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ABSTRACT

This essay explores higher education governance and resource allocation and makes a case for a new system of governance that goes beyond the traditional belief that all fields of knowledge are always and everywhere equally valuable and the mystique of department-centered governance. In an opening section the essay argues that the decline in the strength of higher education in the United States is caused by its inability to apportion scarce resources among competing missions and academic programs. Governance, the essay asserts, is paralyzed by a lack of criteria and strategies to apportion resources in order to meet as much of the demand as possible yet still maintain standards. To end the paralysis, institutions of higher education must apply such criteria, but this will require redesigning the governance system to be iterative both bottom up from the departments and top down from the central administration. Criteria for making meaningful choices among its many constituent parts must be determined. Further, only open processes, conspicuously including disagreement and appeal, can produce widely acceptable, stable decisions regarding such criteria. The essay describes how the College of Liberal Arts at the University of Minnesota successfully applied these principles. Other recommendations include developing inter-institutional mechanisms for systematically developing, refining, and extending reforms; focusing on the institutional mission, concentrating resources in areas of comparative advantage; and allocating state funds based on criteria emphasizing comparative advantages of different institutions. (JB)

IMPEDIMENTS AND IMPERATIVES IN REDESIGNING HIGHER EDUCATION

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Ever so often, an observation or question in a conversation can provide the kind of jolt that challenges fundamental assumptions: Recently, we were in Korea and on a visit to the Posco Research Institute (the Korean equivalent of MIT). As we looked out over the courtyard, the president of the Institute commented that his 900 scientists and engineers were successfully competing with their American counterparts for major grants around the world--and training the next generation of Korean scientists and engineers to compete with U.S. institutions. No longer do Korean scientists find U.S. universities so attractive for research that they cannot be lured back home, he said. What happened, he asked, to U.S. research universities that used to be so strong?

This question challenged us to think beyond the all-too-visible problems besetting U.S. higher education and consider why its institutions have seemed so unequal to addressing these problems. In the process, we began to see how some basic assumptions built into the governance of higher education obstruct effective response. The purpose of this essay is to examine those assumptions and make the case for redesigning that governance--particularly those critical aspects for resource allocation.

"DONNISH " CONVICTIONS AND "INTRACTABLE" PROBLEMS

We should now be engaged in a national dialogue on what to do about the problems facing America's higher education sector: the declining quality of undergraduate education; escalating budget reductions; a looming access deficit for millions of potential students that will break an unwritten contract between the government and its citizens; and the relative decline of American science and technology. The nation's colleges and universities are facing unprecedented challenges. Yet, when it comes to action, higher education leaders appear almost paralyzed. Why so?

We believe that the immediate cause is their inability to apportion scarce resources among competing missions and academic programs. Higher education

administrators cannot effectively apportion resources because they have no criteria for judging the relative value of academic fields, missions, institutions, and systems of higher education. This absence of criteria derives from two "donnish" convictions:

- One, all fields of knowledge are equally valuable everywhere and at all times.
- Two, the professionals organized around the structuring principle of a field of knowledge are the only ones equipped to govern themselves, decide what new subfields should be covered, what should be taught, and who should be hired, promoted, or fired. Outsiders, no matter how great their knowledge, skills, accomplishments, etc., lack the shared understanding needed to effectively contribute to such discussions.

These convictions helped form the Department--the basic governance mechanism of the American university in the late nineteenth century. And departments' continued sway might be all well and good if they were truly autonomous, in financial as well as other ways. But, in reality, they must function as parts of a greater whole--one on which they are financially dependent--and comparisons among academic departments and programs are essential for resource allocation and other aspects of governance.

Given that reality, it is interesting to ask why we have reached a point of crisis today. Before World War II, university administrators had no more criteria than they have now for apportioning resources. However, the higher education system was in equilibrium with its environment: the growth of resources matched the slowly growing student enrollment demands. Therefore, choices weren't necessary.

