is a clear difference in their net assessment of the system. The public appreciates the benefits of a college degree but is alarmed by its lack of affordability. The presidents’ views vary significantly by the kinds of institutions they head, but overall (60%) they give the system a favorable rating for its general direction.

A forthcoming report from the Pew Research Center—“Online College Courses: Good Value?”—focuses on issues connected to the growing use of technology in the delivery of higher education, drawing on the spring 2011 surveys. College presidents report that three-quarters of their institutions offer online courses today. The public survey indicates that nearly one in four graduates (23%) has taken at least one online course, and that number reaches 46% among those who completed their studies within the past ten years.

Nearly all (91%) of two-year colleges offer online courses. Among public four-year colleges, the number is 89%. But among private four-year colleges, the number drops to 60%. For-profit colleges report that 71% offer online courses.

All sectors of higher education forecast strong increases in the prevalence of online courses over the coming ten years. Two-year institutions again lead the way, with a projected increase to 65% of students taking at least one online course, up from the current 16%. Four-year private colleges, which today have the lowest percentage of students taking online courses (11%), foresee an increase to 37% in ten years. The percentage across all types of colleges is expected to more than triple, from 15% to 50%. There is little disagreement about the likely rise in online learning.

Opinions about the value of these courses in comparison with those taught in traditional classrooms are not favorable across all demographic categories in the general public. Younger and older students, those who have taken an online course and those who have not—all are just as likely to rate online courses as inferior to in-person courses. Overall, only 29% rate online courses as equivalent in quality to in-person, while 60% judge them to be less valuable. College presidents give more favorable ratings but are closely divided on the issue, with 51% rating online courses as having equal educational value and 48% less. Presidents’ beliefs about college mission are linked to views on the value of online courses. Those who say workforce preparation is paramount have a higher opinion of the value of online courses (59% favorable vs. 40% unfavorable). Presidents who believe personal and intellectual growth are the top priority have nearly the opposite view (43% favorable vs. 56% not).

Presidents turn out to be technologically adept when compared with the general public. They use a variety of technical devices—computers in various formats, cell phones and smartphones, and electronic books (e-books)—and tend to be early adopters. Fully 91% use a laptop computer, compared with 56% of all adults. E-books are also strongly more popular with presidents (42% use them) than with adults in general (at 12%). And while 74% of adults 18–29 years in age use social media such as Facebook, the aggregate percentage for all adults stands at 35%. In contrast, 50% of college presidents are Facebook users.

Reflecting on the Pew survey results, Jeffrey Selingo, Chronicle of Higher Education vice president and editorial director, noted that the general public appears to be more concerned than college and university presidents about the affordability and value of higher education. The presidents, though, are personally more engaged with digital technologies than the general population. And even though presidents are not strongly impressed with the value of online courses compared with classroom equivalents, they expect online courses to be much more prevalent in the future. The Pew/Chronicle studies suggest fundamental divides between the public and higher education leaders on the cost and value of what this educational system is providing today and on the prospects for technology playing a greater role in the future, particularly for online courses.

New Alignment of Priorities
In January 2011, the American Council on Education (ACE) invited 20,927
members and nonmembers to participate in an online survey based on questions solicited via interviews with 80 campus leaders. Returns were filed by 2,085, for a response rate of 10% and a margin of error of +/-2.04%. Presidents of active ACE member institutions had the highest response rate, at 22%. Though the results represent a snapshot in a changing scene, ACE Vice President Tim McDonough notes that they present a comprehensive, if time-limited, view on the higher education context. They provide a substantial trove of information straight from the members—not only offering data of benefit to the members but also giving ACE a clear view of what is on its members’ minds and an opportunity to assist them in difficult times.

The responses highlight the lingering impact of the recent recession. McDonough notes: “We are still battling some economic headwinds.” At the top of 17 current concerns ranked by survey respondents were budgeting and strategic planning, faculty and academic issues, and learning and outcomes assessment. When respondents were asked to forecast the top issues in the years ahead, fund-raising climbed from sixth to third place in the list. Faculty and academic issues fell from second to fourth. Also trending downward in the future view were accreditation-related matters, personal leadership and development, and governance and board development. Topics gaining ground from the middle and lower range of the 17 current concerns included technology advancements, productivity, risk management and legal issues, and access and degree attainment, with technology advancements moving up from tenth place in the current view to sixth place in the future view and with productivity rising from 15th to 13th. In particular, presidents reported a near-doubling of their interest in productivity gains. Findings were consistent across public, private, four-year, and two-year institutions and among the leadership categories of the respondents.

