

Developing the Workforce of Tomorrow, Part 1



In the next few years, thousands of Baby Boomers are going to retire, leaving factory jobs to Generation Y, who will be presented with dual challenges; increasing productivity and making the overall U.S. economy more competitive. However, the transition between the new generation of workers and the baby boomer generation workers will be difficult because the two generations are profoundly different in terms of attitude, skills and work styles.

According to the findings of "Developing & Engaging the Manufacturing Workforce," a white paper jointly published by the [Grocery Manufacturer's Association \(GMA\)](#) [1], [Booz & Company](#) [2], and [The Alliance for Innovation & Operational Excellence \(AIOE\)](#) [3], consumer packaged goods manufacturers (CPGs) are experiencing difficulties in finding and retaining talented workers with the right combination of problem solving and core skills required in the 21st century manufacturing environment.

The [Manufacturing Excellence Share Group \(MESG\)](#) [4], part of the GMA, developed the paper in conjunction with a Booz & Co. study and panel discussion in which more than a dozen manufacturing executives spoke about hiring, training, skill requirements and development, operational styles and new ways to uncover talent.

To provide a more comprehensive picture of the issues discussed in the study, we interviewed Patricia Riedl, Principal at Booz & Company, who, along with Matthew Lescohier and Thomas Mayor, provided the expertise and technical communicators

during the MESG panel discussion and wrote the report. We also spoke with Maria Ferrante, Vice President, Education & Workforce Development at [PMMI](#) [5]. PMMI has been at the forefront of workforce development and training issues in the packaging and processing industries for a number of years, launched AIOE with charter partner GMA in 2011.



Q: All too often, talking about employment in the manufacturing realm with other manufacturers becomes a “preaching to the choir” situation. Everyone feels they understand the problems that have led to qualified worker shortages, but are there factors that are often overlooked or misunderstood?

Riedl: In general, it is true that manufacturers understand many of the issues contributing to workforce shortages. Recent media reports and studies have clearly summarized the situation and underlying drivers – yet, the fact remains, only 50% of engineering students and 20% of math and science students regard manufacturing as an attractive career. Since this is the case, it would behoove manufacturing leaders to focus on what actions they can take to begin to turn the tide. While there is no “quick fix”, there is a lot manufacturers can do. For example, leaders should be asking themselves:

- Have I clearly defined the critical skills & capabilities my operations require to support my company’s strategy? If this strategy is unclear or likely to change, how will this change my talent requirements?
- Have I established a working environment that is attractive to the current talent pool (i.e. Generation Y)? Is there more I could do to ensure that once I recruit & hire someone that they stay for the long-term?
- Have I invested in the skills training required for my specific business? Are

there local community colleges or training centers that I could partner with to expedite skill development, or provide it at a lower cost?

- Have I reached out to local & regional government / development bodies to communicate what my company needs to be successful? Can I partner with other local manufacturers to influence decisions that support a robust manufacturing base?

Q: There are a number of economic reports that offer a wide array of perspectives on the state of manufacturing employment. Which of the following do you believe are accurate, and why?

a.The manufacturing positions being created today are lower paying, entry level jobs that are not as appealing.

Riedl: To the contrary, most new manufacturing jobs today involve increasingly integrated, computer-controlled production cells and require significant ability to engage in system-level problem solving with team-mates on the floor. These are exciting, high-tech opportunities which require strong STEM skills, and in many cases a two-year associates degree or more.

b.The manufacturing positions currently available pay well but require more training and expertise than most applicants have, therefore making them difficult to fill.

Riedl: We see both skilled and unskilled opportunities in the market although most new (versus replacement) opportunities require advanced training. According to the Georgetown University Center on Education and the Workforce, in 1983, 22% of the U.S. manufacturing workforce had post-secondary education. By 2008, that number had increased to 34%. By 2018, it is expected that 38% of the U.S. manufacturing workforce will have a post-secondary education, a 12% increase over 2008 levels. The indications are that education requirements will continue to increase well into the future as manufacturing becomes more complex and requires a higher skill level.

Clients tell us that both skilled and unskilled positions are hard to fill for different reasons. High skill, high-tech roles are difficult to fill due to a lack of STEM-trained candidates with an interest in manufacturing. A recent Booz & Company survey showed that even recent science and engineering graduates have not been exposed to manufacturing – 31% and 18%, respectively – making it very difficult for manufacturers to attract these workers. The good news is that a bit of exposure in high school or in technical degree programs can significantly impact employment choices.

Despite today's high unemployment, lower skilled manufacturing roles – the traditional path to entry for generations of manufacturing workers -- are also proving hard for our clients to fill. Here the story is a bit different – the complaints are a dearth of reliable candidates willing to commit to a structured, full-time job which in the short term offers only a small income premium relative to social

welfare.

c. There are more manufacturing jobs available now than five years ago.

Riedl: Based on data from the U.S. Bureau of Labor Statistics, the number of workers employed in the manufacturing sector has fallen ~15% since 2007 (~14,000 workers in 2007 vs. ~12,000 today). However, manufacturing jobs have been steadily increasing over the past 12 months.

d. The number of available manufacturing positions continues to decline each year.

Riedl: Based on data from the U.S. Bureau of Labor Statistics, the number of U.S. manufacturing job openings has steadily increased since mid-2009 (from ~100,000 openings in June 2009 to just fewer than 300,000 openings in July 2012). It is true that when you look further back, i.e. prior to the financial crisis (2007), U.S. manufacturing job openings today remain ~20% lower.

Since productivity gains in U.S. manufacturing have offset increases in demand and manufacturing output for several decades, we expect, and in fact would hope this will continue into the future as productivity increases are critical to improve the nation's and the world's standard of living. Over the past two decades, manufacturing productivity has averaged 1.6% growth (CAGR) vs. 1.0% productivity growth across the private sector as a whole.

Q: Are there any specific recruitment or training programs that come to mind which have helped, or could help, manufacturers improve their labor pool?

Ferrante: PMMI has been working closely with industry to help provide solutions to this challenge. One outcome of that effort is the PMMI Mechatronics Certificate Program, a series of industry-developed, third-party validated tests providing a career pathway for skills acquisition, talent development and career opportunities. This program has been endorsed by the National Association of Manufacturers (NAM) and is recognized by the U.S. Department of Labor. In addition, with the help of industry, PMMI has developed a list of critical competencies needed in the manufacturing environment today and for the future. We have developed tests to assess the skills and issue a credential to all who pass our tests. We have several mechatronics partner schools in the U.S. and Canada teaching these competencies and preparing students for a career in packaging or processing.

Please tune into tomorrow's Chem Insider Daily for part two of this two-part piece.

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