The Michigan-Oberlin-Kalamazoo Project

A Partnership between Liberal Arts Colleges and Research Universities

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Introduction

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> "One might also imagine affiliations between comprehensive research universities and liberal-arts colleges. This might allow the students enrolling at large research universities to enjoy the intense, highly personal experience of a liberal arts education at a small college while allowing the faculty members at these colleges to participate in the type of research activities only occurring on a large research campus."

Clayton Koppes was in the audience, and afterwards suggested that Oberlin and Michigan should explore such a collaboration. I returned to Ann Arbor and mentioned this to Earl Lewis, dean of our graduate school, and as frequently happens in universities, was asked to chair a committee to work on the project.

The University-College Partnership Study Committee was formed the possibility of establishing alliances between the University of Michigan-Ann Arbor and high quality liberal arts colleges such as Oberlin College (Clayton Koppes, Dean of Arts and Sciences and Kalamazoo College (Greg Mahler, provost).

In particular, the Committee was asked to:

- Consider a range of possible programs of varying sizes, aimed at different university groups and disciplines, and involving differing degrees of ambition and complexity, including the possibility of later expansion to involve other institutions.
- Consult the leadership and other interested parties at all involved campuses (and other institutions or agencies as you deem desirable) to solicit information and opinions on alternate programs.
- Assess the financial implications of alternatives and explore the possibility of foundation support (NSF, Kellogg, Ford, other) for developing and maintaining varying sorts of partnership programs.

- Explore the possibility of a partnership with a nation foundation (e.g., Woodrow Wilson Fellowship Foundation) for forming a national program of cooperative efforts between liberal arts colleges and research universities.
- Explore the possibility of building the infrastructure necessary to explore these partnerships, such as computer network linkages, administrative support, and any necessary or desirable changes in academic policies.

Background

Of particular interest was an exploration of ways that the University might build alliances with liberal arts colleges that enhance its preparation of future college professors. There has been increasing concern that the highly specialized, research dominated focus of today's Ph.D. programs is not well aligned to producing the type of faculty members needed by the broader higher education enterprise. Furthermore, there is increasing concern about the difficulty that many Ph.D. graduates have in finding positions in higher education. In 1997 42,427 doctorates were awarded in United States, an increase of nearly a third from a decade earlier. Many of these graduates will be frustrated and defeated in their search for faculty positions. Some of this is due to a mismatch between the Ph.D. production and the academic marketplace. Institutional needs for graduate research and teaching assistants tend to drive the size of our graduate programs rather than the needs of the higher education enterprise. Yet it is also true that most graduates have relatively limited experience in teaching, awareness of the qualities of colleges and universities beyond the research university where they received their doctoral training, and knowledge of the broader role of faculty in an academic community. The difficult job market for new PhDs is, to some extent, the result of not getting the right preparation for the jobs that exist.

Few believe that there is a need to replace the research training that is the heart of doctoral study in America. Rather, there is a need to broaden the concept of academic professionalism by including preparation for teaching and for service. Several groups have called for augmenting the graduate training process with

internships or residencies that emphasize the faculty roles of teaching and service in the broader higher education enterprise. The Modern Language Association recommended that "doctoral programs familiarize students with the complex systems of postsecondary education in this country and offer not just courses but also mentored internships, residencies, and exchanges among institutions. The National Academy of Sciences has similarly called for the development of internship programs in teaching-intensive colleges and universities as one way to prepare doctoral students for broader faculty roles.

For past several years, two dozen major research universities have participated in the Preparing Future Faculty program, sponsored in part by the Pew Charitable Trust, that provides teaching experiences for their graduate students at liberal arts colleges. Hence one of our first objectives was to explore the possibility of similar alliances between the University of Michigan and liberal arts colleges for such purposes.

It was also clear, however, that there were many other potential benefits associated with such alliances. For example, faculty members and students at liberal arts colleges increasingly seek access to the research opportunities characterizing research universities. The undergraduate curriculum characterizing teaching-intensive institutions can become obsolete in the face of the rapid evolution of knowledge in fields such as the life sciences and physical sciences. The vast library and laboratory resources of a major research university are difficult to match with the limited resources of most liberal arts colleges. Yet, with emerging information and telecommunications technology, it is now possible to link together scholars and students in such a way as to facilitate intellectual interactions and share resources such as libraries and experimental apparatus. Examples here include digital libraries and collaboratories.

