Coping with Change and Fostering Innovation: An Agenda for Professional and Continuing Education

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> *If a university is to have as its ideal, service on the broadest basis, it cannot escape taking on the function of carrying knowledge to the people.*[1]
>
> — Charles Van Hise

Faced with brutal state budget cutbacks, students unable to get classes they needed to graduate, more qualified applicants than places, and no solution in sight, the University of California regents came to support the idea that online undergraduate courses needed to be part of the solution. The University of California Extension was an obvious choice to help develop a pilot plan, especially given UC-Berkeley Extension's 15-year history with online education. Moreover, developing new avenues for sharing the University's knowledge resources has been Extension's designated role for over a century. What the recession has highlighted is that today's knowledge-based economy relies on our higher education system to educate the broadest number of individuals, including those outside the usual college-age population; to advance economic development; and to reduce inequality. This is prompting institutional

leaders to call upon extension units—frequently also called professional and continuing education units—to assume new and expanded functions in their colleges and universities.

In an age of knowledge, the capacities of professional and continuing education to open up new networks, overcome organizational hurdles, and foster an environment for innovation have assumed great relevance. This essay makes the case as to why. It discusses key forces driving change—the knowledge economy, demographics, technology, and globalization—and reviews opportunities as well as threats arising therefrom. Finally, it explores why professional and continuing education units are well positioned to be a powerful influence for innovation in higher education.

FORCES DRIVING CHANGE

Knowledge economy

In an address to Congress shortly after taking office, President Barack Obama set a goal for the country: to take the actions needed to once again have the highest proportion of college graduates in the world by 2020.[2] A few months later in Michigan, the President stressed that raising college attainment rates and preparing people for new 21st century jobs would shape the nation's economic and social futures.

> Time and again, when we have placed our bet for the future on education, we have prospered as a result—by tapping the incredible innovative and generative potential of a skilled American workforce. That is what happened when President Lincoln signed into law legislation creating the land grant colleges and not only transformed higher education, but also our economy. That is what took place when President Roosevelt signed the GI Bill, which helped educate a generation—and usher in an era of unprecedented prosperity. That was the foundation of the American middle class.[3]

Achieving the President's ambitious goal will necessitate a gargantuan effort on three fronts:

- It will require far larger numbers of current college students to graduate in a timely manner.
- It will require many more 18 to 24 year-olds to enroll in college.
- It will require many adults who are already in the workforce—especially those having some college—to resume their college studies and complete a degree.

It is the third group—adult degree completion students—that historically has been served by professional and continuing education units. Data from UPCEA's 2009 Management Survey reveal strong enrollments in traditional university degree-completion programs, with the median student age being 34, during the 2008-2009 academic year.[4]

Several governors and big city mayors have mounted campaigns aimed at persuading adult learners with some college to pursue degrees.[5] These political leaders recognize that their regions' capacity to attract good jobs is linked to the level of educational attainment of their workforce. Regions having the highest proportion of college graduates tend to have the best economic development prospects and the highest per capita income.

There is a serious mismatch between adult workers' skills and the jobs that are projected to be created in the next decade. It is a situation that threatens not only to slow economic development but also to inhibit social mobility and cohesion if unaddressed. Many workers who lost their jobs in the manufacturing and resource industries destroyed during the recession will most likely have limited employment options when the economy recovers unless they can acquire postsecondary education. The United States must substantially improve the educational attainment levels of its workforce in the next few years if it is to have a sufficient supply of qualified individuals ready to fill the available knowledge economy jobs that are expected to come available in less than a decade. A 2010 study by Georgetown University's Center on Education and the Workforce projects that the US economy will create 46.8 million job openings by 2018, and that 63 percent of the individuals hired for these jobs will be required to have "college degrees or other postsecondary preparation."[6] As the Center's data show (see Table), in 2018, 59 percent of management occupations will require a bachelor's degree or better. Meanwhile demand for individuals with an associate's degree is concentrated in engineering technician and healthcare practitioner occupations.