Money and control issues come to the fore in these findings, according to McDonough. Although the circumstances of the ACE member institutions vary widely, many are focused on making adjustments to cope with the adverse economic conditions. Others find themselves needing to rethink key aspects of how they operate. The changes in topic interest ratings reflect a downgrading not only of some routine categories—such as training and professional development, which are typically early casualties in bad economic times—but also of some core, strategic areas of academic and faculty topics.

McDonough sees colleges and universities looking to their professional associations for assistance in obtaining and understanding fresh information. They are looking for research, services, and training and professional development in data analysis from ACE and counterpart groups. New resources are needed to inform strategic discussions and, ultimately, the decisions that will have to be made. The experience of the recent recession calls for a new standard of data-rich analyses and planning. While everyone will continue to watch the familiar metrics, such as the Dow Jones numbers, new measurements and new capabilities will be needed to understand a wide range of circumstances affecting colleges and universities.

Senior leaders see the potential of IT investment for future benefits. Campus leaders are using every tool at their disposal, says McDonough. Their institutions need to increase revenues, cope with regulatory requirements, and find ways to reduce operating costs. This is an opportunity, says McDonough, for CIOs to make the case for the ability of information technology to leverage other issues: “Here is an opening to demonstrate the value of technology across the spectrum on campus.”

Almost all of the topics of concern in higher education have an IT component, whether in an operational role or as the source of information vital to a good understanding of the institution. Institutional data will need to be tapped to inform many deliberations. Administrative productivity and advances in technological methods for delivering education will figure importantly in the coming years. At present, approximately one-quarter (25.6%) of ACE survey respondents rank information technology as a topic of high interest. That figure rises to nearly one-third (31.7%) when the same individuals look ahead.

For its part, ACE will work to strengthen its role as a provider of the best current information to support its member institutions and as a resource for developing best practice in data analysis.

Roles and Leadership in a New Blend

ITHAKA, founded in 2003, was funded originally by the Andrew W. Mellon Foundation, the William and Flora Hewlett Foundation, and the Stavros S. Niarchos Foundation. ITHAKA’s purpose is to help the academic community use digital technologies to preserve the scholarly record and to advance research and teaching in sustainable ways. Its key services include (1) Ithaka S+R, which conducts research and analysis on the impact of digital media on the academic community, (2) JSTOR, which
archives over 1,000 academic journals, and (3) Portico, which is preserving more than 14,000 electronic journals and books.

Since its inception, Ithaka S+R has collected information in a variety of forms to help answer how the scholarly community is faring as it makes the transition from analog to digital forms of publication and communication. ITHAKA has queried faculty four times—most recently in 2009—and librarians in 2010. With both constituencies, Ithaka S+R is interested to know how work is changing and how the roles of faculty and librarians are being affected by digital information.

Not surprisingly, faculty in the sciences and other quantitatively intensive disciplines were earlier adopters of scholarly materials in digital format. But their colleagues in disciplines heavy in textual resources have followed since.

ITHAKA President Kevin Guthrie remarked that these surveys did not reveal as strong a trend toward e-book adoption as some might have expected but that he will be interested to see what the next round reveals on that topic.

Library administrators feel that the work of strategic planning to meet changing needs is incomplete. Only 35% thought their institutions' plans were adequately developed. Libraries are expecting to shift priorities from acquisitions and preservation of collections in favor of facilitation of research and teaching. More than 91% report that they have begun or are about to start deaccessioning, or moving offsite, their print journals once suitable online access has been provided. When survey participants were asked how they would allocate additional budget if it were available, the leading responses were online or digital journals (55%), finding tools such as OPACs (online public access catalogs), indices, and federated search capabilities (41%), and staff for reference and user/services and teaching (35%).

This same study found some differences of opinion between faculty and librarians over the importance of library services in the support of teaching and research. Regarding teaching facilitation, 60% of faculty rated it as important, versus 95% of librarians. A similar gap was found for research support by library services: 59% vs. 87%. By a small margin (90% to 85%), faculty even exceed the library directors’ response in expecting the libraries to give high importance to buying. By differences of approximately 10%, librarians give higher importance than faculty to collections archiving (80%/70%) and to serving as the gateway to electronic information (75%/65%).
Using a case studies approach, Ithaka S+R looked at issues of online courseware and online learning at several selective institutions. Among the questions addressed are how colleges and universities can distinguish themselves in the digital age as they compete for reputation, students, and faculty, whether the campus-based business model can endure, and whether online courses and courseware can have more transformative roles in the future as institutions face the twin challenges of increasing access to study and maintaining academic quality.

