Changing University Missions and Profiling in the United States: Some Lessons Learned in the New World

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Abstract

The emergence of a global, knowledge-driven economy presents higher education with several significant challenges, including balancing the needs for broadening educational opportunity with the achievement of world-class excellence in research, maintaining adequate support for higher education as ageing populations shift priorities for tax revenues, and resolving the conflict between the demands for greater public accountability and the need for greater institutional agility. The efforts of the United States in addressing such conflicting objectives by encouraging a highly diverse system of institutions with strong differentiation among mission and profiles provides both valuable experience and cautionary lessons for tertiary education in Europe.

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1. Introduction

We live in a time of great change, an increasingly global society, driven by the exponential growth of new knowledge and knitted together by rapidly evolving information and communication technologies (Friedman, 2005; Augustine, 2005). It has become apparent that the strength, prosperity and welfare of a nation in today's global knowledge economy will demand a highly educated citizenry enabled by development of a strong system of tertiary education.

Challenges to universities

It will also require institutions with the ability to discover new knowledge, develop innovative applications of these discoveries, and transfer them into the marketplace through entrepreneurial activities. Hence nations are increasingly challenging their universities to broaden educational opportunity, achieve world-class standards in quality and reputation, and become more efficient and productive.

Experience of US higher education

Yet it is clear that achieving such objectives, both complex and frequently incompatible, will require not only significant institutional change but also significantly greater differentiation of institutional missions and profiles. To provide guidance for European higher education as it continues to adapt to a changing world through the Bologna process, this paper considers the experience of the highly diverse higher education enterprise of the United States in facing the challenges of the new century.

2. The view from the New World

Structure of US higher education

Higher education in the United States is characterised both by its great diversity and an unusual degree of institutional autonomy, understandable in view of the limited role of the federal government in post-secondary education. As *The Economist* notes, "The strength of the American higher education system is that it has no system" (Economist, 2005). In America, colleges and universities, both public and private, are relatively free from government control, at least compared to institutions in other nations. There is no ministry of higher education or national system of education, relatively few federal regulations, and essentially no broad federal higher education policies. Federal support of higher education is primarily channelled to individuals (through student financial aid and competitive faculty research grants) rather than to institutions. The states play a more direct role, providing significant funding to their public universities and imposing governance structures ranging from rigidly controlled systems (e.g., New York and Ohio) to strategic master plans (e.g., California and Texas) to anarchy and benign neglect (e.g., Michigan).

Financing of U e

More specifically, today the United States spends roughly 2.6% of its GDP on higher education ($335 billion), with 55% of this ($190 B) coming from private support, including tuition payments ($95 B), philanthropic gifts ($30 B), endowment earnings ($35 B on average), and revenue from auxiliary activities such as medical clinics and athletics ($30 B). Public sources provide the remaining 45%: the states provide 24% ($75 B), primarily through appropriations directly to public colleges and universities; the federal government provides the remaining 21% ($70 B) through student financial aid, subsidised loans, and tax benefits ($40 B) and research grants ($30 B). This very large dependence on private support – and hence the marketplace – is unique to the United States, since in most other nations higher education is primarily supported and shaped by governments rather than market forces. It is a major reason why on a per-student basis, higher education in America is supported at about twice the level ($20,545 per year) as in Europe. (OECD, 2008)

Non-academic mission costs

There is a caveat here, however, since roughly half of this cost is associated with non-instructional activities such as applied research, health care, intercollegiate athletics, and economic development – missions unique to American universities. After subtracting the sources earmarked for non-academic missions, one finds that the actual instructional costs of American higher education today are quite comparable to many European nations.

Variety of stakeholders

The American university's constituencies are both broad and complex, and include as clients of university services not only students but also patients of its hospitals; federal, state, and local governments; business and industry; and the public at large (e.g., as spectators at athletic events). The university is, however, not only accountable to this vast base of present stakeholders, but it also must accept a stewardship for past investments and a responsibility to maintain the capacity to serve future generations. In many ways, the increasing complexity and diversity of the modern university and its many missions reflect the increasingly diverse and changing character of contemporary society.

