VIEWS & VISIONS

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Developing New Career Pathways in Manufacturing

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Kim Menke is the manager of external affairs and government relations for Toyota Motor Engineering & Manufacturing North America, Inc. (TEMA). Mr. Menke's areas of responsibility include coordination of government relations activities for Toyota's 10 U.S. manufacturing operations and research and development/design centers. He also supports the community relations efforts of Toyota's 14 North American manufacturing plants and the company's research and development/ design centers.

Mr. Menke joined Toyota Motor Manufacturing Kentucky, Inc. (TMMK) in 1987, holding positions as an environmental affairs regulatory specialist, manager of environmental affairs and manager of community relations. In July 2008, these functions were shifted to TEMA in Erlanger, Kentucky.

Prior to joining TMMK, Mr. Menke held positions as a manufacturing engineer in the paint and plastics areas for General Motors, Fisher Guide Division, in Anderson, Indiana, and plant engineer at GM-CPC in Bowling Green, Kentucky. He graduated with a bachelor of science degree in environmental engineering from Western Kentucky University in Bowling Green, Kentucky, in 1985.

Manufacturers in the United States are the most productive in the world, far surpassing the worker productivity of any other major manufacturing economy, leading to higher wages and living standards. Auto manufacturing is one sector that is vital to a strong American economy. Our industry directly employs more than 1.7 million people and is responsible for eight million jobs nationwide. It is a highly competitive industry, with multinational companies from around the globe investing in America and providing good-paying jobs and terrific value to American consumers. Nonetheless, the overwhelming perception is that manufacturing is in decline, with little opportunity and undesirable as a career. Nothing could be further from the truth!

Toyota in the United States

In 1988, Toyota began manufacturing Camrys in Georgetown, Kentucky, at Toyota Motor Manufacturing Kentucky, Inc. (TMMK). In 1996, Toyota broke ground in Buffalo, West Virginia, where we build engines and transmissions for nine Toyota vehicles. Today, Toyota operates 14 vehicle and parts plants in North America. Together, these plants produce 12 models, which represent more than 70 percent of what we sell in the United States. Purchases of parts, components, goods and services from roughly 500 suppliers now exceed $25 billion annually, and we are continuing to grow.

Workforce Training

However, we want to focus attention on a larger issue that directly impacts U.S. manufacturing competitiveness. We, and in fact our entire sector, struggle to attract qualified, "work-ready" applicants who have the necessary skillsets to step into jobs and begin contributing at a high level.

As employers, we need to provide specific company training and methodology but, too often, we find we must level up more basic skills

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to assure success. Each of our plants requires team members to have a broad range of skillsets – from basic foundations in reading, math, and science; to problem solving, communication and strong interpersonal maturity; to the technical skillsets necessary to perform at peak efficiency in their chosen careers.

However, after 25 years of strong growth and development, Toyota and our suppliers still face acute challenges, replacing what were commonly referred to as "skilled trades or maintenance" positions in the United States.

With the advancements in manufacturing technology and techniques, the required skillsets of these manufacturing careers are changing too. This is a systemic problem for all automakers and suppliers and for manufacturing in general. Products can be made and sold anywhere. To sustain our manufacturing in the United States, we must be competitive in the global manufacturing market, not only against our direct competitors, but also against other countries with Toyota facilities.

Nationally, 600,000 skilled training jobs are currently unfilled, as manufacturers across America comb the countryside for qualified workers. In part, this is because of a perception problem. Manufacturing is not considered a rewarding and valued career. It is not promoted to students, parents, teachers and counselors, so they are not fully aware of the opportunity or reality of today's advanced manufacturing operations and careers.

It also is a preparation problem. The preparation of our K-12 students is declining compared to other countries. School systems are struggling

to develop globally competitive talent, particularly in the STEM (science, technology, engineering and math) fields. Global rankings show our students declining – now ranking 17th overall, 14th in reading, 17th in science and 27th in math. In addition, traditional community college systems are failing to fully provide graduates with the manufacturing skills necessary to integrate into the workplace.

