

The Great Lakes Region and the Knowledge Economy

A Roadmap to the Future

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Higher Education at a Crossroad

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November 2, 2006

A National Commission

Two weeks ago, Secretary of Education Margaret Spellings launched a new National Commission on the Future of Higher Education in America, a commission on which I currently serve. In addressing the first meeting of the Commission, Secretary Spellings stated, “It is time to launch a national dialogue on our shared vision for higher education. Of course, the circumstances are far different from earlier studies such as *A Nation at Risk*. Rather than facing a ‘tide of mediocrity’, we’re starting our discussion with the finest system of education in the world—the very best. Our challenge today is to make it even better.” (*The Economist*, 2005).

She went on to charge the Commission with addressing four key areas:

- Accessibility: How accessible is higher education? And who will be the college student of tomorrow?
- Affordability: Why is the cost of college rising so rapidly and how can we make college more affordable?
- Accountability: How well are institutions of higher education preparing out students for the workforce of the 21st century? Will our students have the skills to be leaders in the public and private sectors? How do we know what we’re getting for our investment in higher education?
- Quality: How can we ensure America remains the world’s leader in innovation and research?

Why now? After all, other such major federal higher education initiatives occurred at critical times in our nation’s history:

- In 1862, when, in the midst of the Civil War, Abraham Lincoln signed the Morrill Act creating the land-grant colleges to meet the needs of an increasingly industrialized nation.
- In 1944, when Franklin Roosevelt signed the G.I. Bill providing millions of returning servicemen with the chance to attend college, and shortly thereafter Vannevar Bush submitted his report that recommenced the university-government research partnership that created the research university as the cornerstone of a modern technological nation.

- In 1957 when Dwight Eisenhower responded to Sputnik and the Cold War with the National Defense Education Act.
- In 1965 when Lyndon Johnson helped make the dream of college more affordable for millions of students by signing the Higher Education Act.

A Flat World

Today we face challenges similar to those of earlier times (National Intelligence Council, 2004):

- Clearly we live in a time of great change, an increasingly global society, knitted together by pervasive communications and transportation technologies and driven by the exponential growth of new knowledge.
- It is a time of challenge and contradiction, as an ever-increasing human population threatens global sustainability;
- Shifting geopolitical tensions driven by the great disparity in wealth and power about the globe, threaten our security with terrorism.
- A global, knowledge-driven economy places a new premium on workforce skills through phenomena such as outsourcing and off-shoring;
- And governments place increasing confidence in market forces over public policy to reflect public priorities.

As Tom Friedman stresses in his provocative book, *The World is Flat*, “Information and telecommunications technologies have created a platform where intellectual work and intellectual capital can be delivered from anywhere—disaggregated, delivered, distributed, produced, and put back together again, and this gives an entirely new freedom to the way we do work, especially work of an intellectual nature”. Put another way, “The playing field is being leveled. Some three billion people who were out of the game have walked and often ran onto a level playing field, from China, India, Russia, and Central Europe, nations with rich educational heritages. It is this convergence of new players, on a new playing field, developing new processes for horizontal collaboration, that I believe is the most important force shaping global economics and politics in the early 21st century.” (Friedman, 2005)

Today rapidly evolving technologies and sophisticated supply chain management are allowing “global sourcing”, the ability to outsource not only traditional activities such as low-skill manufacturing, but to off shore essentially any form of knowledge work, no matter how

sophisticated, to whatever part of the globe has populations most capable and cost-effective to perform it.

The impact of the flat world on the industrial Midwest has been disruptive, if not catastrophic in many respects. Yet we have only experienced the first waves of the approaching economic tsunami. From Pennsylvania to Minnesota, Cleveland to Detroit to Chicago, the question is the same: In an increasingly knowledge-driven global economy, what will replace factory-based manufacturing as the economic engine of future prosperity in the industrial Midwest? While this region benefited greatly during the 20th century in being the manufacturing center of the world, today's global phenomena such as outsourcing and off-shoring have destroyed the viability of low-skill, high-wage manufacturing jobs—and even threaten to displace many high-skill service activities—as a source of prosperity and social well-being. As John Austin characterized it in a Brookings Institution study of the region, “Today the economic giant of the Great Lakes region stands with one foot planted in a waning industrial era and its other foot striding toward the emerging global knowledge economy” (Austin, 2005).