	High school or less	Some college, no degree	Associates degree	Bachelor's degree	Master's degree and better
Management occupations	17%	14%	10%	39%	20%
Business operations specialist	10%	14%	10%	46%	19%
Financial specialists	7%	10%	9%	57%	17%
Computer and mathematical science occupations	6%	11%	10%	51%	22%
Architects and technicians	20%	15%	26%	27%	13%
Life and physical scientists	25%	1%	0%	43%	54%
Social scientists and technicians	5%	6%	6%	30%	53%
Community and social services occupations	8%	11%	9%	39%	33%
Legal occupations	9%	10%	11%	17%	52%
Educational occupations	7%	8%	7%	38%	40%
Arts, design, entertainment, sports, and media occupations	9%	12%	11%	56%	11%
Healthcare practitioners and technical occupations	5%	7%	25%	33%	30%
Healthcare support occupations	41%	27%	21%	9%	2%
Protective service occuptions	23%	29%	17%	27%	4%
Food preparation and serving occupations	62%	18%	9%	11%	1%
Building and grounds cleaning and maintenance occupations	75%	2%	5%	7%	1%
Personal care and service occupations	43%	21%	16%	17%	2%
Sales and related occupations	34%	20%	11%	29%	5%
Office and administrative support occupations	35%	28%	15%	19%	2%
Farming, fishing, and forestry occupations	91%	3%	3%	2%	0%
Construction and extraction occupations	72%	13%	9%	6%	1%
Installations, maintenance, and repair occupations	51%	19%	21%	9%	1%
Production occupations	62%	18%	11%	8%	1%
Transportation and material moving occupations	67%	19%	7%	7%	1%

Table. Top occupations for job openings by education level (percentages represent the total for each occupation; row percentages sum to 100 percent). NB: Government statistics consistently underestimate employment needs.

Source: A. Carnevale et al. analysis of March CPS data.

Harvard scholars Claudia Goldin and Lawrence Katz argue that technological change and education are in a "relentless race."[7] They note that American universities expanded in size and scope during most of the 20th century in response to technological change. In the process, educational attainment rose and so did incomes. Still, Goldin and Katz observe that since the 1980s, American education institutions have not readily adjusted to producing a sufficient supply of workers with the skills demanded by a changing technological and global economy. As a consequence, inequality has widened.

Demographics

Assessment of the demographic shifts in several states that have experienced explosive population growth in the last decade reveals why policymakers are worried about the future socio-economic mobility of their residents. Take the state of Texas, which has a young, growing, racially and ethnically diverse worker-aged population. This population could be an important economic asset, provided that a large percentage gains the critical skills and postsecondary credentials that employers value. However, with Texas' non-Anglo populations poised to become a majority by 2020, the official State Data Center "predicts a decline in the overall educational attainment of the Texas labor force by 2040."[8] The forecast is supported by federal research that shows first-generation students, whose parents have no postsecondary education, are most likely to end their formal schooling with high school, and that although some will attend college, relatively few will earn a bachelor's degree or higher.[9]

In the Northeast and Midwest, the in-migration of minority populations has been a positive force, balancing shrinking working-age populations as they grow older or move away. Nevertheless, even a region like New England stands to experience a decline in the educational attainment of its workforce if the achievement gap between the majority and minority populations cannot be narrowed in the coming decade.[10]

An interim solution being pursued by some savvy employers involves retaining and recruiting highly educated older workers. US government agencies are among employers offering flexible work arrangements and part-time employment opportunities to attract talented older workers.[11] The federal government has adopted this strategy to help it deal with the anticipated retirement of 40 percent its workforce in 2015. Interestingly, the government's approach aligns with recent survey data that show that

70 percent of employees nearing 62 and older plan to work well into their retirement years.[12]

A number of economists argue that the nation cannot afford to postpone adjusting conventionally defined retirement ages because of improvements in mortality and life expectancy. John Shoven, professor of economics at Stanford University, observes: "Unless retirement ages begin to adjust with real life expectancy, today's young people could spend 40 percent of their adult life out of the workforce."[13] Meanwhile, if government policies were changed to encourage longer working careers, the nation would benefit from an additional labor supply contributing to GDP and helping to finance its entitlement programs.

