

CHAPTER 12

The Challenge of Transition in Public Higher Education

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INTRODUCTION

The American Land-Grant University was established in 1863 when President Abraham Lincoln signed the Morrill Act into law. Setting aside federal land in the individual states for public universities, the idea behind the Act was to make higher education accessible for the first time to the broader American population in a concentrated effort to help the nation grow and develop economically.

Five years later, the University of California was created in Berkeley. Today it is one of the largest and best public university systems in the world, with 10 campuses up and down the state, five health systems, 234,000 students, 19,000 faculty, 190,000 staff, 1.6 million alumni and an annual budget of about \$20 billion. President Lincoln's vision, all the more remarkable because he acted on it during one of the worst crises in American history — the Civil War was raging at the time — has come spectacularly true. Today, however, that vision is in jeopardy for a variety of reasons, and university administrators have had to search for creative and unconventional ways to meet this serious challenge.

THE CALIFORNIA STORY

The system of higher education developed in California began to take firm shape in 1960 when Gov. Pat Brown signed into law the California Master Plan, which was developed in large part by Clark Kerr, the former UC Berkeley chancellor who by that time was president of the entire UC system. The plan envisioned higher education for everyone in California who wanted it, with UC accepting the top eighth of eligible students, California State Uni-

versity the top third and the rest to be admitted by the California Community Colleges. In many ways, it was the perfection of Lincoln's vision in the Morrill Act, and the Master Plan has served the people of California remarkably well. It helped propel the state's economy into one of the largest and most dynamic in the world, and today 33% of UC undergraduates come from the community colleges and 25% of UC's graduate students enter from CSU.

However, with declining public investment in higher education occurring throughout our nation, we have been forced to come up with new ways to keep higher education affordable and accessible. Our ability to continue educating our young people and growing and enhancing our economy are dependent on our success.

Anyone associated with higher education knows of the profound changes that have been sweeping through the halls of The Academy, and this is particularly true in our public universities and colleges. The changes are primarily a response to difficult economic circumstances, which have triggered deep cuts around the nation to most public services, including higher education. For fiscal year 2012, for example, state and local funding for higher education declined 7% to \$81.2 billion (State Higher Education Executive Officers Association, 2013). Similarly, per-student support declined 9% from the prior year and 150% since 1999; the current rate is less than \$6,000 per student in constant dollars, the lowest level in a quarter century. By way of comparison, per student public support in 1999 was \$17,000.

The reduction in public funding became most severe in the four years after the start of the so-called Great Recession that began at the end of 2007. That being said, it is important to recognize and acknowledge that the disinvestment in public higher education was under way long before this latest economic downturn. In 1987, for instance, the portion of public university revenues coming from tuition and fees was about 23%. As of 2012, the figure had more than doubled to 47% (State Higher Education Executive Officers Association, 2013). This longer-term trend can be traced to shifting budget priorities driven in large part by the changing demographic patterns in the United States.

In other words, our public universities are competing with a variety of growing demands on taxpayer funds. From increased health care costs for aging Baby Boomers and rising public employee pension obligations to growing prison and infrastructure needs, other budgetary concerns have increasingly taken precedence over higher education funding. In California, 2011 marked the first time since the initial University of California (UC) campus opened in 1869 that the total funds received by UC from student tuition and fees exceeded what it received in state aid (Gordon, 2011). Another even more sobering fact: the California general fund budget now appropriates more money for prisons than it does for the state's two flagship university systems, UC and California State University (CSU) (Anand, 2012).

Nationally, most public universities have faced challenges associated with decreasing public funding. In California, a state with a history of budget deficits, these challenges have been particularly acute.

The UC system lost about \$1 billion in state funding from 2008 to 2012, forcing it to cut or eliminate whole programs, lay off staff, furlough faculty and impose repeated increases in tuition and fees.

At the same time, shifts in governance have diffused power inside UC and made it more difficult to move forward on issues and initiatives. Shared governance between the UC Board of Regents, the individual campus administration and Faculty Senate, despite the fact that smaller and smaller percentages of university faculty are tenured and members of the Senate, is one big challenge. We must also accommodate the Student Senate, Staff Assemblies, advisory boards, state and federal advisory boards and more.

