The Future of Higher Education:
A View from CHEMA

A Report from The Council of Higher Education Management Associations

Philip J. Goldstein

August 2006

"...heightened competition, changing revenue streams, demographics, technology, and altered public perceptions are creating serious threats and opportunities for higher education..."

CHEMA

ECAR
EDUCAUSE CENTER FOR APPLIED RESEARCH

The Council of Higher Education
Management Associations

Presented by:

CHEMA, the Council of Higher Education Management Associations, is an organization of nonprofit associations representing the administrative functions of colleges and universities. By sharing information, comparing experiences, and working collectively on projects related to higher education, CHEMA members maximize their resources and create substantial benefits for the colleges and universities they represent.
www.chemanet.org

The mission of the EDUCAUSE Center for Applied Research (ECAR) 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 systematically addresses many of the challenges brought more sharply into focus by information technologies.
www.educause.edu/ecar

Author Philip J. Goldstein is a research fellow with the EDUCAUSE Center for Applied Research.

With generous sponsorship from:

Carter & Burgess, Inc., based in Fort Worth, Texas, is a company that operates in an atmosphere of service and trust in providing architectural, engineering, and related services on a national scale and by encouraging an entrepreneurial spirit emphasizing risk-based business decisions.
www.c-b.com

The Future of Higher Education: A View from CHEMA

I. Introduction

Predicting the future is never easy. Higher education scholar Howard Bowen studied post–World War II education and concluded that none of the ten major changes that shaped higher education during this period had been predicted. Despite the inherent challenges of prediction, much is being discussed and written about the future of higher education. Scholars, federal commissions, and individual campus leaders are all weighing in on how and why higher education should change. Undeniably significant forces for change are growing. Changing demographics, the rise of global competition, technological change, and constrained budgets have already become significant forces for change. Some view these forces as dark clouds on the horizon that threaten higher education. Others view them as agents of change that will enable higher education to reinvent itself in positive ways.

The Council of Higher Education Management Associations (CHEMA) approaches the task of looking at the future with great humility. It is not our intent to use this study to predict the future. Rather, CHEMA's interest is to identify the forces for change that are building and to understand their potential implications for higher education. Our goal is to add the voice of higher education's administrative leadership to those who are seeking to understand and shape the future of higher education. We seek to join the dialogue about the future of our institutions and to create a conversation within administrative functions about how they can change to support that future. We take to heart Alan Kay's advice that "the best way to predict the future is to invent it." Or, as that other great futurist Yogi Berra advises, "If you don't know where you are going, you will wind up somewhere else."

Study Scope and Objectives

CHEMA is an informal, voluntary assembly of 30 management-oriented higher education associations in the United States and Canada. By sharing information, comparing experiences, and working collectively on projects of shared interest, CHEMA members maximize their resources and create substantial benefits for the colleges and universities they represent. Periodically, CHEMA sponsors broad studies and analyses that are of interest to the memberships of its associations.

In sponsoring this study, CHEMA set out to meet three objectives:

- Examine how administrators and officials who are engaged in college and university support functions, and who are leaders within their respective CHEMA member organizations, anticipate that higher education will change over the next ten years.
- Identify the drivers of change and discuss the types of opportunities and threats these leaders foresee for higher education, their institutions, and their functional areas.
- Understand how prepared institutions are to manage change, and identify areas in which these leaders believe higher education can act to shape its own future.

This project is jointly sponsored by 22 CHEMA member associations. A complete list of project participants appears in appendix A.

Research Methods

CHEMA asked the EDUCAUSE Center for Applied Research (ECAR) to design this study and perform the analysis. ECAR brings experience with both quantitative and qualitative research methods. ECAR's efforts were directed by a volunteer steering committee from CHEMA. The steering committee guided the development of research questions and reviewed the results of the analysis.

The research included two major activities. First, a quantitative survey was distributed to the members of the boards of directors of each association. Second, qualitative interviews were conducted with multiple representatives of each participating association. Interviewees were nominated by their associations for the breadth and depth of their perspective on the issues that will shape higher education's future. A complete list of interview participants appears in appendix B.

Survey responses were received from 190 individuals representing 22 associations. Table 1 displays the number of responses received by association.

Table 1. Respondents, by Association

Association	Number	Percent
ACCED-I	6	3.2%
ACHA	16	8.4%
ACPA	10	5.3%
ACRL	12	6.3%
ACUA	3	1.6%
ACUI	10	5.3%
ACUTA	6	3.2%
AHECTA	6	3.2%
APPA	18	9.5%
CUPA-HR	6	3.2%
EDUCAUSE	7	3.7%
IACLEA	5	2.6%
NACA	4	2.1%
NACAS	9	4.7%
NACCU	6	3.2%
NACS	9	4.7%
NACUA	16	8.4%
NACUBO	13	6.8%
NACUFS	9	4.7%
NAEP	2	1.1%
NIRSA	9	4.7%
SCUP	7	3.7%
Other	1	0.5%
Total	**190**	**100.0%**

Nearly all of the respondents are currently employed by institutions of higher education. Fewer than ten respondents hold positions in corporations. We anticipate that the opinions of survey respondents were shaped both by their association position and their experience at their home institution. The majority of respondents work at large, public institutions. Following are some of the characteristics of the 190 respondents:

- 55.6 percent from doctoral institutions
- 41.6 percent from institutions with more than 15,000 students
- 55.8 percent from public institutions
- 57.4 percent with more than 20 years' experience in higher education

Analytical Frameworks

The survey results and the qualitative interviews provided a rich discussion of the issues that will shape higher education's future. However, it is important to note the limitations of the analysis and the conclusions we can draw from it. First, our survey population is not a random sample. Interviewees and survey respondents also do not represent the complete institutional diversity that is higher education. Therefore, we cannot project with any statistical certainty that the views of respondents represent the views of higher education. The relatively small number of respondents also presents some limitations in our ability to analyze the results by individual institutional type or by individual association.

We used several frameworks to assess our results. First, we looked at how perspectives varied by the predominant mission of the associations represented among survey respondents. Second, we looked for differences among respondents based on the typical reporting relationship of their function on campus. Specifically, we sought to understand whether the proximity of the reporting relationship to the cabinet played a major role in shaping views of the future. In addition, we looked for patterns in responses based on years of experience in higher education as well as more traditional groupings, such as control, Carnegie classification, and enrollment. Tables 2 and 3 present the groupings of associations by predominant mission and proximity to the cabinet.

Table 2. Associations, by Predominant Mission

Auxiliary Services	Enable Physical and Virtual Infra-structure	Business and Risk Services	Academic and Student Support
ACCED-I NACAS NACS NACUFS	ACUTA AHECTA APPA EDUCAUSE IACLEA NACCU	ACPA ACUA CUPA-HR NACUA NACUBO NAEP SCUP	ACHA ACRL ACUI NACA NIRSA

Table 3. Associations, by Proximity to the Cabinet

Below VP	At or Near Cabinet (VP)
ACCED-I	ACUA
ACHA	APPA
ACRL	CUPA-HR
ACUI	EDUCAUSE
ACUTA	NACAS
AHECTA	NACUA
IACLEA	NACUBO
NACA	SCUP
NACCU	
NACS	
NACUFS	
NAEP	
NIRSA	

II. Change and Change Drivers

How substantially will higher education change in the future? Will some segments change more dramatically than others? What factors are creating pressures for change? These are the range of questions that we asked project participants. We wanted to gain a sense of how individuals view the coming ten years for higher education. Will it be a period of unprecedented and accelerated change or an era of incremental differences?

Change, but How Much?

In a 1997 interview with *Forbes* magazine, Peter Drucker, speaking about the impact of technological change on higher education, predicted, "Thirty years from now the big university campuses will be relics. Universities won't survive. It's as large a change as when we first got the printed book."[1] In the decade that has passed since Drucker's prediction, higher education has seen many changes. However, many would argue that we are no closer to the demise of the traditional university campus than we were when Drucker made his prediction. Will the next ten years bring more fundamental change?