Today our region faces the challenge of evolving rapidly into a post-industrial, knowledge-based society, a shift in culture and technology as profound as the shift that took place a century ago when our agrarian societies evolved into an industrial nation (Drucker, 1999). Industrial production is steadily shifting from material- and labor-intensive products and processes to knowledge-intensive products and services. A radically new system for creating wealth has evolved on a global scale that depends upon the creation and application of new knowledge and hence upon educated people and their ideas and knowledge institutions such as research universities, corporate R&D laboratories, and national research agencies where advanced education, research, innovation, and entrepreneurial energy are found.

In a very real sense, we are entering a new age, an *age of knowledge*, in which the key strategic resource necessary for prosperity has become knowledge itself—educated people, their ideas and innovation, and their entrepreneurial spirit. (Bloch, 1988). Unlike natural resources, such as iron and oil, that have driven earlier economic transformations, knowledge is inexhaustible. The more it is used, the more it multiplies and expands. But knowledge can be created, absorbed, and applied only by the educated mind. Hence educational institutions in general, and universities in particular, will play increasingly important roles as our societies enter this new age.

Nations are investing heavily and restructuring their economies to create high-skill, high-pay jobs in knowledge-intensive areas such as new technologies, trade, global supply chain management, and professional and technical services. From San Diego to Dublin, Bangalore to Shanghai, there is a growing recognition throughout the world that economic prosperity and social well being in a global knowledge-driven economy requires public investment in knowledge resources. The lessons are clear: regions must create and sustain a highly educated and innovative workforce and the capacity to generate and apply new knowledge, supported through policies and investments in developing human capital, technological innovation, and entrepreneurial skill.

It is this reality of the hyper-competitive, global, knowledge-driven economy of the 21st Century that is stimulating the powerful forces that will reshape the nature of our society and that pose such a formidable challenge to regions such as the Great Lakes region. Our states and cities, once the industrial heartland of the nation and the economic engine of the world, face the very real possibility of becoming an economic backwater in the global knowledge economy.

A Roadmap to the Future

To understand better the implications of the global, knowledge economy and what might be done on the regional level to make the transition from an industrial to a knowledge economy, during the past three years we have applied the planning technique of *strategic roadmapping* to provide a framework for the issues that our state, Michigan, must face and the commitments that we must make, both as individuals and as a state, to achieve prosperity and social well-being in a global knowledge economy. (Duderstadt, 2005).

The roadmapping process was originally developed in the electronics industry, and it is applied frequently to major federal agencies such as the Department of Defense and NASA. Although sometimes cloaked in jargon such as environmental scans, resource maps, and gap analysis, in reality the roadmapping process is quite simple. It begins by asking where we are *today*, then where we wish to be *tomorrow*, followed by an assessment of *how far* we have to go, and finally concludes by developing a *roadmap* to get from here to there.

It seems natural to explore whether this roadmapping exercise might be extended beyond a single state (Michigan) to encompass a region facing similar challenges and characterized by similar educational assets. Common demographics, economic challenges, and geographic proximity suggest that the Great Lakes region, actually from Minnesota to western New York, might be analyzed as just such an economic region.

Let me illustrate the approach, by drawing heavily from our Michigan experience.

Today

By any measure, an assessment of today's status of the Great Lakes region is very disturbing. Our states are having great difficulty in making the transition from a manufacturing to a knowledge economy.

The roadmapping study of own state, Michigan, illustrates the challenges. In recent years Michigan has led the nation in unemployment. Our largest city, Detroit, now ranks as the nation's poorest. We've already seen one of our major corporations, Delphi, file for bankruptcy, with great concern about whether its parent, General Motors and then

possibly Ford, may soon follow. Furthermore, the out-migration of young people in search of better jobs is the fourth most severe among the states.