Our experience shows that only five percent of the candidate pool is qualified in the skilled maintenance positions. Most applicants have only a single discipline (electrician, welder, programmer, etc.) and many applicants simply have basic educational deficiencies. For instance, national testing shows that only 35 percent of 12th-graders are proficient in reading.

At Toyota, we recognize that it takes partnerships to embrace and create change. Moreover, we are working with willing partners to identify best practices in education that will help close the achievement gap and provide better-prepared candidates for careers in manufacturing and other fields. In 2010, Toyota developed an Advanced Manufacturing Technician (AMT) Program.

This cutting-edge program has been endorsed by the Automotive Manufacturing Technical Education Collaborative (AMTEC) as a best practice in the industry. It includes a two-year associate degree that combines a next generation technical curriculum and paid real-world working experience with the development of the non-technical skills required of world-class advanced manufacturing technicians.

An Advanced Manufacturing Technician skillset includes:

- Multi-skilled (electric/fluid power/ mechanics/fabrication);
- Math skills (top one-third nationally); Reading (minimum 12th-grade equivalency);
- Fast technical learner;
- Use/learn with digital media;
- Problem-solver;
- Effective written/verbal communicator (One-on-one and in group settings; develops materials);
- Interpersonal skills (can resolve conflict); and
- Teamwork

First implemented at the TMMK plant in coordination with the Bluegrass Community and Technical College, this model was duplicated at four other plants, including Toyota Motor Manufacturing West Virginia (TMMWV) last year, working with Bridgemont Community and Technical College. The AMT program supports graduating high school seniors and non-traditional students with an advanced learning methodology, with hands-on experience resulting in highly skilled, job-ready candidates for the West Virginia workforce.

The key to any sustainable program like AMT is to develop the K-12 pipeline of students, so they are prepared and aware of this career pathway to manufacturing.

Policy Recommendations

In April 2013, Toyota was honored to testify with other manufacturers before the U.S. House of Representatives Subcommittee on Commerce, Manufacturing and Trade. In that testimony, we put forth the following recommendations to address this skilled worker crisis throughout the country. We need to:

- Intensify cooperation between government, academia and the private sector to improve K-12 STEM education.

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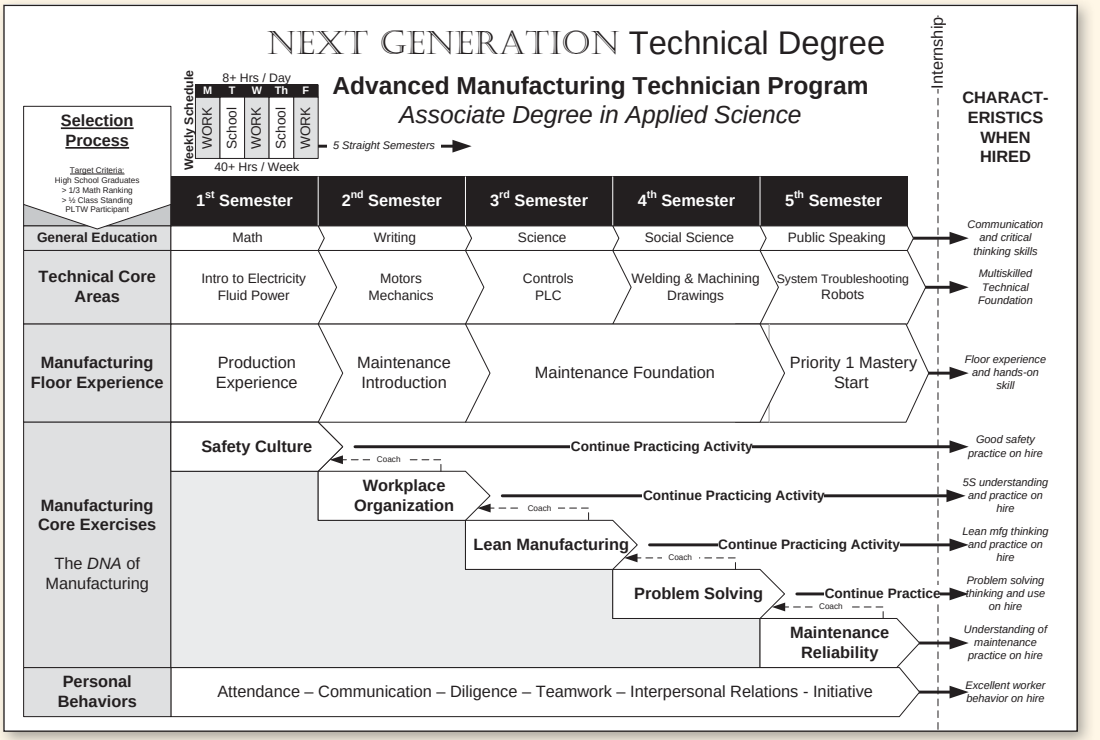
An overview of the totally redesigned Advanced Manufacturing Technician (AMT) Program for Community Colleges