Diversity of institutions

To address this diversity — indeed, incompatibility — of the values, needs, and expectations of the various constituencies served by higher education, the United States has encouraged a highly diverse array of tertiary educational institutions to flourish. From small colleges to immense multi-campus universities, religious to secular institutions, vocational schools to liberal arts colleges, land-grant to urban to national research universities, public to private to for-profit universities, there is a rich diversity both in the nature and the mission of America's roughly 3,600 post-secondary institutions.

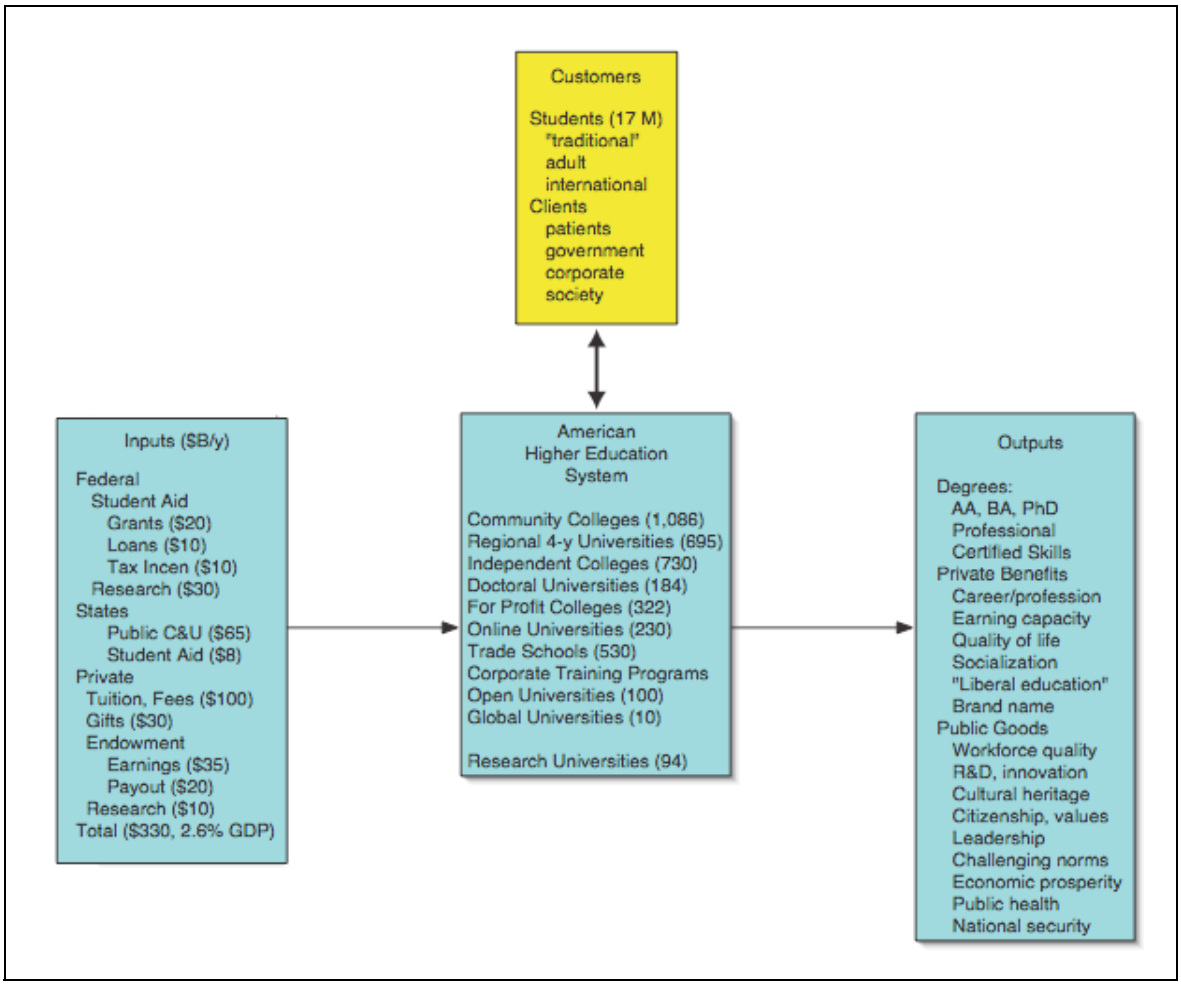

Fig. A 4.2-1 The American higher education ecosystem

Worldwide change

Yet change is in the air. Today our world has entered a period of rapid and profound economic, social, and political transformation based upon a radically new system for creating wealth that depends upon the creation and application of new knowledge and hence upon educated people and their ideas. The world is evolving rapidly into a global, knowledge-driven society as our economies shift from material- and labor-intensive products and processes to knowledge-intensive products and services. Advanced economies, companies, and social institutions have become international, spanning the globe and interdependent with other nations and other peoples. Markets characterised by the instantaneous flows of knowledge, capital, and work unleashed by lowering trade barriers are creating global enterprises based upon business paradigms such as out-sourcing and off-shoring, a shift from public to private equity investment, and declining identification with or loyalty

to national or regional interests. Market pressures increasingly trump public policy and hence the influence of governments.

Intellectual and human capital as key asset

It is this reality of the hyper-competitive, global, knowledge-driven economy of the 21st century that is stimulating the powerful forces that will reshape the role of education in our society. Today, a college degree has become a necessity for most careers, and graduate education is desirable for an increasing number. In the knowledge economy, the key asset driving corporate value is no longer physical capital or unskilled labour. Instead it is intellectual and human capital.

The skills race

This increasingly utilitarian view of higher education is reflected in American public policy. Just as the space race (and Cold War) of the 1960s stimulated major investments in research and education, there are early signs that the skills race of the 21st Century is rapidly becoming a dominant domestic policy issue facing the United States. The National Governors Association notes that "the driving force behind the 21st Century economy is knowledge, and developing human capital is the best way to ensure prosperity." But there is an important difference here. The space race galvanised public concern and concentrated national attention on educating “the best and brightest,” the academically elite of our society. The skills race of the 21st Century will value instead the skills and knowledge of the entire workforce as a key to economic prosperity, national security, and social well-being (NCSL, 2006).

