**The Gathering Storm: Four Challenges Facing Higher Education**

**Thomas L. Benson, Ph.D.**

Introduction:

The university—a one thousand year old institution—faces the most significant threats in its history. While there are important differences in the nature and circumstances of higher education in Europe, America, East Asia, and elsewhere, the serious challenges I will discuss are affecting universities everywhere. It seems increasingly clear that many universities will not survive deep into the 21st century. Those that find a way to keep their doors open will be the ones most able to adapt to rapidly changing social needs and to the brave new world of digital media and global interdependence.

The four challenges I will discuss are intertwined in complex ways, each introducing something new, but also reinforcing the weight of the others. An enlightened strategic response to any of the challenges will require attention to all of them.

The First Challenge: The Digital Revolution

We often speak of the great revolutions that have transformed human history: the agricultural revolution, the Gutenberg revolution, the Industrial revolution. Over the past half-century, we have been witnessing perhaps the most profound revolution of all: the digital revolution. The development of digitally based forms of information technology has radically changed every area of human life—and we are just at the gateway of the process. Not surprisingly, our educational institutions have been profoundly affected by the digital

revolution. Teaching, research, academic libraries, laboratories, and university management have all been significantly changed by digitally based technology. In the fifteenth century, the introduction of movable print made it possible for books to be available everywhere—books of many kinds and from many perspectives. The university library before Gutenberg held all of its books very closely, for they were literally hand-made and of great value. Visit the historic library at Merton College, Oxford and you will see how these precious materials were literally chained to the wall. With the proliferation of printed materials, the importance of the library was enhanced as a unique portal to the world of knowledge. To connect to the many broad streams of human knowledge, it was essential to go to a central repository of significant books—a research library. Now, in our time, the picture is changing rapidly. The special role of the library has been challenged, with digital technology introducing an astonishing, worldwide portal to vital information. Recently, I found in my files an essay by Eli M. Noam, a professor at the Columbia University School of Business. The essay, published in 1995 in the journal *Science*, was considerably ahead of the curve in anticipating what is currently unfolding. Noam wrote:

> The threats to universities may not appear overnight, but they will surely arrive. People often overestimate the impact of change in the short term, but they also underestimate it in the long term. The fundamental forces at work cannot be ignored. They are the consequence of a reversal in the historic direction of information flow. In the past, people came to the information which was stored at the university. In the future, the information will come to the people wherever they are. What then is the role of the university? Will it be more than a collection of remaining physical functions,

such as the science laboratory and the football team? Will the impact of electronics on the university be like that of printing on the medieval cathedral, ending its central role in information transfer? Have we reached the end of the line of a model that goes back more than 2500 years? Can we self-reform, or must things get much worse first?

The two great assets of the traditional university were it professors and its books. In later years, laboratories and other facilities and programs acquired special significance, but for centuries the power of the university rested in its faculty and its library resources. Today, just as the historic role of the university library has been eroded by digital technology, we are also beginning to see the potential for near universal access to faculty resources. With the development of online courses through innovative initiatives such as EdX, the Harvard-MIT collaborative, Coursera, Udacity, and others the classroom teaching of internationally renowned scholar-teachers can be made available on an indefinitely expandable scale. Publishers and intellectual property experts have been grappling with the material implications of universal online access to literature, and now faculty members on a growing number of campuses are expressing alarm at the prospect of electronically delivered courses by a relatively small group of academic superstars becoming a regular part of the academic program on their campuses. It would be one thing for a young economics professor to use Greg Mankiw's "Principles of Microeconomics" as a textbook in his class, but an entirely different matter to have Mankiw deliver the lectures as well. How can professors in second and third tier universities compete with online courses—MOOCs, the much discussed "massive open online courses"—featuring famous faculty instructors from Harvard, Stanford, and Cambridge? Add to the brilliant lectures, film clips and animated material illustrating the subject matter, and

cut-aways to interviews with experts in the field, plus rapidly improving interactive technology that will allow the student to respond to the online content at a pace and in a manner consistent with his or her learning style and special needs—and you have a pedagogical formula for which the average professor wandering in front of a lonely black or white board is no match. But what about the intellectual stimulation and value of sharing the learning experience with other students? No problem, the MOOC platforms provide a passport to worldwide discussion and interaction with other students taking the course. What about laboratories and art studios? Here again, the news is astonishing: virtual laboratories for students and researchers are proliferating on the Internet. The Open University's Openscience Laboratory is an especially notable site, with microscopes and telescopes and other virtual instruments that can be remotely controlled by the student. A virtual equivalent of the hapless frog that once was dissected in traditional introductory biology labs can now be taken apart online, and much more sophisticated scientific inquiry and research can be pursued without the substantial expense of the traditional laboratory facilities. Similarly, there are emerging virtual studios and other instructional resources online for the visual and performing arts.