Our educational system is underachieving with one quarter of Michigan adults without a high school diploma and only one-third of high school graduates college-ready. Less than one-quarter of Michigan citizens have college degrees. And although Michigan's system of higher education is generally regarded as one of the nation's finest, the erosion of state support over the past two decades and most seriously over the past four years—with cuts ranging from 25% to over 40% for some of our public universities—has not only driven up tuition but put the quality and capacity of our public universities at great risk. In fact, state support of my university, the University of Michigan, has dropped below 10% of our operating budget.

More generally, for the past two decades Michigan has been shifting public funds and private capital away from investing in the future through education, research, and innovation to fund instead short term priorities such building prisons, gimmicks such as casino gambling and professional sports stadiums, and ill-advised tax cuts, including tax abatements to prop up dying industries and tax exemptions for politically influential businesses (e.g., the service economy). And all the while, as the state budget began to sag and eventually collapsed in the face of a weak economy, public leaders were instead preoccupied with fighting the old and increasingly irrelevant cultural and political wars (cities vs. suburbs vs. exurbs, labor vs. management, black vs. white, religious right vs. labor left). In recent years the state's motto has become "Eat dessert first; life is uncertain!" Yet what we have really been consuming is the seed corn for our future.

While the details of our study focused on Michigan, much of this assessment would apply equally well throughout the Great Lakes region. Most of our states are experiencing an aging and in some cases declining population, as young, educated adults leave the region for better jobs elsewhere. The region has the highest level of racial segregation in the nation, including the top ten most segregated large metropolitan areas. While the region has a large R&D sector (particularly in its research universities and industrial product development), it badly lags the rest of the nation in entrepreneurial culture. In fact, of the nation's largest cities, only Minneapolis in the Great Lakes region is rated among the most creative, while most of our major cities rank toward the bottom in this index. Although the Great Lakes states have taxable wealth above the national average, their tax effort lies somewhat below the average, as

evidenced by the fact that public higher education in our region has suffered greatly in recent years from reduction in state support, even as the percentage of our population with college degrees continues to lag behind national average.

Actually, the concern about today's challenges also applies at the federal level. A recent study by the National Academy of Sciences notes similar concerns (Augustine, 2005):

- The United States has become a net importer of high-technology products, with its exports falling over the past two decades from 30% to 17%, and its trade balance shifting from plus \$33 B to negative \$24 B in 2004.
- In 2003 only three American companies ranked among the top 10 recipients of patents granted by the U.S. Patent office.
- In 2004, China graduated over 600,000 engineers, India 350,000, and America 70,000.
- While the U.S. has 10.5 million illegal immigrants, under the law the number of visas set aside for "highly qualified foreign workers" dropped to 65,000 a year from its 195,000 peak.
- Today American industry spends more on tort litigation than on R&D...

The National Academies study concludes with the warning:

"America must act now to preserve its strategic and economic security by capitalizing on its knowledge-based resources, particularly in science and engineering, and maintaining the most fertile environment for new and revitalized industries that create well-paying jobs. The building blocks of our economic leadership are wearing away. The challenges that America faces are immense." (Norm Augustine, *Rising Above the Gathering Storm*, 2005)

Yet perhaps our greatest challenge at the state, regional, and national level lies in our attitude. Preoccupied with obsolete political battles, addicted to entitlements, and assuming what worked before will work again, our cities, our states, and perhaps our nation today are sailing blindly into a profoundly different future. Thus far many of our

citizens have been in denial, assuming our low-skill workforce would remain competitive and our factory-based manufacturing economy would be prosperous indefinitely. Yet that 20th-century economy will not return. Our region is at great risk, since by the time we come to realize the permanence of this economic transformation, the out-sourcing/off-shoring train may have left town, taking with it both our low-skill manufacturing jobs and many of our higher-paying service jobs.

To be sure, our region was once the economic engine of the world, the arsenal of democracy, due largely to the investments made by our ancestors in public infrastructure such as schools and colleges, social benefits, and infrastructure. Yet today this spirit of public investment for the future appears missing. Decades of failed public policies and inadequate investment now threaten the extraordinary educational and knowledge resources built through the vision and sacrifices of past generations. Ironically, at a time when the rest of the world has recognized that investing in education and knowledge creation is the key to not only prosperity but, indeed, survival, too many of our citizens and leaders, in both the public and private sector, have come to view such investments as a low priority, expendable during hard times. The aging baby boomer population that now dominates public policy demands instead expensive health care, ever more prisons, homeland security, and reduced tax burdens, rather than investing in education, innovation, and the future.