Demographic changes

In this effort, however, our nation also faces important demographic challenges. Just as in Europe, the percentage of the United States population aged over 60 will grow during the next decade to over 30%. This ageing population will increasingly shift social priorities to the needs and desires of the elderly (e.g., retirement security, health care, safety from crime and terrorism, and tax relief) rather than investing in the future through education and innovation. However, the United States stands apart from many other developed and ageing nations in its openness to immigration. In fact, over the past decade, immigration from Latin America and Asia contributed 53% of the growth in the United States population, exceeding that provided by births (National Information Center, 2006). Such immigration is expected to drive continued growth in the US population from 300 million today to over 450 million by 2050, augmenting its ageing population and stimulating productivity with new and young workers. As it has been so many times in its past, America is once again becoming a nation of immigrants, benefiting greatly from their energy, talents, and hope, even as such mobility changes the ethnic character of the nation. Current projections suggest that by mid-century the United States will no longer have any single majority ethnic group.

Challenge of diversity

While the increasing diversity of the American population with respect to culture, race, ethnicity, and nationality is one of its greatest strengths, it is also of the nation's most serious challenges. A diverse population driven by immigration gives us great vitality. However, the challenge of increasing diversity is complicated by social and economic factors. Today, far from evolving toward one America, its society continues to be hindered by the segregation and non-assimilation of minority and immigrant cultures. American colleges and universities have long played an important role in providing educational opportunities and social mobility for a diverse society. Yet many today continue to challenge, both through the courts and voter referenda, long-accepted programmes such as affirmative action and equal opportunity aimed at expanding access to higher education to underrepresented communities and diversifying US campuses and workplaces, thereby constraining the efforts of higher education to respond to the challenges and opportunities presented by an increasingly diverse nation.

