

Some Observations Concerning
The Changing Nature of Funding
of the American Research University

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Brave, New World

Let me begin with an interesting contrast. When I began my academic career at the University of Michigan almost exactly 30 years ago, over 60% of the financial support for the University's Ann Arbor campus came from state appropriations. More precisely:

State appropriations	60%
Sponsored research	10%
Tuition and fees	10%
Auxiliary activities (hospitals, etc.)	20%

In sharp contrast, today state appropriations contribute only 10% of the University's roughly \$3 billion operating budget.

State appropriations	\$300 million	10%
Sponsored research	\$500 million	17%
Tuition and fees	\$500 million	17%
Private support	\$300 million	10%
Auxiliary activities	\$1,400 million	45%

[Several notes here: I am defining "private" support as the total of annual gifts received (\$180 million) and payout on endowment (\$120 million). Auxiliary income is provided primarily by the UM Medical Center (\$1,300 million) and intercollegiate athletics (\$50 million).]

As we are fond of explaining, over the past three decades the University of Michigan has evolved from a "state-supported" to a "state assisted" to a "state related" to a "state located" university. In fact, with campuses in Europe and Asia, even "state located" may no longer be accurate. Some of my colleagues would contend that we remain only "state molested".

Perhaps a better way to summarize this fact of life is to note that like several other leading public research universities, today the University of Michigan is a "privately-supported but publicly-committed" university. But a state-*supported* university we surely are not ...

So how might one explain this evolution? Was it due to a bold plan, a "strategic intent", executed by a series of scientist-leaders at Michigan, including Frank Rhodes, Harold Shapiro, Bill Frye, Chuck Vest, and JJD? To be sure, there was a conscious effort to take some actions.

- We ramped up prices, namely tuition, as rapidly as the politics would allow. Although our in-state tuition remains quite low (\$6,000), our tuition for nonresidents has risen to private levels (above \$20,000).
- We launched major private fund-raising efforts, culminating in a just-completed fund-raising campaign that raised \$1.5 billion.

- Through both energetic fund-raising and aggressive management, we increased the University's endowment from next to nothing (\$200 million) to over \$2.5 billion.
- We adopted a far more business-like approach to major University activities such as the UM Medical Center and (unfortunately) our entertainment company, the Michigan Wolverines, which now resembles a professional franchise.

But what about the major growth in sponsored research funding? Well, this part of the revenue base, like many other activities, benefited from quite a different phenomenon. As you may recall, several years ago during one of the GUIRR sessions concerning stresses on the academy, a young faculty member expressed his frustration that his university had become “a holding company for faculty entrepreneurs”. Indeed it had. And, in fact, all of our research universities are comprised of hundreds if not thousands of highly enterprising faculty. Of course this is not surprising, since the single investigator grant paradigm of the government-university research partnership strongly rewards just such behavior. And, as a result, our research universities might better be named *entrepreneurial universities*.

The Entrepreneurial University

In many ways, the contemporary research university has become one of the most complex institutions in modern society—far more complex, for example, than most corporations or governments. We are comprised of many activities, some non-profit, some publicly regulated, and some operating in intensely competitive marketplaces. We teach students; we conduct research for various clients; we provide health care; we engage in economic development; we stimulate social change; and we provide mass entertainment (athletics). In systems terminology, the modern university is a “loosely-coupled, adaptive system,” with a growing complexity, as its various components respond to changes in its environment.

The modern university has become a highly adaptable knowledge conglomerate because of the interests and efforts of our faculty. We have provided our faculty with the freedom, the encouragement, and the incentives to move toward their personal goals in highly flexible ways. In a very real sense, the university of today is truly a holding company of faculty entrepreneurs, who drive the evolution of the university to fulfill their individual goals. We have developed a transactional culture, in which everything is up for negotiation. The university administration manages the modern university as a federation. It sets some general ground rules and regulations, acts as an arbiter, raises money for the enterprise, and tries—with limited success—to keep activities roughly coordinated.

The entrepreneurial university paradigm has a number of consequences, some good, and some more sinister. On the plus side, today's research universities are remarkably adaptive to change. We have highly diversified resource portfolios that protect our institutions against downturns in any particular area such as federal research support or state appropriation. Through the efforts of our faculty, we are able to generate new

resources almost at will—not surprising, since we are in the “knowledge business”, which is the ultimate growth industry of our times.

Yet there are also downsides to this culture. We have become so complex that both those on our campus and off have great difficulty in understanding just what we are. For example, with an annual budget of \$3 billion and an additional \$3 billion of investment assets under active management, the U of M, Inc. would rank roughly 470th on the Fortune 500 list. We educate roughly 50,000 students on our several campuses—an educational business amounting to about \$1 billion per year. The University is also a major federal R&D laboratory, conducting over \$450 million a year of sponsored research, supported primarily by federal contracts and grants. We also run a massive health-care company. Our university-owned hospitals and clinics currently treat almost a million patients a year, with a total medical center income of \$1.2 billion. We have a managed care corporation with over 100,000 “managed lives.” In 1994, we formed a non-profit corporation, the Michigan Health Corporation, which will allow us to make equity investments in joint ventures to build a statewide integrated health care system of roughly 1,500,000 subscribers—the patient population we believe necessary to keep our tertiary hospitals (which we own) afloat.