As I write this, we have received some short-term financial relief because California Governor Jerry Brown's approved 2013-2014 budget has given the UC and CSU systems their first increase in state funds in four years. Governor Brown's budget appropriates an additional \$250 million to both the UC and CSU systems (\$125 million each, respectively).

The improved budget picture is due to passage in November 2012 of Proposition 30, which imposed temporary increases in the state sales tax and the income tax on high earners. Most observers credit California college students with helping to turn the election in Proposition 30's favour by working to register large numbers of young voters acutely aware of how the election outcome would affect the costs of their college education.

Because of legislation sponsored by California Assembly Speaker John Perez, Brown's budget also has provisions to create a new "middle-class scholarship" program. Under this measure, students with families making between \$80,000-\$100,000 a year qualify for a 40% tuition discount; students with families making up to \$125,000 a year qualify for a 25% tuition discount; and students with families making up to \$150,000 a year qualify for a 10% tuition discount. Families making less than \$80,000 receive full tuition waivers through the already existing Blue and Gold opportunity program established by the UC Board of Regents in 2009.

While these new financial guarantees are positive developments, the budget outlook for California's public colleges and universities is still cause for concern. For UC, for instance, only about a fourth of the \$1 billion in cuts over the past four years are being restored, even as fixed costs for employee pensions and health benefits continue to rise. Plus, the governor has tied the extra funding to a suggested freeze on tuition over the next four years, which will create new constraints on our ability to fund programs and meet the needs of our students, faculty and staff.

We face even greater challenges because of the evolving demographic makeup of our state and the effect this will have on future state investment. We have six to eight million undocumented immigrants in California, and, by 2020, the majority of the state's high school graduates will be Hispanic, with the majority of those eligible for Pell and Cal Grants. One of two babies born in California is in families eligible for Medicare or Medicaid, adding even more pressure to the state's treasury. It is not hard to see that a majority of college-eligible students will not be able to afford a higher education at our public universities and colleges.

UC Davis already is dealing with many of these challenges. Because of the many grant and scholarship programs available, 53% of our students do not pay tuition. Just under half, 48%, are the first members of their families to attend college. Only 20% of our students pay full tuition. The vast majority, 95% of our students are California residents, paying cheaper, in-state tuition and every year the number of eligible applicants increases by more than 10%.

Given this reality, the need for additional revenues is acute and UC Davis is working hard and creatively to find additional funds on a sustainable basis. Our first-ever comprehensive Campaign for UC Davis is about to reach its goal of raising \$1 billion from 100,000 donors, and we will begin a new, more ambitious campaign in the near future.

UC Davis has also taken aggressive steps to improve our technology transfer capabilities.

There is a long history of public universities using research/entrepreneurial growth to address the decrease in public funding (Clark, 1998). In 1980, only 20 universities in the United States housed their own office for patenting and licensing. By the year 2000, 112 more universities had created their own patent and licensing offices, nearly a 600% growth in only 20 years (Geiger, 2006). Similarly, from 1980 to 2004, in a 24-year period, the number of patents issued to U.S. universities increased tenfold — from about 350 in 1980 to about 3,300 in 2004 (Popp Berman, 2008). While this growth is impressive, there is still room for continued expansion. According to a survey funded by Northeastern University, completed by FTI Consulting, and released at a Brookings Institution forum last November, 83% of Americans believe that higher education must innovate for the United States to maintain its global leadership (Northeastern University, 2012).

UC Davis has embraced this potential for growth by starting a new Venture Catalyst program. The program, the product of a comprehensive review of the campus' entrepreneurial potential, pools together a variety of resources from the Graduate School of Management and the local venture capital community to provide a resource to researchers who seek to bring ideas to market.

More specifically, the program provides resources to researchers on campus to improve their existing ideas and start new, well-funded, growth-centric

companies. They will do this by working in concert with a variety of centres on campus to provide educational and networking opportunities for researchers to create new companies and products.