Tomorrow

A vision for *tomorrow* can best be addressed by asking and answering three key questions:

1. *What skills and knowledge are necessary for individuals to thrive in a 21st century, global, knowledge-intensive society?*

Clearly a college education has become mandatory, probably at the bachelors level, and for many, at the graduate level. Beyond this goal, a region should commit itself to providing high quality, cost-effective, and diverse educational opportunities to all of its citizens throughout their lives, since during an era of rapid economic change and market restructuring, the key to employment security has become continuous education.

2. What skills and knowledge are necessary for a population (workforce) to provide regional advantage in such a competitive knowledge economy?

Here it is important to stress that we are not just competing among ourselves prosperity or with other states such as California or Texas. More serious is the competition from the massive and increasingly well-educated workforces in emerging economies such as India, China, and Central Europe.

3. What level of new knowledge generation (e.g., R&D, innovation, entrepreneurial zeal) is necessary to sustain a 21st century knowledge economy, and how is this achieved?

Here it is increasingly clear that the key to global competitiveness in regions aspiring to a high standard of living is innovation. And the keys to innovation are new knowledge, human capital, infrastructure, and forward-looking policies. Not only must a region match investments made by other states and nations in education, R&D, and infrastructure, but it must recognize the inevitability of new innovative, technology-driven industries replacing old obsolete and dying industries as a natural process of “creative destruction” (à la Schumpeter) that characterizes a hypercompetitive global economy.

How Far?

So how far does do we have to travel to achieve a knowledge economy competitive at the global level? What is the gap between the Great Lakes region today and tomorrow?

This part of the roadmapping process doesn't require a rocket scientist (even though in the 1960s I once did research on nuclear-powered rockets!). One needs only acknowledge the hopelessness in the faces of the unemployed, or the backward glances of young people as they leave our states for better jobs, or the angst of students and parents facing yet another increase in college costs as state government once again cuts appropriations for higher education.

To paraphrase Tom Friedman once again, “The world is flat! Globalization has collapsed time and distance and raised the notion that someone anywhere on earth can do your job, more cheaply. Can America [...and the Great Lakes States...] rise to the challenge on this leveled playing field?”

How Do We Get There?

So, what do we need to do? What is the *roadmap to the future of the Great Lakes region*? In a knowledge-intensive society, regional advantage in a highly competitive global marketplace is achieved through creating a highly educated and skilled workforce. It requires an environment that stimulates creativity, innovation, and entrepreneurial behavior.

More generally, in an age of knowledge in a global economy, educated people, the knowledge they produce, and the innovation and entrepreneurial skills they possess have become the keys to economic prosperity, social-well being, and national security. Moreover, education, knowledge, innovation, and entrepreneurial skills have also become the primary determinants of one's personal standard of living and quality of life. Hence one could well make the case that democratic societies—and state and federal governments—must accept the responsibility to provide all of their citizens with the educational and training opportunities they need, throughout their lives, whenever, wherever, and however they need it, at high quality and at affordable prices. Furthermore, as higher education becomes increasingly important to one's personal standard of living and quality of life, it is important that opportunities for access and education should breach the boundaries and burdens of race, class, poverty, and geography.

Beyond a commitment to educational opportunity, there is another key to economic prosperity: technological innovation. As the source of new products and services, innovation is directly responsible for the most dynamic sectors of the U.S. economy. Here our nation has a great competitive advantage, since our society is based on a highly diverse population, democratic values, and free-market practices. These factors provide an unusually fertile environment for technological innovation. However, history has also shown that significant public investment is necessary to produce the essential ingredients for innovation to flourish: in new knowledge (research), human capital (education), infrastructure (schools and colleges, facilities, laboratories, communications networks), and policies (tax, intellectual property).