3. The implications for higher education

3.1 Caught between massification, league tables, and tax relief

Shared challenges in US and Europe

In many respects the challenges facing higher education in the United States and Europe are similar: the need dramatically to broaden participation in higher education to build a competitive workforce (massification), to enhance the quality of both education and scholarship to compete in a knowledge-driven economy (as measured by league tables), and to reduce the relative burden on tax payers who face other public spending priorities such as health, retirement, and national security. Yet the incompatibility of these objectives creates strong and conflicting demands on universities for greater accountability in areas such as cost containment, productivity, and learning outcomes, even as they are encouraged to diversity their funding sources through mechanisms such as raising student fees, building relationships with industry, encouraging philanthropy, and expanding the market for educational services through adult education or international students.

Balancing needs of different stakeholders

Part of the challenge is balancing the needs of various stakeholders in higher education, predominantly the state, students, and business – and keeping all three satisfied without distorting the fundamental purpose of the university. For example, there is a growing utilitarianism associated with the role of higher education in addressing the need for human capital that could overwhelm the university's traditional social and cultural impact on society and civilisation and its transformative potential through the creation, retention, and dissemination of knowledge.

3.2 Mission differentiation

Diverse higher education ecosystem

It is increasingly apparent that the great diversity of higher education needs, both on the part of diverse constituencies (young students, professionals, adult learners) and society more broadly (teaching, research, economic development, cultural richness) demands a diverse higher education ecosystem of institutional types. The issue of mission differentiation is key, since the availability of limited resources will only allow a small fraction of institutions to become globally competitive as comprehensive research institutions (e.g., with annual budgets typically in the range of $1 billion or more). A differentiated system of higher education helps to accomplish both the goals of massification of educational opportunity and conducting research of world-class quality, but it assigns different roles in such efforts for various institutions.

Highly diverse US system

Enabled both by continental scale and its decentralised nature, the United States has achieved a highly diverse system, enabling it to focus significant public and private resources to create a small set (less than 100) of world-class research universities, while distributing the broader roles of mass education and public service among a highly diverse collection of public and private institutions, albeit with an inevitable tendency toward “mission creep”.

3.3 Public policy vs. markets

Market forces overwhelming public policy

A combination of powerful economic, demographic, and technological forces is likely to drive a massive restructuring of the higher education enterprise similar to that experienced by other economic sectors such as health care, transportation, communications, and energy. Nations are moving toward revenue-driven, market-responsive higher education systems because their current tax systems are increasingly unable to support the degree of universal access to post-secondary education required by knowledge-driven economies in the face of other compelling social priorities, particularly the needs of ageing populations. Furthermore, there is growing willingness on the part of political leaders to use market forces as a means of restructuring higher education in an effort to increase both efficiency and quality. Put another way, market forces are rapidly overwhelming public policy and public investment in determining the future course of higher education.

Changing values

Yet the increasing dominance of market forces over public policy raises serious concerns. (Newman, 2004; Zemsky, 2005) Whether a deliberate or involuntary response to the tightening fiscal constraints and changing priorities for public funds, the long-standing recognition that higher education is a public good, benefiting all of our society, is eroding. Both the American public and its elected leaders increasingly view higher education as a private benefit that should be paid for by

those who benefit most directly, namely the students. It is ironic that this shifts the value proposition from that of government responsibility for supporting the educational needs of a society, to university responsibility for addressing the economic needs of government – an interesting reversal of traditional responsibilities and roles (Glion, 2008). Without the constraints of public policy, earned and empowered by public investments, market forces could so dominate and reshape the higher education enterprise that many of the most important values and traditions of the university could fall by the wayside, including its public purpose.

3.4 Agility and autonomy

Many of the most powerful forces driving change in higher education come from the marketplace, from new societal needs, the limited availability of resources, rapidly evolving technology, and the emergence of new competitors such as for-profit ventures. Clearly in such a rapidly changing environment, agility and adaptability become important attributes of successful institutions. Yet the governance and leadership of most institutions are far more inclined to protect the past than prepare for the future.