After World War II, institutions could not keep up with skyrocketing enrollments *even with increased resources*. By the late 1950s, it became apparent that mission differentiation was urgently needed to maintain the quality of undergraduate education under the increased enrollment pressure. The historical, simple division of missions between research universities and colleges, on the one side, and teacher training institutions, on the other, was no longer sufficient. The Kerr plan, which divided California postsecondary education into the community college, undergraduate, and research universities, was the fullest expression of the ensuing movement to engage in mission differentiation.

Hindsight suggests that the Kerr plan was doomed by the convictions we described above. The conviction that all fields are equally valuable at any institution inevitably blurred the distinctions among the three systems. "Mission creep," the breakdown of mission distinction, was rushed along by the sharply reduced resources of the 1990s, which shattered the Kerr plan's goal to provide access to thousands of California students.

In an era when demand is *outstripping* available resources, this inability to apportion them has overwhelmed even the logic of mission differentiation. Governance is now paralyzed because there is no basis for developing criteria and strategies to apportion resources in order to meet as much of the demand as possible, yet still maintain minimum standards. To end the paralysis, higher education must have and apply such criteria and strategies, but this will require redesigning the governance system. The essential condition for redesign is shattering the conviction that all fields of knowledge are always and everywhere equally valuable and the mystique of department-centered governance.

HOW PRESENT GOVERNANCE IMPEDES ALLOCATION

Higher education institutions are equipped to distribute budget increases in an incremental manner or to administer modest across-the-board cuts. What happens when across-the-board cuts are no longer enough? This is our present predicament. Demands on higher education are rising: An increasingly heterogeneous student population desires a more diverse curriculum. Today's university is expected not only to support basic research but to play a central role in solving national problems: support American high technology, find a cure for AIDS, develop a new generation of K-12 teachers.

Yet, as these demands have grown, resources have remained fixed or begun to shrink. Many states have reached their fiscal limits. Federal support, already declining in real terms, is constrained by the budget deficit.[1] And with the end of

[1]And fiscal erosion continues. Although the absolute budget cuts in higher education in the early 90s have been replaced by budget increases of 2.8% for FY 1994 and 4.3% for FY 1995, higher education's share of state revenues continues to decline relative to corrections (+7.7%), Medicaid (+5.4%), and K-12 education (+7.3%) for FY 1995. States are continuing to retrench higher education in favor of these other programs.

the Cold War, government-sponsored research has come under heightened scrutiny. At the same time, the costs of running a university---paying for faculty, buildings, advanced equipment, and everything else---are rising almost exponentially. For example, the National Science Foundation estimates that the average total annual research equipment expenditures (including operating equipment and capital expenses in, 1988 dollars) for a single full-time researcher (including operating equipment and capital expenses in 1988 dollars)rose from $85,000 in 1958 to $170,000 in the late 1960s to $225,000 in the late 1980s.

Raising tuition (at a cost to equity) has been the short-run solution. Perhaps this is acceptable up to a point, but not if it ignores costs, inefficiencies, and the need for priorities and choices. In principle, colleges and universities ought to continuously analyze these options: Would another classics professor contribute to the education mission more than another mathematics professor? Than acquiring additional equipment for the geophysics lab? Than expanding the student counseling program? Than repairing classroom and dormitory roofs? In practice, however, the governance structure prevents institutions and systems from asking such questions. Those who believe in the "parity of knowledge" argue that there is no way to meaningfully compare the contributions of one professor to another, let alone to those of research equipment, or of student counselors, and so on. "It's comparing apples and oranges," they say.

Three Dogmas of Higher Education

This belief has expression in three dogmas of higher education that fundamentally obstruct effective governance. In the course of a survey of governance issues, we found abundant examples of each.

