

# UV/EB Technology Can Help Drive Reshoring Trend

By Marc Jackson and  
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**“Made in America”** is not simply a patriotic catchphrase for rejuvenating American manufacturing. Now, with the help of UV/EB-curing technology, American manufacturers are reassessing their cost-cutting strategies and discovering that bringing manufacturing back to the U.S. can be more profitable.

It's called reshoring and it's a growing economic trend for manufacturers who are finding the economic benefits of producing near their consumers. As companies continue to look inward for cost reduction opportunities and other improvements, UV/EB-curing

technology can often make the case for reshoring. It's not a patriotic movement. It's just good business.

Reshoring is about moving away from offshoring and instead focusing on domestic manufacturing and internal manufacturing productivity. Manufacturers need to consider using a “Total Cost of Ownership” analysis to decide if offshoring or reshoring is the most cost-effective strategy for them. This means looking beyond the basic costs such as labor and weighing the impact of dislocation of engineering and manufacturing, intellectual property concerns, supply chain risks, quality issues, time-to-market delays and transportation.

Has your company considered or is it in the process of implementing a reshoring strategy? Has your company been affected by clients or customers' reshoring? If so, RadTech would like to hear from you. E-mail [uveb@radtech.org](mailto:uveb@radtech.org).

UV/EB curing technology is increasingly playing a role in enabling *reshoring*—bringing back the manufacture of products that have been lost to offshore sources. The UV/EB processes are quick, flexible and safe in the workplace, and produce an end product that the U.S. consumer can trust, compared to less regulated products from offshore.

A key advantage of domestic sourcing is quick customer response



UV station for printing press.

due to proximity. The speed of UV/EB curing and its ability to modify base products strengthen this intrinsic advantage. Some applications involve completely U.S. made products. Others are a beachhead, applying final printing and customization of base products from offshore. With proper understanding of relevant costs, base product production will follow in many cases. If companies consistently evaluate all of the costs

and risks, approximately 500,000 more manufacturing jobs would come back and the U.S. trade deficit could fall by about 25 percent. That would be a win-win situation.

Offshoring started in the 1950s and 60s and spread from Japan to Taiwan, Korea, Mexico, India, China and other developing countries. The major driving factor for this trend, especially for China, was that manufacturing wages were initially much lower than

U.S. levels. Other contributing factors included U.S. corporate tax rates; lack of a U.S. value-added tax; shortage of skilled workers; EPA and OSHA regulations about certain processes; logistical efficiencies provided by the Internet and container shipping; and the preference of U.S. consumers for the lowest priced products (even if the quality was not quite at the desired level).

U.S. manufacturers and retailers accelerated the trend by following each other to the lowest wage countries, believing they would lose market share if they didn't follow the herd. Offshoring was more severe in the U.S. than in other developed countries due to our market's characteristics—price-sensitive, huge, homogeneous and not concerned with the country of origin.

But now jobs are starting to come home. Reshoring has grown rapidly since about 2009. The *Reshoring Initiative* ([www.reshorenow.org](http://www.reshorenow.org)) tracks all reported and some private cases of reshoring and concludes that approximately 80,000 manufacturing jobs have been reshored since Jan. 1, 2010. More than 200 original equipment manufacturers (OEMs), generally larger companies, have publicly announced reshoring actions. These actions inevitably impact thousands of domestic suppliers of bill of materials products and related processes.

It is helpful to compare the acceleration of reshoring to the deceleration of offshoring:

From 2000 to 2008, offshoring was growing at 100,000 to 150,000 manufacturing jobs per year. Meanwhile, reshoring was growing at about 2,000 manufacturing jobs per year—cases that were not even reported in the media.

- Currently, offshoring is growing at about 30,000 to 50,000 jobs per

## Reshoring is often an efficient way to reduce imports, increase exports and regain manufacturing jobs

in the United States. It's also the fastest and most efficient way to strengthen the U.S. economy. Reshoring also helps manufacturers recover from offshoring's poor quality, trade secret thefts, supply chain disruptions and lengthy delivery times—all while staying cost-competitive.

