SPECIAL REPORT

Manufacturing Skills Certification: Employer Perspectives
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EXECUTIVE SUMMARY

Manufacturing executives face numerous recruitment and hiring issues in today’s ultra-competitive global marketplace. An aspect of human resources (HR) strategy that merits further examination by manufacturing industry leaders and hiring managers is the implementation of an industry-standard credentialing system. In collaboration with The Manufacturing Institute, University of Phoenix presents a special report on the value and effectiveness of a manufacturing-specific skills certification system endorsed by the National Association of Manufacturers. The report identifies the barriers to implementing a standard credentialing system and the roles that industry and higher education can play in engaging and developing a superior-quality workforce. Can manufacturing-specific skills certification improve hiring practices so American businesses can remain dynamic and preserve their competitive edge?

Implementing a manufacturing-specific skills certification system may help you to:

- Reduce or eliminate time and effort wasted on unqualified or uninterested candidates
- Compare job candidates more equitably
- Validate whether a potential hire has both the book smarts and job skills needed for manufacturing jobs
- Reduce employee turnover
- Invest in a more qualified workforce to increase productivity and competitiveness.

Remaining Competitive in an Evolving Marketplace

To remain competitive in today’s business environment, manufacturers throughout the United States must recruit, hire, and train the most qualified employees and boost retention rates—all while reducing the costs and time invested. An industry-standard skills credentialing system integrated into HR policies and operations can help managers set the stage for more informed hiring decisions, minimize on-the-job training time and expense, and improve new worker retention. This special report considers manufacturers’ perspectives on the value of such a system, and the factors that are preventing more widespread implementation of a standard skills certification system among manufacturing organizations.

A shrinking pool of qualified workers, along with limited use of a current standardized system to corroborate employee skills and competencies, makes assessing potential hires more difficult. A standardized skills certification system is an effective, strategic approach that can transform hiring strategies by pinpointing the most qualified candidates. Hiring the most qualified workers helps ensure optimal worker deployment for the demands of the 21st-century marketplace. Higher education can play a crucial role in this process—if the value of skills credentialing is acknowledged and incorporated into HR policies. Credentialing provides hiring managers with a budget-neutral means to seek out and hire only candidates with the core competencies and specialized skills that meet job criteria.
Developing a More Qualified Workforce Through Skills Certification

The Manufacturing Skills Certification System endorsed by the National Association of Manufacturers (NAM) is a series of credentials applicable across all sectors in the manufacturing economy. It can be used for new-hire screening and assessment as well as to enhance current worker skill sets. The NAM-endorsed system directly addresses the deficits in manufacturing education and training that are limiting the pool of qualified candidates for U.S. manufacturing jobs.

This special report confirms the numerous obstacles manufacturing and HR executives face in adopting and using effective industry skills certification to meet hiring and performance challenges. Recruiting, training, and retaining quality workers can all be improved through an industry-standard credentialing system. However, change must come from within manufacturing organizations so that educators can maximize the system’s benefits for the industry.

**The takeaway:** For the NAM-Endorsed Manufacturing Skills Certification System to obtain market-wide acceptance, manufacturers who find value in credentialing must spread the word to other organizations about the advantages of implementing the system. Additionally, community colleges must partner with local manufacturing organizations to provide basic skills education by offering flexible class scheduling and academic credit for certification. By integrating credentialing and education requirements into HR processes, coordinating implementation of credentialing standards, and promoting the value of credentialing throughout industry sectors, manufacturers can achieve a higher-quality workforce for greater productivity and global competitiveness.
Introduction

The American manufacturing industry stands at a crossroads: technological advancements, offshoring, globalization, and a rising skills deficit in the US workforce present challenges that demand industry leaders’ attention and a strategic, coordinated response. One strategy to remain competitive in the current marketplace is to create systems and processes to recruit and develop a skilled workforce that possesses critical thinking and problem-solving abilities as well as industry-specific competencies. A key aspect of this strategy is a standardized skills certification system.

Does skills certification matter in employee recruitment, hiring, and training in the manufacturing sector? What return on value and investment does skills certification provide? Can credentialing keep U.S. manufacturers competitive in today’s global marketplace?