Dogma 1: *Because there is no basis for evaluating the relative merits of different disciplines, there is no way to reallocate funds within a higher education institution.*

A recent example: Scholars and administrators at a national conference at UCLA on problems facing science and technology in the research university offered many examples of erosion--decaying lab facilities, dated research and instructional equipment, and key faculty departing for the greener pastures of industry. At the same time, an engineering professor stated that his university's college of

agriculture is overfunded, while his own is underfunded. There is no way to take from one and give to the other, he explained.

Dogma 2: *Because there is no basis for evaluating the relative merits of academic programs and activities underway at different institutions in postsecondary education systems, it is impossible to shift resources from one campus to another, no matter how compelling the case for the disadvantaged institution.*

A recent example: A professor at a rural California State University campus, where the primary mission is undergraduate teaching, informs us that he has published seven books over the past two decades. How has he been able to do this? His rural campus has not expanded enrollment, which has allowed him to carry out a substantial research program on top of a light teaching load. Meanwhile California State University urban campuses such as Northridge, Los Angeles, San Diego, and San Francisco saw their enrollments skyrocket over the past two decades. When students enroll at these urban campuses, the necessary introductory courses critical to their progress are often missing due to insufficient budgets. In fact, the average undergraduate per-student expenditures at the rural campuses are 15 percent or more above the average undergraduate per-student expenditures at urban campuses in California State University, the University of Minnesota, and the University of Pittsburgh. Dogma 2 seems to prevent taking resources from under-enrolled campuses and given to heavily-enrolled campuses within the same postsecondary system.

Dogma 3: *Because there is no basis for evaluating the relative merits of an institution's diverse missions, an institution must allocate resources to every mission, regardless of its comparative strengths and weaknesses or the extent to which other institutions may have a comparative advantage in pursuing certain missions.*

Two recent examples: (1) The University of Pittsburgh, in fiscal difficulty in the early 1980s, identified its college of engineering as one of its weaker programs. Moreover, a world class college of engineering existed at Carnegie-Mellon University across the street. Some at the University of Pittsburgh suggested that it should focus its resources on higher quality programs. They went so far as to propose an agreement to support Carnegie-Mellon's college of engineering in return for its support of their humanities programs. However, the University of Pittsburgh's

Dean of Engineering and his faculty argued that the college is central to the university's mission. They carried the day.

(2) The Dean of Liberal Arts at the University of Minnesota complains about spending 20 percent of his budget on remedial education. He believes this detracts from the main undergraduate and graduate teaching and research missions of the college. What's worse, he argues, most of these students fail anyway, partly because they are taught by a faculty more interested in research than remedial instruction. At the same time, a nearby community college, with a faculty skilled in meeting the needs of poorly prepared students, is under-enrolled.

Other Obstacles to Effective Governance

Even if the dogmas did not hold sway, there are other obstacles to the effective governance needed for systematic and coherent resource allocation.

Byzantine Structures. Higher education is a stovepiped maze. The decision-making structure in most colleges and universities is at once hierarchical and decentralized. The Dean of a College of Arts and Sciences allocates resources among several dozen social science, humanities, life science, and physical science departments. The Dean of Engineering does the same for a variety of engineering programs; and the Vice President for Operations does likewise for facilities, maintenance, parking, campus security, etc. Each department or office, in turn, has considerable independence in deciding how to use its allocation. The question of whether to recruit an econometrician or a specialist in money and banking, for example, is generally decided within the economics department. None of this activity is coordinated or controlled by higher-level administrators. Administrators report up or down their narrow chain of command in complete ignorance of what those in other parts of the institution are doing.

And there are many other parts. One major research university, UCLA, includes 13 schools and colleges and 72 support organizations. One of those colleges itself contains 89 departments, 28 interdisciplinary programs, 37 special study units, and 28 organized research units. The university's other component organizations are comparably complex. No one could possibly understand the relative merits of these diverse activities through personal experience and observation.

Similarly, the central administrators of a state college usually report to a state postsecondary authority. They typically have little or no relationship with the state's community college system or its university system and vice versa.

