

# A Case For The Apprentice

**A**merican manufacturers are realizing that we cannot compete with foreign manufacturers on price and cost reduction. We are going to have to compete using innovation and new products, which requires highly skilled workers.

Many government programs talk about the need for high skilled and high performance employees, but they never seem to define high skills. I would like to suggest that a high skilled worker means a multi skilled craftsman, who can attain a journeyman status, regardless of the industry. This means learning a lot of skill sets in an apprentice-type training program. In manufacturing we need these craftsman type workers for the following reasons:

**1. Career Path:** Long term apprentice style training can help make the case to a young person that manufacturing can be a career, not just a job.

**2. Certificates are mobile and transferable:** Once the training is complete and the person is certified to be a craftsman/journeyman, the skills are transferable and mobile.

**3. Generalists, not specialists:** Attaining the certification of a multi-skilled craftsman allows the person to work at almost any job in the plant and on any machine. What we are going to need in the future to compete is a lot more generalists who can do many types of work, not specialists like CNC operators.

**4. New products and innovation:** Everybody agrees that American manufacturing needs to be more innovative and create a lot more new products to stay ahead of the game. But few workers are qualified to be involved in the conceptualization and building of prototypes for new products unless they have a wide variety of skills.

**5. Productivity:** It is absolutely true that there is a difference in productivity from country to country. For example, a few years ago I saw a Department of Commerce study that indicated the productivity in Mexico was about 1/20th of what it is in the United States. In this scenario, we should be able to pay 20 times as much to a worker in the United States and be equivalent to the output of a Mexican worker. The most productive workers are the multi-skilled craftsman type workers.

**6. New type of organizations:** Manufacturing companies are slowly moving from the old Defender-type (functional

organizations) to a new organization I call the Prospector organization. This type of organization is designed to exploit new opportunities in the marketplace. It is flexible, flat, and authority is pushed down to the workers doing the work. These new organizations need multi-skilled workers that can be moved around and do a variety of jobs.

**7. High skilled workers can compete against foreign workers:** We can't compete against low-cost foreign workers who can do high volume with low cost parts. But we can compete with the low cost countries with highly productive craftsman who can build complex and custom products.

**8. Higher compensation:** Did you ever wonder why the electrical and the plumbers unions have long waiting lists for their apprentice training? They pay good money to the apprentices while they are in training and they pay very good wages once they are certified. If America needs high-skill employees for high performance manufacturing, then manufacturers need to pay for the skills and the know-how of craftsmen. If we continue to hire people for low wages, we will get what we pay for.

**9. If we truly want higher skilled workers we have to find ways to attract the best and brightest high school kids and many kids who are pursuing general degrees in 4 year colleges.** This will require convincing them that manufacturing is a real career opportunity and with pay commensurate with acquired skills.

## So What Can Be Done?

The High Growth Job Training Initiative is a strategic effort to prepare workers to take advantage of new and increasing job opportunities in the 14 high growth and high demand industries in the U.S. economy such as advanced manufacturing, aerospace, automotive, and construction.

I found a list (updated in January, 2009) of \$75 million issued for 31 grants under the Advanced Manufacturing part of the HGJTI. However, only \$6.9 million was invested specifically in apprentice-type training. If the 5 percent of all apprentices for manufacturing is correct, we need a lot more of the HGJTI funds for apprentice-type training.

The Workforce Investment Act is the program with the biggest budget for training (approximately \$7 billion per year). The Workforce Investment Act was

passed in 1998. Its objective was to give new skills to current and future employees. The Department of Labor funnels the money for training through workforce investment boards in each state. In looking at their website and the budgets shown on the Federal Register, it appears that most of the money is for youth activities, adult activities, dislocated workers, employment services, workforce information grants, and work opportunity tax credits.

## Great Examples

There is a very good success story in the metals industry. The National Institute for Metalworking Skills (NIMS) has launched a new competency-based apprenticeship system for the nation's metalworking industry. The NIMS system represents a dramatic departure from the time-based system and integrates the NIMS national standards and skill certifications in defining and measuring required competencies. NIMS sets skills standards for the industry, certifies individual skills against the standards and accredits training programs that meet NIMS quality requirements.

Their machinist apprenticeship program includes 28 core competencies. To be certified the apprentice needs to earn 12 NIMS credentials. There are programs for machinists, toolmakers, CNC setup programmers, and maintenance. Because most jobs in manufacturing are very technical and the shortage of these workers is already upon us, we need more programs like NIMS in other industries.

A terrific example of what a large manufacturer can do if they really want to close the skills gap is what Siemens Energy and Automation has been doing in the U.S. to nurture a skilled workforce. Their training commitment is from the top down.

If manufacturers really want to interest the best and brightest students in manufacturing jobs, they are going to have to change their image and convince young people that it is better to enter a training program where you are paid to learn. They

will have to convince these kids that a trade is a good career path that pays as well as other apprentice programs.

Manufacturing must answer the question: Do we want higher skills or lower labor costs?

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