We are already too big and complex to buy insurance, so we have our own captive insurance company, Veritas, incorporated in New Hampshire. We have become actively involved in providing a wide array of knowledge services, from degree programs offered in Hong Kong, Seoul, and Paris, to cyberspace-based products such as the Michigan Virtual University. And, of course, we're involved in public entertainment: the Michigan Wolverines. The \$250 million attributable to the Michigan Wolverines is not our athletic budget—our operations amount to “only” \$50 million per year. But, when we include licensing and marketing—including even the “block M,” which we have copyrighted—our college sports activities become a far larger enterprise. It is big-time show business!

Our corporate organization chart would compare in both scale and complexity with many major global corporations. And it is not unique to the University of Michigan. Most of the major research universities in America are characterized by very similar organizational structures, indicative of their multiple missions and diverse array of constituencies. Little wonder that our many publics, not to mention our students and faculty, have trouble understanding the research university.

Many contend that we have diluted our core business of learning, particularly undergraduate education, with a host of entrepreneurial activities. We have become so complex that few, whether on or beyond our campuses, understand what we have become. We have great difficulty in allowing obsolete activities to disappear. We now face serious constraints on resources which no longer allow us to be all things to all people. We also have become sufficiently encumbered with processes, policies, procedures, and past practices so that our best and most creative people no longer determine the direction of our institution.

Put another way, a central concern is that the highly entrepreneurial character of the contemporary research university, our “academic capitalism”, while making our institutions remarkably adaptive, could be putting our core missions, traditions, and even our values at some risk in the years ahead.

Let me illustrate with two data points. First, although we are surrounded by a sense of euphoria by the recent increases in federal support of financial aid and academic research this year, along with similar increases in state appropriations for higher education as our economy booms along, there are storm clouds on the horizon. Let me remind you that both federal research support and state appropriations have yet to make it back to where they were in the early 1990s. Furthermore, we still face the looming burden of the entitlements that will be claimed by the aging baby boomers, with its ominous impact on the discretionary component of the federal budget.

As my second data point concerns a recent visit by two senior partners of a leading information services company. Although they were trying to pedal their new business education software—an “MBA-in-a-box” based on the Sim City paradigm—they also shared with us their view of the higher education market. They believe the size of the higher education enterprise in the United States during the next decade could be as large as \$300 billion per year, with 30 million students, roughly half comprised of today's traditional students and the rest as adult learners in the workplace. (Incidentally, they also put the size of the world market at \$3 trillion.) Their operational model of the brave, new world of market-driven higher education suggests that this emerging domestic market for educational services could be served by a radically restructured enterprise consisting of 50,000 faculty “content providers,” 200,000 faculty learning “facilitators,” and 1,000 faculty “celebrities” who would be the stars in commodity learning-ware products. The learner would be linked to these faculty resources by an array of for-profit services companies, handling the production and packaging of learning-ware, the distribution and delivery of these services to learners, and the assessment and certification of learning outcomes. Quite a contrast with the current enterprise!

Ridiculous, you say? We already see the emergence of a new generation of higher education institutions such as the University of Phoenix and the Western Governors University. In fact, during the past two years, I have participated in the launch of two such “new educational lifeforms”, the Michigan Virtual Automotive College (already serving several thousand students in the automotive industry) and the Michigan Virtual University (serving an array of other industries as well as K-12 teacher education in Michigan). And this competition is growing, with the entry of the UK Open University into North America and new corporate efforts such as those by Sylvan Learning.

A Global Knowledge and Learning Industry

The waves of market pressures on our colleges and universities are building, driven by the realities of our times: the growing correlation between one's education and quality of life, the strategic role of knowledge in determining the prosperity and security of nations, the inability of the traditional higher education institutions to monopolize an open

learning marketplace characterized by active student-learner-consumers and rapidly evolving technology. Driven by an entrepreneurial culture, both within our institutions and across American society, the early phases of a restructuring of the higher education enterprise are beginning to occur.

The market forces unleashed by technology and driven by increasing demand for higher education are very powerful. If allowed to dominate and reshape the higher education enterprise, we could well find ourselves facing a brave, new world in which some of the most important values and traditions of the university fall by the wayside. While the commercial, convenience-store model of the University of Phoenix may be a very effective way to meet the workplace skill needs of some adults, it certainly is not a paradigm that would be suitable for many of the higher purposes of the university. Furthermore, our experience with market-driven, media-based enterprises has not been positive. The broadcasting and publication industries suggest that commercial concerns can lead to mediocrity, an intellectual wasteland in which the least common denominator of quality dominates. But it is also clear that these new educational competitors will not disappear. Rather they will grow and be joined by other new entrants to the higher education marketplace.

