

(Comment: the modifications proposed by Luc WEBER are in blue and bold)

(Comment: modifications proposed by Frank Rhodes are in green and bold)

CONCLUSION

Challenges and Possible Strategies for Research Universities in Europe and the United States

James J. Duderstadt and Luc E. Weber¹

The Glion IV Colloquium brought together university leaders from Europe and the United States to share their perspectives concerning the future of the research university. Although originally proposed as a workshop to “reinvent the university”, there was general agreement that, as social institutions, universities have been quite remarkable in both their resilience and their capacity to adapt to changing social conditions in the past, and there was every reason to expect that they will continue to do so in the future. Hence the discussion focused more on the reaffirmation of those traditional values and roles that have made the university such an enduring force in western **culture** and understanding the challenges, opportunities, and responsibilities that would demand further change in the years ahead. While recognizing the unique geopolitical circumstances that would shape the strategies of particular institutions, there were several common themes that emerged from the conversations as well as a number of suggested approaches to developing institutional strategies and action agendas.

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THREATS AND CHALLENGES, OPPORTUNITIES AND RESPONSIBILITIES

As social institutions, universities are subject to the same powerful economic, social, and technological forces driving change in the rest of our world. The emergence of a global, knowledge-driven economy has intensified the need for nations to provide advanced educational opportunities for a substantial fraction of their workforce, thereby adding the burdens of massification to a public funding base already stressed by the rapidly escalating costs of quality education and scholarship. The learning characteristics of the digital generation of young students, coupled with the higher education needs of adults forced to adapt to the ever-changing demands of the high performance workplace, are compelling universities to explore new learning paradigms such as inquiry-based, interactive learning and lifelong educational opportunities.

Demographic change is also driving a major transformation in the need for and character of higher education. The increasing mobility of populations is changing radically the ethnic composition of regions (e.g., the growth of Latina and Asian populations in the southwestern United States or the immigration of **east and central Europeans, as well as** Africans into the European workforce) as well as creating new minority concentrations that are all too frequently underserved with educational opportunities. Despite the growing needs for advanced education, an aging population in both the United States and Europe seems increasingly reluctant to spend tax funds on the necessary investment in higher education in preference **to** other priorities such as health care, personal security, and tax relief.

The exponential evolution of information and communications technologies has become another disruptive force, driving rapid, profound, and unpredictable change in social institutions such as universities. Digital technology is transforming all aspects of the university: its activities (teaching, research, service), its organization (academic structure, faculty culture, financing, and management), and its environment. Although most Glion IV participants believe the research university will continue to exist in much its present form in the near term, meeting the challenge of emerging competitors in the marketplace will likely demand significant changes in how we teach, how we conduct research, and how our institutions are financed. Over the longer term, Moore's Law promises a more radical transformation of the university.

Intellectual change is also an important force, as information-rich disciplines such as biomedical sciences and earth systems science compete with reductionist disciplines such as physics and mathematics for priority and support. Both the complexity of contemporary research problems and the expense of experimental facilities are driving scholarship increasingly toward interdisciplinary teams of investigators supported by international scientific facilities (e.g., the LHC at CERN and the South Pole station).

These social, technological, and intellectual forces are creating powerful market forces, both challenging the traditional models of the university and stimulating the appearance of new competitors such as for-profit and cyberspace universities. The emergence of global markets is creating more transparency and increasing competition among both institutions and national systems. Today universities are challenged to better position themselves in this marketplace by becoming more visible and competitive, focusing on their core competencies while outsourcing other activities through alliances, similar to the strategies adopted in the business sector. This profiling of institutions raises a number of strategic issues for university leaders, such as the type of research (basic or applied), the focus of research (physical sciences, life sciences, social sciences), the relative priority given research relative to teaching, the priorities among various levels of education (bachelor, doctoral, professional), the pedagogical philosophy (teaching pushed or learning pulled), the character of the curriculum (traditional liberal arts or career-focused), and the method of delivery (campus-based or distance learning).

Research universities face a particular challenge in acquiring the resources necessary for quality teaching and scholarship. Public budgets are increasingly strained by priorities such as the health care requirements of an aging population, the burden of increasingly unsustainable social services, the need to replace aging transportation and urban infrastructure, and the new security demands of an increasingly dangerous world. Many citizens are becoming increasingly individualistic, stressing the priorities of private needs of a market-driven economy rather than addressing the public needs of the commons. As a consequence, the resources available to most universities simply cannot keep pace with the rising costs of excellence in higher education or the rising expectations of the societies they serve.