Accumulation of missions

Furthermore, all of higher education faces a certain dilemma related to the fact that it is far easier for a university to take on new missions and activities in response to societal demand than to shed missions as they become inappropriate, distracting, or too costly. This is a particularly difficult matter for public universities because of intense public and political pressures that require these institutions to continue to accumulate missions, each with an associated risk, without a corresponding capacity to refine and focus activities to avoid risk.

Limited strategic capacity

In the United States most university governing boards view their role as one of oversight to ensure public or political accountability, rather than as stewardship to protect and enhance the university so that it is capable of serving both present and future generations. Similarly faculties tend to resist change. It is little wonder that most universities have limited capacity to react to the profound changes occurring in our society and even less capacity to develop a strategic approach to their future.

4. Signs of stress

Emerging concerns

While public surveys still suggest strong support of higher education, numerous studies sponsored by government, business, foundations, the National Academies, and the higher education community have suggested that the past attainments of American higher education may have led to unwarranted complacency about its future (Callan, 2008). There is clear evidence of an increasing stratification of access to (and success in) quality higher education based on socioeconomic status. Many question whether US colleges and universities are achieving acceptable student learning outcomes (including critical thinking ability, moral reasoning, communication skills, and quantitative literacy). Rising tuitions raise concerns about cost containment and productivity.

Responses needed to changes and competition

American higher education appears to be having difficulty responding to changes demanded by the emerging knowledge services economy, globalisation, rapidly evolving technologies, an increasingly diverse and aging population, and an evolving marketplace characterised by new needs (e.g., lifelong learning), new providers (e.g., for-profit, cyber, and global universities), and new paradigms (e.g., competency-based educational paradigms, distance learning, open educational resources). Furthermore, while American research universities continue to provide the nation with global leadership in research, advanced education, and knowledge-intensive services such as health care, technology transfer, and innovation, this leadership is threatened by rising competition from abroad, by stagnant support of advanced education and research in key strategic areas such as science and engineering, and by the complacency and resistance to change of the academy.

Of particular importance here – and likely relevance to European universities – are the issues of accountability, competition, and governance.

4.1 Accountability

US Spellings Commission

The National Commission on the Future of Higher Education – the so-called Spellings Commission – launched by the Secretary of Education in 2005 to examine issues such as the access, affordability, accountability, and quality of US colleges and universities, concluded that “American higher education has become what in the business world would be called a mature enterprise, increasingly risk-averse, at times self-satisfied, and unduly expensive. It is an enterprise that has yet to address the fundamental issues of how academic programmes and institutions must be transformed to serve the changing educational needs of a knowledge economy. It has yet to successfully confront the impact of globalisation, rapidly evolving technologies, an increasingly diverse and aging population, and an evolving marketplace characterised by new needs and new paradigms” (Miller, 2006).

Two areas of particular concern

More specifically, the Commission raised two areas of particular concern about American higher education: "Too few Americans prepare for, participate in, and complete higher education. Notwithstanding the nation's egalitarian principles, there is ample evidence that qualified young people from families of modest means are far less likely to go to college than their affluent peers with similar qualifications. America's higher-education financing system is increasingly dysfunctional. Government subsidies are declining; tuition is rising; and cost per student is increasing faster than inflation or family income." Furthermore, at a time when the United States needs to be increasing the quality of learning outcomes and the economic value of a college education, the Commission found disturbing signs that suggest higher education is moving in the opposite direction. Numerous recent studies suggest that today's American college students are not really learning what they need to learn (Bok, 2006).

The Commission issued a series of sweeping recommendations to align higher education better with the needs of the nation, including

1. reaffirming America's commitment to provide all students with the opportunity to pursue post-secondary education;
2. restructuring student financial aid programmes to focus upon the needs of lower income and minority students;
3. demanding transparency, accountability, and commitment to public purpose in the operation of our universities;
4. adopting a culture of continuous innovation and quality improvement in higher education;
5. greatly increasing investment in key strategic areas such as science, engineering, medicine, and other knowledge-intensive professions essential to global competitiveness; and
6. ensuring that all citizens have access to high quality educational, learning, and training opportunities throughout their lives through a national strategy to provide lifelong learning opportunities at the post-secondary level.

