

WHAT MICHIGAN MUST HAVE TO SUCCEED

People and Land is a coming together of diverse business, environmental, social justice, and agricultural thought leaders that have laid out a vision for Michigan's future prosperity.

The Six Pillars for Michigan's Prosperity
Our Best and Future Hope

- 1 Attractive Cities and Neighborhoods
- 2 Highly Competitive Schools and Lifelong Learning Opportunities
- 3 **Knowledge-Based Technologies and Michigan's Future**
- 4 Thriving Agriculture to Grow Michigan's Economy
- 5 Natural Resources for Recreation and Job Creation
- 6 Inclusive and Entrepreneurial Culture

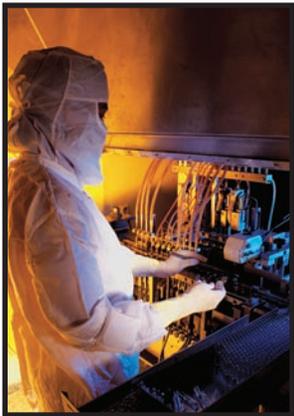
PILLAR 3:

KNOWLEDGE-BASED TECHNOLOGIES AND MICHIGAN'S FUTURE

Job Growth in Michigan Will Come from New and Creative Businesses

For Michigan, competition has been recast on a global stage. Much of the development of new ideas, new businesses, and new jobs is taking place in the new knowledge economy. Exactly what is the “knowledge economy”? Some scholars say it includes “information services, finance and insurance, professional and technical services, and company management”; other researchers considerably broaden that definition. So-called “creative class” workers are also included in this knowledge-driven economy—designers, filmmakers, audio producers and composers, artists, Web workers, advertisers, and more.

The knowledge economy is also measured by the number of IT professionals outside the IT industry; jobs held by managers, professionals, and technicians; the educational attainment of the entire workforce; immigration of knowledge workers; and employment in high value-added manufacturing sectors and high-wage traded services, like financial and insurance sector jobs. Michigan ranks 22nd in the U.S. in these high-growth categories.^(P3-1)



Some predict that as routine jobs become automated or off-shored, and as the economy becomes even more knowledge driven, managers, technicians, and professionals will become increasingly important—and Michigan ranks 11th in these jobs. Another booming sector nationally has been professional technical jobs, which grew 68 percent faster than overall employment between 1999 and 2005, and includes engineers and scientists, health professionals, lawyers, teachers, accountants, bankers, consultants, and engineering technicians—and Michigan ranks 25th in these jobs.

How We Cultivate Knowledge-Based Technologies

Michigan has 105 degree-granting institutions that place us in the top ten nationally in graduates at all levels of postsecondary education. The number of graduates in 2005–2006 was 103,183, including 1,811 PhD graduates.^(P3-2) We clearly have what it takes to create highly employable

talent. However, Michigan's investment in higher education in the last five years has been the lowest in the nation.^(P3-3)

Another economic contribution of universities is their capacity for technology transfer—taking new ideas and quickly moving them into the private sector to create jobs. MSU, U-M, Michigan Tech, Wayne State, and Western Michigan have tech transfer licenses, were issued 201 patent licenses in 2006, and submitted 339 patent applications. The result of this work can mean not only jobs but also patent-related revenue. In 2006, Michigan universities accrued nearly \$30 million from patents.^(P3-4) There is far more potential for technology industry growth in Michigan if we set the stage.

How Do We Keep Knowledge-Based Jobs in Michigan?

Knowledge jobs require a critical mass of young, talented people (college grads, minorities, women, immigrants), and nearby university research capabilities (which spawn patents and high-tech jobs). These in turn create an entrepreneurial culture and attract venture capital. However, the people who can work in these jobs demand attractive places to live and work, and Michigan needs to focus on placemaking. Once an area has a sense of “place” recognized for entrepreneurship and clusters of knowledge-related innovation, the area attracts more and more of the same activity.