Ithaka S+R also conducts projects in collaboration with consulting clients. These address many of the vital issues facing libraries, such as exploring new, collaborative approaches to collection development and examining the impact of digitization on library staffing and services. Other projects are looking at alternative business models for contributed-content collections for owners of video archives.

According to Guthrie, ITHAKA is finding that the formerly distinct domains of infrastructure, content, and pedagogy in higher education are now blending. As a consequence, the roles of CIOs, librarians, and faculty are converging—and not without some tensions and differences of opinion. For CIOs and other IT professionals, the organizational impact of digital scholarship creates a new opportunity for leadership and an expansion of the IT role beyond being the provider of infrastructure. IT leaders also will need to understand the new realities of work and of the division of roles that are evolving with digitization.

According to Ithaka S+R Director of Research Roger C. Schonfeld, colleges and universities that have had the best success in addressing the need to change their scholarly environments are the ones that have done a good job of defining issues, identifying metrics of change, and obtaining good measurements.

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Change This Time

On August 10, 2011, John Walda, President and CEO of the National Association of College and University Business Officers (NACUBO), presented an EDUCAUSE Live! webinar on the primary issues facing chief financial officers at colleges and universities. As Walda noted, the overwhelming problem they face is diminished revenues. Large cuts in state spending and operating support for higher education are a certainty. The ceiling for raising tuition and fees may have been reached. The potential for cuts in federal aid, particularly for Pell Grants, is very strong as well. The prospect that any of these situations will change in the foreseeable future is low. The results are being felt in the form of inadequate tuition income and budget shortfalls.

Walda’s talk highlighted findings from studies conducted by multiple organizations over the past year. The impact varies across the range of institutions of higher education. According to “The 2011 Inside Higher Ed Survey of College and University Business Officers,” public colleges and universities rate cuts in state spending as their biggest concern by a wide margin over other factors (65.6%), followed by budget shortfalls (23.6%). Private institutions put affordability at the top of the list (36.6%), followed closely by inadequate tuition revenues (32.5%). For-profit institutions are unanimous in seeing cuts in federal financial aid as their biggest problem (100%), followed by affordability, at 33.3%.

A closer look at Pell Grant statistics shows a surge in the number of recipients and the dollars awarded following the broadening of eligibility in 2007–8. From 2007 to 2010, the dollar outlay doubled from about $14 billion to nearly $30 billion. The chances that Pell Grant expenditures will remain at these levels as negotiations over the federal debt ceiling progress are probably small.

State operating support per student is at a twenty-five-year low, according to the July 2011 study “Fiscal and State Policy Issues Affecting Higher Education,” from the American Association of State Colleges and Universities (AASCU). The estimated change across the fifty states is estimated at -6.1% for 2012. Twelve states are showing double-digit declines. Only eight states are projecting increases, the largest of which is 6.8%. The expiration of federal stimulus funding in the coming year will further reduce operating support. Discretionary funding for education by states, says Walda, is not likely to rebound quickly even in a better economy. States have other urgent shortfalls—such as
underfunding of retirement plans—that will need to be addressed as conditions improve.

College tuition has tripled since 1980–81, even before accounting for inflation, with public four-year institutions seeing the sharpest rate of growth among all sectors since 2000–2001. A 2010 NACUBO study shows that the average tuition discount rate (the percentage of listed costs met by various forms of financial aid) grew from 37.3% in 2000 to 42.4% in 2010 for first-year students and from 33.6% to 37.1% for all undergraduates over the same period.

Walda points out that although this has been a popular tactic in college pricing, it may have run its course as a viable approach, given the severity of anticipated revenue shortfalls.

The Inside Higher Ed survey reveals signs of substantial changes being considered at public colleges and universities. Low-enrollment academic programs are at risk of being cut at 37.9% of baccalaureate colleges and 64.7% of associate colleges. Universities and master’s institutions plan to look at metrics in an effort to analyze programs and target potential improvements as a high priority, 61% and 50% respectively. Across the types of public institutions, using technology to reduce instructional costs is popular: 27.7% at universities and 49.1% at associate colleges. And rates of using technology to generate the metrics needed for cost reductions in other operating areas range from 42.6% at universities to 31% at baccalaureate colleges.

