



Learning Key in Knowledge Economy Article

**LATTITUDE**  
CONSULTING GROUP, INC.



As Published at [Information Management](#)

## ***Learning Becoming Key in Knowledge Economy***

By Jeff Walter

September 2007

Now in the midst of the information revolution, the economy is dominated by a struggle to control the production and distribution of knowledge. In this knowledge economy, a significant portion of the working population finds employment in the service sector. The increasing complexity of products and the systems that produce those products require that workers in all sectors have the necessary knowledge and competencies to excel at their job function.

As an illustration of how industry is reacting to the information revolution, Michigan Future, Inc., a nonpartisan, nonprofit organization formed to develop ideas on how Michigan can thrive in the information economy, identifies the following knowledge-based industries:

- Wholesale trade,
- Management of companies,
- Information,
- Education,
- Financial activities,
- Health care and social assistance,
- Professional and technical services, and
- Government, except education.

### **Michigan, a Compelling Example**

Michigan lost nearly 163,000 manufacturing jobs from 2000 through 2003, a decline of 18 percent. There is a widespread concern that these jobs are gone forever and that the 700,000 remaining jobs are at risk. Most pronounced in industrial states like Michigan, manufacturing losses are viewed with greater concern than those in other industries. One view holds that manufacturing, which historically has been a high-wage industry, will disappear, and the economy will be increasingly dominated by low-wage service-providing industries. In industrial states like Michigan, many see manufacturing as the most important engine powering the state's economy.<sup>1</sup>

Michigan Future analyzed employment data from 1990 to 2003 and found evidence that the knowledge economy is more than information revolution hype. During this time period, the greatest job gains occurred in those industries that were identified as knowledge based. Notably, the manufacturing industry was the only sector to lose jobs. However, the decrease in manufacturing jobs does not entirely explain Michigan's slow recovery. The state actually lost more jobs in the service sector, including both knowledge-based jobs and low-paying, low-education jobs.

Michigan Future used the concept of earnings share as part of the analysis. Basically, the earnings share is a percentage of the per capita income that can be traced to a specific industry, in other words, how much income



## Learning Key in Knowledge Economy

Article

**LATTITUDE**  
CONSULTING GROUP, INC.

in a state is earned by residents working in manufacturing jobs, and how much is earned by individuals working in one of the knowledge industries.

When looking at growth data over a greater time period and comparing Michigan's 2001 per capita income to other states, the long-term impact of Michigan's manufacturing and knowledge economy mix can be seen. Michigan has had one of the highest shares of earnings from manufacturing jobs and a share of 3.5 percent below the national average from knowledge-based jobs. In 2001, Michigan was one of 16 states, including neighboring Indiana and Ohio, that had the lowest per-capita income and was the one of the slowest growing states over the previous 30 years.

A comparison of Michigan to other states shows the emerging importance of the knowledge economy.

- 12 of 13 states that had an earnings share from knowledge-based jobs had per-capita income above the national average.
- All 15 states that had a greater share of knowledge-based jobs than manufacturing jobs had a per capita above the national average.

### Making the Transition

In 2007, Michigan's future, as well as other states faced with economic difficulty, depends on developing a strategy to deal with the reality of economic globalization. States like Michigan must transition from a manufacturing-based workforce and develop knowledge-based sectors of its economy including high-tech, health care and others.

How can a state trying to make this transition succeed? One popular remedy is lowering taxes to attract businesses in desired sectors. However, this approach does not appear to increase per capita income as much as other factors. In fact, some of the most prosperous metropolitan areas, such as San Francisco and Seattle, are also the most taxed.

Actually, education appears to be the critical factor. Michigan Future found a correlation between higher education levels of residents to a higher concentration of knowledge economy earnings. Additional research further validates the "greater education, not lower taxes" contention. The research matched per capita income to the highest educated states and the lowest taxed states. As it turns out, eight out of the ten most educated states had higher per capita income than the lowest taxed states. Two states, Virginia and Colorado, were both top educated and low tax states.

If a state successfully transitions from a manufacturing to knowledge-based economy through an educated workforce, how does it develop such a workforce? The state can increase the education of its existing workforce by investing in education and training programs. In addition to internal development, states can also hope to attract highly educated individuals from other states. Both internal and external development can be implemented to maximize the effectiveness of each approach.

Internal development includes both short-term and long-term investments. Short-term investments focus on the current workforce and include retraining programs. Long-term investments focus on the workforce of the future and include public school programs, as well as funding for higher education.