Perhaps even more fundamentally, there has been an erosion in the sense of trust that has existed among public authorities, the general population, and the university. Rather than viewing higher education as an investment one generation makes to benefit the next, governments are increasingly holding universities accountable for addressing utilitarian objectives such as workforce skills or economic development. The climate of

increased competition in the private sector and induced by tight public budgets, the lack of transparency of decisions made by universities, their great difficulty in communication with the public, all undermine a sense of societal trust of the university, thereby eroding the autonomy so necessary to adapt to change and perform its fundamental roles by challenging existing premises and creating knowledge for the future.

SUGGESTIONS, SCENARIOS, AND STRATEGIES

History has shown that procrastination and inaction are dangerous approaches to an era of change. Burying one's **head** in the sand and hoping threats will disappear can lead to disaster. How, then, should the research university respond? How should it plan for the future? What actions should it take? The Glion IV Colloquium established that while there is considerable agreement about the forces driving change in higher education both in the United States and Europe, there are as many different approaches to developing strategies and actions as there are participants in the conversation.

Yet some strategies seem universally compelling. For example, the climate of increased competition will demand that universities specialize more in what they can do best, striving to be excellence in more specific niches. The days of the truly comprehensive research university, the effort to be all things to all people, may be coming to an end. Yet the character of research universities demands they maintain a certain breadth in basic and applied research as well as in postgraduate education. Research universities face the threat of losing students to those institutions that focus more on serving the short term requirements of the labour market or losing research funding to specialized institutes that focus on a particular area.

Beginning with the Basics: Values, Roles, and Missions

It is during a time of challenge and transformation that it is most essential for universities to reconsider and reaffirm those key values, roles, and missions that should be protected and preserved even while other characteristics may change. For example, how should research universities set priorities among their various roles such as education of the young, the preservation of culture, scholarship and basic research, serving as a social critic, and applying knowledge to serve society? Which values and principles of the university should be reconsidered? While most would regard values such as academic freedom, openness, critical thinking, and a commitment to excellence as

invariants, what about other practices such as the guild character of faculty governance or the unassailable security provided by academic tenure?

In particular, universities should reconsider their most important roles of producing and transmitting knowledge, that is research and teaching, in terms of service to society. For example, what is the right balance between curiosity-driven research, driven by the interest of the faculty, and more applied research addressing key social priorities. To be sure, there is ample evidence to suggest that much of curiosity-driven research builds the knowledge base that later leads to practical applications. Yet in the short term, it is sometimes difficult to make the case for basic research in appealing for public support. Similarly, the value of the liberal education universities provide in the academic disciplines is sometimes at odds with the career-oriented educations sought by students, parents, and governments. Public demands for accountability are increasing, tending to push toward applied research and workforce education. Yet the unique value of the research university arises from a balance between basic and applied research just as it does between a liberal education and the professional training.

Here the capacity of research universities to position themselves in the evolving global market for students, faculty, resources, and prestige by focusing on where they can achieve true excellence becomes important. The missions of the top research universities such as Oxford, Cambridge, the Federal Institutes of Technology in Zurich and Lausanne, the Catholic Universities of Leuven **and Louvain-la-Neuve**, the Universities of Geneva, Leiden, Twente or the Karoliniska Institute in Europe or Harvard, MIT, Stanford, and the Universities of California, Michigan, and Wisconsin in the United States tend to be determined primarily by tradition, grass-roots faculty interests, or the serendipity of opportunity rather than any general institution-wide strategy. Their success can be attributed to a comparatively favourable environment regarding funding, relative autonomy from government intrusion, and the ability to compete successfully for the best students and faculty. These factors allowed them to compete effectively for research funding, thereby reinforcing their established excellence and benefiting from a “virtuous cycle”.

The challenging question today is whether such a *laissez-faire* approach at the level of leadership of the institution will be sufficient in the years again to sustain quality in the face of the more intense competition arising from other institutions that seek to better profile and position themselves to respond to the changing marketplace. Clearly the rising costs of excellence in teaching and scholarship will pose formidable challenges to most research universities. It was the sense of the Glion IV participants that most

research universities will be compelled to think and act more strategically, to rigorously analyze their strengths and weaknesses, as well as the threats and opportunities before them.