Handout A 4.2-1 **Main recommendations of Spellings Commission**

Recommendations NOT included

Actions have been launched by government and the higher education community at the federal and state levels to implement several of these recommendations over the next few years (SHEEO, 2005). Yet, because of the cacophony of criticism and speculation following the

release of the Commission's report, it is also important to note here what were NOT included as recommendations: no standardised testing, no tuition price fixing, no national (federal) accreditation process, and no federalisation of American higher education, which constitutionally remains the responsibility of the states and the private sector.

4.2 A Darwinian ecosystem

"Winner takes all"

While the competition within the higher education marketplace of diverse institutions can drive quality, if not always efficiency, there is an important downside. The highly competitive nature of higher education in America, where universities compete for the best faculty, the best students, resources from public and private sources, athletic supremacy, and reputation, has created an environment that demands achievement. However, it has also created an intensely Darwinian, winner-takes-all ecosystem in which the strongest and wealthiest institutions have become predators, raiding the best faculty and students of the less generously supported and more constrained public universities, and manipulating federal research and financial policies to sustain a system in which the rich get richer and the poor get devoured (Duderstadt, 2000).

Challenge for public research universities

This ruthless and frequently predatory competition poses a particularly serious challenge to America's public research universities. As noted earlier, ageing populations are not likely to give higher education a priority in terms of state tax dollars for perhaps a generation or longer. Hence even as states are depending more on their public universities to expand access to underserved communities, to achieve world-class performance in research and graduate studies key to regional economic competitiveness, state appropriations are declining while demands for higher efficiency and accountability are intensifying.

Serious competitive imbalance

In sharp contrast, due both to booming financial markets and favourable federal financial aid and tax policies, many private universities have managed to build endowments so large (at least on a per student basis) that they have become independent of the education marketplace (e.g., student tuition, R&D grants, even private support). This creates a serious competitive imbalance in the marketplace for the best faculty, students, and perhaps resources, since the wealth gap between the rich privates and flagship publics is growing ever larger.

Political constraints

This is aggravated by the political constraints on public universities that not only limit their flexibility and agility, but also hinder their capacity to compete (e.g., constraints on tuition, affirmative action, technology transfer, and globalisation). The plight of the public research university in America is not only a serious challenge to the states but as well as to the federal government, since these institutions represent the backbone of advanced education and research, producing

most of the scientists, engineers, doctors, lawyers, and other knowledge professionals, conducting most of the research, and performing most of the public service sought by states. It would be a national disaster if America's public research universities were to deteriorate to the point in which research and advanced education of world-class quality could only occur in the 20 to 30 wealthiest private universities.

4.3 Governance

Decentralised and diverse structures

Higher education in the United States is clearly going through a period of critical self-evaluation. There is increasing government and stakeholder pressure for demanding better governance and accountability of higher education, particularly in view of the imperatives of the global knowledge economy. Traditionally, the governance of higher education in America has been decentralised to the states at the system level and external governing boards of lay citizens at the institution level. The great diversity of university governance – state government, coordinating boards, boards of trustees, faculty senates – suggests that the most appropriate governance structure should involve a unique consideration of history and constraints for each institution.

Expanded role and mission not matched by governance

Yet, while a collegial style of governance among these internal and external constituencies has a long history both in United States and abroad, the extraordinary expansion of the roles and mission of the university over the past century has resulted in a contemporary institution with only the faintest resemblance to those in which shared governance first evolved. Despite dramatic changes in the nature of scholarship, pedagogy, and service to society, the university today is organised, managed, and governed in a manner little different from the far simpler colleges of the early twentieth century (AGB, 1996, 2006).