We asked survey respondents to indicate their level of agreement with the statement, "In the next ten years, higher education will change dramatically." Respondents indicated their level of agreement using a 5-point scale, with 1 indicating strong disagreement, 3 indicating neutrality, and 5 indicating strong agreement. The mean response of 3.66 was between neutrality and agreement with the statement.

Respondents were not uniform in their assessment of the future. The distribution of responses suggests that most ranged from slight disagreement to strong agreement with the statement. Part of the range of responses can be explained by differences in the respondents' home institutions. We found a statistically significant relationship between the control (public or private) of a respondent's home institution and expectations for the degree of future change. Figure 1 compares the mean responses among respondents from public institutions to those from private institutions.

Figure 1. Expectations for Change, by Control
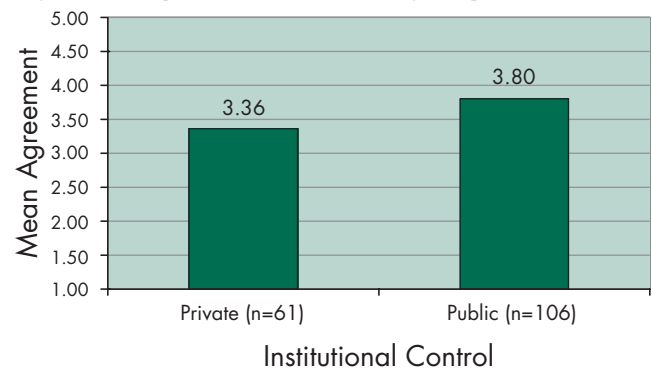
Statement: In the next ten years, higher education will change dramatically.
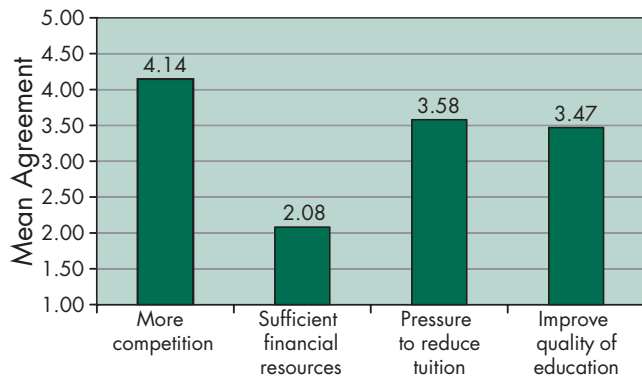*Scale: 1 – strongly disagree, 2 – disagree, 3 – neutral, 4 – agree, 5 – strongly agree*

Respondents from public institutions anticipate that higher education will undergo more significant change than do respondents from private institutions. This difference of opinion may in part indicate that the pressures for change are greater at public institutions. Many project participants believe that public institutions are more sensitive to changes in public funding, student demographics, and regional economic issues. Others anticipate a growing "privatization" of public institutions as their funding shifts from state allocations to other revenue streams.

Respondents were also asked to indicate their level of agreement with four specific changes that higher education will encounter. We asked respondents to agree or disagree that in the next ten years, higher education will

- face more competition
- have sufficient funds to meet strategic objectives
- face pressure to reduce tuition
- improve the quality of education

Figure 2. In the next ten years, higher education will:

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

As figure 2 illustrates, respondents on average agree that higher education will face more competition and be under greater pressure to reduce tuition, and will make strides in improving the quality of education. Again, respondents were not uniform in their view of the future. The strongest response came to the question regarding sufficiency of future resources. Respondents disagree that institutions will have sufficient financial resources to meet future strategic objectives. As we will see in the following sections, financial constraints are anticipated to be a significant factor in defining the future of higher education.

There were no significant differences among respondents based on the type of association they represent, the type of institution they are from, or even their years of service to higher education. We had wondered if long-time veterans of higher education would hold a more reserved view of the future than colleagues with less experience in the industry. Interestingly, there was no significant difference in responses based on the number of years of experience in higher education.

Respondents had similar expectations for change for their individual functional areas as well. Using the same 5-point scale, respondents agreed somewhat that their functional area would change dramatically (3.7), face more competition (3.62), and be under pressure to reduce costs (3.65). Respondents agreed more strongly that they would also achieve improvements in the quality of service in the future (3.99). As they did for higher education as a whole, respondents also disagreed that their functional areas

would have sufficient resources to meet strategic objectives (2.84).

Perspectives on the future of individual functional areas do vary by the predominant mission of the function. For example, increased competition is anticipated most strongly by auxiliary services functions. These are the campus functions, such as bookstores or dining services, that face the most intense threats from substitutes in the form of local merchants or online stores. Conversely, functions with a primary mission of business or risk management, such as the finance office or general counsel, do not anticipate significant new competition. All functions, regardless of mission, were fairly pessimistic about the sufficiency of future funding. Similarly, all of the functions generally agreed that they would come under more intense pressure to reduce costs. Figure 3 illustrates respondents' views of the future of their functional area, segmented by the primary mission of their function.

Figure 3. In the next ten years, my function will:
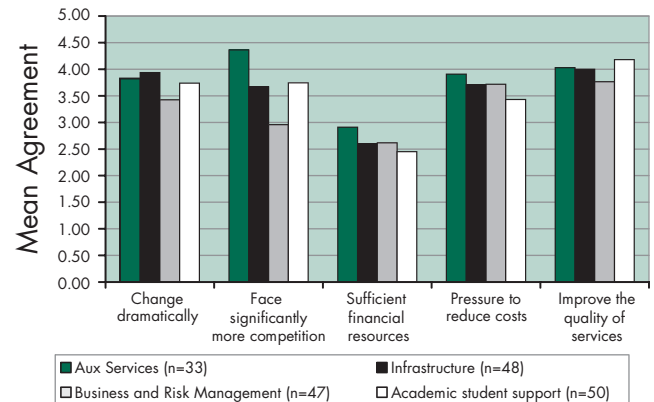
Scale: 1 – strongly disagree, 2 – disagree, 3 – neutral,
4 – agree, 5 – strongly agree

It is also interesting to note that, regardless of their function's primary mission, respondents on average expect to improve the quality of services. This is one of the evident tensions among respondents' views of the future. On the one hand, they see a future of insufficient financial resources and increased need to cut costs. On the other hand, they anticipate success at improving service. Higher education's administrative functions are certainly not unique in facing this challenge. In fact, this assessment describes the majority of sectors of our economy today. However, it does suggest the need for some significant degree of innovation or gains in productivity to be able to balance these two opposing forces.

The Change Drivers

To better understand the forces that will shape the future, we asked respondents to indicate which factors they felt would be the most significant drivers of future changes. Respondents were asked to select their top-three change drivers for higher education. More than half of respondents (60.5 percent) see financial constraints as the most significant driver of change. The next two most frequently selected factors were technological change (32.6 percent) and changing student demographics (23.7 percent). Financial resources and technological change were also seen by respondents as the most significant change drivers for their respective functional areas. Table 4 lists the percentage of respondents who selected each factor for both higher education as a whole and for the respondent's function.

Table 4. Top Three Change Drivers in Higher Education and My Function (n=190)

Drivers	For Higher Ed	For My Function
	Percent	Percent
Insufficient financial resources	60.5	53.7
Technological change	32.6	31.1
Changing student demographics	23.7	14.7
Aging and expanding plant	21.1	24.7
Demonstrate outcomes	20.5	26.3
Rising consumer expectations	18.9	17.4
Increased regulation	17.4	14.2
24x7 Service	16.3	25.8
Rising student expectations	15.3	22.1
Global marketplace	14.7	6.3
Increased competition	14.2	10
Workforce demographics	12.6	8.9
Pressure to reduce tuition	8.4	2.1
Privatization	6.3	10
Decline in enrollment	3.7	1.6
Managing IP Rights	2.6	6.3
Lack of skilled workforce	2.1	10
Declining student retention	1.6	2.6

Several other interesting points to note from this data include the following:

- More respondents saw the need to demonstrate outcomes as a change driver for their function (26.3 percent) than for higher education overall (20.5 percent).
- Relatively few respondents (8.4 percent) saw pressure to reduce tuition as a top-three change driver.
- Rising student expectations (22.1 percent) and the need to offer 24x7 service (25.8 percent) are viewed as top-three change drivers for individual functions by more than a fifth of respondents.