For example, in Europe, since the Bologna process will result in a clearer separation between general studies and more advanced studies at the postgraduate level, research universities should consider whether they should concentrate more of their effort on research-led teaching at the masters and Ph.D. level, reducing their activities at the bachelor degree level to those necessary to meet regional needs. Such a strategy would result in a decrease in total enrolments, but it would also free faculty resources to increase the number of specialized or interdisciplinary programs and improve the quality of teaching. Other universities might choose instead to emphasize more undergraduate or professional education.

Research universities should also assess whether they can achieve a critical mass of intellectual resources in the disciplines they offer, since this is both a necessary condition for quality and for an efficient use of resources. If this is not the case in certain disciplines, they should consider other alternatives such as discontinuing academic programs, developing alliances with other institutions to achieve the necessary critical mass in other areas (as is happening in the French speaking part of Switzerland), merging with or perhaps other institutions. In other words, the competitive forces on higher education may drive the same phenomenon of restructuring we have seen in other economic sectors such as banking and transportation, complete with mergers and acquisitions and the appearance of new competitors and possibly even the demise of some established institutions.

Institutional vs. System Strategies

Here it is important to distinguish between the challenges and options available to a single institution and those facing a higher education system at the regional, national (state), or continental (E.U. or U.S.) level. As an increasingly competitive marketplace demands mission profiling and positioning at the institution level, governments should demand greater diversification and hierarchy of their system of universities. Clearly all universities should not aspire to become world-class research universities, although many will continue to do so. A robust national system will require regional institutions providing undergraduate and professional education to regional workforces, an array of specialized institutions addressing particular needs (teacher preparation, workforce training, lifelong learning), in addition to research universities with competitive capabilities in research and graduate education. While such hierarchies may conflict with

the egalitarian views of many societies (not to mention the political ambitions of local government officials), the reality is that both the available resource base and regional/nation needs can only justify a limited number of research universities.

In the United States, different regions (states) rely on different mechanisms to encourage and enforce differentiation. In some, such as California, North Carolina, and Ohio, there are well-defined "master plans" that determine the missions of various institutions. Perhaps the best known is the California Master Plan, which dictates that the top 12.5% of second school graduates will have the opportunity to attend the University of California with its nine (soon to be 10) research university campuses, while the next third attend the campuses of the California State University system, which has thus far been discouraged from launching Ph.D. programs or major research efforts. The rest of the population is served by local two-year community colleges, with the opportunity to transfer into four-year institutions. Although now challenged by changing demographics and economic base, the California system has been remarkable over the past half-century in building perhaps the world's greatest public research university while providing educational opportunities on a mass scale for California citizens.

In sharp contrast are those regions, **such as Michigan and Texas**, that rely almost entirely on the marketplace to drive differentiation. Here individual institutions are coordinated only very loosely by state-wide policies or governance and instead encouraged to compete vigorously for student, faculty, resources, and political favour. Institutional ambitions to expand missions in inappropriate directions are constrained by the marketplace and the availability of additional resources. Interestingly enough, this entirely market-driven approach has proven to be just as capable as the centralized planning models in other states, and perhaps even more cost effective.

One final characteristic of the United States system is important to note: the strong role played by private universities, those with limited public support and independent of government authority. In part because of historical factors, the United States has been fortunate in the growth of a large number of elite private research universities, including several that rank among the finest universities in the world (e.g., Harvard, Yale, Princeton, Stanford, MIT, Caltech). Although these receive only modest direct support from public tax dollars (e.g., through research grants, student financial aid, or subsidy of professional programs such as medical education), they do benefit enormously from generous tax policies that encourage strong private giving and the growth of assets such as endowments. These private universities not only provide strong and usually beneficial

competition with public institutions, but they also provide a resilience to the American higher education unmatched in other nations.

Clearly an important part of the strategy in building competitive research university systems in Europe will involve some consideration of stimulating similar private, rather government-independent, research universities. There is a sense that at some level privatization of higher education in Europe is already occurring, but current cultural resistance to student fees and existing tax policies keep this at a low level. Indeed, one of our participants suggested that perhaps the best way to drive rapid change in European higher education would be to encourage several of the leading American private universities (e.g., Harvard, Stanford, or MIT) to open satellite campuses in Europe, charging the same fees but delivering the same high quality and reputation of academic programs as they offer in the United States!

