

IN PARTNERSHIP WITH

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manufacturing

# INDUSTRIAL EVOLUTION



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**L**ook around. How many of the products that you see were made in the USA? If you're like most Americans, you probably assume everything is "Made in China." But after a decade of decline, manufacturing jobs are returning to the U.S., and there's reason to believe manufacturing can reemerge as a force in the domestic economy.

An economic resurgence driven in part by manufacturing will, however, call for concerted efforts from the private sector, educational institutions and government. "American manufacturing is at a crossroads," says Scott Paul, executive director of the Alliance for American Manufacturing, a nonpartisan organization whose mission is to strengthen manufacturing in the U.S. "Will we see a continued decline? Or are we about to witness a significant revival?"

## ◊ ◊ ◊ Faded Old Glory?

The U.S. manufacturing workforce peaked at 19.5 million in 1979. It has declined about 40 percent since then, to 11.7 million, with nearly 6 million factory jobs disappearing between 2000 and 2009.

One reason for the loss is more efficient productivity. Thanks to innovation and automation, workers crank out twice what they did

in the early 1990s, and three times what they produced in the early 1980s. But a bigger factor is China. From 2001 to 2008, 2.4 million U.S. jobs were lost to or displaced by Chinese manufacturing.

"As a nation, we've failed to keep up with changing times," Paul believes. "In the 1950s and '60s, we were the undisputed industrial power. But in the 1970s and '80s, we began to see competition from Europe and Asia. And instead of updating our manufacturing policy, we simply did more of the same."

## ◊ ◊ ◊ On the cusp of recovery

The news from the industrial front isn't all bad. By some counts, the United States remains the global manufacturing leader, churning out 19 percent of the world's goods, ahead of China's 15.6 percent.

What's more, U.S. manufacturing jobs rose by 250,000 during the past 15 months, the first sustained increase since 1997, and output grew at an annual rate of 9.1 percent in the first quarter of 2011, exceeding the 1.8 percent growth of the economy overall.

Experts also point to an emergent "re-shoring" trend, with manufacturers bringing operations to the U.S. In May, automaker Volkswagen opened its first U.S. manufacturing plant, in Chattanooga, Tenn. The facility will build the company's new Passat mid-size sedan on the 1,400-acre site, and will employ more than 2,000 workers and produce up to 150,000 cars a year. A nearby supplier park will create more than 500 additional jobs, and several thousand new jobs are expected as an indirect effect of the investment.

Another global manufacturer, Siemens, operates more than 100 domestic manufacturing sites, including several that produce



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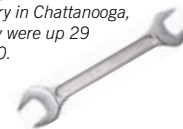
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A metal finishing technician inspects a 2012 VW Passat at the Volkswagen factory in Chattanooga, Tenn. Volkswagen sales for May were up 29 percent compared to May 2010.



manufacturing can be safe, high-tech and family-supporting,” Paul says.

Volkswagen’s Tennessee facility, for example, is working to meet the requirements of the U.S. Leadership in Energy and Environmental Design standard. LED lighting and advanced insulation reduce energy use, and a new paint technology saves 5 million gallons of water per year and recycles otherwise deposited paint residuals.

Those new workers need to be supported with the right training and skills. Collaboration between the private sector and educators can prepare students for careers in manufacturing, from the shop floor to the boardroom, from design to engineering. In Chattanooga,

Volkswagen has set up an academy to train workers in the latest technologies and best practices in auto manufacturing. In addition, the automaker provides (through public partners) a seamless articulation of education and training for students to obtain a BS in industrial technology.

### Invest for success

Manufacturers are also looking to government for an aggressive, coordinated manufacturing policy. Several incentives could help revitalize the sector. One is a reduced tax burden on domestic manufacturing. Another is an investment in infrastructure, which will take costs out of the supply chain and create demand for manufactured materials. And third is a tax credit for research and development, with an added incentive for products that are both designed and produced in the United States.

Paul points out that the voting public is ahead of Washington on the issue of manufacturing policy. In fact, in an April 2010 survey of 1,000 likely voters, 86 percent said they want Washington to focus on manufacturing, and 78 percent supported a national manufacturing strategy.

“We were pleasantly surprised by the strong support and enthusiasm for our manufacturing center in Tennessee,” Fischer says. “We believe we can be part of the beginning of a real industrial rebound for America.”

“You have to be obsessed with pushing the innovation curve, because the second you stop, someone else will take it,” Siemens’ Spiegel concludes. “The announcement by the White House of an open investment policy is an important step in promoting investment in American manufacturing and infrastructure. We believe President Obama’s goal of doubling U.S. exports by 2015 is doable. And we expect to help him achieve it.” — *Eric Schoeniger*

components for wind energy. A recent \$20 million expansion in Elgin, Ill. will create 300 new jobs in wind driven systems. A new wind turbine blade plant in Ft. Madison, Iowa has created 750 jobs, with more to come. And at a new turbine facility in Hutchinson, Kan., 400 new green-collar workers are helping to place Siemens among the largest suppliers of wind turbines in the country. In fact, Siemens USA generates one-quarter of the company’s \$25 billion in revenues.

Yet challenges remain. The quarter-million new American manufacturing jobs represent only 13 percent of those lost to the economic downturn. And many new positions are lower-paying than those they replaced. Offshoring continues, and China’s rise as a manufacturing force continues apace.

### If you build it

What’s the solution? A growing number of observers are calling for new commitments from manufacturers, educators and government.

First, companies should explore the potentials of re-shoring. Rising fuel prices are making global shipping less cost-effective. Climbing wages and prices in China and India mean offshoring is less compelling. And supply chain disruptions following the March earthquake and tsunami in Japan have companies reconsidering local or regional supply chains.

“Our new facility in Tennessee places us close to the customer and allows us to react quickly to market changes,” says Frank Fischer, chairman and CEO of Volkswagen Group of America Chattanooga Operations. “And because 85 percent of supplies will be sourced in North America, we won’t be as subject to currency fluctuations.”

Eric Spiegel, president and CEO of Siemens USA, sees similar benefits. “The United States offers enormous opportunity,” he says. “By manufacturing here, we get proximity to our largest market. We get highly skilled workers educated at some of the world’s best universities, with access to the best research facilities. And we get cutting-edge innovation we can link directly to our manufacturing sites.”

Second, manufacturers need to appeal directly to workers as they enter the workforce. “We need to show young people that





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