The 78 million baby boomers born between 1946 and 1964 may reshape the US workforce—if significant numbers can be persuaded to remain in the workforce beyond the traditional retirement age. Already professional and continuing education units are important providers of ongoing training and credentials for many people who want to remain current in their fields or prepare to transition into new careers.[14] And with more people likely to have not only longer but also several different careers, the role of professional and continuing education in higher education institutions can be expected to become still more salient in the future.

Harvard University Business School professor Rosabeth Moss Kanter anticipates "someday soon, going to a university at 50 or 60 could be the norm." Kanter believes that universities will need to create graduate schools designed specifically for accomplished professionals who want to make a transition. "This isn't going back to school," observes Kanter, "it's using school to move forward."[15]

Technology

As US institutions have moved toward creating a universal higher-education system, the growth of online education has increased the convenience of higher education for adult learners and multiplied institutional options. According to the Sloan report, US enrollment in individual online courses reached 4.6 million students in the fall 2008 term—a 17 percent increase over the previous year.[16] The University of Massachusetts system online consortium—UMassOnline—saw its enrollments rise by over 14 percent and its revenues climb 20 percent in fiscal year 2010 compared to the prior year. Of its 45,796 students, 31 percent were enrolled in postbaccalaureate certificate or degree programs.[17] Johns Hopkins University's applied

master's programs in high-demand fields such as biotechnology, business and public health, global security studies, and energy policy and climate, attract working adults in the Baltimore/Washington corridor and beyond. The university's reputation, together with the convenience of being able to take many courses online, have attracted students, as evidenced by the fact that some 35 percent of the graduate degrees awarded by Johns Hopkins are earned today by adult learners in the professional master's degree programs.

Online education also has been a major reason for the rapid growth of for-profit institutions in the last decade. For-profits now educate 2.6 million, or 10 percent, of the students who enroll at US degree-granting institutions year round.[18] The University of Phoenix, with 455,600 students, ranks second only to the State University of New York in size.[19] Large numbers of working adults have returned to school since the economic downturn. But with states disinvesting in higher education, prospective students frequently are shut out of programs in public institutions. Rather than delay their plans, some students will opt to enroll in for-profit institutions even though it means paying higher fees than those charged by a public institution.

Congressional committees in the House and the Senate turned their focus on for-profit education in summer 2010. It came to the attention of members of Congress that students enrolled in large online for-profits had received the most federal Pell grant money in 2008–2009 and, moreover, that for-profit college students accounted for a disproportionate share of student-loan defaults. While the business practices of some for-profits may be suspect, generally legislators have been unwilling to level an across-the-board criticism of the sector. They recognize that for-profits serve a disproportionate number of low-income and minority students who want to earn degrees to improve their employability. At the same time, Congress has a responsibility to watch where taxpayers' money goes. The Health Care and Education Reconciliation Act signed into law in March 2010 includes a $36 billion investment in the Pell Grant program, and members of Congress want to ensure that the Pell monies are being well spent and so have asked the Government Accountability Office to study the program.[20]

IT-based instruction has disrupted traditional structures in areas such as financial aid, quality assessment, and criteria for earning degrees.[21] For instance, the current state-by-state approval and licensing system forces an online university to go through multiple review processes to achieve a nationwide presence. Also, there is no national agreement among the

states on whether public institutions should establish differential fees for in-state and out-of-state online students. As a result, institutions in some states assess all online students the same fee, whereas public institutions in other states draw a distinction between the two and charge a higher fee to an out-of-state online student. Another area of contention regards how to adapt the strict time-definition of a Carnegie unit credit hour involving "seat-time" to an e-learning context.[22]

Meanwhile, the recession, diminished state revenues, and a growing demand for higher education have all contributed to a new receptivity in the academy and state houses for exploiting online education's capacities to support inter-institutional collaborations.