This special report examines how manufacturers currently use, or anticipate using, industry-specific credentialing, its benefits, and the need for HR practices to evolve if the United States is to stay competitive. The report presents evidence from current research, including a survey of the perceived value of the skills credentialing system among manufacturing executives and hiring managers throughout the United States and across several industry sectors. Based on this research, the report explores the hiring issues many industry executives face and ways to enhance the broad-based adoption and effectiveness of industry-specific skills certification to improve workforce performance and competitiveness. Higher education can play a critical role in this process, and is ready to respond to industry needs—but before that can happen, manufacturing leaders must first acknowledge the evidence that there is inherent value in skills credentialing and then incorporate the system into their HR strategies.

The Need: Situation Analysis

As the world’s largest manufacturing economy, the United States produces about 21% of global products, but competition from other countries, including China and Japan, are putting increasing pressure on employers to innovate and increase the skills of their workforce to remain successful and profitable. Technological advances and a flattened worldwide economy mean new workers must be able to contribute from day one and learn new proficiencies to take part in the emerging global economy; however, many employers say that finding qualified, skilled workers is among their biggest challenges. Recruiting and hiring employees with basic and higher-level skills—from math and reading to science, technology, and occupation-specific expertise—are imperative steps for building and maintaining a competitive workforce.
Why Is Recruiting a Qualified Workforce So Difficult?

As more baby boomers reach retirement age, the national workforce is losing experienced, skilled workers. This means fewer employees with the appropriate technical knowledge and skills are available to employers. Students who graduate from high school or community college often have less interest in manufacturing as a career, and those with an interest in manufacturing are not graduating with adequate core competencies.

Most employers still rely on “old” methods of hiring, such as in-person interviews and reference checks. In addition, job candidates do not always have the specialized knowledge and skills to meet manufacturers’ needs.

Another issue employers face is the “revolving door.” The time and resources employers invest in worker training are significant. If workers drop out before completing training, they are of no value to the company. Other recruits may want to “try out” manufacturing as a career, but quit because of low interest, unfulfilled expectations, or weak workplace competencies. In either case, employers are left with unmet staffing needs, additional costs, and disappointment.
The Challenge for Manufacturers

To remain competitive in the global marketplace means manufacturers must attract and hire highly skilled and trained workers and retain those workers for long periods of time. Traditional recruitment and selection practices alone do not meet the needs of manufacturers for hiring skilled and motivated employees. Recruiting a qualified manufacturing workforce—from engineering to biotech—remains a persistent challenge. Does using an industry-specific skills certification system make recruiting more cost-effective? Does it help to develop a more qualified pipeline of candidates for the workforce? If the answer to these questions is yes, what factors are inhibiting broader implementation of this credentialing system among manufacturing organizations?

Manufacturers must weigh the need for upgrading current worker skills and training new employees against the costs of those investments. An economical approach to this challenge is needed. Employees who are not already credentialed when hired require more training time on basic manufacturing processes and prerequisites prior to any specialized instruction. That increases costs and time invested. Additionally, non-credentialed employees often do not stay with a company for long periods of time, which escalates retention and recruitment costs. The manufacturing industry requires a cost-effective, time-effective approach to recruitment, on-the-job instruction, retention, and motivation.

A skills certification system, endorsed by the National Association of Manufacturers (NAM), allows employers to target and narrow training for new hires. When new employees can walk in the door with a recognized set of credentials, hiring managers and executives have a readily identifiable skills benchmark, which allows the training that is needed to be more targeted, and, therefore, more economical. Credentialing ensures that potential hires are evaluated from the same baseline. Employers have the certainty and confidence that new employees arrive with core competencies, assessed by an objective, outside organization. The "weeding out" process has already occurred, so new hires are integrated into the workforce and are productive more quickly than those without skills certification.

A significant barrier to implementing a credentialing system may be the lack of sufficient information for manufacturers to assess the system’s value and the implications of integrating credentialing standards into HR policies and operations. Reviewing current research on manufacturing leaders’ perspectives of the benefits and challenges of skills certification can provide insights that enable managers to make informed decisions about implementation. With research-based data, decision makers can more effectively direct change in their organizations and maintain a competitive edge over industry rivals.