The Venture Catalyst program is focused on identifying commercially viable ideas that fall within UC Davis' Intellectual Property Claims, enabling the university to not only advance innovative ideas and inspire innovative research, but also to benefit from the commercial successes of the research it helps advance.

As contributions from the public sector decline, transferring research from the lab to the marketplace will inevitably assume a greater role if major research universities such as UC Davis are going to maintain their strong research efforts. Not only does the opportunity reaffirm the university's commitment to smart, innovative research, but it also works to disseminate these ideas to the larger world and allows the university to continue its course of strategic growth.

Another way we are dealing with declining state aid has been through the emergence of our 2020 growth initiative. The 2020 initiative, a decision reached after 16 months of extensive study and consultation with campus and regional stakeholders, puts the university on a path toward adding up to 5,000 new students by 2020. This growth will be accompanied by corresponding increases in graduate students, faculty, staff and facilities. Even with decreased public funding, measures can be taken to ensure that our campus maintains and continues its mission for excellence. While there are clear benefits for students, staff and faculty, there are also benefits for the region — UC Davis currently generates approximately \$7 billion a year in regional economic activity, and provides nearly 70,000 jobs. These impacts will undoubtedly increase under the 2020 Initiative.

THE ROLE OF ONLINE LEARNING

In a much-quoted 2012 article in the *New Yorker* magazine, John Hennessy, the president of Stanford University, famously predicted “There is a tsunami coming” to higher education. Digital technology, he maintained, would transform our colleges and universities in much the same way it has revolutionized other information-based industries such as music, newspapers and book publishing (Auletta, 2012). The question we face as university and college administrators is whether we will cling stubbornly to traditional ways of delivering education to our students or position ourselves in front of the wave and successfully ride it to a new paradigm that enhances what we do and the services we offer students.

Because we are living in an age driven by information and technology, greater numbers of people are coming to the realization that they need the skills that a first-rate public research university can provide. Unfortunately,

for many of the reasons discussed above and more, we cannot possibly begin to accommodate all the deserving people who want to learn the skills and knowledge that come, say, with a UC education. Unless we find ways to reach more people, they will go elsewhere and in time our relevancy will diminish.

The fierce push for more online education is indeed a building tsunami and we must not be swept away by it. There is a new industry forming that is already taking advantage of this growing demand for high-level skills and educational content as people increasingly become aware that their ability to have a good life will depend on the skills they will have and the quality of the learning they obtain.

This powerful centre of gravity is taking hold around us. It has been gaining currency at a rapid pace to compete with public universities and colleges. Although this remains a work in progress, the new online providers have learned from the mistakes and shortcomings of the past. Their content will be high quality. Much of it already is. And they understand that completion of a course of study and obtaining a degree will be crucial to this growing market of consumers who want to compete in the global economy.

We have a great many strengths as public research universities, but change at our institutions typically has occurred slowly and deliberately. If we respond to the rapidly growing demand for online education at the same pace with which we usually embrace change, we will study it, we will take our time, we will do it our way and we will be left behind.

According to the 2012 Survey of Online Learning conducted by the Babson Survey Research Group and the College Board, 6.7 million students reported taking at least one online course in the fall 2011 term, an increase of nearly 600,000 students over the previous year. This growth has occurred as overall higher education enrolments have been in decline and the vast majority of higher education institutions still do not offer a Massive Open Online Course, or a MOOC.

At UC Davis, Professor John Owens has started a MOOC, “Introduction to Parallel Computing”, through Udacity. This is the first MOOC taught by a UC Davis faculty member and it has attracted more than 15,000 students from around the world. Much work needs to be done regarding course completion and how students can earn credit or certificates of completion, but the potential of such offerings is apparent by the enormous interest they have generated.

If public education leaders don’t embrace a sensible and intelligent way to provide more people with the quality of teaching that we now offer in the traditional campus setting, our institutions will continue to face increasing difficulties. Each university must find the correct approach that works best for its faculty, students and staff.

