

The Future of Higher Education New Roles for the 21st-Century University

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James J. Duderstadt
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Introduction

Changing times demand a new social contract between society and the institutions of higher education.

Perhaps the unique characteristic of higher education in the United States is the strong bond between the university and society. Historically, universities have been shaped by, drawn their agenda from, and been responsible to the communities that founded them. Each generation has established a social contract between the university and the society it serves.

Despite the fact that the Constitution reserves to the states power over education, the federal government has played an important if not dominant role in defining the nature of the social contract with universities. Early legislation, such as the Federal Ordinance of 1785, defined the public role of the university in sustaining a young democracy. A century later, the Morrill Act and the other land-grant acts stimulated the states to create public universities to help develop the vast natural resources of the nation through agricultural extension programs and engineering experiment stations, while broadening opportunities for education to the working class. In the decades after World War II, the government extended this social contract through a series of actions, including the GI Bill, the Higher Education Acts, and federal financial aid programs, effectively expanding the role of higher education from its traditional emphasis on educating the elite for leadership roles to providing mass education. Yet another form of social contract evolved to address the research needs of the nation: a partnership in which the federal government supported faculty investigators to engage in research of their own choosing in the expectation that significant benefits would accrue to society in the forms of military security, public health, and economic prosperity.

Today, an array of powerful social, economic, and technological forces is driving change in the needs of society and the institutions created to respond to those needs. It is time once again to reconsider the social contract between the university and the nation, and federal policy and action will probably be required to shape this relationship once again.

There are many ways to classify the powerful forces driving change in our society. For the purposes of this discussion, it is useful to do so as follows:

The age of knowledge. The United States is evolving rapidly into a postindustrial, knowledge-based society, just as a century ago it evolved from an agrarian into an industrial nation. Industrial production is shifting steadily from material- and labor-intensive products and processes to knowledge-intensive products. A radically new system for creating wealth has evolved that depends on the creation and application of new knowledge.

In a very real sense, the nation is entering a new age--an age of knowledge--in which the key strategic resource necessary for prosperity has become knowledge itself; that is, educated people and their ideas. Unlike natural resources, such as iron and oil, that have driven earlier economic transformations, knowledge is inexhaustible. The more it is used, the more it multiplies and expands. But knowledge is not available to all. It can be absorbed and applied only by the educated mind. Hence, as society becomes ever more knowledge-intensive, it becomes ever more dependent on those social institutions, such as the university, that create knowledge, educate people, and provide those people with learning resources throughout their lives.

Demographic change. The U.S. population is becoming increasingly diverse with respect to race, ethnicity, and nationality. Women, minorities, and immigrants now account for roughly 85 percent of the growth in the labor force, and these groups currently represent 60 percent of all workers. Still, the full participation of currently underrepresented minorities and women is crucial to the U.S. commitment to equity and social justice, as well as to the nation's future strength and prosperity.

The challenge of increasing diversity is complicated by social and economic factors. Far from evolving toward one nation, society continues to be hindered by segregation and nonassimilation of minority cultures. Both the courts and legislative bodies are now challenging such long-accepted programs as affirmative action and equal opportunity. Yet social pluralism also is among the nation's most important opportunities, because it provides us with an extraordinary vitality and energy as a people. As both a reflection and a leader of society at large, the university has a unique responsibility to develop effective models of multicultural, pluralistic communities for the nation. Universities must strive to achieve new levels of understanding, tolerance, and mutual fulfillment for peoples of diverse racial and cultural backgrounds, both on campus and beyond. But it also has become increasingly clear that universities must do so within a new political context that will require new policies and practices.

The globalization of the United States. Whether through travel and communication, through the arts and culture, or through the internationalization of commerce, capital, and labor, the United States is becoming increasingly linked with the global community. A completely domestic U.S. economy has ceased to exist, because the nation is no longer self-sufficient or self-sustaining. The U.S. economy and many of its companies are truly international, spanning the globe and intensely interdependent with other nations and other peoples. Worldwide communication networks have created an international market, not only for conventional products but also for knowledge professionals, research, and educational services. The United States is evolving into a "world nation" with not just economic and political ties but also ethnic ties to all parts of the globe.