Unclear Priorities. Why don't universities and colleges focus resources on what they do best? Firms, industries, and nations continually try to focus their investments of land, labor, and capital on businesses in which they produce goods or services at a higher quality level than their competitors and at a lower price. Translated into higher education, the concept suggests this general question---What centers, departments, colleges, or services provided by their institution enjoy comparative advantage over those provided by other higher education institutions?

Because of the three dogmas, all teaching, service, and most research functions are pursued with equal vigor. It is as if each automobile assembly plant insisted on making all of the parts necessary to produce an automobile. In the face of competition from the Japanese, the Big Three auto firms have learned the folly of Dogma 3 and the need for each plant to focus on its comparative advantage in the system of automobile production. The production of higher education is, of course, much more complex than the production of autos, but the issues of functional specialization and comparative advantage are not even part of the repertoire of higher education leaders.

In a similar vein, why have the demarcation lines between community colleges, state colleges and universities, and research universities collapsed? In the Kerr plan, the intent was for community colleges to focus on remedial instruction, school-to-work vocational training, and the first two years of undergraduate education. State colleges, later renamed state universities, were to concentrate on undergraduate instruction, while the full-spectrum research universities of California were to give added emphasis to graduate instruction and research.

Today, the Kerr plan is dead. Several community colleges, through various devices, have sought to offer the four-year degree themselves. Moreover, there is a tilt away from school-to-work vocational training and remediation and toward academic instruction, even though only 5 percent of community college academic-track enrollees ever receive their B.A. degree. Thus, two principal parts of the community college mission are undercut, to no great purpose. As of 1995, however,

several state colleges are engaged in graduate instruction in business, education, and the liberal arts. And as much as 15-20 percent of the undergraduate instruction budget in the "research" universities goes for remedial instruction. What is the point of pretending to differentiate among the three systems of postsecondary education if mission focus is lost within and across them?

Inadequate Information. Because decision-makers never needed to choose among competing functions, information systems did not evolve to support such decisions. Higher education officials simply don't have the comparative information they need to understand the tradeoffs among missions and organizations. Consider the expenditures-per-student from 1971 to 1989 in one state's flagship university, the University of Minnesota. The College of Health Sciences saw an increase of 77 percent--understandable, perhaps, in view of the increasing national and state priority given to the health sciences during this period. But for the College of Forestry, an area of declining interest in the state, the budget increased over 100 percent while the budget for Institute of Technology, also an area of increased national and state attention over these two decades, declined 20 percent. Did these allocations reflect incompetence or inattention? No: The university simply lacked the ability to coherently merge data from its diverse information systems. The left hand literally did not know what the right hand was doing.

Dispersed Power. The power to make resource allocations in higher education is divided and constrained; there is no central authority in charge. For starters, funding comes from many sources and most of them dictate the uses to which the money can be put. But financial management is also made difficult by a long list of other players, for example:

- In research universities, the faculty set their own teaching loads. Over the past thirty years, the average yearly course load has been cut from seven or eight to four or five courses; the result is a massive increase in the subsidy for faculty research.
- Accrediting agencies determine what an institution must spend on a variety of activities, e. g., how many books law libraries must purchase.
- Engineering, medical, and many other associations have more and more influence over what goes into the curriculum and what instructional equipment a school must provide.
- State legislatures and other groups have a strong voice in deciding which academic programs are created or maintained.

- National interest groups and the federal government pursue their independent goals, e.g., development of science and technology for national defense through the higher education sector. These goals may or may not be congruent with the university's goals.

The fragmentation of power undermines even clear priorities and good information. Consider one research university's experience, again the University of Minnesota: In the mid-1960s when the Vietnam conflict was inspiring great national interest in a number of Third World areas, including South Asia, the federal government and a major foundation offered the university support for a South Asian Studies Department. The University accepted their offer; eight faculty members were hired and eventually tenured. But in the mid-1970s, when interest in South Asia waned, the external funders turned their attention and support to other issues. Although disbanding the South Asian Studies Department was theoretically possible, it was politically impossible. By the mid 1980s, the university was supporting eight faculty members who taught, on average, fewer than three students apiece while faculty members in most other departments taught, on average, more than 30 students.