Other nations are beginning to reap the benefits of such investments aimed at stimulating and exploiting technological innovation, creating serious competitive

challenges to American industry and business both in the conventional marketplace (e.g., Toyota) and through new paradigms such as the global sourcing of knowledge-intensive services (e.g. Bangalore). Yet again, at a time when our competitors are investing heavily in the education and skill of their workforce and in stimulating the technological innovation to secure future economic prosperity, many of our states are missing in action, significantly under-investing their economic and political resources in preparing for the knowledge economy.

Adequately supporting education and technological innovation is not just something we would like to do; it is something we have to do. What is really at stake here is building our regional advantage, our ability to compete for prosperity, for quality of life, in an increasingly competitive world. In a knowledge-intensive society, regional advantage is not achieved through tax cuts for the wealthy or using public dollars to prop up dying industries. It is achieved through creating a highly educated and skilled workforce. As Bill Gates warned, cutting-edge companies no longer make decisions to locate and expand based on tax policies and incentives. Instead they base these decisions on a state's talent pool and culture for innovation—priorities apparently no longer valued by many of Michigan's leaders, at least when it comes to tax policy.

It requires an environment that stimulates creativity, innovation, and entrepreneurial behavior. Specifically, it requires public investment in the ingredients of innovation—educated people and new knowledge—by creating a ubiquitous, high-quality learning and knowledge infrastructure. Put another way, it requires public purpose, policy, and investment to create a knowledge society competitive in a global economy.

A Unique Asset of the Great Lakes States

So what might we suggest as the elements of a roadmap to the future for the Great Lakes region? A recent study by the Brookings Institute (Austin, 2005) characterized the challenges and assets of our states as follows:

- Challenges
 - decaying manufacturing base
 - backward economic culture
 - lag in knowledge work
 - brain drain

- aging population
- segregated cities
- obsolete tax structures
- Assets
 - economic population size and market
 - research base
 - location (Great Lakes)
 - several agglomeration centers
 - decision and R&D center for key sectors
 - political economic history and importance

Which of these assets might we use in a roadmap to the future of the Great Lakes region? Probably not natural resources, although the fresh water resources of the Great Lakes might temporarily be an asset in areas such as tourism (until Nestle bottles it all up and sells it). Unfortunately, human capital is also not currently an asset for our region, both because of aging (and perhaps declining) populations and the relatively low priority given to education by a manufacturing economy—and unfortunately for many of our citizens and political leaders. The current infrastructure of these states—both physical such as highways and industrial facilities and policies such as tax structure and public priorities—evolved to serve a manufacturing rather than a knowledge economy. Today this infrastructure represents more of a liability than an asset.

Yet there is one very unusual—indeed, unique—asset possessed by this region: the strongest concentration of flagship research universities in the world. At its core are the Big Ten universities, or more correctly, the C. I. C. (Committee on Institutional Cooperation) group, which consists of the eleven Big Ten universities plus the University of Chicago. These twelve universities conduct more research, produce more scientists and engineers, doctors and lawyers, business executives and teachers, than any collection of universities in the world, including the University of California, the Ivy League, Oxford and Cambridge, and the other leading universities in Europe and Asia. More specifically, they conduct over \$6 billion/year of R&D, enroll over 300,000 undergraduates and 76,000 graduate students, award roughly one-fifth of the nation's doctorates in fields such as engineering, chemistry, mathematics, and computer science. When one adds to these institutions other leading research universities of the Great

Lakes regions such as Cornell, Carnegie Mellon, Pittsburgh, Case-Western Reserve, Iowa State, one has a significant fraction of the world's top research universities.

As the flagship universities of their states, these institutions already set the pace for broader educational activities, both at the post-secondary and K-12 levels. Each of these universities has built world-class excellence in unique areas (e.g., Illinois in computer technology, Minnesota in chemistry and chemical technology, Ohio State in materials science and technology, Michigan State and Penn State in agricultural technology, Wisconsin and Michigan in engineering, the natural and social sciences, and biomedical science, Northwestern in medicine and business administration, and Chicago in the humanities and sciences). Aggregating these "spires of excellence" by linking these institutions would give the region the world's leading programs in a broad range of key knowledge areas.

The rapid evolution of digital technologies provide powerful new paradigms to integrate together the programs and activities of these institutions. These institutions have long played important leadership roles in developing these technologies, e.g., Minnesota's pioneering work in networking ("Gopher"), Illinois's development of the browser (Netscape), Michigan's and Michigan State's role in developing the Internet (NSFnet), and Indiana's management of Internet2.