It is no wonder then that professors are apprehensive. With serious financial pressures mounting in the university business offices, the economies of scale offered by online instructional materials are extremely attractive. The prospect exists of a substantial reduction in full-time faculty lines through the use of blended or flipped courses in which online lectures and other materials are combined with real-time, classroom based discussion, field trips, and other activities. A significantly smaller number of full-time faculty, joined by adjunct faculty,

could share responsibility for these courses, functioning in many respects like teaching assistants.

Given the high stakes, it is not surprising that a spirited debate is now underway concerning the educational quality and proper place of MOOCs and other online instructional materials. One of the more widely publicized attacks on the idea of MOOCs replacing local professors was launched earlier this year by the philosophy faculty at California's San Jose State University . In response to a suggestion by the administration that they use an EdX MOOC course on social justice taught by a renowned Harvard professor, Michael Sandel, the philosophy faculty sent an open letter to Professor Sandel, making the case for traditional, campus-based faculty instruction. They wrote: "With pre-packaged MOOCs and blended courses, faculty are ultimately not needed. A teaching assistant would suffice to facilitate a blended course, and one might argue, paying a university professor just to monitor someone else's material would be a waste of resources…..Let's not kid ourselves, administrators at CSU are beginning a process of replacing faculty with cheap online education."

The philosophers at San Jose State argued that there is no acceptable educational substitute for live interaction with professors and other students. They also worried about the creation of an elitist pattern in which rich bright students will be able to sit at the feet of the great MOOC stars, while the vast majority of students around the world can only sit in front of screens and monitors.

Whatever the merits of their arguments, the faculty at San Jose State and elsewhere are not likely to win the debate. The playing field is far from even. On the one hand, you have the centuries-old method of course delivery: a faculty member

leading the learning experience in real-time, using lectures, demonstrations, discussion sessions, and other techniques to transmit knowledge. On the other hand, you have what some would call the "brave new" virtual classroom structured at every level around state of the art course content, cutting edge pedagogical strategies that enhance learning outcomes, including the motivational power associated with the world of video games and other immersive software materials. While the relatively early results are mixed, there is evidence in support of the argument that MOOCs have the potential to achieve results—learning outcomes and levels of interest and satisfaction—equal to or greater than traditional classroom-based instruction. The development of MOOCS and other advanced online education is in its early stages. A good deal of research is underway, initiatives such as the MOOC Research Hub funded by the Bill and Melinda Gates Foundation. These research projects are studying a very wide range of issues, including means to promote greater retention of students—the completion rate for free-standing online courses has been notoriously low—and better means of assessing learning outcomes.

MOOCs and the rapidly developing world of online instruction are here to stay and there can be little doubt that they will have a profound influence on the future of higher education. The MIT Technology Review claimed recently that the MOOC is the most important development in educational technology in 200 years. Major universities in the United States—Harvard, Stanford, Penn, Princeton, Berkeley—and the list goes on--have associated themselves with major new initiatives to provide free online courses and, in some cases, certification for those successfully completing the courses. The enrollment numbers are growing exponentially, month-by-month. Coursera alone

reports that, to date, 4.5 million people have registered for its 431 courses.

Just last week, another major development was announced: Google and EdX, the academic collaborative begun by Harvard and MIT that now involves twenty-eight leading institutions, will be launching "MOOC.org" an open, online platform that will permit any university, organization, company, or individual to create and host online instructional content. This open source project will include ultimately a vast array of instructional content, permitting institutions and individuals to create customized academic programs and to compete for attention and support in the dramatically expanding world of online education.

It is tempting, but, at the same time, too early to make detailed predictions about the ultimate impact of the digital revolution on higher education. We can be sure, however, that things will never be the same, and that university leaders everywhere must understand and respond to the dramatic changes taking place. The San Jose State University professors suggested that a two tier world may emerge if the MOOCs begin to play a big role in the life of the university: an elite sector of top universities where the MOOCs originate and a second-class tier of schools who use the MOOCs in place of traditional professors. It may be more reasonable to assume that in time, the second-class institutions will fall away all together.

It seems likely that the new digital technologies will continue to evolve rapidly, putting the traditional bricks and mortar, real-time classroom at ever greater disadvantage. There are essentially four key elements in the competition: cost, quality, access, and brand value. Proponents of online education believe that the first three elements will be settled decisively

on their side. The brand value issue, however, is another question. Overtime, it seems reasonable to assume that online education will win wide acceptance if equal or superior outcomes can be demonstrated and if the cost and access difference between traditional education and online education continue to widen.