Influence at federal level

In the name of greater accountability, the Bush administration has recently attempted to exert more influence at the federal level. Some of this has been stimulated by the work of the Spellings Commission, demanding greater accountability for access, costs, quality, and measuring learning outcomes using the mechanism of accreditation, which in the past has served to qualify American institutions for access to federal student financial aid programmes but not to assess quality. Thus far, higher education has effectively lobbied Congress to prevent this from happening. But, of course, the federal government has other tools such as student financial programmes, research support, and tax policy!

Influence at state level

There are similar calls for greater control of higher education by state governments, driven in part by public concern about the rising costs of public higher education (SHEEO, 2005). Governors and state legislatures are taking a more active role in proposing the agendas for their public colleges and universities, through state-wide coordinating bodies and appointments to university governing boards. More broadly,

there are also calls to consider a major restructuring of governance at the institutional level, recognizing the limited ability of lay boards to understand the growing complexity of the university sufficiently to meet their fiduciary and policy responsibilities.

Weakened faculty governance

Ironically, this top-down pressure from the federal government, the states, and governing boards on the university is occurring at a time when faculty governance is relatively weak because of high mobility in the faculty marketplace that tends to erode loyalty to, knowledge about, and interest in the affairs of their current university way-station.

5. Some final caveats

Different US and European approaches

While most universities are embracing – or at least coping with – the ongoing challenges of massification, academic competition, and limited public resources, local politics, culture, and history shape their particular approach. While the United States continues to rely on a highly decentralised market-driven approach, consistent with the constitutional role that the states play in higher education and the autonomy of private institutions, Europe has chosen the more strategic approach of the Bologna process (and related programmes and initiatives such as Erasmus, Socrates, and the European Research Area) to enhance cooperation and competition among institutions, stimulate greater mobility of students and faculty, and allow the marketplace to drive greater diversification by focusing sufficient resources on a subset of institutions to achieve world-class quality (Glion, 2008).

Increased government and stakeholder pressure

In both America and Europe there is increasing government and stakeholder pressure for capable governance, leadership, and accountability of higher education, particularly in view of the expansion of participation and the increasing importance of education to prospering in the global knowledge economy. Paradoxically, in some states (and nations) even as relative government support has declined, the effort to regulate universities and hold them accountable has increased. Although some of this is explained by the sub-optimal activities of a relatively small number of institutions, it is perhaps also evidence of governments attempting to retain control over the sector through regulation even as their financial control waned. Yet, such excessive regulation can be counter-productive in a global economy that demands agility and innovation.

Some government policies emphasised

An instructive example in this area is the effort to emphasise government policies in many nations related to the knowledge and innovation economy by focusing almost entirely on the trinity of degree production (massification), research reputation (league tables), and tax relief, to the exclusion of the broader roles of the university. In the

United States such focused efforts by federal or state governments to utilise higher education to address particular near term priorities (e.g., economic competitiveness, national defense, public health, the needs of underserved minority communities, etc.) are less influential.

Moderating influences

While the cacophony of demands from the highly diverse stakeholders attempting to influence American higher education (students, politicians, media, business, patients, sports fans…) can be a headache for university leaders and governing boards, it does have a moderating effect on dominance by any particular constituency or agenda because of the diversity of funding sources. Furthermore, the intensely competitive higher education marketplace in the U.S. in which faculty, students, and resources move easily from one institution to another, has a self-correcting effect. If some institutions lose their way and become too focused on an agenda far removed from their core academic competence, they will quickly lose faculty, students, and eventually reputation.

Stronger government role in Europe

This phenomenon is more serious in Europe because of the strong influence of government (support and regulation) on higher education. The cultural constraints on a freely operating market for faculty and student talent in Europe, coupled with the much stronger role that governments play in both financing and governing higher education, put European universities at somewhat greater risk in the face of such present day imperatives as the innovation economy.