Certification System Helps Manufacturers Recruit More Effectively (But There’s a Catch-22)

The Manufacturing Skills Certification System is a series of credentials that apply across all sectors of the manufacturing industry and may be used to screen potential hires or help incumbent workers advance their careers. The certification system was created by The Manufacturing Institute—a Washington, DC-based organization dedicated to improving and expanding manufacturing in the United States—and endorsed by its affiliate organization, the National Association of Manufacturers (NAM).

The credentialing system validates whether candidates have both the book smarts and the job skills needed for entry-level positions in any manufacturing setting. As part of an effort to expand use of the NAM-Endorsed Skills Certification System in 25 states, The Manufacturing Institute partnered with University of Phoenix to conduct a qualitative survey of the certification system’s value for manufacturers.
Industry Leaders Weigh In

University of Phoenix conducted telephone surveys from August to November 2010 with a cross-section of manufacturing executives and hiring managers nationwide who are currently using or anticipate using the NAM-Endorsed Manufacturing Skills Certification System. Among the overarching concerns:

- What will it take to hire and retain the most skilled workforce?
- How can companies maintain a business edge among competitors?
- How can employers maximize human capital strategies through education and workforce development?
- How does a standard certification protocol benefit everyone in the industry?

Key survey questions concerned which credentials manufacturers currently use or plan to use, length of time using the system, whether and how credential value is tracked, alternative methods used to verify employee competency, and perceptions regarding the value of the credentialing system.

Research Results

The survey yielded the following key findings:

- **Leaders in the manufacturing industry who participated in the survey reported using all but one of the NAM-endorsed skill certifications to screen employees.**

- Participants reported that before using the NAM-Endorsed Manufacturing Skills Certification System, they verified employee competency by using in-person interviews and background, reference, and criminal history checks.
• Participants reported value in implementing the credentialing system related to lower recruiting costs, lower entry-level training costs, higher employee retention rates, improved opportunities for advancement by incumbent employees, and improved employee engagement and input.

• Participants also reported value related to lower new employee relocation costs and improved workplace safety, although these values were considered less significant.

• Participants reported drawbacks of the credentialing system, such as the time and effort required of workers to earn a credential, difficulty explaining the credentialing system to workers, and lack of market acceptance.

• Catch-22: The demand from industry and the supply from our nation’s community and technical colleges need to grow concurrently. According to the industry leaders who participated in the survey, change within manufacturing organizations and the educational system will maximize the credentialing system’s benefit for the manufacturing industry.

Credentials Used by Surveyed Manufacturing Organizations

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<th>Credentials</th>
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<tr>
<td>NCRC</td>
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<tr>
<td>NIMS</td>
<td>4</td>
</tr>
<tr>
<td>MSSC</td>
<td>3</td>
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<td>AWS</td>
<td>2</td>
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<td>SME</td>
<td>1</td>
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</tbody>
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National Career Readiness Certificate (NCRC, also referred to as WorkKeys®)
National Institute for Metalworking Skills (NIMS)
Manufacturing Skill Standards Council (MSSC)
American Welding Society (AWS)
Society of Manufacturing Engineers (SME)

Source: University of Phoenix
Summary of Manufacturing Leaders’ Perspectives

• Survey participants agreed that credentialing reduced wasted time and effort in the hiring process by weeding out candidates who were not really interested in manufacturing as a career: “We’re not bringing people in that just kind of want to try out manufacturing or are enamored by the pay,” said one decision maker, “only to find out that, within a couple of weeks, they don’t like it and they don’t come back.” Manufacturing leaders also noted that by hiring credentialed workers, they could target training needs of new employees, rather than conducting a more generalized program. Targeted training helps to reduce costs because employees already have baseline knowledge enabling them immediately to be ready to work, become engaged, and integrate their skills into the team.

• Widespread implementation of the NAM-Endorsed Manufacturing Skills Certification System would benefit the entire manufacturing industry, according to study participants. A standardized program measures all applicants against the same set of criteria, allowing recruitment of better talent. Leaders also believe it would make finding a skilled workforce much easier, while improving the quality of the final products made in the United States.