Metros are Knowledge Magnets

Metropolitan areas are the prime drivers of the knowledge economy. In 2001, the Minneapolis region ranked 3rd in the nation in its share of the workforce employed in managerial, professional, and technical positions as well as the education level of the workforce. Detroit ranked 29th.^(P3-5)

Knowledge Sector Jobs and Education Level		
Rank	Metro	Score
1	Washington, D.C.	14.2
2	Denver	12.8
3	Minneapolis	12.8
4	Austin	12.8
5	Raleigh-Durham	12.3
6	Seattle	12.1
7	San Francisco	11.9
8	Boston	11.7
9	Hartford	11.5
10	Salt Lake City	11.2
11	San Diego	11.1
12	Oklahoma City	10.8
13	Nashville	10.8
14	Philadelphia	10.7
15	Atlanta	10.7
16	Cincinnati	10.7
17	New York	10.6
18	Rochester	10.5
19	Cleveland	10.4
20	Buffalo	10.4
21	Dayton	10.3
22	Columbus	10.1
23	Richmond	10.1
24	Portland	10.1
25	Norfolk	10.1
26	Charlotte	9.9
27	Dallas	9.9
28	Indianapolis	9.8
29	Detroit	9.8
30	Pittsburgh	9.7
31	Houston	9.7
32	Milwaukee	9.6
33	Sacramento	9.6
34	New Orleans	9.1
35	Chicago	8.9

SOURCE: The Metropolitan New Economy Index, 2001.

by 2010, 90 percent of the engineers in the world will live in Asia,^(P3-11) there is growth potential for Michigan throughout many sectors, given the broad definition of a knowledge economy.

As Richard Florida says, “Innovative people cluster together,” and they do it largely in metropolitan areas, where they increase each other’s productivity, a kind of “urban metabolism.”^(P3-6) While studies show that, as a region, the Detroit-Ann Arbor metro area is creating momentum as a talent magnet,^(P3-7) it has a long way to go to measure up to leading cities, let alone surpass them and truly ignite Michigan’s prosperity.

The Promise of a Knowledge Economy

Set against the overall loss of 177,000 jobs in auto manufacturing alone between 2000 and 2008, one researcher finds “the only reliable path to a high-prosperity Michigan is to be concentrated in knowledge-based enterprises.”^(P3-8) Since 1990, middle- and high-wage knowledge-based jobs have grown only 17 percent in Michigan compared to 32 percent nationally—translating to 223,000 knowledge jobs if Michigan were on track with the rest of the nation.^(P3-9)

On an encouraging note, some assert that while manufacturing jobs in the auto industry are being lost, Michigan is quietly becoming the world center for automotive engineering, research, and design. The Michigan Economic Development Corporation reports that Michigan is the number one state for auto research and development, employing more than 60,000 professionals.^(P3-10)

Even though some predict that

Nationally, today’s economy is already knowledge dependent, and since the 1990s, such jobs have become the nation’s largest occupational category. The Kauffmann Index of 2007 showed that managerial and professional jobs increased as a share of total employment from 22 percent in 1979 to 34.8 percent in 2003.^(P3-12) According to the National Center for Education Statistics, “Experts agree that the availability of a highly talented, creative and educated workforce is the primary determinant of where knowledge economy businesses choose to locate.”^(P3-13)

The Path to a Knowledge Economy

Michigan metro areas do not yet have that kind of synergistic knowledge economy compared to many other metros. Given the state’s failure to keep pace, Michigan needs solutions. The 2005 Council on Michigan Competitiveness report—*Innovative America*—points the way.^(P3-14) The report named innovation as the chief economic challenge and identified several elements for developing it:

- Investment in research and development that fuels innovation
- Talent cultivation
- A culture that supports innovation

The bottom line: Knowledge-based technologies and the jobs they fuel must have a feeder system for the talent they demand and the right environment to attract and retain that talent in Michigan. This means a strong university system and attractive places for talented people to live, work, and play. That is Michigan’s prosperity challenge—for all of us.

Learn More

For more information on knowledge-based economies and Michigan’s future and to explore sources for this article, visit www.PeopleandLand.org. The Six Pillars for Prosperity are endorsed by PAL member organizations, including:

- Michigan Association of REALTORS®
- Michigan Chamber of Commerce
- Michigan Environmental Council
- Michigan Farm Bureau
- Michigan Suburbs Alliance
- Michigan United Conservation Clubs
- NAACP – Detroit Branch