The factors that were not frequently selected are also interesting. For instance, few respondents (3.7 percent) identified declines in enrollment as a significant change driver for higher education. This seems to contradict the national demographic predictions that enrollments will peak around 2008. It may be that more respondents were from states that are experiencing population growth. It seems most respondents anticipate that changes in the demographics of the student body will be a more significant issue than declines in the number of traditional college-age students.

Similarly, relatively few respondents (8.9 percent) selected changing workforce demographics as a top-three driver of change. This also seems contrary to other studies that predict that the aging of the population may create labor shortages in the United States. It is possible that respondents concerned about this issue spread their choices between this change driver and the lack of a skilled workforce (10 percent). Or, it could be that the respondents consider changing workforce demographics an important factor, but not as important a driver as changes in student demographics, financial constraints, or expected technological change.

III. The Big Issues

While respondents and interviewees are not of one mind regarding how much change higher education will undergo, they did identify a set of issues that warrant monitoring and attention. These are the issues that many project participants feel will have a significant impact on colleges and universities. The nature of the impact, or even if it is a positive or negative change, are neither clear nor universally agreed upon. However, these are likely to be the issues and questions that will demand attention.

1. Has higher education entered a period of financial decline?

As noted, survey respondents were very concerned about the financial outlook for higher education. More than 40 percent of respondents saw insufficient financial resources as one of the three largest threats that

higher education faces. In fact, as table 5 illustrates, three of the four most frequently selected threats relate directly to the financial health of the industry.

Table 5. Top 3 Threats to Higher Education's Success

Threats	Percent Selected as Top 3 Threat
Resistance to change	55.8
Lack of resources	43.7
Increased cost of an education	34.7
Decreased government funding	28.9
Complacency	21.1
Inability to control costs	18.9
Insufficient leadership	17.9
Organizational silos	15.8
Keep pace with technology change	14.7
Government regulation	12.1
Increased competition	11.6
Insufficient facilities	10.0
Complex governance structures	6.8
Lack of skilled workers	1.6

More than 25 percent of respondents report that securing financial resources is one of the top three issues commanding their attention. The heightening concern over higher education's finances is driven by four primary factors:

- State funding for public universities has and is expected to continue to decline.
- The rate of growth of federal spending for research is expected to decline.
- Operating costs for significant items such as health care, utilities, and construction are increasing rapidly.
- Tuition cannot continue to rise to make up the difference from declines in other revenue streams without limiting access to higher education.

Absent change, Georgia Yuan, Smith College's general counsel, sees higher education on a collision course that will challenge its core values. "Tuition is going up in response to government regulation and the higher cost of doing business, while government is cutting back on support and financial aid, saying that public universities need to be more productive and efficient. On the other hand, all institutions are worried about increasing costs and a desire to promote greater access to quality educational services."

How might higher education be impacted by its future financial constraints? Nearly 30 percent of survey respondents anticipate that cost containment will be one of the most significant issues that will command more management attention in the future. Twenty-five percent of respondents indicated that cost containment is already one of the top three issues that consume their attention.

However, many see higher education's financial challenges as producing more fundamental changes than just administrative cost containment. Interviewees forecast more far-reaching changes, including the following:

- a permanent shift in the composition of revenue for public institutions away from state support to other revenue streams that will make them behave more like private institutions
- rates of tuition increases that continue to grow and make higher education unaffordable to many segments of the population
- mounting pressure on "middle of the pack" private institutions without clear niches to merge or cease operations

While some institutions with large endowments may be less affected, the majority will feel the pressures. Robert Mindrum, director of Purdue Memorial Union, sums up the situation. "I think there will be winners and losers, and the public institutions will be hit the hardest with funding challenges. There will be a continuing change to the mix of funding from public to private sources that will make it more difficult for public institutions."

Not all view higher education's fiscal challenges negatively. Some view it as a necessary force for change that can have lasting positive impacts. Carla Stoffle, dean of university libraries at the University of Arizona, sees financial constraints driving higher education to address a core of the problem. She says, "Higher education's economics are not sustainable. We have nibbled the edges, but universities are hard to change. We have to look at the fundamental cost structure of higher education and find a way to maintain quality and reduce cost to a sustainable level."

Other interviewees question whether higher education has a financial problem or a priority-setting problem. Their view is that institutions need to become more willing to focus on achieving excellence in targeted areas, rather than across the board.

Their view is captured by Doug Christensen, Office of Administrative Solutions – Physical Facilities at Brigham Young University. Doug believes that resources will be there for real needs if an institution can identify them. He explains, "If a high priority, real need is there, there always is money. It becomes an issue of prioritizing what is of real importance to the institution's mission and vision; this is not necessarily a limited-resource issue."

2. Are institutions prepared for the changes in their student bodies?

Changing student demographics was the second most frequently identified change driver by survey respondents. Demographic changes in the United States will significantly alter the composition of student bodies at most institutions. In the book and PBS special report, *Declining by Degrees,* essayists Robert Suro and Richard Fry describe the demographic changes that are underway:

- Since 1970, the number of foreign-born persons in the United States has tripled to more than 33 million people or 12 percent of the population.
- A quarter of the foreign-born population is from Asia and half from Latin America.
- Between 2000 and 2020, the non-Hispanic school age population will shrink slightly, while the number of Hispanics ages 5 to 19 will grow by nearly 60 percent.
- Hispanics and Asians attend college at the same or greater percentages than their white counterparts.[2]

While higher education's market is growing more diverse, it is not growing in size, at least among traditional markets. There are strong regional differences in markets as well. College-bound populations in some areas of the Northeast and Midwest are shrinking, and they are growing in the Southeast, Southwest, and West. Institutions in states with declining populations will find themselves in increasingly competitive markets for students or will need to tap new markets to a greater extent. Institutions in growing markets will face a different challenge. For example, Thomas Dison, associate vice president at the University of Texas at Austin, explains that, in his state, institutions are preparing for an enrollment bubble. "A growing population of students is coming. This generation of students will be more diverse, and a larger percentage will be first-generation college students."

If institutions are to maintain their enrollments in the face of the predicted decline in the number of college-bound students, they must be able to attract and retain students from diverse backgrounds. They must create a campus climate that is even more welcoming of diversity. Jonathan Alger, vice president and general counsel at Rutgers University, describes his view of the challenge of diversity. "Diversity is going to continue to be a significant challenge for our institutions, as well as an opportunity. We will see students from a variety of family, socio-economic, racial, and ethnic backgrounds who, in many cases, might not have attended college 20 years ago. Growing religious diversity and related tensions will also need to be addressed. Students, faculty, and staff will need to become educated about and sensitive to differences in this area."

The changes in demographics are pronounced. Yet, they are not the only changes in the composition of the student body that will impact higher education. Interviewees predict that institutions must also prepare to respond to the following:

- an increasingly older student body that pursues work and school simultaneously
- growing expectations for services and service quality, fueled in part by the high cost of education
- increased expectation of 24x7 access to services
- increased movement of students between institutions

The pressures that these changes bring to bear on institutions are apparent in the survey responses. A quarter of survey respondents (25.8 percent) believe that the need to provide 24x7 services is a top-three driver of change for their functional area. Twenty-two percent of respondents identified rising consumer expectations as a top-three change driver. Likewise, nearly 50 percent of respondents report that improving service is one of the top three issues commanding their attention today, and 25 percent expect it to grow more significantly in the future. Ron Bleed, vice chancellor emeritus at Maricopa Community Colleges, likens the changes in student behavior to a form of "free agency." Bleed explains, "We are seeing the free agency of the student. They will have fewer ties to a single institution or to institutional services. They will want to 'plug and play' into the institution's educational programs and services."