While the successful implementation of the Bologna process and the **rightly envisaged creation of an** European Research Council will lead to greater market mobility and competitiveness within Europe, there were concerns expressed by Glion IV participants that these could also create forces driving homogenization of institutions. Some even suspected the Bologna process might be a Trojan horse for the larger agenda of European political integration. To many, the concept of institutional “diversity” is a euphemism for “hierarchy” that still represents a taboo for many faculty members and political leaders. Yet there was a sense that in an environment characterized by limited public resources, increasing demands for accountability in addressing social priorities (e.g., massification, workforce training), and intense market competition, research universities could **survive only** in highly diverse and hierarchical university systems. While it may be difficult politically to achieve a planned differentiation of university missions, market forces will continue to demand institutional diversity.

The Changing Nature of Education and Scholarship

The changes in the nature of scholarship, from disciplinary to multi/inter-trans/cross-disciplinary, from specialization and reductionism to information-rich sciences and complexity, from basic to applied scholarship, will likely reshape the intellectual architecture of the **university** as well as its organizational structure. Perhaps it is time that research universities reconsider the key themes of the Enlightenment in which social progress is related to new knowledge, yet within a new paradigm such as a 21st Century version of the land-grant acts that created the public research universities in America. Of particular note here is the increasingly rapid and nonlinear nature of the transfer of knowledge from the library and laboratory into practical application. Although the

academic disciplines are likely to continue to influence key institutional characteristics such as faculty recruitment and academic program quality, the changing nature of scholarship will likely demand a more intimate integration of basic research with professional programs (e.g., molecular biology in the clinical sciences or social sciences in business administration). This will pose a particular challenge to universities without **appreciable(?)** activity in those professional disciplines that connect directly with society.

Similarly the changing nature of education demands a reconsideration of the teaching mission of the research university. Young media-savvy students increasingly demand interactive, collaborative learning experiences and will take more control of their learning environment. Adults seeking lifelong learning opportunities will approach universities as consumers of educational services rather than students.

The Glion IV participants learned of many important experiments both in Europe and American involving both student-**centered** learning and research-led curricula. Yet, to date, the high cost of such paradigm shifts left traditional classroom teaching (e.g., lectures) as the most cost-effective method, particularly in the context of massification. Furthermore, the faculty reward system and the importance of grantsmanship for institutional finances are likely to continue to maintain the balance in favour of research over teaching, at least for faculty members heavily involved in research and graduate education. The likely consequence will be an increasing separation of roles in which faculty increasingly focus on the design of learning resources and objectives, while others (part-time lecturers, adjuncts, practitioners, or student peers) assume primary responsibility for delivery of learning experiences to students.

Students and Faculty

Paradoxically, the most important strategic action that research universities should take is one that has been the key to success thus far: a determined effort to seek, the very best faculty and students. Of course, the key to the reputation of a research university is the quality of its faculty, since this determines not simply the quality of academic programs but the ability to attract outstanding undergraduate and graduate students, gather external support—particularly research grants, and perform cutting edge research. The effort to attract, develop, and retain outstanding faculty requires the capacity to offer competitive salaries—a particular challenge to public universities with limited resources or overly constrained by government compensation policies. But, just as important, it demands the capacity to build high quality research environments (laboratory facilities, equipment, research assistants, graduate students, research

policies). Furthermore, it requires rigorous recruitment, promotion, and retirement policies.

Similarly, the quality of the student body, particularly at the graduate and postdoctoral level, is key both to the quality of research programs and the ability to attract the best faculty. Those institutions constrained by public policy, practice, or culture in adopting selective admissions policies are at some risk, since mediocre students can pull down the general level of academic programs at both the undergraduate and graduate level.

Here it is important to recognize that the marketplace for the best faculty and students has become an increasingly global one, breaking loose from the constraints of national borders or institutional policies. The long-standing mobility of faculty and students in the United States has created an intensely competitive marketplace in which universities compete aggressively for the best people, and faculty loyalties are less to a particular institution than to their discipline or research group. In effect, the U.S. marketplace for talent has become a Darwinian ecosystem, in which the wealthy elite universities act as predators feeding on the faculties of their less well-endowed prey, luring away their top faculty. This has been particularly true of those elite private universities such as Harvard that tend to build their senior faculty by **recruiting** established scholars from other institutions that have invested heavily in their development from the junior ranks.