At UC Davis, we held an online education summit in May in order to evaluate existing courses and consider opportunities for expansion and improve-

ment. The vast majority of attendees generally felt that the courses that have been offered at UC Davis were impressive and well-planned, and maintained a student-centred approach. Positive attributes of the courses were noted: new opportunities for faculty innovation; additional possibilities for improving student-faculty interaction; improved flexibility in course delivery; increased access to impacted courses; and enhanced opportunities for assessment through the abundant data and sophisticated online analytics. Negatives noted at the summit included a lack of understanding of the costs in time and money for development and training; a lack of resources to ensure that students, particularly those who are unrepresented and underserved, can succeed in the digital environment; and a cumbersome course approval process.

Even as faculty and administrators at some universities are resisting the use of online teaching, the tsunami that Stanford's John Hennessy said was coming to higher education is gaining speed and moving even more powerfully than many could fully anticipate. It requires us to wisely and expeditiously develop our own products and our own markets. With the demand and the market for these types of courses likely to grow and pick up speed, the challenge becomes reacting appropriately. We must recognize the potential and appeal of online learning even as we buttress and project forward in a positive way the benefit of educating students on campus.

Better coordination with community colleges and high schools is one appealing possibility. We can offer more online courses to students planning to attend UC Davis, for instance, enabling them to graduate more quickly and spending and borrowing less to do so. Instead of relying on others to provide online content and make it available, we should embrace the idea of providing the content ourselves. Finding our own solutions is far preferable to having them imposed on us by our governing boards or by elected legislators and governors who are, understandably, responding to pressure from constituents who want the high-quality educational content we currently provide to a small portion of the public.

It is preferable to address these issues ourselves, in a deliberative, thoughtful and non-political matter, than to have solutions, however imperfect they may be, imposed on us by outside forces. So, too, must we continue to examine whether we are providing our students the best experience and the optimum environment for their success while they are enrolled in our schools and after. We know that adequate counselling and mentoring would help us improve time to degree matrixes, which in turn would enable us to reduce the actual cost and debt our students must incur to complete their degree.

THE INTERNATIONAL STORY

For higher education leaders in the United States, it is important to recognize that deep cuts to public higher education in California and the rest of the

nation are in stark contrast with public funding for higher education in East Asia. While countries in Europe and individual states in the United States have either maintained or decreased funding for public higher education, nations in East Asia have continued to increase public funding for higher education (Varghese, 2010), raising questions about the United States' ability to remain economically competitive.

Japan, South Korea, Singapore, Taiwan and China are four countries that are continuing to expand their funding for public higher education (Organization for Economic Cooperation and Development, 2012).

Relative to the international community, the United States' investment in research and development as a percentage of gross domestic product (GDP) has begun to slide. For the last 30 years, public and private research and development expenditures in the United States have been between 2.5% and 2.8% of GDP (National Research Council, 2012). In contrast, Japan has increased research and development expenditures from 2.8% of GDP in 1996 to 3.3% in 2008, while South Korea has reached 3.5% of GDP (OECD, 2012). Similarly, while annual growth in research and development for the United States and the European Union hover around 5-6%, China's annual growth was an average of approximately 20% for the period from 1996 to 2007 (OECD, 2012).

While U.S. investment in research and development still remains strong, we are losing ground when it comes to historic U.S. dominance of world science and engineering. The high levels of investment made by Japan, China, Singapore and South Korea, among others, are paying off for their economies and for their schools, as the quality and international reputation of their top universities have been rising significantly.

CONCLUSION

This is an exciting time to be an active member of the public higher education academy. While there are many challenges associated with the decline in public funding, especially when the international community is taken into account, public universities can adapt and are doing so.

Institutions of higher education must maintain their historic values and integrity of purpose, but they cannot be oblivious to the changing times. To succeed, public universities must continue to do what has worked in the past, but also actively search for and embrace new solutions. We must seek alternative sources of funding when state funds run short, we must maintain a global perspective, and we must be aware of other, potentially revolutionary, ideas. In doing so, we, as university leaders, will better serve our campuses, our constituencies and — most importantly — our students.

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