According to Walda, expenses will clearly need to be reduced across the board, but there will also have to be decreases in the cost to deliver a unit of education. Deciding how many academic programs need to be offered—which will be cut and which will remain—is among the most daunting problems ahead. Doing less with less or doing the same with less will be commonplace. Finding ways to generate new revenue will be particularly challenging and is not an easy discussion to initiate within the higher education community. Coping with the current hardship—bridging the gap—is the immediate need. Recognizing that “normal” has changed and calls for more dramatic action comes close behind.

Walda sees an important opportunity for CIOs to forge closer partnerships with their chief financial officers. For starters, the high cost of information technology is a major concern to CFOs. NACUBO has selected cloud computing as one of the initiatives that it will support and that it will encourage CFOs to examine this year. But CFOs need partners in the difficult work of discovering the data and performing the analyses bearing on all aspects of an institution’s life. And CIOs will be in a key position to plan and implement the changes that will bring streamlined administration and reduced educational costs.

There was a time, Walda remembers, when chief business officers—now known as CFOs—were not “at the table” for core institutional decision-making. That has changed in recent years. Prospects are good that the role of the CIO will likewise become more central as colleges and universities look to information technology in strategic and transformative ways.

**Know the IT Mandate**

For nine years, IBM has conducted a continuing research effort it terms the “C-Suite.” This is an effort to study the issues facing executives in multiple roles in institutions of all kinds and in all parts of the world. Over time, each of the new and repeat studies has generated questions that have become part of the core set for the C-Suite series and has helped identify trends to watch.

For their second CIO study in this series (in 2011), 3,018 CIOs were interviewed face-to-face. Each session was carefully structured and included both new and longitudinal questions. The information gathered in this way was then studied through various statistical and qualitative analyses. The first IBM study of CIOs (in 2009), had concentrated on the relationship between high-profit and low-profit enterprises. The 2011 analysis discovered a different means for characterizing successful CIOs. Clusters of responses pointed to four distinct CIO “mandates,” or sets of objectives, sought by organizations. CIO performance was found to correspond closely to individuals’ ability to meet the mandate for their enterprise.

The mandates are (1) **Leverage**, providing IT services for greater organizational effectiveness, (2) **Expand**, offering
wide-ranging assistance to help the organization refine processes and enhance collaboration, (3) Transform, developing solutions that change relationships with stakeholders, and (4) Pioneer, playing a primary role in implementing the vision of the enterprise, including changes in business models. These concepts factored out from a wide range of characteristics—including region, country, industry, and income—among the organizations studied. Successful CIOs know and respond to the mandate that defines their organization's expectations of them.

Not surprisingly, the study also showed a close alignment of vision between CIOs and CEOs. The gap is partly closed by CIOs having a greater understanding of the current business needs of their colleagues. But it is also narrowed when CEOs, who generally already acknowledge the value of information technology, see how changes in the enterprise enabled by technology can affect the business. Linda Ban, IBM's C-Suite Study Director, observes that everyone believes technology can be important but that knowing what changes it will bring and what consequences will follow are the keys to IT success. These are discoveries a CIO makes not alone but, rather, in concert with other executives.

Neither companies nor CIOs can be easily predicted to correspond to one of the mandates based on obvious factors. The criteria are also time-sensitive: as situations evolve, success or failure depends more on the ability to meet the current need than on past success in circumstances that may no longer apply. The work of understanding the business is continual and all-engaging.

The CIO study, says Ban, highlights several tasks for CIOs. The first is to roll up their sleeves, get into the enterprise systems data, and figure out how to use it to get the best possible understanding of the organization. CIOs are uniquely well situated to lead the practice of delving into information resources, applying business intelligence and analytics, for key insights.

The need for the simplification of work is another strong theme throughout the CIO study. Business process and communications need to become easier. Complexity needs to be reduced or masked. Standardization, consolidation, and openness in practices are now commonly viewed as more important than complex and proprietary processes. CIOs need to champion the simplification of work and modify information technology to support that goal.

Finally, collaboration needs to replace the often siloed nature of information and communication in organizations of all kinds and sizes. Internally, better tools and processes need to be developed to replace barriers to good flow and accessibility. Externally, and in particular for organizations with mandates to transform or pioneer, connections with existing and new partners is vital. CIOs need to lead the way in finding valuable insights beyond the borders of the enterprise.