There are some very large questions before us now: How substantially will the digital revolution transform our institutions? What will our schools look like fifteen to twenty years from now? What do we need to be doing today to prepare for the far-reaching changes ahead? How can we maintain operational integrity and minimize disruption of services during this time of historic transition?

The Second Challenge: Globalization

The modern university has been powerfully affected by the forces of globalization. Far-reaching Initiatives have been put in place on many campuses to internationalize the curriculum, to recruit more international students, and to cultivate international partnerships. Currently, three million students are studying abroad, and the number is expected to grow to nearly eight million in the next ten years. Branch campuses have been established overseas, and efforts are underway to create international, standardized degree requirements--the most notable being the Bologna Process within the European Union. In addition, there has been growing interest and activity in the developing of joint and dual degree programs across borders. And everywhere, English language programs are the center of considerable attention, as universities attempt to open their doors to the global market and prepare their students for the future.

At a recent conference I attended, a speaker was challenged by a member of the audience for failing to make a distinction, which, on reflection, seems useful. The speaker had treated the terms "globalization" and "internationalization" as interchangeable. Globalization, it was argued, is what is happening at a quickening pace everywhere, including the university campus. Internationalization is what we do about it. We are being challenged by inescapable forces to rethink and to redesign many of our traditional practices. While the imperative to internationalize the university seems evident, many institutions have been slow to make the kinds of changes required in their academic programs and in the composition of the faculty and student community. This resistance to change owes to a wide variety of factors: cultural, political, and financial. Some of it, however, owes to lack of vision and leadership. One of the lessons I learned in my years in academic administration is that much of the opposition to change derives from an aversion to the heavy workload that institutional reform imposes. Bringing the opponents of change on board was never easy, but demonstrating that the changes were connected to the vital interests of the institution had some value. As with the digital revolution, it is safe to say that no 21st century university can afford to neglect the rising tide of globalization. The greatest environmental problems facing the world are essentially borderless, as are the risks associated with emerging diseases, the growing threats to future food and water security, the increasing gaps, worldwide, between the rich and the poor…..and the list goes on.

A healthy university is a microcosm of the global community. The composition of the student community, as well as the staff and the faculty, should reflect a university's commitment to engagement with the wider world. Ambitious targets should be set for increasing the percentage of foreign students and

employees on the campus, and with respect to the latter group, efforts should be mounted to challenge and replace campus-based and governmental policies that discriminate against and complicate the lives of international faculty and staff.

A strategic internationalization plan for the university should also include rigorous attention to curricular resources. University leaders often talk about preparing students for careers and citizenship in a global economy. The record of too many institutions is substandard, however, in advancing this goal. Course-by-course, academic program-by-academic program, there is still too much parochialism—based, one suspects, as much on ignorance as indifference. Too little attention is paid to the emerging economies and their rich and important cultural traditions. In recent years, I have been associated with an organization in the United States—the Africa Network—that has been attempting to increase the levels of attention to Africa in American higher education. The overall picture in far too many institutions is dismal in every important category: faculty resources, academic programs, and the numbers of students from Africa. Changing the picture is, of course, expensive, but it seems that a good deal of the underachievement owes not to money, but to a lack of commitment to comprehensive internationalization of the institution.

The rise of China and the ascendancy of Asia to unprecedented levels of influence in the global community create enormous new opportunities for Asian universities to attract students, scholars, and support from the West. Until recently, with some important exceptions, what we have seen are Western universities establishing centers across Asia to interpret Asia to Western students and scholars. There is nothing remotely

equivalent to this pattern in the West. That is to say, Westerners are essentially in charge of the Western-based centers that serve international students and scholars. Clearly, this pattern needs to change—and, as noted, there are some exemplary institutions in Asia that are leading the way. Within Asia, especially here in East Asia, there are extraordinary possibilities for creating programs and attracting international students to study-abroad and, for that matter, degree programs that reflect the culture, achievements, energy, and intellectual power of the region. The growing trend in Japanese universities to offer an increasing number of courses and academic programs in English will provide a strong boost. While China has been monopolizing the attention of the West in recent years, Japan has a remarkable, perhaps unique, potential to become a highly competitive academic vantage point for understanding East Asian societies—China included. To get to this point, Japanese universities must take bold steps and deal with some closed doors and shuttered windows. One way of advancing the cause would be to explore new forms of partnership with universities both inside and outside of Japan. The creation of joint and dual degree programs—admittedly ambitious work—offers an especially powerful way forward. The central focus of some of these programs would be, ideally, not simply Japan and the West, but East Asia and the West, with an appropriately significant Japanese component.

