

TAKING THE NANOPULSE

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We need to finish up the funeral for yesterday's auto plants, textile mills and steel factories and get on with the kind of manufacturing jobs and economic growth that nanotechnology can provide.

Nanotechnology: America's Next Industrial Revolution **It's the "quality-first" antidote for a "cost-first" economy**

BY SCOTT E. RICKERT

Worried about the trade deficit? About fewer manufacturing jobs? About the long-term health of America's economy? Me, too. So I've been talking to some experts, reading reports, and scanning the economic and technology news. I'll admit there's no silver bullet. But I also contend one thing – loudly and logically. It's time to shift our manufacturing focus away from a race to bottom on cost. Productivity matters, but we're never going to regain industrial leadership with a "cost-first" philosophy focused on making disposable tee-shirts, plastic flowerpots and 39-dollar DVD players.

If all that's required are fast hands and a heartbeat, we can't win that game. The game we can win is manufacturing "quality-first" products that require America's higher level of skills – more complex products, innovative products, high tech products. That's the Industrial Revolution we need – and it's going to be built on nanotechnology.

The foundation is already in place for a nano-driven Industrial Revolution. America is still the largest manufacturer of goods on the planet -- and not by a little. Plus, we're particularly good at manufacturing that requires a strong knowledge base. Even in this incredibly difficult economy our exports remain strong in quality-first manufacturing categories: semiconductors, pharmaceuticals, industrial machines; measuring, computers, medical equipment, and testing and control instruments.

Here are the facts: ahead-of-the-curve technology is our sweet spot, and nanotechnology is the bat we need to be swinging. In a recent [interview](#) with NanoBusiness Alliance Vice President Vince Caprio, I dubbed nanotechnology "the software of the Nano Decade." You can't see, smell, or really touch it. Like software, it's used in small quantities but will have immense impact on virtually every field, driving the improvement of existing products and the development of new ones.

For smart companies, the Revolution has already begun -- take a look at a few examples from the very recent news. An American company continues to increase its commercialized line of nanotech-enabled medical diagnostics. More and more investment is going into thin film solar panels that use nano-materials. There's a new advanced battery plant going up in auto-starved Michigan.

And that's just the tip of the iceberg. Multiple industry studies continue to point to growth in nanotechnology. The global market value for nanotechnology in coatings and adhesives is an expected to see 5X growth by 2015. Another report says that even good old-fashioned

American agriculture is going to get a boost from nanotechnology in the form of advanced sensor systems that track soil and crop characteristics and the environmental impact of agricultural chemicals.

With a committed focus on nanotechnology's capabilities, the kinds of leadership we see in existing "quality-first" markets can sweep across the manufacturing landscape. Imagine the impact. Innovation and excellence would spread throughout the supply chain. Materials would be smarter, design would be continuously ground-breaking, even our processes would improve. A manufacturing system built on knowledge instead of cheap labor is the jumpstart and ultimate sustainable advantage that results in enormous trickle-down benefits for American workers, their families and our entire economy.

Recent global events favor American aggressive action. As concerns grow about foreign toxins, recalls and breakdowns, more companies are staying with their American manufacturing base. Even foreign companies are setting up production where our law sets higher standards. The price differential for that American quality is shrinking day by day, too. Foreign labor costs are going up. Tariffs are looming. Foreign interest rates are making their goods more expensive.

So how do fuel the new Industrial Revolution? The government needs to start promoting nanotechnology and other industries that have a high probability of success. We need to look for linkages where nanotechnology can separate us from the pack of global also-rans: alternative energy, advance medicine, defense.

And one more thing. It's time for all of us to finish up the funeral for yesterday's industries – auto plants, textile mills and steel factories – and get on with new plans. I've built a nanotechnology company in the heart of the so-called Rust Belt, and I know the first step is to stop looking back. Let's get off the bench, put away the crying towel, and get back to work. Do we want the world to Buy American? Then let's offer them more of what we make best – quality first. And it starts with nanotechnology.

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