So too, liberal arts colleges produce many of the undergraduate students who continue on to graduate school at major research universities. There is considerable interest among graduate faculties in both influencing the

undergraduate education these students receive and in recruiting them into graduate programs.

More broadly, there have been suggestions that a key theme of higher education in the years ahead would be alliances and networks that leverage and enhance the capabilities of colleges and universities to serve society. If properly structured, such alliances would allow institutions of various types to focus on their strengths, while relying on their partners in the alliance to help respond to broader societal needs.

Guidelines for the Discussions

With this in mind, the Committee suggested at the outset the following guidelines for potential relationships:

From the University of Michigan perspective:

- Provide advanced graduate students and postdocs with teaching experiences in undergraduate intensive institutions such as liberal arts colleges and comprehensive four-year universities.
- Through interaction with faculty in these institutions, develop a better understanding among our own graduate faculty of needs and opportunities characterizing the broader higher education enterprise.
- Provide our own graduate and professional programs with better access to outstanding graduates of liberal arts colleges.
- Develop relationships between UM programs and those of partner institutions by establishing intellectual linkages

From the perspective of liberal arts college partners:

- Provide faculty and students with access to the research environment, faculty, facilities and research opportunities of the University of Michigan.

- Partner institutions giving advanced teaching opportunities to our top graduate students and postdoctoral scholars might evaluate them as potential faculty members.
- Build intellectual relationships between programs and faculty that would enliven curriculum and facilitate faculty development.

The Committee chose to begin such explorations with Oberlin College and Kalamazoo College, because of the outstanding quality of these institutions, the number of their undergraduates who continue graduate study at Michigan, and the number of Michigan faculty who are alumni of these colleges. The potential for mutual benefit between the University of Michigan and Oberlin College and Kalamazoo College (and other similar highly quality liberal arts colleges) was soon apparent, with in collaboration with these institutions, the Committee developed the set of recommendations conveyed in this report.

At the outset, the Committee expressed strong interest in broadening the alliance exploration effort beyond liberal arts colleges to include comprehensive universities. Because of its proximity, Eastern Michigan University was selected as the prototype for further study, although the Committee was also very interested in UM-Dearborn as a second candidate for such an alliance. However, developing a strategy for interacting with comprehensive universities such as Eastern Michigan University was somewhat more challenging, in part because of the significant differences between faculty environments. The Committee eventually decided to regard the potential of alliances with comprehensive universities as a "work-in-progress", requiring further discussion at the faculty level. This report suggests some possible further steps for such a dialog.

Recommendations

Recommendation 1: Preparing Future Faculty programs:

- To establish fellowships or residencies that would allow advanced graduate students or postdoctoral scholars to spend one or two years in a supervised

teaching role at a liberal arts college, with the involvement of senior faculty mentors from both institutions. Note that faculty from UM, Oberlin, and Kalamazoo all agreed that such residencies would be most appropriate for postdoctoral scholars. Furthermore, all institutions believed that a priority should be given to graduate students or postdoctoral scholars with a particular interest in pedagogical issues and the scholarship of teaching.

- To enable the fellows/residents to maintain a relationship with their Michigan research group, perhaps by occasional visits back to Michigan or by their graduate advisor or research group leader to their liberal arts college.
- To provide fellows/residents with the opportunity to teach at least one advanced course in an area related to their research specialty while in residence at the liberal arts college.

Recommendation 2: Providing Research Opportunities to Faculty and Students

- To provide faculty members from partner institutions with research opportunities through sabbatical or summer session appointments in Michigan research groups.
- To create a faculty development program that would provide mid-career faculty members at liberal arts college with an opportunity to "go back to school" and explore new directions at Michigan. Here, the Michigan Journalist-in-Residence program might provide a model.
- Provide undergraduate research opportunities at Michigan for undergraduate students from liberal arts colleges. Although there is intense demand for such UROP experiences from Michigan undergraduates during the academic year, there is a sense that there may be such opportunities for summer research experiences. Furthermore, network technology might provide access to research involvement by liberal arts college undergraduates during the academic term.
- Establish robust electronic linkages between Michigan and partner institutions, providing access to research resources such as libraries, databases, collaboratories and research groups.

- Provide faculty from partnering institutions with assistance in learning the techniques of grantsmanship (e.g., pursuing sponsored research grants).