Changes in demographics and student consumer behaviors have significant implications for many administrative services of an institution. This is especially true, of course, for those with a primary mission in student services. Figure 4 illustrates the proportion of respondents that identified changing student demographics as a top-three change driver for their area by the primary mission of their function.

Figure 4. Student demographics will drive change for my function

Function's Primary Mission

■ No □ Yes
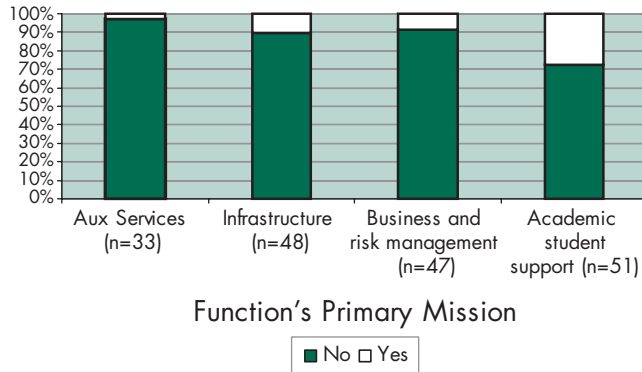
Several participants believe that institutions that react well to these changes will have a comparative advantage. Daniel Maxwell, director of student activities at Western Illinois University, urges his colleagues to become more attuned to student needs and priorities. "We really need to be listening more to our students. What they want is changing rapidly. For example, with [2005's Hurricane] Katrina, there has been a rapid growth in student interest in being a hands-on volunteer. We need to spot these changes and rapidly shift our resources."

Lynette Willett of Coastal Carolina University and Justin Lawhead of the University of Memphis both see a significant opportunity for student services to increase their contribution to the institution. Willett believes "the most important issue for student affairs is the increased importance of attention to special needs populations." Lawhead sees a similar opportunity to help the campus manage diversity and help students be better prepared. He encourages institutions to "think about the international diversity of the country." He adds, "We need to make sure that students understand how the world affects them."

3. How will institutions and functions fare in the face of greater competition?

The competitive landscape for higher education has many dimensions. It is also not a new phenomenon. Institutions have always competed for students, faculty, and resources. Participants in the study however, see competition as a growing and changing force. Interestingly, survey respondents did not rank competition as highly as a change driver as they did funding, student demographics, or technological change. In fact, competition was only the 11th most frequently selected change driver (global marketplace).

At first look, it appears that respondents are not all that concerned about the impact of competition. However, upon closer examination, several factors indicate that respondents do view competition as a significant change driver. First, respondents may have split their choices between competition and the increasingly global marketplace as two change drivers that both capture forms of competition. Taken together, 28.9 percent of respondents selected one or both of these as a top-three driver of change. Second, there may be an issue of cause and effect among the factors. Interviews revealed that competition is a factor or by-product of the change drivers that respondents did select most frequently. Through our conversations, it became apparent that student demographics, finances, and technology will either foster more competition or be exacerbated by competition.

Interviewees identified three types of competition that they believe will intensify in higher education. They foresee three forms of competition: among traditional institutions for students and resources

- between traditional institutions and new entrants, including global competitors and for-profit providers
- between campus services and external providers

The range of competition varies as well. Some examples of growing competition that participants anticipate are illustrated in table 6.

Table 6. Dimensions of Competition in Higher Education

| Competition	Examples
Among traditional institutions	• Community colleges offering four-year degrees • More intense competition for students in regions with declining populations • Greater competition for research funding as the rate of growth of federal and industry research spending declines
With new entrants	• Increased global competition for international students • Global competition for industry research spending • For-profit providers for adult learning and, increasingly, traditional students
Between campus services and external providers	• Online stores • Greater mobility of students between campus and local community • Increased number of working students, reducing hours on campus

Many participants felt that more direct and intense competition is already changing higher education. Mary Kennard, vice president and general counsel at American University, already sees an impact from global and for-profit competition. "There is greater competition coming from a lot of different places, including other countries. U.S. higher education is not the only game in town. New competition from for-profit institutions and corporate training programs is already changing higher education. Short courses, weekend programs, certificate programs, and changing instructional methods are being spurred by for-profit and international competition." Jonathan Alger echoes the theme of the growing presence of global competition. "Institutions will need to become more international in their outlook and focus, and to fight harder for better international students."

Lynette Willett of Coastal Carolina University anticipates that technology will foster greater competition, which could threaten higher education's traditional market. "We will face competition from entrepreneurs that are ten steps ahead of us. They will be able to use technology to connect with populations across the age spectrum. They will capture populations that, before, had hung tightly to traditional education."

Competition is already felt intensely by many of the functional areas represented in this study. Campus stores, and dining and conference services, for example, have always faced some degree of competition. These and other areas anticipate that their competition will grow. Figure 5 illustrates survey respondents' views of the importance of competition as a change driver for their function based on their predominant mission.

Figure 5. Increased competition will be a significant change driver in my area

Predominant Mission

■ No □ Yes
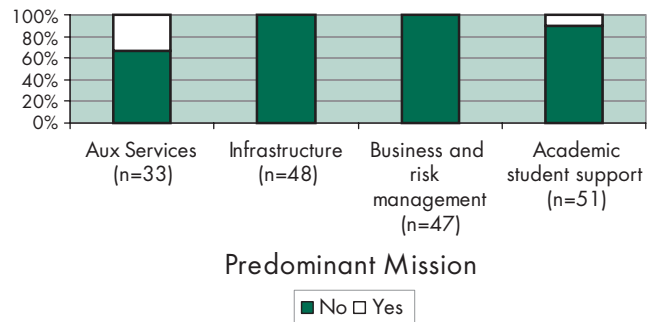
Respondents from campus auxiliary services believe that they will be most impacted by competition. In contrast, relatively few respondents from functions predominantly focused on academic or student support services thought their functions would be impacted much by competition. Interestingly, of those respondents from functions whose primary mission is either to operate campus infrastructure or provide business services, none saw external competition as a significant driver of change. One could argue that some of these areas are already competing with the local market for aspects of their services. For example, information technology (IT) organizations often compete with the local market to provide network connectivity or telecommunications. Facilities management organizations can find themselves competing with the local marketplace to perform minor renovations. While less frequent, internal audit departments or general counsels compete with local accounting or law firms to provide their services to the institution. Perhaps, respondents from these functions do not view competition in this way. Or, they may not see the areas in which they compete changing much in the future.

Respondents from organizations with a predominant mission of auxiliary services are very focused on competition. These entities find themselves competing with both local and national firms. Technological change has further altered competition for some auxiliary services functions. The Internet has enabled students to shop off-campus without leaving their residence halls. Student demographics are also changing competition. As more students both attend school and work, they are spending less time on campus. This leaves them with less time to spend money on campus. Steve Styers at the University of Cincinnati describes the heightened competition faced by campus services. "I have to be even more cost-conscious because competition is even keener. I have to offer the tools and technologies that students expect and remain cost competitive. This is impacting everything from the cost of meals to phone service and wireless connectivity."

From a societal point of view, several project participants spoke of a growing concern about the loss of U.S. competitiveness if the excellence of higher education is not sustained. They expressed concern that there did not appear to be a national agenda promoting the importance of higher education to the country's economic prosperity. Several cited the incredible investments being made by China and India in the quality of science and technology education in their institutions of higher education. In the short run, these developments may decrease the number of international students who choose to study in the United States. However, when coupled with the decline in the number of U.S. students who pursue science or technology education, it represents a long-term threat to our economic growth.