Although this competition is currently most intense in the United States, there has been a long-standing trend for American universities to also attract many of the best graduate students and faculty from Europe and Asia. From this perspective, the Bologna process, coupled with the effort to build a European-wide competitive grants system through the European Research Council, might be interpreted as an effort to respond to the reality of this intensely competitive international marketplace for academic talent by building a European market comparable in quality **and bigger in size than** that in America. Yet, beyond investment and policies, a key difference remains the vast difference in the mobility of students and faculty in Europe, where both local policies and cultures tend to bind faculty to particular institutions, and the United States, where a truly free market for the best students and faculty exists, with sometimes ruthless efficiency.

Resources

The rising costs of excellence and the increasing competitiveness of the marketplace for the academic talent pose formidable challenges to research universities in acquiring the necessary financial resources. It has become increasingly clear that few governments will have the capacity or the will, in the face of other compelling social priorities, to provide

the funding necessary to build and sustain world-class research universities. Hence a key element of institutional strategies must be to build more diversified and robust funding portfolios. Here we find a very considerable difference between American and European practice and strategies.

In the United States, there has not only been a long-standing mix of public universities, supported by state tax dollars, and private institutions supported primarily by student fees (tuition) and private philanthropy, but as well a several-decade long trend for both public and private research universities to build resource portfolios with a balance of public tax support (direct appropriations, research grants, student financial aid), student fees (where many public universities now charge tuition comparable to private universities, at least for students from other states), and private philanthropy (both through direct gifts and the income earned on the endowment funds accumulated through earlier giving). In fact, there is an increasing similarity in the mix of financial resources characterizing public and private research universities, with direct government support now comprising only about 10% to 20% of the support of the leading public research universities. This not only expands greatly the resource base available to American research universities, but it gives them a financial resilience against the inevitable ebb and flow of various sources of public and private support. It has also allowed a real rate of growth of 4% to 6% in revenues, providing the capacity to innovate and adapt to a changing environment.

In sharp contrast, most European universities continue to rely heavily on government support, with relatively modest contributions from student fees and philanthropy. In part this is due to cultural traditions such as the resistance to student fees. But it is also due to the fact that the capacity of universities to access alternative financial resources such as student fees or private gifts are strongly dependent upon government decisions and policies. The challenge for European universities is to develop the capacity to augment government support with additional funds raised essentially on a contractual basis. In a sense, universities can sell their teaching (student fees), research services (research contracts and intellectual property, services (health care, economic development), and, in a sense, reputation (private giving from loyal donors). Beyond this, they must develop the capacity to accumulate, manage, and benefit from the income on assets (endowment). But in pursuing such strategies, European research universities should be aware that the effort to broaden resource portfolios will be quite difficult in the early stages and could pose risks to traditional funding sources such as government support.

The introduction or increase of student fees is probably the most promising approach to increasing revenues. However throughout Europe there is a strong resistance against fees, with a few exceptions in Spain and England. This may be due in part to a confusion between the perspectives of higher education as a “public responsibility” and as a “public good”. (Partially rewritten by lw:) Higher education is certainly not, at least in an economic sense, a public **good** implying that it should be provided free, even if it produces external benefits for those not participating directly as students or clients of a university. However, **Europeans largely agree that higher education is a public responsibility which means that it must be provided or at least regulated by the State.**

The consequences of this confusion are far reaching, particularly with respect to the resistance of raising fees such that students contribute more directly to the funding of their studies. First, the payment of fees by students actually yields a better allocation of resources (on both the supply and demand sides of higher education). Second, free access to higher education produces a regressive impact on the income distribution of a country. **(comment lw; delete the following at it is developed in chapter 13) because, despite all the efforts made, the proportion of low-income students in higher education—and particularly research universities—is still rather small. The fact that this low-income group pays taxes, however modest, makes it clear that they are subsidizing the studies of students from higher income families.)** These are two strong arguments in favour of raising student fees, provided that sufficient need-based financial aid is provided to prevent fees from becoming a barrier to low-income students, and provided as well that governments do not simply offset the additional income from rising student fees by reducing their public funding of higher education.

Contract research represents a second important revenue possibility. European universities have already become quite active in contract research, and the key here is to develop even more effective strategies both at the institutional level and at the national or European Union level to build competitive research grants programs. The increasing commercial value of the intellectual property resulting from research (and perhaps eventually instructional) efforts also has considerable revenue potential, albeit accompanied by some risk to the research environment if universities become overly protective and bureaucratic.