Within this broad picture, the contemporary U.S. university is a truly international institution. It not only reflects a strong international character among its students, faculty, and academic programs but also stands at the center of a world system of learning and scholarship. Yet, despite the intellectual richness of the nation's campuses, universities still suffer from the inherited insularity and ethnocentrism of a country that for much of its history has been protected from the rest of the world and has been self-sufficient--perhaps even self-absorbed--in its economy. Universities must enable all students to appreciate the unique contributions to human culture that come from other traditions--to communicate, to work, to live, and to thrive in multicultural settings whether in this country or anywhere on the face of globe.

The post-Cold War world. For almost half a century, the driving force behind many of the major public investments in national infrastructure has been concern for national security. The evolution of the research university, the national laboratories, the interstate highway system, the telecommunications systems and airports, and the space program were stimulated by concerns about the arms race and competition with the Communist bloc. Many of the technologies now taken for granted, from semiconductors to jet aircraft, from computers to composite materials, were spin-offs of the defense industry.

In the wake of the extraordinary events of the past decade--the disintegration of the Soviet Union, the reunification of Germany, and the major steps toward peace in the Middle East--the driving force of national security has weakened, at least as it arises from superpower confrontation if not from terrorism and regional ethnic conflict. In keeping with this change, much of the motivation for major public investment has weakened. But peace has not freed up new resources in the post-Cold War world for investment in such key areas as education and research. Instead, the nation is drifting in search of new driving imperatives. Although there are numerous societal concerns, such as economic competitiveness, national health care, crime, and K-12 education, none of these has yet assumed an urgency sufficient to set new priorities for public investment.

Market forces. Most people generally think of higher education as public enterprise, shaped by public policy and actions to serve a civic purpose. Yet market forces also act on colleges and universities. Society seeks services such as education and research. Academic institutions must compete for students, faculty, and resources. To be sure, the market is a strange one, heavily subsidized and shaped by public investment so that prices are always far less than true costs. Furthermore, if prices, such as tuition, are largely fictitious, even more so is much of the value of education services, based on such myths and vague perceptions as a college degree being a ticket to success, or the prestige associated with certain institutions. Ironically, the public expects not only the range of choice that a market provides but also the subsidies that make the price of a public higher education less than the cost of its provision.

In the past, universities enjoyed a monopoly over advanced education because of geographical location and their control of the accreditation of academic programs necessary for awarding degrees. Today, however, all of these market constraints are being challenged. The growth in the size and complexity of the postsecondary enterprise is creating an expanding array of students and educational providers. Information technology eliminates the barriers of space and time, and new competitive forces, such as virtual universities and for-profit education providers, enter the marketplace to challenge the process of credentialing.

It can be argued that education itself will replace natural resources or national defense as the priority for the 21st century.

The weakening influence of traditional regulations and the emergence of new competitive forces, driven by changing societal needs, economic realities, and technology, are likely to drive a massive restructuring of the higher education enterprise. From experience with other restructured sectors of the economy, such as health care, transportation, communications, and energy, we could expect to see a significant reorganization of higher education, complete with mergers, acquisitions, new competitors, and new products and services. More generally, we may well be seeing the early stages of a global knowledge and learning industry, in which the activities of traditional academic institutions converge with other knowledge-intensive organizations, such as telecommunications, entertainment, and information service companies.

This perspective of a market-driven restructuring of higher education as an industry, although perhaps both alien and distasteful to the academy, is nevertheless an important framework for considering the future of the university. Although the postsecondary education market may have complex cross-subsidies and numerous public misconceptions, it is nevertheless very real and demanding, with the capacity to reward those who can respond to rapid change and punish those who cannot. Universities will have to learn to cope with the competitive pressures of this marketplace while preserving the most important of their traditional values and character.

Brave new world

In an increasingly knowledge-driven society, more and more people seek education as the hope for a better future, the key to good jobs and careers and to meaningful and fulfilling lives. The knowledge created within universities also addresses many of the most urgent needs of society, including health care, national security, economic competitiveness, and environmental protection.