Certification also affects opportunities for worker advancement. Employees have the ability to increase their wages, take on new responsibilities, and move into management or supervisory positions. One leader said that those employees who commit the time and effort to become credentialed and master necessary skills, have much greater odds of promotion than someone who did not take on this challenge.

Benefits of Credentialing

Survey respondents were generally positive about the benefits of certification systems. They noted the following favorable outcomes:

• Managers’ ability to choose from a hiring pool of more qualified candidates
• A mechanism to compare job candidates more equitably
• Expedited hiring process
• Faster learning by new hires and earlier contributions to the organization
• Improved safety outcomes because of increased awareness, understanding, and retention of safety skills and standard procedures
• Employees’ greater enthusiasm and commitment to their jobs
• Reduced training costs because of more targeted programs and reduction or elimination of basic skills courses
• Lower turnover-related costs because of higher retention rates
• A common measure of skill sets and competencies regardless of location
• A means to differentiate between committed candidates or workers and those who are less engaged.

Survey respondents were also upbeat about the ability of certification to help win more business by highlighting employee competencies for prospective customers. Certification distinguishes credentialed employees as potential leaders among their peers, boosting workers’ credibility. It also establishes that the company has a culture of investing in human capital, making it a more desirable employer.

To bridge the education gap between school and work, new recruits must have basic life skills such as reading and math, as well as skills specific to their job or industry. The NAM-Endorsed Manufacturing Skills Certification System provides a uniform
measurement of essential workplace and occupational skills that employees need to thrive in today’s technologically advanced manufacturing environment. It provides hiring managers and decision makers with an industry-recognized, clearly defined progressive series of competencies that immediately signal proficiency in a candidate’s chosen field.

Skills certifications encompass a range of training and assessment—from basic work-readiness through industry or occupation-specific technical, production, and post-secondary education. The Manufacturing Institute partnered with world-leading certification organizations to align with tiers of skill requirements:

**Tiers 1-3:** ACT for The National Career Readiness Certificate (NCRC)

**Tier 4:** The Manufacturing Skill Standards Council (MSSC) for Certified Production Technician (CPT), the National Institute for Metalworking Skills (NIMS) for Certified Machinists and Metalformers, or the American Welding Society’s (AWS) for Certified Welders

**Tier 5:** The Society of Manufacturing Engineers (SME) for advanced-level Certified Technologists and Engineers.

These multilevel certification options offer a variety of solutions to the current skills gap and position certified employees to contribute higher value to their organizations and the industry at large.

“Education is key to advancing workers’ careers as it provides them with the opportunity to broaden their perspectives by asking them to examine different points of view.”

— Fred Bentley, COO of Hayes Lemmerz International, Inc. and 1996 University of Phoenix MBA graduate
Challenges of Credentialing

The credentialing system is not yet used universally, so it has not yet gained widespread market acceptance. Without widespread acceptance, community and technical colleges are hesitant to expand their existing programs. The market for certified workers and the opportunity for workers to become credentialed are not growing in tandem.

- Some manufacturers are hesitant to change the status quo. Although hiring credentialed employees is a cost-neutral process, many hiring managers still rely on interviews and background checks because it is a familiar process. However, senior leaders who responded to the survey consistently reported problems with self-reported information.
- A disconnect exists between company executives and human resources managers. Some HR managers are not in sync with changes in technology and may not be aware of advances or changing needs. Persuading them to change their hiring protocols could be problematic, yet without the change, recruits are still assessed by “old” criteria, which may no longer be relevant.
- Some manufacturers were not yet familiar with the NAM-Endorsed Manufacturing Skills Certification System or how it can address the need for a qualified, skilled workforce. Manufacturers need to become more aware of the system and empowered to incorporate it into their hiring practices.

Values Associated with Credentialing

- Lower recruiting costs
- Lower entry-level training costs
- Improved employee retention
- Improved opportunities for advancement
- Improved employee engagement and input
- Lower relocation costs
- Improved workplace safety

Manufacturing organizations associated multiple values with using or anticipating using the skills credentialing system.