Philanthropy could also be an important source of additional funds, but only if governments develop and implement tax policies that provide strong incentives for private giving, such as allowing individuals and corporations to exclude from **taxes the**

amounts given to universities or the income universities generate on accumulated assets (endowment). Although some European institutions (Oxford and Cambridge) have launched major private fund-raising campaigns in the United States where such tax policies have existed for decades, philanthropy will only become an important revenue source if such tax policies are adopted directly by the host nation.

The services provided by research universities can also provide significant revenue streams. Those universities with medical schools can tap the income generated by the clinical activities of their faculty and students. Executive management education provided to corporate executives by business schools has also proven to be a lucrative income source for American universities. Many professional disciplines such as engineering, business administration, and health sciences can build profitable consulting services. Again, however, tax policies are key to the effectiveness of such efforts.

One of the major differences between American and European universities involves endowments, the accumulation, investment, and benefit from the assets acquired through private gifts or services (research, clinical income). This has been key to the vitality of private higher education in the United States, with several of the elite private universities accumulating many billions of dollars of endowment assets. But even public universities have moved aggressively to build endowments, with some accumulating assets comparable to those of private universities (e.g., U. Texas at \$10 B or U. Michigan at \$4 B). Income from these endowments not only **provides** the additional funds necessary for excellence and innovation, but in many institutions **provides** a substantial portion of the base support for academic programs. (Harvard's \$18 B endowment yields an annual payout of roughly \$700 million a year.)

Yet once again it is clear that without favourable tax policies, such strategies are clearly impractical. There are currently no tax incentives in Europe (or most of the rest of the world) for individuals to make donations to universities or for corporations to fund research projects, since these are not deductible from their income. Although universities can lobby their national governments, in particular their ministries of finance, to change the tax laws, they will face major challenges. After all, most European universities are already seen as a tax burden, and hence ministers of finance will not be keen to accept new loopholes in the tax laws. Beyond this, there is **in European universities** practically no culture of alumni loyalty that could be tapped for private gifts.

Leadership, Management, and Governance

Better profiling or positioning an institution to respond to market forces can only occur if universities can initiate strategic planning and, more importantly, make and implement decisions, which usually implies making structural changes that affect people. Yet the majority of European universities and still many in the United States are characterized by a cumbersome and extremely slow decision process. Furthermore many are **limited** by burdensome governance constraints, whether due to intrusive relationship with governments (both U.S. and E.U.), the political character of their governing boards (U.S.), the guild culture in their faculty governance (E.U.), or the weak authority given university leaders (both U.S. and E.U.).

Yet, addressing this challenge of leadership is complex. Simply providing greater authority to the **rector** or president is insufficient because in universities there is considerable institutional knowledge among the faculty. There is a very serious trade-off between the creation of a streamlined administrative hierarchy and relying on a more democratic system of shared governance, which is necessarily cumbersome, but allows for the participation of all those who can make a contribution to the improvement of the institution. Hence leadership strategies should involve three often conflicting objectives: strong leadership, light decision and control structures, and broad consultation of all stakeholders.

As universities become more complex, good management becomes more important. Since over 80% of the expenditures of universities involve human resources, the effective management of people and their activities becomes paramount. Yet the long tradition of selecting academic leaders from among the faculty poses a challenge, since the best scholars and teachers **may** not be the most effective leaders and managers. Clearly additional training in management methods, including the use of modern management tools in supporting decision making, has become critical. Furthermore, the presence of talented and experienced administrative staff becomes ever more critical for the efficient and effective operation of the contemporary research university.

In Europe, there is increasing recognition of the need to reconsider the mechanism of control and influence over the research university by government, since this tends to limit or threaten the autonomy of institutions at a time when more flexibility is necessary to adapt to a rapidly changing world. One solution being explored by both public authorities and universities is to create an administrative board with **real power** that sits between the state and the institution. This would allow for a clear separation between the bodies that propose a solution and those that make and control it (**FR: unclear**). The leader of the institution, a rector or president, is either in a position to make a decision,

which must be controlled (**confirmed?**) by another body, or in a position to propose a decision that should be made by the board and controlled by the state (**FR: unclear**). The delicate question here is whether members of the institution, e.g., the faculty, can be members of the board or if the latter should be composed exclusively of external members. Obviously there are good arguments for either solution, but a pure system of decision and control argues for a board **composed** only of external members.