Yet there is great unease on campuses. Throughout society, there is erosion in support of important university commitments, such as academic freedom, tenure, broad access, and racial diversity. The faculty feels increasing stress, fearing a decline in public support of research, sensing a loss of scholarly community with increasing disciplinary specialization, and being pulled out of the classroom and the laboratory by the demands of grantsmanship. Even the concept of higher education as a public good is being challenged, as society and its elected leaders increasingly see a college education as an individual benefit determined by values of the marketplace rather than the broader needs of a democratic society. Many states now spend more on prisons than on public higher education. The federal government has shifted student financial aid programs from grants to loans to tax incentives, clearly designed to appeal more to the marketplace and middle-class voters than to expand access to higher education.

To be sure, most colleges and universities are responding to the challenges presented by a changing world. They are evolving to serve a new age. But most are evolving within the traditional definition of their role, according to the time-honored processes of considered reflection and consensus that have long characterized the academy. Is such glacial change responsive enough to allow the university to control its own destiny? Or will the tidal wave of societal forces sweep over the academy, transforming the university in unforeseen and unacceptable ways while creating new institutional forms--from cyberspace universities, to global learning networks, to for-profit learning assessment corporations--that challenge our experience and our concept of the university?

The market forces unleashed by technology and driven by increasing demand for higher education are powerful. If they are allowed to dominate and reshape the higher education enterprise, we could well find ourselves facing a brave new world in which some of the most important values and traditions of the university fall by the wayside. The commercial, convenience-store model of a university--perhaps typified by the University of Phoenix (see the article by Jorge Klor de Alva in this issue)--may be an effective way to meet the workplace skill needs of some adults. But it certainly is not a model that would be suitable for many of the higher purposes of the university. Although universities teach skills and convey knowledge, they also preserve and convey cultural heritage from one generation to the next, perform the research necessary to generate new knowledge, serve as constructive social critics, and provide a broad array of

knowledge-based services to society.

One particular worry centers on the future of the university campus. Despite market pressures, the campus will not disappear. But the escalating costs of residential education could price this form of education beyond the range of all but the affluent, relegating much if not most of the population to low-cost (and perhaps low-quality) education through shopping-mall learning centers or computer-mediated distance learning. In this dark, market-driven future, the residential college campus could well become the gated community of the higher education enterprise, available only to the rich and privileged.

A society of learning

Yet there is a far brighter vision for the future of higher education. Of course, it would be both impractical and foolhardy to suggest one particular model for the university of the 21st century. The great and ever-increasing diversity characterizing higher education makes it clear that there will be many forms and many types of institutions serving society. But there are a number of themes that almost certainly will factor into some part of the higher education enterprise:

- **Learner-centered.** Just like other social institutions, universities must become more focused on those they serve. They must transform themselves from faculty-centered to learner-centered institutions, becoming more responsive to what students need to learn rather than simply what faculties wish to teach.
- **Affordable.** Universities must become far more affordable, providing educational opportunities within the resources of all citizens. Whether this occurs through greater public subsidy or dramatic restructuring of universities, it seems increasingly clear that society no longer will tolerate the high-cost, low-productivity model that characterizes much of higher education today.
- **Lifelong learning.** The need for advanced education and skills will require a willingness to continue to learn throughout life and a commitment on the part of institutions to provide such opportunities. The concept of student and alumnus will merge. Today's highly partitioned system of education will blend increasingly into a seamless web, in which primary and secondary education; undergraduate, graduate, and professional education; on-the-job training and continuing education; and lifelong enrichment become a continuum.
- **Interactive and collaborative.** New forms of pedagogy tailored to changing societal needs already are emerging. Some examples: asynchronous (any time, any place) learning uses information technology to break the constraints of time and space, making learning opportunities more compatible with lifestyles and career needs; and interactive and collaborative learning techniques effectively reach the plug-and-play generation of the digital age.
- **Diverse.** The great diversity characterizing higher education will continue, as it must to serve an increasingly diverse population with diverse needs and goals.
- **Intelligent and adaptive.** Knowledge and distributed-intelligence technology will increasingly foster the construction of learning environments that are not only highly customized but adapted to the needs of the learner.