As a result, higher education is likely to evolve from a loosely federated system of colleges and universities serving traditional students from local communities to, in effect, a *global knowledge and learning industry*. With the emergence of new competitive forces and the weakening influence of traditional regulations, education is evolving like other “deregulated” industries, e.g., health care or communications, or energy. Yet, in contrast to these other industries which have been restructured as government regulation has disappeared, the global knowledge industry will be unleashed by emerging information technology as it releases education from the constraints of space, time, and the credentialing monopoly. And, as our society becomes ever more dependent upon new knowledge and educated people, upon knowledge workers, this global knowledge business will represent one of the most active growth industries of our times.

While many in the academy would undoubtedly view with derision or alarm the depiction of the higher education enterprise as an “industry” or “business,” operating in a highly competitive, increasingly deregulated, global marketplace, this is nevertheless an important perspective which will require a new paradigm for how we think about postsecondary education. Furthermore, it is clear that no one, no government, is in control of the higher-education industry. Instead it responds to forces of the marketplace. Universities will have to learn to cope with the competitive pressures of this marketplace while preserving the most important of their traditional values and character.

Will this restructuring of the higher education enterprise really happen? If you doubt it, just consider the health care industry. While Washington debated federal programs to control health care costs, the marketplace took over with new paradigms such as managed care and for-profit health centers. In less than a decade the health care industry was totally changed. Today, higher education is a \$180 billion per year enterprise, a significant part of \$600 billion per year spent in the United States on education. In many

ways the education industry represents the last of the economic sectors dominated by public control and yet at risk because of quality, cost-effectiveness, and changing demands.

The Balance Between Public Policy and Market Forces

Let me raise yet a broader issue. For most of our history, the growth of higher education in America has been sustained by tax dollars, either direct through state or federal appropriation, or indirect through favorable tax policy. As a result, higher education has been strongly shaped by public policies and public agendas. A brief list of several major federal actions illustrates the degree to which the nature of higher education in America today has been determined by public policy and public action:

- Colleges as necessary to democracies (Jefferson, Northwest Ordinance)
- The Morrill Act (Land Grant Act)
- The G.I. Bill
- The Government-University Research Partnership (the Bush paradigm)
- The National Defense Education Act
- The Higher Education Act (in its many reauthorizations)
- The Equal Opportunity Act and Title IX

Today, however, there is an increasing sense that the growth of higher education in the 21st Century will be fueled by private dollars. Public policy will be replaced increasingly by market pressures. Hence the key question: Will a privately funded, market driven “global knowledge and learning industry” be able to preserve the important traditions, values, and broader missions of the university?

Let me conclude with several caveats. First, even though it is likely that private investment will become increasingly important in the support of higher education, there is still a major opportunity to shape the university as a social institution through public policy. However, I believe the lever will increasingly be tax policy rather than tax dollars. Actually, we have already seen this in the federal budget balancing agreement of 1997, in which the largest commitment to higher education since the GI Bill was made, but via \$50 billion in tax benefits rather than additional appropriations. Clearly there is an opportunity for the federal government to have great impact on a privately-funded, market-driven higher education enterprise through tax policies in areas such as charitable giving, endowment management, educational benefits, and R&D tax credits.

The second caveat has to do with the role of foundations. During the next several decades we will see the largest transfer of wealth from one generation to the next in our nation’s history. Much of this wealth will end up in non-for-profit foundations. In recent times, foundations have been a relatively minor player in the support of campus based research compared to the federal government. But the potential for a significantly expanded role is considerable.

Finally, a caveat with respect to industry. While relationships with industry will be increasingly important, I am pragmatic about the magnitude of the impact of industrial support on university financing. Indeed, in many areas such as software development the university is actually a competitor with industry. The challenge will be to develop alliances in areas where there are mutual interests, and to compete effectively in areas necessary to preserve the strength and integrity of our institutions. Not an easy task, but clearly a characteristic of the brave, new world ahead.

We have entered a period of significant change in higher education as our universities attempt to respond to the challenges, opportunities, and responsibilities before them. This time of great change, of shifting paradigms, provides the context in which we must consider the changing nature of the university.

Much of this change will be driven by market forces—by a limited resource base, changing societal needs, new technologies, and new competitors. But we also must remember that higher education has a public purpose and a public obligation. Those of us in higher education must always keep before us two questions: “Who do we serve?” and “How can we serve better?” And society must work to shape and form the markets that will in turn reshape our institutions with appropriate civic purpose.

From this perspective, it is important to understand that the most critical challenge facing most institutions will be to develop the capacity for change. We must remove the constraints that prevent us from responding to the needs of rapidly changing societies, to remove unnecessary processes and administrative structures, to question existing premises and arrangements. Universities should strive to challenge, excite, and embolden all members of their academic communities to embark on what should be a great adventure for higher education.

Certainly the need for higher education will be of increasing importance in our knowledge-driven future. Certainly, too, it has become increasingly clear that our current paradigms for the university, its teaching and research, its service to society, its financing, all must change rapidly and perhaps radically. Hence the real question is not whether higher education will be transformed, but rather *how* . . . and by *whom*. If the university is capable of transforming itself to respond to the needs of a culture of learning, then what is currently perceived as the challenge of change may, in fact, become the opportunity for a renaissance in higher education in the years ahead.