In Pennsylvania, policymakers are encouraging online course sharing by the 14 state-owned universities and urging students to enroll in programs managed collaboratively by more than one institution.[23] By fostering inter-institutional cooperation, the state hopes to realize efficiencies and gain the flexibility to respond nimbly to students' changing enrollment patterns.

Indiana has a new, nonprofit, online, competency-based university as a result of a partnership between the state and Western Governors University (WGU), and start-up funding from the Lumina, Gates, and Lily Foundations. Governor Mitch Daniels established the partnership with the aim of providing place-bound adults—especially those with some college—affordable access to fully accredited bachelor's and master's degrees in business, teacher education, information technology, and the health professions.[24] The academic model that is focused on individualized learning under the guidance of a faculty mentor, while convenient, is not for everyone. However, the state offers another online option for adult learners—Indiana University's School of Continuing Studies. It currently serves 8,000 students—primarily adults. Indiana ranks 42nd among states in the proportion of adults with a postsecondary credential. And the state's Commission for Higher Education estimates that nearly one million Indiana adults require further education and training. Given the enormous need, it is anticipated that having another nonprofit, online higher-education provider in the state, such as WGU-Indiana, will be a plus because it is likely to generate expanded interest in online education.

Rather than compete with each other, two major West Coast university providers of professional continuing education—the University of Washington Extension and the University of California-San Diego-Extension—are offering an online biotechnology project management certificate in partner-

ship. Each partner institution is responsible for providing two of the four courses that comprise the certificate program. Because both San Diego and Seattle are biotechnology hubs, the extension programs have ready access to relevant industry and academic expertise as well as proximity to many individuals who may aspire to move up in the biotech industry by learning project management.

Most recently, in July 2010, the regents of the University of California voted to approve an online learning program. State projections show that California needs to prepare for 400,000 additional students by 2019 and, without funding, as many as 70 percent could be turned away.[25] As UC-Berkeley's Law School Dean Christopher Edley observed:

> Online learning would enable us to serve the growing number of qualified students for whom there will be no room on campus or for whom a residential full-time program won't work.[26]

Meanwhile, globalization is producing an expanded demand for higher education opportunities, increasing competition among providers, and helping to further international quality assessment efforts.

Globalization

Worldwide, some 3 million students studied outside their home countries in 2009—a 57 percent increase since 1999.[27] Of these, 671,616 studied in the United States in the 2008–2009 academic year. Whereas the number of international students at US colleges and universities was the highest ever, the United States' relative share of 21 percent of international students has been declining in the last few years. US universities still dominate the leading world university rankings such as those produced by *Times Higher Education* and Shanghai Jiaotong University. Meanwhile, other countries in Europe and Asia are upping investments in their universities, which have come to be appreciated ever more as potential innovation incubators and a pathway to wealth.

International competition among universities eager to attract the brightest students and faculty has become intense. For some countries with aging populations, offering incentives to international students is part of a national strategy to increase their home talent pool and competitiveness in a global economy. Canada has a fast-track system that allows international graduates with Canadian work experience to become permanent residents. In an effort to hold onto foreign talent, the Canadian province of Ontario has

gone further still and modified its residency rules to permit an international student who earns a PhD in the province to be fast-tracked for permanent residence status.[28] In the Netherlands, Dutch law was changed recently to permit international university graduates to stay on in the country for one year.[29] Employability—whether or not there is a chance to gain work experience—exerts a significant influence over an international student's choice of university and country. Meanwhile countries like the United States and Australia that routinely attract large numbers of international students are able both to benefit from the infusion of foreign talent and also grow a sizeable trade surplus. In Australia, for instance, international education services are now the country's third largest export overall.