Jonathan Alger of Rutgers University sees a potential silver lining for higher education if political and business leaders grow more concerned with the country's global competitiveness. He explains, "I would not rule out increased government concern with, and support for, higher education. Global competition could create a major shock to the system. Education could once again become a national security concern as it was in the 1950s, leading to an increase in federal funding."

5. Will higher education be successful recruiting and retaining the skilled workforce it requires?

America's workforce is aging. It is estimated that by 2030, the United States will face a shortage of 30 million workers needed to replace retiring baby boomers. In the next ten years, the numbers of workers age 55 and older will grow four times faster than the overall workforce.[3] As table 7 illustrates, the percentage of the population over age 65 will grow from 13 percent to 19.7 percent.

Table 7. U.S. Population by Age

	Population Age 24–44	Population Age 45–64	Population Age 65+
2010	26.8%	26.2%	13.0%
2020	26.2%	24.9%	16.3%
2030	25.2%	22.6%	19.7%

Source: The Greystone Group, Presentation to the White House Preconference on Aging

The workforce in the United States is predicted to change in other ways as well. For example, as the population grows more diverse, so too will the workforce. It is also predicted that workers will continue to be more mobile. The Bureau of Labor Statistics predicts that today's graduates will have between 10 and 14 careers in their lifetime. There is also growing concern that there will be a shortage of skilled labor in the workforce.

Given these trends, one would anticipate that higher education will face staff shortages and greater competition to recruit staff. At best, it seems that higher education should be prepared for a workforce that turns over much more frequently in the future than it did in the past. This may be especially challenging for a community that relies so much on relationships and institutional memory to guide many of its business practices.

How concerned is higher education with the changes that are projected for the workforce? Survey respondents provided a mixed view of this issue. Only 12.6 percent of respondents selected changing workforce demographics as a top-three driver of change for

higher education. Even fewer (8.9 percent) identified it as a top-three change driver for their functional area. There were no significant differences in respondents' views by their institutional background or the primary mission of their functional area.

On the other hand, respondents do report that personnel management takes up much of their time. As figure 6 illustrates, nearly 35 percent of respondents identified personnel management as one of the three biggest issues commanding their attention today. This trailed only improving service, which was selected by about 45 percent of respondents.

Figure 6. Personnel Management Commands Management Attention (n=190)
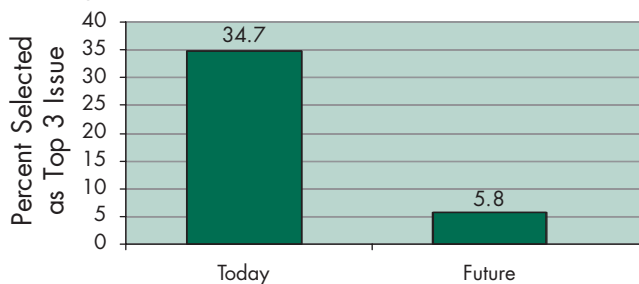
While personnel management is commanding attention today, relatively few respondents saw it as an issue that would be likely to command more of their attention in the future. Only 5.8 percent of respondents—the fewest in number—identified personnel management as one of the three issues that had the potential to command more of their attention in the future. Instead, respondents focused on securing resources, containing costs, and improving service as issues that would likely command more of their focus in the future.

Respondents also did not consider lack of a skilled workforce as a significant threat to the future success of higher education. It was ranked last among a list of 14 potential threats by respondents. It appears that respondents do not see recruiting a skilled workforce in the future as a significantly different challenge than it is today. Or, it may be that the anticipated effects of changes in workforce demographics show up in other variables, such as cost containment and service improvement. It makes sense that these factors would be linked to changes in the supply of skilled workers. We should also note that we asked about the workforce in general and did not differentiate between staff and faculty. It is possible that we would have seen

different levels of concern had we asked separately about the availability of skilled faculty.

Interview participants were more focused on the challenges of recruiting and retaining a skilled workforce. They raised concerns about both the graying leadership of their functional areas and the challenge of competing with the private sector to recruit skilled staff. For example, Daniel Maxwell, director of student activities at Western Illinois University, sees higher education's compensation structure as a significant disadvantage. He explains, "How many years can you go with a 1 percent salary increase? How do I get people to come to a rural town, with poor pay as well?"

Ralph Maier, director of purchasing services at the University of Pennsylvania, sees an even broader challenge. He sees a need to completely rethink what higher education offers its employees. "Higher education needs a different approach to hiring. We are competing with private industry for the required skills and experience. The historical view of superior quality of life in higher education is a fallacy. Staff hires are not looking for 25-year jobs any longer. Market-competitive compensation and health benefits are the top concerns." If in fact compensation and health benefits are increasingly the factors that count in recruiting staff, it will create a further upward pressure on higher education's costs.

The graying of the profession was viewed as both an opportunity and a threat by interviewees. Within their institutions, several expressed concern at the prospect of losing so much experience and institutional memory at a time of great change and challenge. From a national perspective, several interviewees expressed concern that there was not a strong enough pipeline of future leaders to take the place of those who will retire. They urged a more focused effort to develop the next generation of leaders.

Others saw opportunity in the potential turnover of the workforce. Lorelei Meeker of Indiana University sees an opportunity for higher education to gain fresh perspectives. She explains, "Massive retirements of boomer faculty and staff will create a tremendous fluidity that will open up new possibilities and new solutions." Lorelei and others reason that an influx of new perspectives and new ideas will make higher education more willing to change. They also foresee the opportunity to bring in more leaders with corporate

backgrounds to lead both institutions and individual functions. Project participants who shared this view feel that higher education as a whole and individual functions can benefit from new thinking.

Demographics alone suggest that higher education is likely to need to recruit more individuals with corporate work experience. However, this trend raises its own set of questions. Would higher education be receptive to an influx of more leaders with corporate backgrounds? Will these leaders be effective? Could higher education be competitive in recruiting individuals with corporate backgrounds? Robert Mindrum, director of the Purdue Memorial Union at Purdue University, raises a cautionary note that as higher education becomes more corporate, it risks alienating another portion of its workforce. "If we become too much like the private sector, there will be less reason for people to work in higher education for lower salaries."

Clearly, there is a complex set of issues and questions surrounding the future workforce for higher education that warrants close attention — a closer focus, perhaps, than many project participants anticipate. Doug Christensen of BYU summed it up for us this way: "The biggest innovation that higher education can make is to nurture those who work and support the university. We have a tendency to only look externally, while ignoring the internal support staffs and faculty that are integral to the institution."

5. How will technology continue to transform the academy?

In his book *The World is Flat,* Thomas L. Friedman quotes Carly Fiorina, former CEO of Hewlett Packard, as describing the dot-com boom and bust as the end of the beginning of the technology revolution.[4] Friedman goes on to argue that only now are we beginning to see the effects of the true technology revolution in industry and society. Project participants appear to have a similar sense of technology's role in higher education. Mary Daniels of Ohio State University offers her own version of Carly Fiorina's view of technology. "We are at the end of the first wave of technology implementations, where we learned how IT can change the way we do business. The second wave will transform the learning experience. It is just aking higher education longer to translate technology enhancements to education."

Project participants expect technology to be a significant force for change, although the specific types of technologically driven changes that will occur and how fast they will come about still feels elusive. Among survey respondents, technological change was the second most selected change driver for higher education as a whole and individual functional areas. The anticipated impact of technology did not differ significantly by either a respondent's institutional perspective or primary mission of the functional area that they represent.

Many participants shared examples of how they believe that technology already was transforming higher education at all levels. They see how technology has enabled students, faculty, and staff to adopt significantly different ways to communicate, access information, and deliver campus services. Several interviewees mentioned that they were counting on future technology developments to help them secure additional productivity gains that will enable them to both enhance service and control costs.