Protecting key values, missions and profiles

So what are governments, governing boards, and university leaders to do, as their academic institutions are buffeted by powerful forces of change and in the face of unpredictable futures? Here it is important always to begin with the basics, by considering carefully those key institutional values, missions, and profiles that should be protected and preserved during a period of transformation. For example, how would an institution prioritise among roles such as educating the young (e.g., bachelor education), preserving and transmitting culture (e.g., libraries, visual and performing arts), basic research and scholarship (e.g., graduate and professional education), and serving as a responsible critic of society? Similarly, what are the most important values to protect? Clearly academic freedom, an openness to new ideas, a commitment to rigorous study, and an aspiration for the achievement of excellence would be on the list for most institutions. But what about values and practices such as lay governing boards, shared governance, and tenure–all long-standing characteristics of American higher education? Should these be preserved? At what expense? (Duderstadt, 2007)

Definin objectives institutional

Of course, all institutions aspire to excellence, but just how should they define their quality objectives? For example, there is an increasing sense that while the tendency of many elite institutions in American higher education to compete aggressively for ever more resources to focus on a fixed number of students, faculty members, and academic programmes in an effort to enhance their reputation (e.g., league table rankings), such efforts fail to serve the broader national need to extend educational opportunities and research capacity. Rather, the premium should be on the development of unique missions for each college and university that reflect not only their tradition and unique character, but also address the challenges and opportunities presented by a rapidly changing world.

References

[1] Augustine, Norman (chair) (2005): *Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future*, in National Academies Committee on Prospering in the Global Economy of the 21st Century. National Academies Press, Washington, D.C.

[2] Association of Governing Boards (2006): *The Leadership Imperative*, in The Report of the AGB Task Force on the State of the Presidency in American Higher Education. Association of Governing Boards of Universities and Colleges, Washington, D.C.

[3] Association of Governing Boards (1996): *Renewing the Academic Presidency: Stronger Leadership for Tougher Times*, in Report of the Commission on the Academic Presidency. Association of Governing Boards of Universities and Colleges, Washington, D.C.

[4] Bok, Derek (2006): *Our Underachieving Colleges*, Princeton University Press, Princeton, NJ.

[5] Callan, Patrick; Immerwahr, John (2008): *What Colleges Must Do to Keep the Public's Good Will*, in Chronicle of Higher Education, January 11, 2008.

[6] Duderstadt, James J. (2000): *A University for the 21st Century*, University of Michigan Press, Ann Arbor, MI.

[7] Duderstadt, James J. (2007): *The View From the Helm: Leading the American University During an Era of Change*, University of Michigan Press, Ann Arbor, MI.

[8] The Economist (2005): *The Brains Business: A Survey of Higher Education*, in The Economist, September 10, 2005.

[9] Friedman, Thomas (2005): *The World Is Flat: A Brief History of the 21st Century*, Farrar, Strauss, and Giroux, New York.

[10] Glion Colloquium VI (2008): *The Globalization of Higher Education*, Economica, Paris. See also http://www.glion.org/

[11] Miller, Charles (chair) (2006): *A Test of Leadership: Charting the Future of U.S. Higher Education*, in National Commission on the Future of Higher Education

in America ("The Spellings Commission"), U.S. Department of Education, Washington D.C.

[12] National Information Center (2006): *Population Projects-Percent Change from 2000 to 2005*. http://www.higheredinfo.org/dbrowser/index.php?level=nation&mode=data&state=0&submeasure=107

[13] NCSL (2006): *Transforming Higher Education: National Imperative and State Responsibility.* National Conference of State Legislatures: Washington, D.C.

[14] Newman, Frank; Couturier, Lara; Scurry, Jamie (2004): *The Future of Higher Education: Rhetoric, Reality, and the Risks of Market.* Jossey-Bass Publishers, San Francisco, CA.

[15] OECD (2008): Education at a Glance 2007: *OECD Indicators, Organisation for Economic Co-operation and Development*, Paris, France.

[16] SHEEO (2005): *Accountability for Better Results: A National Imperative for Higher Education*, in National Commission on Accountability in Higher Education. State Higher Education Executive Officers, Washington, D.C.

[17] Zemsky, Robert; Massey, William; Wegner, Gregory (2005): *Remaking the American University: Market-Smart and Mission Centered*, Rutgers University Press, New York.

Biography:

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