## Learning Key in Knowledge Economy

Article

**LATTITUDE**  
CONSULTING GROUP, INC.

To further develop the knowledge economy, the state can develop and fund nonprofit organizations that also receive private donations. These nonprofit organizations can operate more independently from government institutions. Different nonprofit organizations can provide knowledge-building value in different ways. One nonprofit might provide education and training services to individuals displaced by outsourcing (short-term internal investment). Another type of nonprofit, however, is the business.

### Building and Sustaining the Creative Class

Social scientist Richard Florida grouped knowledge workers, intellectuals and artists and called them the creative class. In his book, *In Cities and the Creative Class*, Florida devoted several chapters to a discussion of the creative class and creative cities. To attract the creative class, a city needed "the three T's" of *talent* (have a highly talented/educated/skilled population), *tolerance* (have a diverse community, which has a "live and let live" ethos) and *technology* (have the technological infrastructure necessary to fuel an entrepreneurial culture).

Florida has shown that cities like Buffalo, New Orleans and Louisville were not able to attract the creative class in comparison to cities which better exemplified the three Ts. Other research of the creative class suggests that where people choose to live can no longer be predicted according to old industrial models (e.g., people will go to where the jobs/factories are). Other sociologists have noted that this demographic shift has occurred gradually over the past decade. Creative workers are looking for cultural, social and technological amenities/climates in which they feel they can best "be themselves."

The same types of investments that would be made to attract this creative class of workers must also be made to serve an additional purpose - retaining knowledge workers. After all, after investing substantially in educating its own citizens and preparing them for the knowledge economy, the last thing a state wants to see is those workers leaving.

### Succeeding in the Knowledge Economy

Success in the knowledge economy, however, happens at the company level. Businesses must manage two levels of information transfer - the data underlying processes (inventories, financial metrics, design specifications, etc.) and the knowledge that a worker requires to perform their jobs. For the knowledge worker, the latter involves fewer assembly-line operating procedures than the manufacturing counterpart. The information must enable the worker to operate within a framework, gather and analyze data, problem-solve, and follow a plan to complete a project or assignment. Learning is key in the knowledge-based business and can be accomplished through a top-down approach or a bottom-up approach.

In the top-down approach, an entity uses formal mechanisms of knowledge transfer, such as degrees, certifications and continuing education. Knowledge is pushed to the worker and achievement is measured in course completions. This approach is useful when uniformity is important.

In the bottom-up approach, the individual is responsible for locating and acquiring knowledge through both formal and informal modes of learning. Knowledge is pulled by the worker and achievement is measured by demonstrating competency through some sort of assessment or exam. Bottom-up takes advantage of informal learning and simplifies learning management.



Optimal knowledge transfer in an organization (and between partner organizations) may combine both the top-down and bottom-up approach with an emphasis on one or the other.

Training budgets can be tight for both private and government organizations. Technology can help decrease training delivery costs by reducing the administrative effort and by supporting distance learning. Web-based software can manage course catalogs, enrollment, scheduling and class rosters for in-class instructor-led training, online courses and certification programs. Knowledge-based technologies, like blogs and wikis, are particular suited for informal learning.

Learning management software for formal learning can provide organizations with a means to evaluate the effectiveness of training programs and identify areas to improve. By using training data collected by knowledge-based technology and outcomes collected by the organization, a statistical analysis can determine which programs are successful.

- Corporations can manage their training and talent development resources to maximize their impact on business results.
- Nonprofit and government organizations can determine how to most effectively fund training programs that result in employment for retrained individuals or that have a positive impact on business startups.

These findings suggest that learning is key to the knowledge economy on several dimensions;

- Increased education level required for an individual to compete for higher-paying jobs;
- Economic growth depends on a state's ability to grow and attract knowledge worker talent; and
- To be competitive in the knowledge economy, organizations and companies must be able to manage knowledge in the way processes were managed in manufacturing.

These dimensions have technological implications. States that have historically depended on manufacturing must leverage technology to effectively and efficiently educate and train and retrain the workforce to develop knowledge worker skills. In addition, the state must develop the technical and cultural infrastructure that will attract and retain the knowledge worker. A knowledge worker must be educated, willing to learn and comfortable with the technology that companies must use to manage knowledge competitively.

*Reference:*

1. Grimes and Glazer. "A New Path to Prosperity? Manufacturing and Knowledge-Based Industries As Drivers of Economic Growth." University of Michigan, 2004.

Jeff Walter is the president of Latitude Consulting Group, an e-business and technology consulting firm based in Saline, Mich., helping clients use IT to increase productivity and reduce costs. Latitude's expertise is rooted in a twenty-five year operating history of designing and building large-scale business partner portals for Fortune 100 companies.