What is certain is that international students are not only becoming more numerous, but also more mobile. Going forward, it will become difficult for any US university to ignore emerging international higher-education norms and international higher-education assessment initiatives. The Bologna Process launched in 1999, has promoted the harmonization of higher education degree structures in 45 European countries. While far from perfect, the Bologna Process has established 3+2 cycle higher-education model—a bachelor's degree followed by a master's degree—that is likely to become a standard embraced by countries beyond Europe. Although the US higher-education system appears unlikely to adopt the Bologna model in the near term, it will need to find nondiscriminatory ways to accommodate international students coming from countries that subscribe to the Bologna system. In the meantime, the Organization for Economic Cooperation and Development (OECD) has begun gathering comparative evidence on the skills of the adult populations of its member countries with the aim of assessing adult competencies within a comparative international framework, and learning how education throughout the lifecycle can contribute to economic growth and social equity.[30]

AN INFLUENCE FOR INNOVATION IN HIGHER EDUCATION

High-quality professional and continuing education units in US colleges and universities are essential nodes in an innovation system. Empowering people to innovate requires access to relevant ongoing education and training and the opportunity to apply this knowledge in the workplace or in addressing pressing social challenges. Professional and continuing education units provide learning to a wide array of constituencies. In do-

ing so, they connect their parent institutions with the needs of industry, government, and the world.

One of the advantages of the United States' higher education system is that it is differentiated by mission. This has resulted in a system that offers multiple access routes to higher education for different populations. When it comes to professional and continuing education units, whether an academic institution is a research university, a liberal arts college, a technical college, or another type of school does not need to define whom they serve. Professional and continuing education units align their programs with the goals of their parent institutions. Such units are expected to explore new markets and develop creative learning opportunities in response to important social and economic needs.

These days, many college and university leaders sometimes are so preoccupied with budget woes and concerns about their institution's standing in the national *US News & World Report* rankings that they have difficulty looking to the future, beyond the needs of their current traditional-aged, full-time undergraduate and graduate students. Yet adult degree seekers, professionals, and international students represent important and rapidly expanding constituencies for higher education. Innovation does not lie exclusively in the realm of R & D. In order to foster the diffusion of knowledge and innovation, it has become important to provide myriad postsecondary education opportunities that can generate job growth and advance economic development.

The United States has lost hundreds of thousands of construction and manufacturing jobs since the recession of 2008, jobs that, in many cases, have disappeared for good. The workers thus displaced are left with few options if they lack the postsecondary degrees required to move into new occupations that can provide a pathway to a middle-class career. What are needed are many more universities willing to redesign their undergraduate curricula in important fields such as engineering—as the University of Wisconsin-Platteville did—so that adult learners can complete degrees on a part-time basis while also holding down a job.

Professional and continuing education units are expert at drawing upon the knowledge resources of their university to create cross-disciplinary programs that respond to emerging professions or new labor force requirements. Most units prefer a shared approach to curricular development, because partnering with faculty, practitioners, and prospective employers is

most likely to yield a well-designed curriculum and gain prompt approval. While traditional higher education is responsive to labor market shifts as well, the research shows that there is typically a four- to seven-year lag before programs are available.[31]

Postsecondary education will become vital for most good jobs going forward. The worry is that the American higher education system is not keeping pace with the expanded demand for college-educated workers.[32] It is not simply that the fastest-growing industries are requiring disproportionately higher education levels, but that all occupations are requiring more education. Across the country there are large numbers of college-qualified individuals who, because of their economic situation or family responsibilities, cannot become full-time students. Unless a way can be found to educate more individuals for jobs in a knowledge economy, it is projected the demand for workers with college educations will outpace supply as early as 2018.

The challenges are complex, but the mission is simple: professional and continuing education units must work with their parent institutions to respond quickly and creatively to regional workforce needs encompassing a wide range of adult learners. In the words of Christopher Edley: "Our purpose is to advance knowledge while democratizing excellence. To do that, we must innovate."[33]

ENDNOTES

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