Many colleges and universities already have launched major strategic efforts to understand these themes and to transform themselves into institutions that are more capable of serving a knowledge-driven society. Yet such efforts to explore new models of learning extend far beyond the traditional higher education enterprise to include an array of new participants, including publishing houses such as Harcourt-Brace, entertainment companies such as Disney, information services providers such as Anderson Consulting, and information technology corporations such as IBM. It is clear that access to advanced learning opportunities is not only becoming a more pervasive need, but could well become a defining domestic policy issue for a knowledge-driven society. Rather than aspiring to an "age of knowledge," the nation might instead aspire to a "society of learning," in which people are continually surrounded by, immersed in, and absorbed in learning experiences.

The real question is not whether higher education will be transformed, but rather how and by whom.

From land-grant to learn-grant

Entering the new century, there is an increasing sense that the social contract between the university and U.S. society, perhaps best represented by today's government-university research partnership, may need to be reconsidered and perhaps even renegotiated. The number and interests of the different stakeholders in the university have expanded and diversified, drifting apart without adequate ways to communicate and reach agreement on priorities. Political pressures to downsize federal agencies, balance the federal budget, and reduce domestic discretionary spending may significantly reduce the funding available for university-based research. Government officials are concerned about the rapidly rising costs of operating research facilities and about the reluctance of scientists and their institutions to acknowledge that choices must be made to live with limited resources and set priorities.

Although the government-university partnership has had great impact in making the U.S. research university the world leader in both the quality of scholarship and the production of scholars, the partnership also has had its downside. Pressures on faculty for success and recognition have led to major changes in the culture and governance of universities. The peer-reviewed grant system has fostered fierce competitiveness, imposed intractable work schedules, contributed to a loss of collegiality and community, and shifted faculty loyalties from the campus to disciplinary communities. Publication and grantsmanship have become a one-dimensional criterion for academic performance and prestige, to the detriment of teaching and service. Furthermore, although the partnership has responded well to the particular interests of academic researchers, it can be questioned whether the needs of other stakeholders, including the taxpaying public, have been adequately addressed.

Today, there seems to be a shift in what society seeks from the university. Students and parents increasingly favor professional degree programs that will help students get a first job, rather than the liberal education that is capable of enriching their lives. Politicians value productivity measures rather than academic rankings. In a sense, society is telling universities that although quality is important, cost is even more so. The marketplace seeks low-cost quality services rather than prestige. Parents and students ask increasingly, "If a Ford will do, then why buy a Cadillac?" It could be that the culture of excellence, which has driven the evolution of and competition among research universities, will no longer be accepted and sustained by the public. Although this shift from prestige-driven to cost-competitive market forces may broaden the mission and capacity of many colleges and universities, it could do so at the expense of the excellence of the nation's very best institutions.

Rather than allowing the marketplace alone to redefine the nature of higher education, perhaps it is time to reconsider an earlier type of social contract between the university and society: the land-grant university model. Recall that a century and a half ago, the United States was facing changes similar to today's, evolving from an agrarian frontier society into an industrial nation. At that time, a social contract was developed among the federal government, the states, and public colleges and universities to assist the young nation in making this transition. The land-grant acts were based on several commitments. First, the government provided federal lands for the support of higher education. Second, the states agreed to create public universities designed to serve regional as well as national interests. As the final element, these land-grant universities accepted new responsibilities to broaden educational opportunities for the working class while launching new programs in applied areas such as agriculture, engineering, and medicine, aimed at serving an industrial society.

Society is now undergoing a similarly profound transition, this time from an industrial to a knowledge-based society. Hence, it may be time for a new social contract aimed at providing the knowledge and the educated citizens necessary for prosperity, security, and social well-being in this new age. Perhaps it is time for a new federal act, similar to the land-grant acts of the 19th century, that will help the higher education enterprise address the needs of the 21st century. Of course, a 21st century land-grant act is not a new concept. Some observers have recommended an industrial analog to the agricultural experiment stations of the land-grant universities. Others have suggested that in an information-driven economy, perhaps telecommunications bandwidth is the asset that could be assigned to universities, much as federal lands were a century ago. Unfortunately, an industrial extension service may be of marginal utility in a knowledge-driven society, and Congress already has given away most of the available bandwidth to traditional broadcasting and telecommunications companies.