While the flagship public research universities in the Great Lakes region face similar challenges today as their state's budgets struggle to cope with staggering costs for health care, corrections, security, and infrastructure in the face of political forces demanding tax relief, this has made them lean and mean. In effect, all of these institutions have already managed to become predominantly privately-supported public institutions and developed the flexibility and entrepreneurial skills to compete in an increasingly aggressive marketplace, with their quality and capacity essentially intact. (Zemsky, 2005)

Perhaps most important, there is a long-standing tradition of cooperation among these institutions (in addition to their highly visible competition through the Big Ten Athletic Conference). They work together on both regional and national agendas, merging library and research resources, and sharing curricula and instructional resources with faculty and students. Because of their land-grant traditions, they also have a long history of public service and extension, not only within their states but throughout the world.

These institutions are characterized by a long tradition of global outreach and international development that might enable them to coalesce into a true “world university”, reaching into all parts of the globe to open up new markets and access world-class human capital.

Hence it seems natural to suggest that any strategic effort to better position the Great Lakes region for the global, knowledge economy must include these remarkable institutions as essential assets. In fact, one might liken such an effort to that undertaken by California in the 1950s, when the challenge and opportunities afforded by a changing economy and population stimulated the development of the California Master Plan, a bold vision, which created a system of universal post-secondary education, with the University of California campuses at the helm, augmented by the California State University System and the California Community College System that together provided a very unusual combination of world-class quality with broad access. Today most agree that the California Master Plan played a very critical role in providing the state with exceptional regional advantage, creating the strongest regional economy in the world. As *The Economist* recently observed: “The extraordinary growth in the California economy during the last half of the 20th century was due to many things: the development of California’s infrastructure (aqueducts and freeways), the development of agriculture, and perhaps the most important factor for today’s high-tech California economy: the creation of a superb set of public universities.” (The Economist, 2005)

Because of many generations of strong support and stewardship, today the Great Lakes states have a collection of flagship research universities not only comparable to but superior in many characteristics—quality, capacity, breadth, global presence—to those of the California institutions. Hence it is natural to question whether a similar planning effort could be launched to weave these formidable assets into a strategy to build regional advantage in a global, knowledge-driven economy.

Some Next Steps

So, where to next? Since I’m an engineer rather than an economist, I’d prefer to leave you with some suggestions rather than simply a series of questions.

The first step is to engage the attention and commitment of leaders from the various sectors of our society, e.g., business and industry, state and local governments, higher

education, foundations, and the media. Of course, as someone raised in Missouri, I am well aware of the old adage that sometimes to get a mule to move, you first have to whack it over the head with a 2x4. Hence let me suggest that we turn to the CIC universities as the 2x4, a brain trust perhaps working closely with other organizations such as the Brookings Institution, to join together to develop a detailed analysis of the economic and social challenges faced by our region as it grapples with the imperatives of a global, knowledge-driven economy, much as we have tried to do through the Michigan Roadmap. The media will play an important role in this effort by raising public awareness of just how much at risk our states will be if we remain trapped in the low-skill industrial economy while the rest of our world evolves into a knowledge economy.

Second, we need to form organizations to link together the leadership of various sectors. At the outset, let me suggest a steering group consisting of governors, mayors, CEOs, and university and foundation presidents. This might be a multi-state version of the government-university-industry roundtable groups that exist in other states such as California or at the national level through the National Academies. Perhaps a coalition of the Federal Reserve Banks (Chicago, Cleveland, Minneapolis) could host this activity?

Third, someone is going to have to bankroll the early work to form these groups, perform the necessary analysis, and develop the roadmap to our future. Here our region is fortunate to have a number of important and influential foundations, e.g., MacCarthur, Spencer, Kellogg, Mott, and others that have invested in the welfare of our states in the past, and that could join together in investing in just such a multi-state effort for the future.