TOWARD A NEW SYSTEM OF GOVERNANCE

The higher education sector plainly needs to develop new forms of decision making mechanisms--i.e., governance. Fortunately, the shape of those forms is becoming clear.

To avoid the extremes that characterized the old system, the new governance system must first be iterative---both bottom up from the departments and top down from central administration. All the various academic and nonacademic divisions should be subjected to the same scrutiny. Because no single group of decision-makers can set priorities for such a large, complex structure, there should be no closed administrator or faculty task forces to set priorities. Only an open process, conspicuously including disagreement and appeal, can produce widely acceptable, stable decisions.

For such a process to overcome the three dogmas, higher education will have to develop criteria for making meaningful choices among its many constituent parts. Some strong institutions are already doing it. On three occasions we have participated in such exercises. For example, in the early 1980s, the College of

Liberal Arts at the University of Minnesota was faced with the necessity of substantial cuts because of university-wide retrenchments. The problem was to develop and apply comparative evaluation criteria to rank 44 academic programs, departments, and schools, which included

a) the humanities---from art history to English, the several foreign language departments, and area study programs for East Asia, the Middle East, Russia and Eastern Europe, and South Asia;

b) the social sciences---from economics, history, and geography to philosophy, psychology, political science, speech and communication, and sociology; and

c) the music, journalism, library, and social work schools.

The faculty task force that did the evaluation agreed upon the following set of evaluation criteria:

Quality. Indicators of quality included faculty publications, patents, and citations; national ratings and rankings; attrition or graduation rates; and results of standardized assessments. Departments such economics and geography were ranked at the top while English and the school of social work were ranked at the bottom.

Centrality. This criterion measured a program's contribution to the institution's or system's mission. For example, is the program essential to a challenging liberal arts education? By this measure even though the English department was rated poor, the committee judged it central to the mission and thus agreed to protect it from elimination or restructuring. Several of the humanities departments, however, judged to be of poor quality, were reduced in size in order to capture resources to fund new initiatives.

Demand and Workload. Programs were evaluated according to how much they are used, from both a short-term and a long-term view. Indicators here included the numbers of applicants, the quality of acceptances, support to other programs, instruction of students, or research on pressing societal problems.

Comparative Advantage. This criterion addressed the rationale for a program's place in the institution or system---what unique characteristics make it essential to the community, region, nation or the institution itself? It made sense to support a Department of Scandinavian Studies in Minnesota. In contrast, the

library school was focused on traditional programs instead of connecting with the strong information sciences programs associated with cutting edge computer companies in the region.

Based on the application of these criteria, the committee recommended increasing support for the top departments in the College, increasing resources for multicultural programs, restructuring the humanities programs, and eliminating the Library School.

Institutes that are trying to restructure should apply the concept of comparative advantage to other levels and functions the university provides, as well:

A) *Classes*. Every college and university teaches microeconomics at the freshman level. Virtually every research university has several introductory statistics courses scattered among a number of colleges. Many colleges and universities teach the same beginning course in Greek, Latin, Hindi, or Persian. Every institution in the Big Ten or University of California offers a similar scope and methods graduate course introducing political science research methods. Given the advanced state of distance learning technology, departments and universities could collaborate to pool courses and instructors to save money and provide students the best instruction available in the subject.

B) *Colleges*. New York may need a minimum number of librarians but how many schools of library science are required in order to train them? Which colleges have a comparative advantage in library sciences? Which would be better off funding humanities or computer sciences?