Source: University of Phoenix Research Institute

“Our company has been identifying skill sets for certain jobs and ensuring that employees are trained in the skills they need. Until last year, if you asked 10 people what skills they expected a quality engineer to have, for example, you’d get 10 different answers. Now, we’ve identified 14 competencies and 33 basic skills that quality engineers need to have.”

—Terri Pomfret, training director at Johnson Controls and 2008 graduate of the Doctor of Management in Organizational Leadership program at University of Phoenix
Lack of flexible course availability at community colleges makes it more difficult for potential hires to obtain certification. The consensus is that if more manufacturers demanded credentialing as a hiring requirement, community colleges would respond by offering more courses at more convenient times. This would facilitate scheduling, particularly for smaller manufacturers that often have to band together to provide a sufficient number of students for a class.

Some manufacturers pointed to a lack of market acceptance of manufacturing credentials, particularly compared with more well-known information technology (IT) certifications such as those from Cisco® and Microsoft®. One leader observed that NAM-endorsed credentials do not yet result in the same type of market impact as the more familiar IT certifications. Industry-driven demand for a recognized credentialing system is essential to widespread acceptance of skills standards.

Reasons to Implement a Credentialing System

Industry leaders agreed that broad implementation of skills credentialing would benefit the manufacturing industry as a whole. It would provide consistency, standardization, and improved ability to hire qualified workers, regardless of sector. Many also believed credentialing would enable more jobs to remain in the United States, resulting in output of higher-quality products.

Credentialing also provides employers with a uniform tool to supplement employment strategies that rely on self-reported information, in-person interviews, references, and background checks. Even those leaders who use additional hiring methods, such as job fairs, apprenticeship programs, or aptitude tests, admit there are persistent issues with what they called a “revolving door” of employee turnover. Skills certification can provide a return on value for recruitment and training costs and can boost employee engagement and retention.

Hiring managers must have the appropriate information to advance their organizations at the pace of the global economy. Understanding the need for a common skills certification system gives managers valuable knowledge to hire and retain qualified workers in their industry. Using a common skills certification denominator ensures that candidates are compared equitably. Skills certification systems provide manufacturers with added power to direct change within their organizations and to maintain an edge over global industry rivals.

Ongoing Challenges and Opportunities

Without more qualified workers in the pipeline, manufacturers will encounter increasing difficulties in remaining competitive in the global marketplace. Persuading senior human resources leaders to revamp their hiring practices is a necessary step to ensuring successful, widespread implementation of credentialing processes. Additionally, industry decision makers must be educated about the NAM-endorsed system and how it can assist in minimizing the shortage of qualified workers. Compounding the challenge, several states offer their own certifications—a situation that causes uncertainty and confusion among senior leaders about quality and standards. “Until employers say [the NAM-Endorsed Manufacturing Skills Certification System] is what we need,”

“The manufacturing industry is always looking to upgrade the talent level of its employees, and some companies are now setting minimum education standards for hiring and promotions. This practice represents a shift from a long-standing tradition of promoting workers based on longevity rather than skills or education. More and more manufacturers are looking to fill positions with the kind of talent that, in the past, was sought after only when hiring engineers.”

—Paul Fox, national accounts manager at Horton Automatics, a subsidiary of the Overhead Door Corporations, and 2004 University of Phoenix MBA graduate

“Education, coupled with experience, can move a candidate to the top of the list for hiring and promotions.”

—Chris Manolis, director of national accounts at Horton Automatics and employer of University of Phoenix MBA graduate Paul Fox
one manufacturing leader noted, “we are going to continue to deliver the programs that reflect the status quo, and they are not getting us what we need.”

High schools and community colleges must also commit to taking a proactive role in the credentialing process—promoting it from within and adopting industry-recognized standards to provide uniform proof of proficiencies to employers. Without improved K–12 education in basic math and reading skills, ongoing problems will remain for workers who want to improve their proficiencies. Community colleges need to be prepared to respond to increased manufacturing industry demands for qualified workers. More classes, at more convenient times, and more scheduling flexibility will enable workers in a variety of occupations to take advantage of opportunities for advancement.

**Next Steps**

To position the industry to develop a pipeline of qualified job candidates and strengthen the workforce for the future, coordinated efforts are needed by manufacturers and higher education leaders. The following next steps can yield positive results for the industry.