### Top reasons for companies to reshore:

- Reduces Total Cost of Ownership
- Improves quality and consistency of inputs
- Reduces pipeline and surge inventory impact on just-in-time operations
- Clusters manufacturing near R&D facilities, enhancing innovation
- Reduces intellectual property and regulatory compliance risk
- Eliminates the waste and instability caused by offshoring
- Strengthens companies' ability to respond quickly to customers' demands

Company benefits of reshoring are growing daily as offshore sourcing faces increased wages and currencies, higher transportation and fuel costs, and an inability to provide required responsiveness.

Many companies are shifting their operations back to the U.S. because offshoring has hindered their ability to rapidly deliver goods, maintain low inventories, uphold competitive costs and meet demand for rapid adjustments to unique products.

year, while reshoring is growing at about 30,000 jobs per year.

- Conclusion—in the last five years the ratio of the growth in offshoring compared to the growth in reshoring has dropped from about 50:1 to close to 1:1.

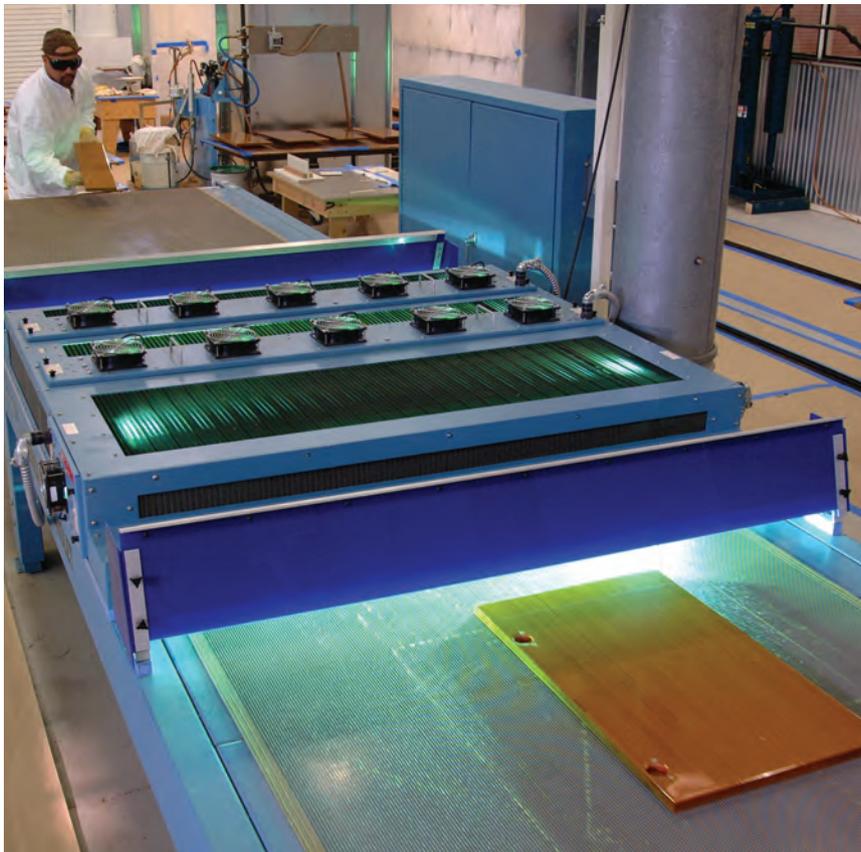
In spite of those numbers, it's important to note that it took 60 years for offshoring to reach its current level and it will probably take 20 or 30 years, at least, to largely reverse that trend.

The goal of the *Reshoring Initiative* is to bring back enough jobs to balance the approximately \$500 billion per year trade deficit, bringing back about 3 million manufacturing jobs, maybe 8 million total jobs.

The major factors driving reshoring include:

- Chinese wages (expressed in U.S. dollars) rising at about 18 percent per year for the last 13 years
- higher oil prices
- lower natural gas prices
- increasing willingness to consider the total cost of offshoring rather than just the purchase price
- advanced manufacturing technologies such as UV/EB, robotics, five-axis milling and other processes that make small lots more affordable and minimize labor costs

Experts at the *Reshoring Initiative* are confident the reshoring trend will continue. No other developing country offers the former advantages of China—which is now locked into continuing wage increases due to its economic growth and one-child policy. As American companies look to maintain their competitive edge, they will likely find reshoring is an appealing and cost-cutting strategy for an evolving U.S. market. The economic benefits of producing near the consumer are strengthening once more.



