



**Mississippi Career & Technical Education Conference
August 4, 2011
Rankin, MS**

For the last ten years, I have had the opportunity to work with Mississippi community colleges on a range of workforce and economic issues, and I'm excited to work with you again on career and technical education programs that support the state's manufacturers.

I am now the President of The Manufacturing Institute. We are the non-profit, non-partisan affiliate of the National Association of Manufacturers and our mission is to support the nation's manufacturers through solutions and services focused on education, workforce development, and innovation acceleration.

While our solutions are obviously tailored to the manufacturing industry, let me assure you that most of them are applicable to other business sectors as well. But manufacturing in particular has required some creative new approaches.

For a generation now, manufacturers have been fighting a negative perception in this country about our industry. So it comes as a shock to most people when you point out the actual facts:

- The U.S. is still the largest manufacturer in the world, producing over 20% of the world's goods, a figure that has barely changed in 25 years;
- Foreign manufacturers are moving their operations to the U.S., increasing their direct investments by over 500% in the last 20 years;
- Manufacturing now accounts for nearly 60% of all U.S. exports, providing a valuable source of external wealth; and,
- There are still over 280,000 manufacturing firms in this country employing nearly 12 million Americans.

The figures for Mississippi are also significant. 2,600 manufacturing plants employ over 135,000 residents and contribute over 90% of the state's exports. Manufacturing is the lifeblood of communities all across the state, providing security for hundreds of thousands of Mississippi families.

Not only is manufacturing important to our economic health, but also it is vital to our national security, providing the hardware and technologies to support our servicemen and women both here in Mississippi and overseas.

While manufacturing remains a strong and vibrant presence across the state and the country, it now confronts some serious challenges including:

- A significant increase in the structural costs facing the industry caused by both worldwide demand for energy and raw materials and government policies around health care and tax rates;
- The absence of a coherent and coordinated national trade policy; and,
- The lack of a national innovation strategy.

Each of these is contributing to a worsening business climate where our companies struggle to compete against foreign firms who possess the full support of their governments. It's why you're seeing manufacturers becoming more vocal in calling for new policies and a new commitment to our industrial sector.

But while these issues play out on the front pages of newspapers and websites, there is another challenge looming in the background, one that threatens not only manufacturers, but also companies in every sector of the economy. That is the deteriorating condition of our workforce and, in particular, the next generation workforce.

The U.S. is betting its entire economic future on our ability to produce the leading-edge. Whether it's in IT, biotech, aerospace, construction...it doesn't matter. We'll be the ones to constantly create new and better things. This future promises to be bright, but only if we have the workforce that is capable of pushing that leading-edge. And right now, that doesn't look like a very good bet.

Many of you have heard the numbers and read the stories before, but that doesn't make them any less threatening. High school drop out rates are now at 30% and many students who do graduate lack the basic reading, writing, and mathematics skills needed in society. Enrollment in remediation courses at higher education has soared, increasing the burden on higher education with a sort of "under preparation tax." And college completion rates are around 50%, and closer to 30% for community colleges.

We could spend all year on the reasons behind this, but I want to point to one in particular today. Students simply cannot see the connection between school and a job.

Through a whole series of decisions over the last hundred years, we have created an education system that is almost completely separate from the economy at large. It has been the job of schools to educate children and create responsible citizens, and it has

been the job of companies to train employees. Jobs for individuals with almost any education level were plentiful because companies would spend the time and resources to turn them into productive employees.

This arrangement worked until the economy went global and competitors weren't just across street or across the country, but around the world. Now, companies can no longer afford the luxury of six month training programs. They need employees who have the knowledge and skills to contribute right away.

That means that schools must now become game-changers. This is a major challenge for schools because: first, they do not have experience in training employees; and second, they can't readily identify the skills the companies across all sectors now demand of their employees.

The only way to address this monumental challenge is to align education-economic development-workforce-and business agendas so that they work in concert to develop the talent necessary for business success in the global economy.

As representatives of the manufacturing industry, we think we've found a solution that fits the needs of our businesses while working within the existing secondary and postsecondary education structure.

The core premise of our solution is that, in manufacturing, we have standards for every imaginable input and output. Whether it is the composition of steel, the tolerance of machines, or the failure rate of a part, manufacturers can give the details to three decimal points. So let's create a system that allows manufacturers to be as rigorous in the standards they apply to their most important asset - human capital.

These standards should come not in the form used by traditional education, which measures seat time through credit hours. Instead, our standards will be competency based, demonstrated through mastery, and verified through certification.

To develop our solution, called the NAM-Endorsed Manufacturing Skills Certification System, we joined with several other leading industry groups two years ago to create a system of nationally portable, industry-recognized credentials. These credentials -- and the training required to obtain them -- certify that an individual possesses the basic skills required to work in any sector of the manufacturing industry.

Our system can be envisioned as a pyramid of skills certifications, with an initial focus on the skills required for all entry-level jobs in manufacturing today including:

- Personal effectiveness skills;

- Foundational academic competencies – for manufacturers, those are applied math, reading, and critical thinking;
- General workplace competencies which cover the fundamentals of business;
- And, the industry-wide technical skills related to basic manufacturing processes including production, logistics, machining, quality assurance, safety and health, and technology.

The foundational competencies in the first tiers are grounded in ACT's National Career Readiness Certificate. The technical competencies are covered by the Manufacturing Skill Standards Council's Certified Production Technician, the National Institute for Metalworking Skills' Machining and Metalforming certifications, and the American Welding Society's Certified Welder series. Finally, the Society of Manufacturing Engineers' Engineering Technologist certification caps our entry-level skills system, recognizing the infusion of technology into all manufacturing processes.