Recommendation 3: Intellectual Linkages between Institutions

- Establish relationships between the faculty development organizations on each campus (e.g., CRLT at Michigan).
- Conduct joint conferences on issues of teaching and scholarship that would bring together faculty from participating institutions.
- Establishing visiting lectureships that would allow Michigan faculty to visit partner campuses, giving lectures, meeting with students and faculty, and hopefully gaining better understanding of the nature of these institutions.
- Establish relationships between particular departments, so that Michigan's research perspective might be used to aid partner institutions in curriculum development.

Recommendation 4: General Recommendations

- All partner institutions stressed the importance of giving the proposed alliance sufficiently high visibility to provide the credibility for faculty and program participation.
- Clearly identify the units in each institution responsible for the brokering and monitoring of the relationship (e.g., at Michigan this would probably involve the Graduate School, the Office of the VP-Research, the Office of the Provost, and CRLT).

The Committee provides several observations concerning important issues such as funding, administration, formal agreements, and extension of the alliance model to a broader class of institutions. In particular, the Committee suggests the exploration an alliance with the group of outstanding liberal arts colleges belonging to the Great Lakes College Association.

One Further Idea: A "Virtual" University System

Buried in our report was one additional teaser:

> "As we noted earlier, the rapid evolution of information technology is allowing the creation of new types of structures for cooperation and collaboration, largely independent of space and time (asynchronous). For example, the University of Michigan is a national leader in the development of the collaboratory concept, in which scholars and students from widely dispersed institutions share and operate complex scientific instrumentation. Furthermore, the Internet2 project, developing the next generation of networking technology for academic research, is located in Ann Arbor. Hence the idea arises of exploring the possibility of creating a "virtual university system", using Internet2 to link together the University of Michigan with a group of outstanding liberal arts colleges such as the Great Lakes College Association. The rapid buildup of federal funding in this area (the so-called "IT-squared" initiative in the FY2000 federal budget proposal) suggests the potential for major federal funding of such experiments."

This brings me to my final topic:

Last year (2000) the presidents of the National Academies (Science, Engineering, and Medicine) launched a major new study to explore the impact of information technology on the future of the research university, which I was asked to chair. The premise is a simple one. The rapid evolution of digital technology will present many challenges and opportunities to higher education in general and the research university in particular. Yet there is an increasing sense that many of the most significant issues are neither well recognized nor understood either by leaders of our universities or those who support and depend upon their activities..

The first phase of the project, funded from internal Academy funds and organized under the Government-University-Industry Research Roundtable (GUIRR), was aimed at addressing three sets of issues:

- To identify those technologies likely to evolve in the near term (a decade or less) which could have major impact on the research university.

- To examine the possible implications of these technology scenarios for the research university: its activities (teaching, research, service, outreach); the organization, structure, management, financing of the university; and the impact on the broader higher education enterprise and the environment in which it functions.

- To determine what role, if any, there is for the federal government and other stakeholders in the development of policies, programs, and investments to protect the valuable role and contributions of the university during this period of change.

To this end, a Steering Committee to guide the project was formed last year consisting of leaders drawn from industry, higher education, and government with expertise in the areas of information technology, research universities, and public policy. Since first convening in February 2000, the Steering Committee has held several meetings (including site visits to major technology development centers such as Lucent (Bell) Laboratories and IBM Research Laboratories) and held numerous conference calls to identify and discuss trends, issues, and possible recommendations. The key themes addressed by these discussions were:
- The pace of evolution of information technology (e.g., Moore's Law).
- The ubiquitous/pervasive character of the Internet (e.g., wireless, photonics).
- The relaxation (or obliteration) of the conventional constraints of space, time, and monopoly.
- The democratizing character of IT (access to information, education, research).

- The changing ways we handle digital data, information, and knowledge.
- The growing importance of intellectual capital relative to physical or financial capital.

In January 2001 a two-day workshop was held at the National Academies with invited participation of roughly 100 leaders from technology, higher education, and government. The purpose of the workshop was to stimulate a conversation, to launch a dialog, aimed at identifying key themes and issues, to suggest possible recommendations and strategies for research universities and their various stakeholders, and to provide guidance on the next phase of the project. The key presentations and discussion of the workshop were videotaped and will be broadcast on the Research Channel and video-streamed from its website during the spring (2001) to serve as an archive for further discussion.