Several also see evidence of technology's potential to support instruction. Mary Kenard of American University describes her own experience teaching with technology. "For the class that I teach, I do everything electronically — an electronic textbook, e-mail assignments, and chats, as well as electronically posted exams and grades." Some are quite bullish on technology's potential to transform instruction. Steve Sayers, AVP for campus services at the University of Cincinnati, captures the sentiment of many with his view that it is only a matter of time before technology significantly alters the approach to instruction. He told us, "I think significant changes will revolve around technology. It will alter where students learn and how they learn. It may be longer than ten years, but the time will come when students will be able to learn anywhere."

While most participants do not share Peter Drucker's view that technology will make the traditional university obsolete, many do feel that technology will certainly diminish the need for certain types of students to have access to campus. A number of interviewees, especially in auxiliary or student services, believe that their functional areas must start to redefine their services in light of a future where many students will be spending significantly less or no time on campus.

Of course, this will not occur equally at all institutions. Many students and institutions will still value personal, face-to-face interactions. In fact, as Lincoln

Johnson of the University of Washington reminds us, an institution can be high-tech and high-touch. He said, "The students I interact with are very much into their computers. On the other hand, most can step away and realize it's good to have a high-touch piece as well." So, institutions like traditional residential colleges may not see much of an impact. But as Ron Bleed of Maricopa Community Colleges reminds us, these institutions are not the majority. "Residential colleges command much of our mind share, but they really serve a minority of students."

Participants also saw consequences to technological gain. For one thing, it consumes the time and attention of management. As figure 7 illustrates, more than 15 percent of respondents identified integrating new technology as one of the top three issues that commands their attention today. Nearly a quarter of respondents anticipate that it will become a more significant issue in the future.

Figure 7. Integrating New Technology Commands Management Attention
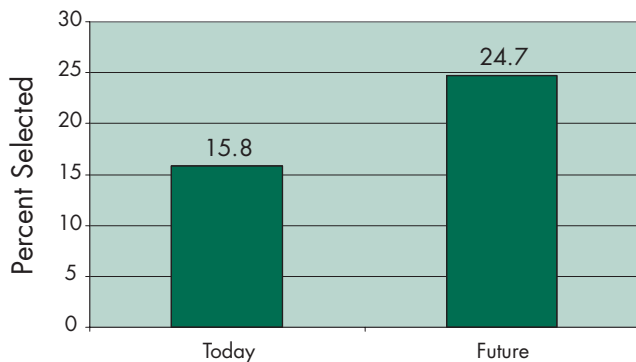
Participants also saw some unintended and potentially undesirable side effects of greater access to technology. Some fear that too much technology is actually reducing the effectiveness of staff. Georgia Yuan, Smith College general counsel, told us, "Technology is speeding up the expectations for responding to requests for services. This has quickened the pace of administration to a dangerous level. Thoughtfulness is sacrificed in favor of acting and responding quickly." Others see technology or, more specifically, access to information presenting significant challenges to the traditional culture of higher education. Lynette Willett of Coastal Carolina University explains, "The increasing access to information and the speed at which it comes at us is challenging higher education's more deliberative and collaborative tendency."

So opinions vary as to how much and how fast technology will enable change in higher education. In reality, it is likely that the availability of technology in and of itself will not drive widespread change. But technology in concert with the other issues described in this section — a shortage of skilled workers, pressure to enhance service and contain cost, the need to appeal to new markets, and new competition — could be a recipe for significant change. Many of the individuals we spoke with are certainly preparing for that eventuality, both within their institutions and within their functional areas.

IV. Are We Ready for the Future?

How prepared is higher education to shape its own future? Can we leverage the forces for change to the advantage of our institutions? We asked participants to assess how well prepared their institutions and their own functions were to respond to the challenges of the future. We also asked respondents to evaluate how well important levers for successfully managing change were performing.

The Future — An Opportunity or Threat?

Despite the many challenges and changes that participants foresee for higher education, they are optimistic about the future. Interestingly, they appear more confident about the future of higher education than about the future of their own institution. More than three-quarters of survey respondents are optimistic about the future of higher education. However, a smaller number of respondents (38.1 percent) felt that their own institution was well positioned to take advantage of the changes that the next ten years will bring (see figure 8).

Figure 8. Respondents' Views of the Future (n=190)
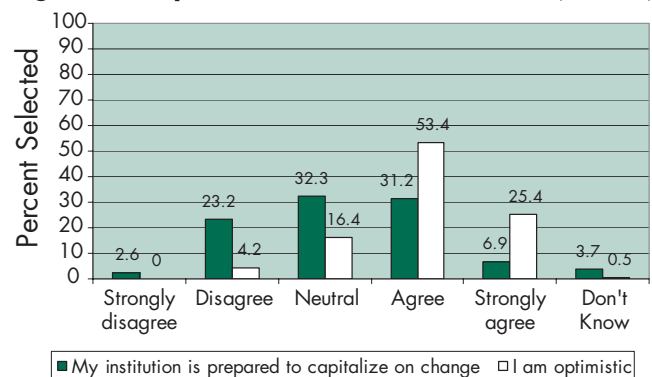
Respondents were even more confident in the future of their individual functional areas. As figure 9 illustrates, the majority of respondents feel that they are well positioned to capitalize on change and are generally optimistic about the future.

Figure 9. The Future of My Functional Area

Legend: ■ My function is positioned to capitalize on change □ I am optimistic
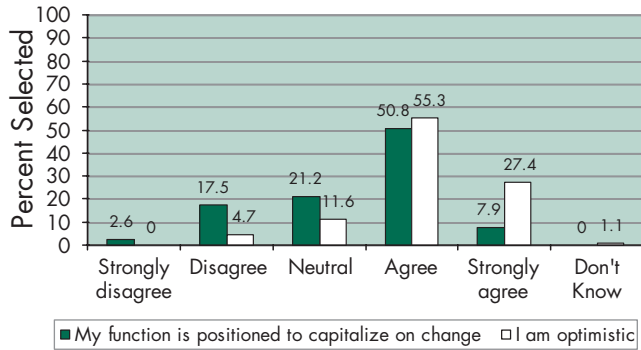
There do not appear to be any significant differences in respondents' views of the future, either by type of institution or primary mission of their functional area. Nor does presumed proximity to the cabinet (organizational reporting relationship) appear to have a significant relationship to respondents' optimism about the future.

Change Enablers

To understand how well positioned respondents felt their institutions were to manage change, we identified eight change enablers:

- leadership capability
- decision making
- governance
- technology
- student services
- human resource practices
- institutional culture
- knowledge of the external environment

We felt that together, these were the eight areas in which an institution would need to attain high levels of capability to successfully anticipate, plan, and implement change. For each one, we asked respondents to indicate the extent to which they agreed or disagreed that their institution's capability positioned it well for the changes ahead.

Overall, the means of 3.5 or less do not suggest that respondents have an extremely high degree of confidence in any of the change enablers. The standard deviations (not shown) suggest that for many of the

enablers, there are significant numbers of respondents who agree and significant numbers who disagree with each statement. Respondents did differentiate between the enablers. As table 8 illustrates, respondents are most confident in their institutional leadership, technology, student services, and knowledge of the external environment.

Table 8. Assessment of Institutional Change Enablers

	Enabler	Mean Agreement
Potential Assets	Leadership	3.52
	Student Services	3.48
	Technology	3.47
	Knowledge of Environment	3.44
Uncertain	Decision-making	3.2
	Governance	3.09
	Culture	3.08
Potential Liability	HR Practices	2.87

Q: This factor positions us well for the changes ahead.

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

On the other hand, respondents have a more uncertain assessment of enablers that speak to the efficiency of decision making and the ability to put decisions into action. The enablers of decision making, governance structures, and institutional culture all have mean responses that hover around neutral. Human resource practices is the enabler that respondents feel the least confidence in for the future. In fact, 38 percent of respondents either disagree or strongly disagree that their institution's HR practices position them well for the future. Perhaps this is the question where respondents demonstrated their concern about the very challenging future ahead in recruiting and retaining a skilled workforce in light of changing demographics and enhanced competition.