### UV/EB Improves Bottom Line

Advancements in UV/EB-curing enable processes to significantly reduce cycle time, while also increasing flexibility and decreasing dependence on a scarce, highly skilled workforce—thus enabling a myriad of manufacturers to thrive in the U.S.

The wood industry is just one segment that is making the most of UV/EB technology to keep their processes competitive for the world market. Commercial flooring, for example, used to be installed, then coated on-site in a process that took days. Now, the majority of commercial floors are produced by OEMs who coat, finish and package the products in minutes.

Office furniture production has also changed. Furniture used to be spray coated by hand then left to dry overnight or longer. UV curing has changed all that—giving manufacturers a process that allows high-quality,

durable coatings that can be applied and dried in minutes, thereby enabling efficient production in facilities located close to customers. The efficiency of UV curing has made it possible for commercial flooring and office furniture to continue production in the U.S.

Digital UV printing is enabling the reshoring of product finishing. The U.S. economy is driven by consumer demand. To compete in this market, companies must respond quickly to changing consumer tastes. This is made possible by the versatility of digital UV printing. Consumer product companies who once thought in terms of stock keeping units (SKUs) by the “millions” or “billions” can now produce by the “thousands”—meaning they can fine-tune products to smaller, more profitable consumer niches. This capability is consistent with the core economic logic of reshoring which is to minimize total cost by producing near the consumer.

Athletic shoe components produced outside the U.S. are digitally decorated with UV inks and assembled domestically. Cosmetic packaging can be tailored to niche segments with digital UV printing. A skin cream that was once marketed only to “women,” is now targeted to women in different age and ethnic groups, and men.

Common industrial products also benefit from the efficiency of digital UV printing. Fan belts need to meet standard specifications, but they are marketed through a variety of retail chains and body shops. In the past, a manufacturer would plan the production, storage and distribution of dozens of fan belt SKUs. Now, digital UV printing enables fan belts to be marked with the correct codes and logos when a retailer places an order. Instead of storing multiple SKUs, the manufacturer now only needs to stock the unmarked fan belt, thereby cutting their storage costs.

Innovations such as digital UV printing are in their infancy, but they enable shorter runs and more customized products. Equipment companies feel this market will continue to grow as ink and coating companies develop new formulas that help producers take full advantage of the flexibility, versatility and efficiency of this technology. Established industries such as commercial flooring and office furniture will continue to use UV technology to grow U.S. production and take advantage of the benefits of operating close to customers.

The reshoring trend adds an incentive for all U.S. manufacturers, especially those that provide the agility and automation required to be competitive and the green values needed for regulatory approval and customer acceptance. Stanley Furniture has learned that a mother will pay a premium for a U.S.-made crib because of the confidence that

the wood has been processed with chemicals that will not harm the baby. Walmart has committed to buying an additional \$50 billion in U.S.-made products over the next 10 years. Other retailers are following this example and further driving the trend.

Reshoring is not just a U.S. phenomenon. The economic benefits of producing near the consumer apply to all nations. Reshoring initiatives are now starting in the Netherlands and France.

Readers are encouraged to consider the implications for their company, and use the free tools of the *Reshoring Initiative* to make better sourcing decisions. There are multiple ways you can help your company by advancing reshoring. Begin by visiting the *Reshoring Initiative* website ([www.reshorennow.org](http://www.reshorennow.org)) to:

- Use the free TCO Estimator for sourcing decisions and selling against offshore competitors.
- Report cases where your company (as OEM or contract manufacturer) reshored—especially where UV/EB curing was involved. It’s an easy way to get free publicity for your company. And you can receive a free “Manufacturing is Cool” T-shirt!
- Invite the *Reshoring Initiative* to address your or your customers’ industries at a speaking engagement or meeting.
- Post a link to the not-for-profit *Reshoring Initiative* on your website.

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### About the Reshoring Initiative

The mission of the Reshoring Initiative is to bring good, well-paying manufacturing jobs back to the United States by assisting companies to more accurately assess their total cost of offshoring, and shift collective thinking from “offshoring is cheaper” to “local reduces the total cost of ownership.” Harry Moser founded the Reshoring Initiative to help companies recognize that U.S. manufacturing is often the most profitable choice. For more information visit [www.reshorennow.org](http://www.reshorennow.org)