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Bring High-Tech Manufacturing Back to Silicon Valley

[Other Views](#)July 12, 2010 Posted by: [Henry R. Hank Nothhaft](#)

Henry R. Nothhaft is CEO of Tessera, a technology miniaturization firm, and coauthor with David Kline of "Great Again!" to be published next year by Harvard Business Press.

When I first arrived in Silicon Valley in 1986, my division at DSC Communications employed 1,300 people. Of those, roughly 1,000 were in manufacturing. We built everything from printed circuit boards to full communications systems. We also bought circuit boards from a number of outside sources, all located locally.

We weren't an exception. The valley had a strong manufacturing base from San Jose to Palo Alto.

Today, virtually none of those jobs exist here, and that brings back troubling memories for me.

My hometown, Sharon, Pennsylvania, was a thriving middle-class community with a strong manufacturing economy in the heart of the Shenango Valley. In the 1980s and 1990s, a wave of deindustrialization swept across the Northeast United States, turning the region into the "Rust Belt." It very quickly hollowed out my hometown, eviscerated its middle class and slashed family incomes from 13 percent above to 30 percent below the national median — all in the space of a single generation.

I mention this because I've been wondering lately if a similar fate awaits my adopted community of Silicon Valley. Put another way, is the distance between the Shenango Valley and Silicon Valley a lot shorter than most people think?

Bemoaning the loss of manufacturing jobs is not a new story. But in the wake of our latest economic collapse, it's wise for us to remind ourselves how important manufacturing is, not only for our economy, but for society in general. We must do more to prevent the demise of manufacturing — and the jobs and security it provides our citizens.

Corporate America's obsession for downsizing, offshoring and short-term profitability hasn't just destroyed industries like steel, auto and textiles. We also have systematically gutted our ability to build the most advanced high-tech products of tomorrow — from electric cars and solar cells to cell phones, computers and next-generation LED lighting.

And if we're not making the advanced technology products we need, then we're buying them from countries that do. Which explains why the \$30 billion trade surplus in high-tech products that America enjoyed ten years ago has now become a \$53 billion deficit!

Take the semiconductor industry, once the driving engine of Silicon Valley. Today we lead the world in only one semiconductor category: the number of plant closings. In 2009 alone, 15 semiconductor plants shut down in the U.S., up from four the year before. Just in the last five years, we have lost nearly half of our semiconductor manufacturing capacity, and today produce only 14 percent of the world's supply of a device that America invented 52 years ago.

The same goes for the burgeoning solar energy industry, also invented right here in the USA. Today, China dominates the market, while the U.S. produces only 5 percent of solar cells. What about wind energy turbines? The number of U. S. wind-turbine manufacturing facilities actually fell by a third last year, with a loss of 1,500 high-tech manufacturing jobs.

Next-generation LED illumination? Electric and hybrid car batteries? Electronic displays for tomorrow's gadgets? Advanced materials? In virtually every high-tech sector of tomorrow, America is now a bit player.

Yet the myth still persists, most recently expounded by the prolific journalist Tom Friedman, that so long as America is strong in R&D and services, we can let others do the manufacturing.

Unfortunately, there are three things wrong with that theory.

First, our R&D and services are also being outsourced to China and elsewhere along with manufacturing. Which leaves us where, exactly — other than in ever-increasing debt?

Second, R&D de-coupled from manufacturing eventually results in the loss of incremental innovation which occurs on the factory floor and, inevitably, a leadership position. Just ask anyone in the semiconductor business.

But third and most importantly, manufacturing is the most powerful economic force multiplier in the world, creating up to 15 additional jobs outside of manufacturing for every job on the factory floor. Of course, manufacturing's economic-force multiplier effect also works the other way. For every manufacturing job lost, ripple effects of job destruction and income erosion spread like a plague throughout the economy.

That's what happened in the Shenango Valley when we allowed the industrial belt to become the Rust Belt a generation ago. That's what really causing today's jobless recovery — a problem that's actually existed for 20 years but has been masked by the technology and housing bubbles. And I fear that it's now showing its impact in Silicon Valley today.

According to the latest annual Silicon Valley Index, Silicon Valley has entered "a new phase of uncertainty" in which its standing as a high-tech innovation hub is "at risk." Especially worrisome, said the report, is that the percentage of middle-income households in the region has fallen by 6 percent since 2002 — a trend it ominously

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Henry R. Hank Nothhaft
President, Chief Executive Officer and Chairman
Tessera

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called a "hollowing out of the middle."

Certainly, Silicon Valley has resources the Shenango Valley never had, including first-class universities, a globally-oriented labor force, an abundance of entrepreneurs, and the world's most successful venture capitalists. So Saratoga, CA, my current hometown, will never become exactly like Sharon, PA.

But unless this high-tech de-industrialization is reversed, Silicon Valley may evolve into a kind of banana republic of technology. There will be a few wealthy people at the top, a mass of low-paid service workers at the bottom and not a lot of people in between. The only middle class our grandchildren may see will be in a diorama in some future museum.

So here's an axiom of economics that we in America seem to have forgotten: Unless high-tech innovation is tied to high value-added manufacturing, no society can capture the full economic benefits of new technology.

That's why virtually every other major nation on earth offers tax holidays and other significant incentives to any company that will locate manufacturing in its territory. They know that manufacturing strengthens an economy and a middle class like nothing else can.

What can we do?

We need a concerted effort to reward companies that create manufacturing jobs. Among the steps we must consider:

- Level the international playing field so manufacturers have less financial incentive to go overseas — on everything from currency valuation to effective tax rates
- Encourage federal, state and local governments to aggressively assist innovators in financing, building and operating manufacturing facilities
- Adopt dependable tax credits for research and development
- Strengthen our patent system to protect and reward innovation, and punish those manufacturers who infringe on our patents
- Encourage policies at the State and Local levels that support rather than hinder the formation of small businesses

Silicon Valley is one of the world's greatest success stories. Let's not let it go down the same path as the Shenango Valley.

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