Beyond leadership, there are important management issues that need to be addressed. In the face of limited resources and increasing public accountability, universities need to be more aggressive in adopting the cost containment and quality assurance practices proven so effective in the business sector. This generally demands the decentralization of authority over both human and financial resources, along with an appropriate system of accountability. (Comment lw: I have eliminated the reference to the EUA)A continuous system of quality audits of academic departments that focuses more on outputs, e.g., the quality of student learning or research productivity, than inputs, such as student selectivity or faculty reputation, **has become a must**. The methodology **is** organized around the drafting of self-evaluation reports, review committees comprised of external peers, and the consideration of these reports by the university leadership (president, deans, government bodies). Experience demonstrates that a serious effort at quality evaluation can frequently reveal shortcomings, making transparent what was often suspected but hidden. In other words, good universities can improve still further with such a quality culture. Yet here faculty opposition can be strong, since many faculty members **will resist** efforts to apply such quality **controls**, arguing that the academic community is simply too different from the corporate setting.

CONCLUDING REMARKS

There seems general agreement among the participants in the Glion IV colloquium that the research university faces a period of significant challenge and change, driven by an array of powerful economic, social, and **technological** forces. Key in transforming this era from a threat to an opportunity is institutional flexibility (particularly that arising from a more robust and diversified funding model) and institutional autonomy (allowing universities more control over their destinies during a time of change). Strong evidence for this is provided by the great success of private research universities and “privately-financed” public universities in the United States, and this enhanced flexibility and

autonomy should clearly be an objective of European research universities if they are to compete in the global marketplace.

There are currently many contrasts between the characteristics of the research university in Europe and the United States. European institutions function in a highly fragmented marketplace, still controlled by nation-states (although many of their faculties compete globally); most European universities are still almost entirely dependent upon government support, without the benefit of significant student fee income, private giving, or endowments; student and faculty mobility is still highly constrained, at least compared to the United States; private (government-independent) higher education is still modest; institutional leadership is relatively weak (frequently elected by the faculty); and true institutional autonomy is limited.

The most immediate objectives **for** research universities in Europe are:

- Control over tuition policies
- More favourable tax policies (to encourage philanthropy and build endowments)
- More institutional autonomy
- Stronger institutional leadership
- Stronger differentiation and stratification of institution mission (likely determined more by the market forces driven by competitive research grants and faculty and student mobility than government policy)

Perhaps the ongoing Bologna process and the effort to build an EU-wide competitive research grants system by the European Research Council will provide a useful political umbrella under which such issues can be explored both by universities and governments. But here a caution is warranted. The big, bad wolf of the marketplace can be a useful device to elevate the political visibility of the need to change. But crying wolf too often, without taking aggressive internal actions to address the changing demands on the research university, could lead to disaster. Markets are inexorable and global in **extent**. They are likely to dominate higher education—and public policy—for several decades and represent a reality **that must** be addressed in a strategic fashion through aggressive internal decisions and actions as well as external persuasion and influence.

American research universities also face some unique challenges, not the least of which are the attitudes of an aging society (the “baby boomers”) who increasingly seek the gratification of personal **needs** (e.g., health care, security, tax relief, and personal consumption) over social priorities (e.g., investing in schools, reducing poverty, integrating minority populations). The same extraordinary and growing gap between rich

and poor in the United States also appears in the decoupling of the wealthy “medallion” universities from the rest of the higher education enterprise, driving predatory practices in which the rich institutions feed on the poor (raiding their best faculty and students). American universities continue to be relatively insular, with inadequate priority given to developing stronger international character in their instructional and research programs (particularly in the area of **social sciences** and languages). The absence of any true higher education policy at the federal level **has** eroded the public purpose of American higher education, abandoning traditional objectives such as broad student access and academic excellence in favour of responding to the near term rewards of the marketplace (e.g., the shift from need-based to merit-based financial aid programs, the aggressive commercialization of intellectual property) ~~(FR: Probably not.)~~. Here American universities may have much to learn from the deeper historical and cultural ties of their European counterparts.

Yet it is important for research universities in both Europe and America to recognize that the competitive forces driving change in higher education are truly global in extent. The mobility of capital, people, and ideas **leads** to a global, knowledge-driven economy, **which** not only links more tightly the economic welfare and security of nation-states, but immerses their social institutions such as the research university in a global marketplace. ~~immersing their soc~~**and also embraces** social institutions, such as the research university, in global markets ~~(FR: An obscure sentence)~~. While the strategies for addressing the future of **individual** research universities will be determined by unique historical, cultural, and environmental factors, the imperatives for change will be universal.