

Private Sector: American manufacturing is hardly on the rocks

Tuesday, December 30, 2008

By Mark C. Tomlinson

The dire headlines about the Detroit car companies may have many thinking that manufacturing in America is coming to an end. However, it is important to note that the auto industry is just a single component of the \$1.6 trillion dollars manufacturing adds to our national economy.

For the past century, U.S. manufacturing has been synonymous with the auto industry. And for the last three decades, news reports of the Big Three's struggles to compete with foreign automakers, images of workers on assembly lines, labor negotiations and reports of job losses have dominated the U.S. media, creating a negative impression of manufacturing.

It's time America moves beyond this outdated image.

Manufacturing is a dynamic, high-tech industry. It is responsible for every object we touch -- and many that we don't. Manufacturing is about making cell phones, furniture and toothpaste. But it's also about the fabrication of enormous airplane parts and the creation of microscopic medical implants. It's the design, machining and testing of thousands of components used in the oil fields to explore, harvest and refine the oil and gas that our world depends on. However, oil and gas is not exclusively used for transportation needs, but is found in the plastics used to build that cell phone and the chemicals and coatings used to build that medical device.

Manufacturing is more than a "rust belt" industry. Although there have been significant job losses in certain industries and regions, there are many areas of the country that have been clamoring for skilled employees.

Take the Carolinas, for example. They, along with other parts of the Southeast, have seen tremendous growth in several manufacturing segments. Following the decline of the textile industry, business, government and education worked together to create opportunities in aerospace and defense, medical devices and alternative energy.

In Texas, the oil and gas industry has created a thriving manufacturing community.

In an industry that many view only from the gas pump, oil and gas creates approximately one in every three manufacturing positions in the Houston area -- and they are struggling to find qualified employees.

The Northeast has a very diverse manufacturing base, from defense, to food, to medical devices and more.

Known more for manufacturing celebrities than its industrial base, southern California's economy is very dependent on manufacturing. In Los Angeles County alone, more than 16,000 manufacturers produce items for traditional markets such as aerospace, defense, energy, medical and consumer. There are opportunities in emerging markets such as alternative energy. Wind power is ready to expand, but is struggling to find a robust supply base. Bolts are bolts, and nuts are nuts, but somehow the population of auto, medical and aerospace suppliers aren't grabbing the opportunity to supply the alternative energy market.

Manufacturing in the United States has moved far beyond Henry Ford's assembly line. Yes, many low-skilled, repetitive factory jobs have moved offshore. Others have disappeared because technology can make things safer, stronger or cheaper than manual labor.

But we need to understand that manufacturing goes far beyond our collective image of "factory" work.

First, we need to understand that manufacturing is a process -- not just the finished product.

Manufacturing begins with an idea for a product followed by the engineered design, which includes material and process selection, and quality testing. It continues with the identification of the tools and machines needed to make it and the suppliers who can provide the individual elements of the final product. All this high-skilled work

precedes the activity most Americans associate with manufacturing -- the "factory floor."

We also should appreciate the role manufacturing plays in American innovation. It's about finding ways to make a better mousetrap a billion times over. It was manufacturing professionals who developed the composite materials used in airplanes and cars that make them stronger, more energy efficient and cheaper to produce.

Manufacturing is about being green and sustainable. By eliminating waste in process and resources, manufacturers reduce costs and save the planet.

Technologies that deal with minute particulates are on the verge of exploding. Micromanufacturing has made a significant impact on the development of medical devices, sensors, stabilization systems and electronics. Nanotechnology promises to lead the next industrial revolution with potential to be a \$3.1 trillion industry by 2015.

Even though manufacturing offers high-tech, leading-edge and well-paying careers, too many Americans believe that "Mamas shouldn't let their kids grow up to be manufacturers."

We desperately need to change this mind-set. Manufacturing is vital to America's future. It's the primary source of U.S. wealth. No other segment of our economy can combine things in a way that the value of the whole is greater than the sum of its parts.

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First published on December 30, 2008 at 12:00 am
Pittsburgh Post Gazette