Developing New Career Pathways in Manufacturing

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Further, we need to recruit and train additional qualified K-12 STEM teachers throughout the United States.

- Support innovative STEM education programs in middle school and high school, such as Project Lead the Way (PLTW), which engage students in hands-on, project-based learning and expose them to STEM fields through local industry professionals and real-world workplace experiences.
- Focus federal resources on education and workforce development programs that:
  - result in a nationally portable, industry-recognized credentialed program (such as Toyota's AMT program);
  - emphasize the development of the next-generation skilled worker through multi-skill technical training, as well as non-technical competencies, such as verbal and written communication;
  - encourage coordination between community colleges and local employers to help ensure that the curriculum meets the local employment needs; and,
  - strengthen and improve career and technical education programs in the United States, so that they produce graduates with world-class skills and capabilities, who do not require extensive "up-skilling" when hired.

We clearly recognize the budget challenges facing our nation. However, we believe many of these recommendations can be accomplished by a shift in emphasis among existing workforce development funds on the federal, state and local levels. Simply put, America's focus for some time now has been on the idea that everyone needs to go to college and get a generalist four-year degree. The benefits of this focus, as great as they are, do not necessarily accrue to the manufacturing sector. Our talent pool of skilled technicians has declined precipitously and it needs to be replaced if America is going to compete in the global manufacturing marketplace. Four-year degrees per se are not the issue – and we need skilled bachelor's degree graduates as well. However, the balance of technical and other training is critical. That is why, for example, the Toyota AMT program provides for a two-year associate degree, with a defined pathway to continue, if desired, to get a four-year bachelor's degree in engineering from a state college or university.

In summary, for manufacturing to compete in the global marketplace, our students need to be ready, willing and able to take on the manufacturing career challenges in the future that will keep U.S. manufacturing as a global leader.

Operation Feed finale, April 2012

Create a Best Place to Work, Create a Workforce for Tomorrow

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careers than in similar environments. It's a key strategy in our effort to ensure top employees are invested in our business. We empower folks to act with a sense of urgency and give them a sense of freedom and authority to take action and influence change. With the right training and the opportunity to grow, our people are able to flourish.

It's All Worthwhile

We're proud to have had outstanding leaders stay with our firm for 10, 20 or even 30 years or more. It is the sense of inclusiveness, as well as the promise of a challenging, interesting place to work that keeps our high-achieving, highly valued team members around. Our regular employee satisfaction surveys tell us our associates value our emphasis on culture and professional development.

Creating a best place to work is a challenge, but it comes with great payoffs. With the right amount of hard work, the continual fostering of growth and development, and a chance to relieve some of the pressure those two invariably create, we plan to be successful for years to come.