The health and success of the 21st century university requires full engagement with global resources. Finding the means to balance national and cultural heritage with a vital openness to international perspectives and the valuable contributions of international faculty and students is a strategic necessity for universities everywhere.

The Third Challenge: The Financial Crisis

Education has always been expensive, but over the past three decades, the cost of high quality education has increased at a rate more than twice that of inflation. Indispensable new technologies, competition between institutions for superior faculty and facilities, and the costs associated with attracting top students have all contributed to the sharp increase. Cut backs in public funding for higher education and new levels of scarcity in the admissions market have put additional pressure on tight budgets. Looking ahead, it is difficult to see many hopeful signs. Indeed, disappointing demographic trends—in Japan the looming 2018 demographic picture and in America, the currently unfolding "baby bust"--skyrocketing plant and technology costs, aggressive competition from for-profit universities, and plummeting levels of public support ensure continuing financial stress.

It seems clear that the current financial foundations of the modern university are inadequate for future needs. In order to survive, dramatic changes will be required: bold new economies, new partnerships, and additional sources of revenue must be discovered and implemented.

While there are surely additional economies to be found at current levels of operation—for example, a greater reliance on adjunct faculty, further reductions in small and under-enrolled programs—none of these measures by itself or taken together will save the day. And the political and marketing impact of still more budget reductions of the kind mentioned may well prove to be counter-productive.

How are contemporary universities to find the resources not only to sustain their current operations, but also to develop new ways of transmitting and creating knowledge for the 21st

century? The tuition line has been pulled and stretched nearly as far as it will go. Government funding is increasingly unreliable and inadequate, as the will and the ability to provide support continue to contract. On the revenue side, philanthropy has some potential. There continue to be unexploited opportunities for success through creative fundraising strategies, especially in Japan and other countries that have not had long-standing donor development programs. But even with the best results, philanthropy cannot play more than a modest role in sustaining essential university operations.

Perhaps the most promising large-scale opportunities for improving university finances involve integrated strategies for developing both academic programs and research operations in closer alignment with business and industry. This is a heresy for me--a long-term advocate of liberal arts education—but the issue is one of establishing a sustainable future for the modern university. There is an obvious, natural affinity between the dominant student purpose of finding entrance to the job market and the needs of business and industry to ensure a steady flow of well-trained and able workers. Similarly, the research function of the university and the interest of business and industry in developing new products and technology are highly compatible. The use of MOOCs and other online instructional materials creates the possibility for the student to pursue his or her education in the work place as well as on campus. Specific programs of study could be developed collaboratively between academic and corporate leadership teams. The possibilities are substantial. At the same time, the risks for the university must not be ignored, as the sharp focus on profit and corporate interests collide with the values of academic freedom, disinterested research, and the historic autonomy of the university. Are these points of

tension and potential conflict insurmountable? There are enough models of mutually satisfied collaboration in Japan, America, and elsewhere to give us hope that more ambitious and far-reaching patterns of partnership might prove successful.

The digital revolution and globalization present serious challenges for higher education, but also promising opportunities for new economies and enhanced revenue. If they are to survive the deepening financial crisis, universities will need to develop powerful strategies for retaining decisive control, both financially and politically, in three critical areas: academic programs, which are facing increasing competition from new, non-traditional providers, faculty resources, which may be tempted to move away from traditional institutions toward new forms of academic entrepreneurship, and the accreditation of academic programs and degrees. The university has enjoyed a virtual monopoly in these three areas for a very long time. Now, that control is being contested by substantially capitalized, aggressive, and creative new providers. If it is lost, the university system, as we have known it, will almost certainly fail. In the short term, political alliances in government and industry and public support may sustain the university monopoly, but in the long run, better, cheaper, more energetic approaches to higher education may erode such support. The financial well being of the university—indeed, the survival of the university--will depend upon a comprehensive and imaginative response to these powerful new forces.

The Fourth Challenge: Rethinking the Uses of the University

In the light of the dramatic changes sweeping through higher education, it is time for fresh new ideas concerning the nature

and core purposes of the university. The higher educational institutions that will emerge in the decades ahead will be quite different from the university that has endured for so long. Some might say that the term "university"—in its historic sense—will no longer be applicable. For some time now, there has been a lack of agreement among educators about the essential meaning of the term "university." Robert Maynard Hutchins, the renowned president of the University of Chicago, once characterized the modern university as a sprawling set of buildings and programs connected by nothing more than a central heating system. In his classic survey of the modern university, "The Uses of the University," Clark Kerr, who served as chancellor and President at the University of California, claims that the modern university is not a single, coherent entity, but rather a complex of communities--more properly called a "multiversity"—that comprises many subcultures, often in tension or combat: an undergraduate community, a graduate school, a professional school, staff, faculty, and alumni communities, as well as more diffuse constituencies beyond the campus gates.