Where our system takes the next step though, is by organizing, aligning and translating those stackable credentials into corresponding educational courses that can be integrated into high school and community college degree programs of study.

It is this development of pathways, that clearly link specific courses, certifications, job titles, and salaries demonstrating the connection between school, work, and money, that we believe will have a significant impact on retaining a greater number of students and attracting them into the manufacturing fields.

Now we recognize that regional economies vary, and educational pathways to success must recognize that as well. Our nationally-portable, industry-recognized entry-level certifications represent about 80% of the skills required for career success. The 20% customization needs to reflect regional economies and local employers.

However, as a nation, we spend far too much of our time and resources focusing on the 20% difference. We use this difference to justify recreating entire curriculum at the state and even individual college level, duplicating efforts and resources and resulting in certifications that have little value to the industry as a whole. Instead, if we focus on the common core, we can then better leverage the limited resources, public and private, to reach a greater number of students and have a wider impact on the industry.

While on its face, the idea of a skills certification system may not seem transformational, it is in fact reforming education. For too long, any programs that were "career and technical" or "company-specific" were pushed off into the non-credit side of academic institutions, making a loud and clear statement of the value that colleges and universities placed on those programs.

Our system is integrated into the for-credit side of colleges, so that even if students only take three or four courses, achieve a certification, and head into the workforce, they have “banked” those credits so that, when they return to achieve the next level certification, they will be working towards a degree as well. The achievement of degrees still holds meaning, both in the workplace and in society, and the education and skills that an individual obtains should be rewarded with advancement in education and in the economy.

This also creates more on and off ramps in education which facilitate an individual’s ability to obtain schooling when their professional career requires it and also positions them to earn while they learn.

From a company perspective, a nationally portable, industry-recognized credential system, integrated into degree programs, transforms their approach to human resources. It would nearly guarantee a level of quality in potential hires that does not exist today, greatly reducing the risk associated with hiring new employees – a decision I’ve heard manufacturers describe as “a million dollar bet” when the total expected investment in that worker is calculated.

And from the college perspective, industry-recognized certifications should begin to redefine completion in postsecondary education. If an individual is coming to your school to get the skills needed for a job, and he or she achieves that goal with a certification and then finds a job, how is that not a success? Well today, that person is part of your 70% non-completion rate. That can and should change.

So, what does this system mean for Mississippi, and in particular the community college career and technical education programs that are the natural home for such certification courses?

Well, first, we learned very early on in this process that it isn’t a good idea to tell faculty members how to teach. So instead of creating curriculum for every school to adopt, we instead use the industry-recognized standards as the desired result. As long as students can demonstrate mastery in welding or metalworking or other manufacturing processes, how they get there is up to each individual state or institution.

By adopting this approach, we can still ensure the national portability of credentials that benefits both employers and workers, while allowing for state and local customization to specific industry clusters that are relevant to regional economies.

Next, Mississippi is well positioned to make this Skills Certification System a reality across the state. When we first launched the system two years ago, the Bill & Melinda Gates Foundation provided us with a sizable grant to pilot our approach in four states. Because of the success of that pilot, the Lumina Foundation for Education followed last

year with a grant to begin implementation in an additional 13 states. One of those states is Mississippi.

So, working with Jay Moon and the Mississippi Manufacturers Association, we are organizing the key leaders in manufacturing, education, and government to map out the steps necessary to implement this in community colleges while simultaneously building the demand for certified workers at Mississippi manufacturers.

Third, for the last several years, Mississippi has been building a career awareness and student recruitment program called Dream It! Do It! to encourage more students to pursue careers in manufacturing. This is particularly important because, as all of you know, the once ubiquitous vo-tech programs have all but disappeared from our high schools, eliminating what was a natural feeder program into the manufacturing industry.

Fortunately, Mississippi has been the site of some high profile manufacturing plant openings and the citizens of the state both appreciate the importance of manufacturing and understand the good jobs that can be found in the industry. The efforts of the Dream It! Do It! team will hopefully interest an even greater number of students in manufacturing and direct them towards the education pathways that allow them to pursue a career at one of Mississippi's manufacturing firms.

Fourth, the University of Mississippi recently established the Center for Manufacturing Excellence which seeks to drive innovation in manufacturing in the state. This is important because innovation is the only real competitive advantage that the United States possesses in the global economy, and we have to marshal our key assets, including universities, to strengthen our innovation engine.

And finally, very few states have this strong of a network of CTE professionals in community colleges. You are going to be responsible for implementing the certification program in your colleges and developing the skills of the next generation of manufacturing workers.

You also have a natural connection to the workforce development system in Mississippi because so much of the WIA activity happens at community colleges. We are currently supporting a bill called America Works that would direct the resources in WIA towards programs that result in nationally portable, industry-recognized credentials. If that bill succeeds, and last year, it passed the House 410-to-12, then individuals are going to have significant resources to pursue manufacturing education. That means more people in your programs and, ultimately, more skilled workers into manufacturing.

The importance of having those workers available to the industry was just reinforced this week as GE Aviation announced that it was building a new plant here in Mississippi that will create 250 high tech jobs.

Mississippi is developing a reputation as a new hotbed of manufacturing. This was started, in part, because of a lower cost structure here than in the Midwest. In order to maintain that reputation though, a quality, skilled workforce is essential. The NAM-endorsed Manufacturing Skills Certification System is part of that solution.

Nationwide, we have set a goal of credentialing half-a-million workers over the next five years through our Skills Certification System. This will not only replenish the pipeline of skilled workers for the manufacturing industry, but also provide a model for other industries to follow to ensure that all Americans have the skills needed to work and succeed in the industries that will shape and define the U.S. economy in the 21st century.

I am proud that Mississippi will be one of the leading states in this effort and look forward to working with all of you in the months in come.

Thank you.