Whereas the land-grant model was focused on developing the nation's vast natural resources, it is now clear that the nation's most important national resource for the future will be its people. Indeed, it can be argued that education itself will replace natural resources or national defense as the priority for the 21st century. It might even be conjectured that a social contract based on developing and maintaining the abilities and talents of all people to their fullest extent could well transform schools, colleges, and universities into new forms that would rival the research university in importance.

Thus, a 21st-century analog to the 19th-century land-grant university might be termed a "learn-grant"

university, designed to develop human resources as its top priority along with the infrastructure necessary to sustain a knowledge-driven society. The field stations and cooperative extension programs--perhaps existing in cyberspace as much as at physical locations--could be directed to the needs and the development of the people in the region. Although traditional academic disciplines and professional fields would continue to have major educational and service roles and responsibilities, new interdisciplinary fields, such as complexity and global change, might be developed to provide the necessary knowledge and associated problem-solving services in the land-grant tradition.

In an era of relative prosperity in which education plays such a pivotal role, it may be possible to build the case for new federal commitments. But certain features seem increasingly apparent. New investments are unlikely to be made within the old models. For example, no matter its success, the federal government-research university partnership remains a system in which only a small number of elite institutions participate and benefit. The theme of a new land-grant act would be to broaden the base, to build and distribute widely the capacity to contribute new knowledge and educated knowledge workers to society, not simply to channel more resources into established institutions. Furthermore, Congress and the White House are unlikely to entirely abandon the budget-balancing constraints that many observers believe have contributed to today's prosperity. Hence, major new investments through additional appropriations seem unlikely. However, there is another model--provided, in fact, by the 1997 Budget Balancing Agreement--in which tax policy was used as an alternative mechanism to invest in education.

An example illustrates one possible approach. Suppose the federal government were to provide a permanent R&D tax credit to industry for research and educational activities undertaken jointly with public universities in special research parks or networked organizations. The states would commit to matching the federal contributions, perhaps by developing the research parks and assisting their colleges and universities in building the capacity to work with industry. The participating universities would not only agree to work with industry, but would restructure their intellectual property ownership policies to facilitate such partnerships. Universities would go beyond this to build the capacity to provide more universal educational opportunities, perhaps through network-based learning or virtual universities. Universities also would agree to form alliances with other universities as well as with other parts of the education enterprise, such as K-12 education and workplace training programs.

Other national priorities, such as health care, the environment, global change, and economic competitiveness might be part of an expanded national service mission for universities. Institutions and academic researchers would then commit to research and professional service associated with such national priorities. To attract the leadership and the long-term public support needed for a valid national public service mission, faculties would be called on to set new priorities, collaborate across campus boundaries, and build on their diverse capabilities.

Though challenging, the road ahead is not altogether unfamiliar. Change has always characterized the university, even as it sought to preserve and propagate the intellectual achievements of civilization. During just the past decade, undergraduate education has been improved significantly. Costs have been cut and administrations streamlined. Campuses are far more diverse today with respect to race and gender. Researchers are focusing their attention on key national priorities. Yet these changes in the university, although important, have been largely reactive rather than strategic. For the most part, institutions still have not grappled with the extraordinary implications of a society of learning that likely represents the future.

Clearly, higher education will flourish in the decades ahead. In a knowledge-intensive society, the need for advanced education will become ever more pressing, both for individuals and society. Yet it also is likely that the university as it stands today (or rather, the current constellation of diverse institutions that make up the higher education enterprise) will change in profound ways to serve a changing world. The real question is not whether higher education will be transformed, but rather how and by whom. If the university is capable of transforming itself to respond to the needs of a culture of learning, then what is currently perceived as the challenge of change may become the opportunity for a renaissance in higher education in the years ahead.

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