**A Higher Standard of Accountability**

Now in its tenth year, the EDUCAUSE Core Data Service (CDS) has become well established as a benchmark used by colleges and universities in strategic planning and management of IT services. It is unique among benchmarking sources in being open and transparent to all who participate. The CDS is undergoing a review at EDUCAUSE as part of the association's interest in strengthening and further developing its ability to assist member institutions in their use of data to plan, manage, monitor, and operate IT services.

Susan Grajek, EDUCAUSE Vice President of Data, Research, and Analytics, sees accountability as being one of the major challenges facing the IT community in higher education. “The bar is being raised; the information we provide on IT’s efficiency and effectiveness is being held to higher and higher standards.” Senior leaders are asking some tough questions. Why are we spending so much on information technology? Is it not possible to do more with less? Where are the productivity enhancements? How do we compare with our peers? Can the IT leadership demonstrate that it is doing as well as best-in-class beyond higher education?

EDUCAUSE is evolving the CDS to help CIOs answer those challenging questions. It will reorient the questions asked and the data gathered. Tying costs to services, says Grajek, will be one of the critical tasks. In principle, the entire IT budget should correspond to particular services whose costs and value can be analyzed and assessed. Considerable
work will need to be done in order to establish consistency in information across the wide range of participating colleges and universities. Definitions will need to apply across multiple institutional types and will also need to correspond with metrics used in the wider IT community.

EDUCAUSE is launching pilot projects to establish benchmarks for costs, key performance indicators, and maturity indices. The chief benefits of a maturity index are to be concrete about what it means to be at any given level and to provide a vocabulary for discussing aspirations and the implications of stepping up from one level to another.

The EDUCAUSE Center for Applied Research (ECAR) is developing a new standard model for its benchmarking and analytics research. Four tiers of IT service management are envisioned: operations, management, planning, and strategic alignment. Each of these will entail its own metrics, and together they will present a more comprehensive model of information technology than has been possible in the past. The methodology (and data collection) will need to grow in stages. EDUCAUSE will also provide corresponding professional development opportunities to help members learn how to collect data for IT service metrics and how to apply metrics to their daily operations and strategic planning.

Grajek adds that a more robust infrastructure, one in which people can interact with these data, will also be needed but that this will take time to develop. The objective is to enable a wider range of questions to be asked and to practice benchmarking more dynamically. Another goal is to expand the range of people able to participate in analytics. Whereas the IT profession lives with the data and specialists at colleges and universities study it, the idea is to extend the capability to more administrators by building a stronger tool for inquiry and reporting. EDUCAUSE is thus exploring linkages with other sources of higher education benchmarking data beyond information technology.

In the coming months, ECAR will work with its members to expand the data it collects. New topics will be added, including undergraduate students’ uses of technology, mobile technologies, research computing, and cross-institutional collaborations. The methods used to gather and study the data will also diversify. Discovery of success factors and actionable recommendations will be important. Results will be presented in a variety of formats in a new “research hub” to improve accessibility and usefulness.

The studies highlighted above are sounding a wake-up call. Higher education information technology is being asked to

- reduce costs,
- improve perceived value,
- provide evidence and be accountable,
- know the data, and
- provide leverage and innovation.

The financial future of higher education is daunting. The public is concerned that college is unaffordable. Institutional costs continue to rise, whether from energy expenses, unfunded mandates, repair and renovation, or personnel. Stimulus dollars are going away. “Rescue” dollars are unlikely to come from outside the academy. Future cuts in state support for higher education

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Implications for the IT Landscape

By Diana Oblinger
are a certainty because of competing state priorities (e.g., retirement funds, medical programs). Additional cuts in federal financial aid are also likely. Inadequate tuition income and budget shortfalls are part of the future. As the prospects for new revenue continue to look grim, information technology is being asked to do all it can to help higher education institutions cut costs and improve productivity.

With nearly 60% of survey respondents stating that higher education fails to provide good value for students and families, those of us in higher education must worry about more than cost—we must focus on the perceived value of higher education as well.

Finally, all of the studies and surveys point to collaboration. The problems are too complex and the interdependencies too great for information technology to be effective by itself.

Richard S. Tedlow advises organizations that want to be great to be “ruthlessly realistic.” It would be too easy to dismiss distressing data. Instead, we must take a realistic view of the future that we know is on the horizon, and we must look for ways to use information technology to solve the problems lying ahead—to reduce costs, improve value, provide evidence, and leverage innovation in higher education. We need to keep the parts of our model that work—and improve them. And if there is a better model thanks to our digital world, we must adapt. We must respond to the wake-up call.

**Notes**


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