Although the project is still in an early phase, there are already some important preliminary conclusions:

- The extraordinary evolutionary pace of information technology will not only continue for the next several decades, but it could well accelerate on a superexponential slope. Photonic technology is evolving at twice the rate of silicon chip technology (e.g., Moore's Law), with miniaturization and wireless technology moving even faster, implying that the rate of growth of network appliances will be incredible. For planning purposes, we can assume that within the decade we will have infinite bandwidth and infinite processing power (at least compared to current capabilities).

- The event horizons are moving ever closer. Getting people to think about the implications of accelerating technology learning curves as well as technology cost-performance curves is very important. There are likely to be major technology surprises, comparable in significance to the PC in 1980 and the Internet browser in 1994, but at more frequent intervals. The future is becoming less certain.

- The impact of information technology on the university will likely be profound, rapid, and discontinuous–just as it has been and will continue

to be for the economy, our society, and our social institutions (e.g., corporations, governments, and learning institutions). It will affect our activities (teaching, research, outreach), our organizations (academic structure, faculty culture, financing and management), and the broader higher education enterprise as it evolves into a global knowledge and learning industry.

- For at least the near term, meaning a decade or less, the research university will continue to exist in much its present form, although meeting the challenge of emerging competitors in the marketplace will demand significant changes in how we teach, how we conduct scholarship, and how our institutions are financed. Universities must anticipate these forces, develop appropriate strategies, and make adequate investments if they are to prosper during this period.

- Over the longer term, the basic character and structure of the research university may be challenged by the IT-driven forces of aggregation (e.g., new alliances, restructuring of the academic marketplace into a global learning and knowledge industry) and disaggregation (e.g., restructuring of the academic disciplines, detachment of faculty and students from particular universities, decoupling of research and education).

- Procrastination and inaction are the most dangerous courses for colleges and universities during a time of rapid technological change. To be sure, there are certain ancient values and traditions of the university that should be maintained and protected, such as academic freedom, a rational spirit of inquiry, and liberal learning. But, just as in earlier times, the university will have to transform itself to serve a radically changing world if it is to sustain these important values and roles.

- Although we feel confident that information technology will continue its rapid evolution for the foreseeable future, it is far more difficult to predict the impact of this technology on human behavior and upon social

institutions such as the university. It is important that higher education develop mechanisms to sense the changes that are being driven by information technology and to understand where these forces may drive the university.

- Because of the profound yet unpredictable impact of this technology, it is important that institutional strategies include : 1) the opportunity for experimentation, 2) the formation of alliances both with other academic institutions as well as with for-profit and government organizations, and 3) the development of sufficient in-house expertise among the faculty and staff to track technological trends and assess various courses of action.

- In summary, for the near term (meaning a decade or less), we anticipate that information technology will drive comprehensible if rapid, profound, and discontinuous change in the university. For the longer term (two decades and beyond), all bets are off. The implications of a million-fold increase in the power of information technology are difficult to even imagine, much less predict.

Liberal arts colleges that continue to stress such mentoring, hands-on, tutorial-based education will be least challenged by the emerging knowledge media. It is the large, comprehensive universities that rely heavily on impersonal mass education that are at great risk. A significant share of this conventional mass education can be offered commercially and electronically. After all, a large part of the function of large universities is mass information transfer, which can be performed quite effectively and efficiently via information technology. Virtual universities, even when constructed along the conventional distance-learning paradigm, may well provide formidable competition to large universities in terms of both quality and price.

In fact, the powerful tools for learning provided by information technology, when coupled to the changing educational needs of our society and

the changing character of our students, suggests that it may be time to explore an entirely new architecture for learning in a society with ubiquitous digital technology. Perhaps it is time to consider a blank sheet approach to learning, by setting aside existing educational systems, policies, and practices, and instead first focusing on what knowledge, skills, and abilities a person will need to lead a productive and satisfying life in the century ahead. Then, by considering the diversity of ways in which people learn, and the rich array of knowledge resources emerging in our society, designing a new ecology of learning for the 21st Century.

A possible vision for discussion:

A virtual Oxbridge

Where the extraordinary learning environment provided
by the liberal arts college is coupled to the
Vast intellectual resources of the contemporary research
university, its research laboratories and libraries,
and its graduate and professional programs.
Allowing students and faculty of each to benefit from
the rich environments provided by both types
of institutions.

Why stop with Michigan-Oberlin-Kalamazoo

How about the CIC (Big Ten) forming a network with all of the
wonderful liberal arts colleges in the Midwest?