During its thousand year history, the university has evolved from a unitary teaching mission—the transmission of knowledge—to a mission that encompasses two, not always peacefully situated roles: the transmission of knowledge and research: the creation of knowledge. It was not until the 19th century that the idea of the university as a community of teachers and scholars emerged. The tension, whether creative or disruptive, between the research and teaching functions of the university has continued to the present day, with the teaching function falling behind steadily in support and glamor. Now, in the 21st century, with ever more sophisticated and aggressively promoted online education tools coming to the fore, some are predicting that the university will lay down

much of its historic teaching mission and return to a unitary mission: research—the creation of knowledge.

Clark Kerr, whom I just mentioned, was widely recognized for his calm, sober assessments of trends and potentials in higher education. He was an outspoken critic of dooms–day predictions and those who would turn a few indicators gone negative into proof that the end is at hand. Given this reputation, it is interesting to read what Kerr had to say in 2000 about the growing role of educational technology in higher education. In a supplemental chapter for the Fifth Edition of "The Uses of the University,"
Kerr reflects on the argument of Peter Drucker and others that bricks and mortar undergraduate teaching will be replaced early in the 21st century by new, computer-based instruction. Writing in the first year of the new millennium, Kerr claimed that it was too early to write off the traditional university classroom, but he concluded: "If the electronic revolution does turn out to be a total replacement for classroom lectures instead of primarily an add-on, then it could become the great theme for the next century."

Now over a decade later, it seems as if, indeed, the electronic revolution is about to become the one of the great themes for higher education in the 21st century. The stakes could not be higher. Bold, decisive action is required if the current challenges are to be met. Yet this is just the kind of behavior that universities rarely exhibit. Woodrow Wilson, reflecting on his days as the President of Princeton, said that changing long standing traditions at the university was like moving a cemetery: "You find," he said, "that the dead have many friends." The years ahead will be a genuine test of the resilience and vitality of the university and the imagination and courage of university leaders.

In this time of challenge and uncertainty, there are at least some things that are reasonably clear:

1. A genuine storm is overtaking higher education. However ugly many of its implications, it must be faced head-on. Strategic planning for the next five-to-ten years on all campuses must deal with the digital revolution and the rising tide of globalization, as well as the unsustainability of the business model that guides most contemporary universities.

2. The agenda of the university is going to be increasingly shaped by market forces from without. The historic prerogatives and imperatives of the university are being replaced—whether for good or not—by the demands and expectations of students and the business and political communities.

3. A large number of universities will not survive to the mid-century. There simply is not enough space in the market for as many institutions as currently exist. The digital revolution and globalization will favor the strongest and most highly innovative schools and a smaller number of institutions that are able to find a corner or niche in the market left unfilled by the more prominent universities.

4. New, substantial partnerships and joint ventures with other institutions, both nationally and internationally, can bring economies of scale to the university and added marketing value. Similarly new and invigorated partnerships with business and industry can multiply the university's resources and strengthen important friendships. It is difficult to see how the research mission

of the university will be able to survive without a major enhancement of these partnerships.

5. The historic focus of the university on a relatively narrow age cohort—young adults—should be replaced by a broader vision, one that includes increased programs and services for other age-cohorts. We need, in other words, to expand the band-width of the university to encompass additional groups that can make good use of what the university can provide. Lifelong learning programs, intentional intellectual communities, and programs that inspire and prepare older citizens for new endeavors in retirement hold considerable potential for filling some of the gaps left by the diminished ranks of younger students.

There are a number of other important points of reference in this time of challenge and relative uncertainty, but there is more than enough to think about in the five that I have listed.

## A Final Word

The university is one of the greatest and most enduring institutions in the world. As Clayton Christensen and Henry Eyring report in their recent book, "The Innovative University: Changing the DNA of Higher Education," until recent years, the university has had no real external competition. Now, at what is surely the worst possible time—with costs running beyond revenues, bad demographic trends, and government support declining—powerful new competition, both actual and on the horizon, has emerged, threatening the university's territory and its future. There is still time—not endless, but sufficient--for the higher education community in Japan, America, and around the world to respond innovatively and strategically. As

university leaders and proponents of educational reform face these challenges, we have some things for which we can be grateful.  Not the least is our sense of partnership and common purpose—East and West—in the in the struggle to reshape and to secure the future of higher education.