C) *Services*. Possible applications range from functions such as physical plant and maintenance, power plants for heat and electricity to health care, police protection, and social welfare functions such as child care. Whether or not the service is provided appears wholly correlated with sheer size---the larger the postsecondary institution, the more likely it provides the service itself instead of contracting out. Universities have no particular comparative advantage for provision of these services--the vast majority of these functions should be considered for privatization.

D) *The library*. What is the optimum size of the library collection for undergraduate colleges or major research universities? What is the comparative advantage of each school's collection from the regional or state perspective? The University of California system has five research libraries in southern California alone at Los Angeles, San Diego, Irvine, Riverside, and Santa Barbara. Only one, UCLA, holds a collection of major import. And the budget it receives annually forces major cuts in acquisition of books and periodicals. Why not designate UCLA the regional research library and spend the acquisition budgets of the other universities on 1) technology to access UCLA and other major collections and 2) other academic needs? Couldn't the Big Ten do the same?

CAN WE MEET THE CHALLENGE?

Instead of trying to break out of the box the three dogmas have placed them in, university leaders continue to argue, almost irresponsibly, for one solution only: more resources. The current slippage in state budgets gives every sign of accelerating. Federal support for higher education over the foreseeable future will decline as well. State legislatures, frustrated by lack of action from university leaders, may resort to unilateral budget reductions designed to force restructuring. Without improved governance systems, the higher education sector is unlikely to respond coherently to such pressures.

The problem is not that higher education *cannot* respond to the changing environment; individual departments, colleges, and universities do. Creative faculty and administrators frequently recognize the problems we have noted above, design imaginative responses to them, and inspire their colleagues to undertake the kinds of activities needed to carry through those responses. But, if no individual steps forward, or if those who do prove ineffectual, there are no institutional or system-wide mechanisms to compel attention to these issues, to aid and encourage the design of responses, or to replicate useful individual reforms.

Without an ability to build upon local experiments, promising ideas will accomplish only localized improvements. There are no systematic mechanisms for ensuring that departments within an institution even examine, much less consider adopting, a reform tested elsewhere within the institution. There are no inter-

institutional mechanisms for systematically developing, refining, and extending reforms.

At the campus level, both public and private institutions should be encouraged to focus their missions and concentrate scarce resources on their areas of comparative advantage. How might this be accomplished? The dozens of doctoral programs each research university supports are unwarranted. For example, there are over 140 plus doctoral programs in political science in the nation, about 100 too many. The number of doctoral training programs will decline in any event as a result of the forces of change described here. Why not establish national guidelines for minimum qualifications of graduate and professional programs, including their costs? Governors, university trustees, and college presidents would then have better information with which to evaluate demands for yet another medical or dental school or to determine whether multiple graduate programs in physics should be maintained.

At the state level, legislatures could require state-funded postsecondary institutions to demonstrate that they can reallocate resources from low to high priorities by undertaking comparative strategic planning based on criteria emphasizing comparative advantage. Systems of higher education could be required to fund campuses differentially based on a system-wide planning and priority setting efforts. State higher education coordinating boards could be transformed into bodies with the power to eliminate redundant doctoral programs; cut back excessive capacity in undergraduate programs; enforce new mission differentiation compacts among the community colleges, state and research universities; and, yes, even eliminate campuses that were no longer cost effective.

Is institutional redesign of the magnitude we argued for too daunting? Perhaps. But the early history of higher education in the United States suggests that the task is not impossible. Our leaders in the mid-19th century, spurred by Jefferson's arguments on behalf of public higher education, designed the state-based land grant system that, in concert with strong private colleges and universities, changed the face of higher education for over a century. Moreover, each of the problems discussed here can be solved. It is only natural that after 100 years of operation, some restructuring is needed. We listed a number of ways that university leaders can reallocate resources, refocus missions, and specialize (develop a better

sense of comparative advantage). There are others. Are we really not up to redesigning the system our forefathers invented for us? At the end of the 20th century, the choices will be made *by* higher education leaders or *for* them. The path taken matters a great deal for America's role in the 21st century.