Fourth, there would need to be a corresponding roadmapping effort within each sector. For example:

- Both state and local governments need to do a better job in identifying and sharing information on “best practices”, both to provide new ideas to a political system all-too-frequently backing into the future, as well as perhaps to provide a political umbrella for the necessary action.
- Leaders of business and industry—and of course, their shareholders and the investment community—need to look beyond quarterly earnings and consider

the longer term impact of workforce quality, R&D and innovation, and regional prosperity on their future—indeed, their very survival, in the flat world of the knowledge economy.

- Higher education should recommit itself to achieving world-class quality—not that every institution should strive to be a Stanford or Harvard—but community colleges and regional universities should focus to achieve world-class standards in serving their students and communities in a cost-effective fashion, while research universities should recognize that focusing to achieve excellence in key academic programs is more important in today’s hyper competitive global economy than building yet another Taj Mahal complex on their campuses (succumbing to the “edifice complex”) or winning a national championship in a revenue sport
- Our foundations need a similar challenge. While their impact on national and global agendas is important, they must remember that their wealth has been drawn from our region. Hence while their original benefactors may have long since passed away, there remains a fundamental responsibility to address the needs of our states, particularly during a time of great challenge.
- The media should demand that its reporters and editors pay attention to the big picture, building both the capacity and commitment to understand and educate our citizens about the real challenges posed by our changing world and the sacrifices they will be necessary both for their own long-term prosperity and security and that of their children.
- And while we are talking about challenges, let us not forget the federal government. As we all are painfully aware, the national dialog has drifted far from the issues that really matter to our region and our nation for the longer term and instead tend to be distracted by narrow special interests or cultural wars. Yet perhaps the Great Lakes region has an opportunity to shift this debate. After all, if the coasts remain blue, while the south and west remain red, the roughly one-third of votes represented by the Great Lakes remain in play and could be used as the 2x4 to get the Washington mule’s attention, in 2006 but even more so in 2008. If we could come together to develop an agenda for what actions are necessary at the federal level to help our region

make the transition to a knowledge economy, then we could hold the feet of the candidates of both political parties to the fire, demanding they address these issues rather than the distractions they currently use to manipulate public opinion and voters.

Concluding Remarks

In our early effort to develop a strategic roadmap for the future of Michigan we sensed a growing concern and frustration on the part of many citizens with the deafening silence about our state's future that characterized our public, private, and education sectors. Too many of our leaders, in government, industry, labor, and universities, have simply not been willing to acknowledge that the rest of the world is changing. They have held fast to an economic model that is not much different from the one that grew up around the heyday of the assembly line era—an era that passed long ago.

To be sure, it is difficult to address issues such as developing a tax system for a 21st-century economy, building world-class schools and colleges, or making the necessary investments for future generations in the face of the determination of the body politic still clinging tenaciously to past beliefs and practices. Yet the realities of a flat world will no longer tolerate procrastination or benign neglect. For this effort to have value, we believe it essential to explore openly and honestly where our region is today, where it must head for tomorrow, and what actions will be necessary to get there. We simply must stop backing into the future and, instead, turn our attention to making the commitments and investments today necessary to allow the Great Lakes states to compete for prosperity and social well-being tomorrow in a global, knowledge-driven economy.

Returning once again to Friedman:

"The flattening of the world is moving ahead apace, and nothing is going to stop it. What can happen is a decline in our standard of living if more Americans are not empowered and educated to participate in a world where all the knowledge centers are being connected. We have within our society all the ingredients for American individuals to thrive in such a world, but if we squander these ingredients, we will stagnate."
(Friedman, 2005)

Hence our goal is simple in principle if challenging in execution: To transform what was once the manufacturing center of the world economy into what could become its knowledge center. Put another way, while this region provided the *muscle* for the manufacturing economy that powered the 20th century, I believe it has the capacity to become the *brains* of the 21st century knowledge economy.

And what could be more appropriate for a region of the nation established more than two centuries ago on a founding principle of the Northwest Ordinance (now chiseled in the frieze above the central building on our Ann Arbor campus)



“Religion, morality, and knowledge being necessary to good government and the happiness of mankind, schools and the means of education shall forever be encouraged.”

Perhaps it has never been more imperative that we heed this principle by making education the cornerstone of the effort to position the Great Lakes states for prosperity and social well being in a global, knowledge economy!

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