Leadership and Resistance to Change

We asked participants to identify the issues that were the major threats to the future success of higher education as well as the attributes that would be most likely to enable future success. As table 9 illustrates, respondents view a mix of opposing issues.

Table 9. Strengths for and Threats to Future Success

Threats to Future Success	Percent Selected	Strengths That Will Enable Success	Percent Selected
Resistance to change	55.8	Ability to innovate	58.9
Lack of resources	43.7	Sense of mission	49.5
Increased cost of an education	34.7	Executive leadership	42.6
Decreased government funding	28.9	Reputation for quality	35.3
Complacency	21.1	Public support	25.3
Inability to control costs	18.9	Financial resources	23.2
Insufficient leadership	17.9	Strong traditions	20.5
Organizational silos	15.8	Faculty capability	14.7
Keep pace with technology change	14.7	Staff capability	13.2
Government regulation	12.1	Government support	4.7
Increased competition	11.6		
Insufficient facilities	10		
Complex governance structures	6.8		
Lack of skilled workers	1.6		

In terms of threats, respondents see resistance to change and the forces that are reshaping higher education's finances, such as decreased government funding and increased costs of tuition, as the most significant threats to the future. On the other hand, respondents see higher education's strong sense of its mission and purpose, its ability to innovate, and the capabilities of its leaders as the strengths that are most likely to enable its future success.

Respondents' concerns about resistance to change and confidence in leadership capability seem to be the central issue in determining how effectively and how quickly higher education will change as its environment changes. It has become an accepted belief that higher education is resistant to change. Clearly, there are some real obstacles. Higher education's historic success is one. It is difficult for individuals and institutions to want to reinvent themselves when what was done in the past worked so well. Shared governance is another. While the participative decision making of higher education can enrich the quality of decisions, it can also reduce the efficiency of decision making. A third is the individualized, entrepreneurial culture of the academy. Some have referred to faculty as the last true entrepreneurs. They are expected to be individual players seeking ways to develop and disseminate new knowledge within specific areas of discipline. They are sources of innovation (witness the significant number of respondents who see this as a strength), but are asked to drive innovation within their research or teaching, not on behalf of their institution.

So there are some true sources of resistance to change. One can imagine that many of these sources of resistance could be found in any large enterprise in any industry. Others may be somewhat unique to higher education. To better understand the true nature of resistance to change and the degree of an impediment it poses to future success, we spent considerable time in our qualitative interviews discussing this issue. The majority of individuals we spoke with feel strongly that resistance to change is real but is not a reason to avoid necessary change. In fact, many see the inability to overcome resistance not as some flaw in the culture of our institutions, but as evidence that we are failing to lead.

Marvin Peterson, professor of education at the University of Michigan, argues that higher education is not an irrational community that will refuse to change no matter what. He points out that "there is no such thing as resistance to change in the face of a compelling reason to change." Marvin and others believe that higher education can and does change when leaders establish the need for change and engage their institutions in designing change.

Bob Hascall, vice president, campus services, at Emory University, acknowledges that change is more of a challenge for higher education than for many corporations. He told us, "People will always resist change. You need to communicate the need for change and to engage people to help implement the change. Our institution's leadership has made a case for the

need for this institution to change. There is a broad communication plan that expresses and articulates the need. Faculty and staff have been engaged in the process of visualizing the future."

Others point out that leaders need to embrace a broad set of tactics and strategies to prepare their institutions or individual functions for the changes of the future. Lizabeth Wilson, dean of university libraries at the University of Washington, describes how planning, staff skills, and culture all play a role in change. "You need to engage in meaningful planning and envisioning processes. This enables staff to look beyond their local situation. It is also critical that institutions invest in staff and organizational development, especially during periods of enormous amounts of change. If people know that they have the opportunity to continuously learn and change skills, retool, and stretch their brains, then they are less resistant to change. Culture also enables us to be nimble and facile. We are fortunate to be located in an area [Seattle] that draws people who want to be innovative."

Lizabeth sets a fairly high bar for institutions and individual functions. Higher education has often fallen short in its ability to invest in staff skill development and engage them effectively in planning the future. However, as she and others pointed out, we can't expect staff to change unless we take these steps. Lizabeth went on to add, "Change is difficult, but if you have an agreement of where we are going, why we're going there, and how we'll know when we get there, people are pretty amazing and resilient."

Help Wanted — Leaders

Participants identified leadership as a key ingredient that will ensure higher education's future success and help mitigate its threats. Given leadership's importance, we also asked study participants how well they feel today's leaders are performing and what challenges higher education faces to recruit the leaders of tomorrow. We asked respondents to indicate the extent of their agreement that leaders understand how higher education will change, that the community's leadership capability positions it well for the future, and that leaders are effectively engaging their constituents in discussions about the future. As table 10 illustrates, respondents on average agreed that higher education's leadership is ready for the future.

Table 10. Respondents' Views of Higher Education Leadership

Statement	Mean	Std. Deviation
Leaders understand how HE will change	3.54	1.135
Leadership capability positions us well	3.52	0.956
Leaders effectively engage in discussion about the future	3.36	1.096
Leaders understand how my function will change	2.81	1.19

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

However, it is important to note that there are fairly significant standard deviations (between 0.95 and 1.2) for each of these questions. This would suggest that respondents are not uniform in their views of these statements. The distribution of responses suggests that significant numbers of respondents are neutral or in slight disagreement with each statement, while significant numbers of respondents agree. Interestingly, there are no apparent relationships between respondents' views of these statements and their proximity to the cabinet, institutional characteristics, or primary mission of their functional area. In fact, we did not find any variable in the survey that appears to explain the distribution of responses.

Respondents do not believe, on average, that higher education's leaders understand how their individual functional areas will change in the future. However, respondents are divided in their view of this statement as well. Differences in functional area's primary mission do not appear to explain respondents' views of leadership's understanding of their function. Nor does proximity to the cabinet explain the distribution of responses. Our qualitative interviews suggest that the onus is on the functional leaders to educate their institution's leadership. Those who do this well may achieve greater degrees of understanding. Several described communications efforts they undertook to establish how their function was changing and the steps they were taking to align its future with the future of the institution.

While survey respondents seem somewhat confident in higher education's overall leadership,

qualitative interviewees expressed concern that institutions would be hard pressed to find future leaders. Many fear that the job of campus leader has grown too broad and too demanding. They see presidents increasingly torn between their external and internal foci. Balancing these demands and having the skills to effectively lead changing institutions in more turbulent times is seen as a tall order for most leaders.

Some respondents predict that higher education will increasingly see the internal and external leadership roles split at institutions. Ira Fink, president of Ira Fink and Associates, University Planning Consultants, supports this view. He told us, "Institutions will do the best if they have an external leader focused on fundraising, community relations, and promotion of the institution, and an internal leader focused on academic and administrative operations. The jobs are different, and the skills and preparation of the individuals who fill them are different."

Mary Daniels of Ohio State University sees the challenge as choosing between competing visions of the kinds of presidents higher education needs. "The choice is a president as a CEO or a president as a scholar. On the one hand, institutions have become as complex as business enterprises, and we need leaders who are business-minded. The downside is the loss of understanding about the educational nature of our enterprise. We need business-minded leaders who understand change, who are change agents, and who can demonstrate their ability to take an institution's culture and history and make it relevant for the future."

The leadership challenge of the future will also stretch the personal skills required from presidents and vice presidents. Paul Oliaro, vice president for student affairs and dean of students at California State University–Fresno, describes his view of future leaders. "Leaders have to be in touch, have good analytical skills, be good listeners, and have a sense of the impact they have on the people around them. They have to be willing to take risks and take responsibility for mistakes."