- It is up to manufacturers who perceive value in credentialing to spread the word to other manufacturing organizations about the advantages of using the NAM-Endorsed Manufacturing Skills Certification System. One way to clarify the role of certification in adding value to the workforce is to examine how other industries use standardized certification systems (e.g., IT industry: Cisco®, Microsoft®).

- Role of educational institutions: Community colleges must develop basic skills—reading, math, and computer literacy—and offer academic credits as added incentives for learners to acquire industry-specific certification. By offering more classes at more convenient times and providing academic recognition of earned credentials, educational institutions can help motivate adult learners and respond to the industry demand for skill-building opportunities. Educators are generally willing to adapt and serve industry needs—but they cannot carry the entire burden of workforce development without industry input and support. Manufacturers have an opportunity to partner with educational institutions to create integrated programs that serve and strengthen the workforce.

- Role of industry: Industry leaders can promote workforce skills enhancement through a coordinated effort to increase awareness of the value of credentialing and to encourage and support participation in certification programs. In addition, manufacturing leaders can achieve multiple benefits for their employees and organizations by integrating credentialing standards into overall HR strategies. An integrated approach to skills certification carries implications for overall production quality and organizational competitiveness. Such an approach can apply across industry sectors. Higher-quality workforce skills translate into greater productivity and global competitiveness throughout the industry.

- Incumbent workers also can benefit from the credentialing process, according to the majority of industry leaders surveyed. Credentialing reduces turnover rates and makes a difference in tough economic times when managers decide who stays or goes because workers with up-to-date skill sets are more valuable to the company. Credentialed workers also open themselves up to potential opportunities for advancement and wage increases. When companies offer certification opportunities, many leaders find that workers become more engaged in the workplace.

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**“All of our employees throughout the plant have some degree of technical certification. We expect our employees to be able to communicate effectively with employees of all skill levels and to make our company more efficient by observing ways we can improve our processes. We want them to feel they have a stake in the company and that they’re responsible for the continuous improvement of our facilities.”**

—Fred Bentley, COO of Hayes Lemmerz International, Inc. and 1996 University of Phoenix MBA graduate

**“The material I’m learning in class is helping me understand how to collaborate better with international colleagues.”**

—Mike Davis, Sr., supervisor at Tyco Electronics, and a current University of Phoenix bachelor’s degree student
In Sum: The Manufacturing Skills Certification System provides multiple values, including lower costs for recruiting new hires and training entry-level employees. But there’s a catch 22: The manufacturing industry hasn’t fully adopted the system. Without industry-wide adoption, community colleges can offer only a limited number of certification classes. The next task for manufacturing leaders who want industry-wide credentialing is clear: **integrate credentialing requirements and education into HR strategies, coordinate the implementation of the credentialing standards, and spread the word about the value of credentialing throughout industry sectors.**

Notes

2 Heitner and Miller. 2010.

References


Acknowledgments

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About University of Phoenix

University of Phoenix is constantly innovating to help students balance education and life in a rapidly changing world. Through flexible schedules, challenging courses and interactive learning, students achieve personal and career aspirations without putting their lives on hold. University of Phoenix serves a diverse student population, offering associate, bachelor’s, master’s, and doctoral degree programs from campuses and learning centers across the U.S. as well as online throughout the world. For more information, visit www.phoenix.edu.

About the National Association of Manufacturers

The National Association of Manufacturers is the nation’s largest industrial trade association, representing small and large manufacturers in every industrial sector and in all 50 states. Headquartered in Washington, D.C., the NAM has 10 additional offices across the country. The NAM’s mission is to enhance the competitiveness of manufacturers by shaping a legislative and regulatory environment conducive to U.S. economic growth and to increase understanding among policymakers, the media and the general public about the vital role of manufacturing to America’s economic future and standard of living.

About The Manufacturing Institute

The Manufacturing Institute is the research and education arm of the National Association of Manufacturers, building intellectual support and raising understanding among policymakers, the media, educators and potential workers about manufacturing’s contributions to the quality of American life, the challenges facing the sector and its excellent career opportunities. Visit the web site at www.nam.org/institute for more information about manufacturing and the economy.

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