Is it possible to find leaders who possess all these qualities? Many participants think it will be possible to find the leaders of the future if higher education is open to recruiting them from broader pools of experience. However, higher education will need to be open to leaders at many levels coming from broader backgrounds, including from outside of higher education. Many participants believe higher education will be willing to bring in new kinds of leaders and will benefit from their perspectives.

The real concern seems to center around higher education's ability to recruit these leaders. Participants expressed concern that committee-driven search processes and uncompetitive compensation practices will make higher education appear inhospitable to leaders from diverse backgrounds. This would impact searches not only for future presidents, but future vice presidents and functional area leaders as well. Paul Oliaro fears that compensation practices, especially at public institutions, will hold higher education back. He told us, "Institutions are multihundred million organizations with CEOs (presidents) who are paid like mid-level investment brokers. The ability of higher education to recruit the best and the brightest isn't going to happen without competitive pay."

V. Conclusions

As noted at the outset, we never expected this study to produce a definitive picture of the future of higher education. To expect that would have been unreasonable. This study does point toward a set of interconnected forces that are buffeting higher education as it moves to the future. At a macro level, heightened competition, changing revenue streams, demographics, technology, and altered public perceptions are all creating serious threats and opportunities for higher education. These same forces are altering the landscape for most, if not all, of the individual functions of a university that are represented in this study.

The study also suggests a set of critical questions that institutions and functions should be mindful of as we chart a course to the future. The most significant of these questions seem to be:

1. How can we alter the underlying economics of our institutions and functions to be able to contain costs while serving the increasing expectations of our constituents?
2. Do we understand how the changing demographics of the country will impact the composition of our students, and have we done all we can to make our campuses welcoming to increased diversity?
3. Have we developed an understanding of the new competition we will face and the new markets in which our institutions and functions may compete?

4. In a time of constrained resources, have we done enough to demonstrate how our functions can be supportive of the broader mission and strategies of our institutions?

5. Are we prepared to recruit and retain the workforce of the future?

6. Are we developing or finding the next generation of leaders of our functions and our institutions?

Perhaps, by confronting the right questions we can rise to Alan Kay's challenge and create our own futures.

Notes

[1]Robert Lenzner and Stephen Johnson. "Seeing things as they really are," *Forbes Magazine*, March 10, 1997.

[2]Robert Suro and Richard Fry. "Leaving the newcomers behind," in *Declining by Degree,* edited by Richard Hersh and John Merrow. pp. 170–171.

[3]Source is a Greystone Group presentation to the White House Preconference on Aging, July 12, 2005.

[4]Thomas Friedman. *The World Is Flat: A Brief History of the Twenty-first Century.* p. 200.

Appendix A – Participating Associations

ACUTA: Association for Communications Technology Professionals in Higher Education

American College Health Association

American College Personnel Association

APPA – Serving Educational Facilities Professionals

Association of College and Research Libraries

Association of College and University Auditors

Association of College Unions International

Association of Collegiate Conference Events Directors–International

Association of Higher Education Cable Television Administrators

College and University Professional Association for Human Resources

EDUCAUSE – Transforming Higher Education Through Information Technology

International Association of Campus Law Enforcement Administrators

National Association for Campus Activities

National Association of Campus Card Users

National Association of College and University Attorneys

National Association of College and University Business Officers

National Association of College and University Food Services

National Association of College Auxiliary Services

National Association of College Stores

National Association of Educational Procurement

National Intramural Recreational Sports Association

Society for College and University Planning

Appendix B – Individuals Interviewed

Lowell Adkins	NACCU	
Jonathan Alger	Rutgers, the State University of New Jersey	Vice President and General Counsel
Nancy H. Allen	University of Denver	Dean and Director
Bruce Barnard	Colby College	Director, Colby College Bookstore
Jeffrey V. Bialik	Golden Gate University	Vice President of Operations and Enrollment Services
Ron Bleed	Maricopa Community College District	Vice Chancellor Emeritus
Ned Britt	Towson University	Director of Campus Recreation Services
Nancy Brooks	Iowa State University	Associate Director of Purchasing
Douglas (Doug) Christensen	Brigham Young University	Office of Administrative Solutions – Physical Facilities
Lynn C. Coleman	Howard Community College	Vice President, Administration & Finance
Sharon Coulson	University of California–Davis	Director of Dining Services
William (Bill) Daigneau	University of Texas M.D. Anderson Cancer Center	Vice President & Chief Facilities Officer
Mary A. Daniels	Ohio State University	Consultant
Thomas W. Dison	University of Texas at Austin	Director & Associate Vice President
Patricia A. Eldred	University of Vermont	Director of AFS Auxiliary Services
Charles A. Figari	University of Texas–Houston	Vice President & Chief Auxiliary Enterprises Officer
Ira Fink	Ira Fink and Associates, University Planning Consultants	President
Tom Flynn	University of Maryland, College Park	Associate Director
Richard Gartrell	University of Denver	Director of Human Resources
Janet C. Gong	University of California–Davis	Assistant Vice Chancellor of Student Affairs
William Hardiman	George Mason University	Director of Purchasing
Robert (Bob) Hascall	Emory University	Vice President, Campus Services
Colleen Hegranes	College of St. Catherine	Senior Vice President
Jeffrey Hoffman	California State Polytechnic University–Pomona	Associate Director for Marketing and Programs
Dallas L. Holmes	Utah State University	Associate Professor, Extension & Continuing Education
Kathy Humphrey	University of Pittsburgh	Vice Provost for Student Affairs
Lincoln Johnson	University of Washington	Director
Phil Johnson	University of Notre Dame	
Mary Kennard	American University	Vice President and General Counsel
Justin Lawhead	University of Memphis	Associate Dean, Student Leadership and Involvement
Ralph Maier	University of Pennsylvania	Director, Purchasing Services
Peter Martel	Bridgewater State College	Associate Vice President for Human Resources
Daniel Maxwell	Western Illinois University	Director of Student Activities
Ted Mayer	Harvard University	Executive Director of Dining Services

Jack McCredie	University of California–Berkeley	Senior ECAR Fellow Associate Vice Chancellor & CIO, Emeritus
Lorelei Meeker	Indiana University	Director, Purchasing
Russ Meyer	University of Nevada, Reno	Associate Director, Housing Operations & Dining Services
Rosalind R. Meyers	Georgia Institute of Technology	Associate Vice President for Auxiliary Services
Mona Milius	University of Northern Iowa	Associate Director, Residence Dining
Pam Mills	University of Colorado–Boulder	Director, CU Bookstore
Robert Mindrum	Purdue University	Director, Purdue Memorial Union
Diane Moen	University of Wisconsin–Stout	Vice Chancellor, ASLS
Paul Oliaro	California State University at Fresno	Vice President for Student Affairs
Marvin W. Peterson	University of Michigan–Ann Arbor	Professor of Higher Education
Jeffrey Pittman	Regent University	Vice President of Student Services
Robyn Render	University of North Carolina	Vice President for Information Resources & CIO
Steve Rittereiser	Central Washington University	
Rodney Rose	STRATUS	Strategic Consultant
Steve Sayers	University of California	Associate Vice President of Campus Services
Dave Smallen	Hamilton College	Vice President, Information Technology
Carla J. Stoffle	University of Arizona	Dean, University Libraries
Patricia Todus	Northwestern University	Deputy CIO & Associate Vice President
Nancy Tribbensee	Arizona State University	Associate Vice President for Legal Affairs
John Turk	University of California–San Diego	UCSD Bookstore Director
Greg Walters	Lewis & Clark College	Director of Human Resources
Lynn Willett	Coastal Carolina University	Vice President for Student Affairs
Lizabeth Wilson	University of Washington, Allen Library	Dean of University Libraries
Georgia Yuan	Smith College	General Counsel and Assistant to the President

Participating CHEMA Organizations:

American College Health Association