

The new reality: No guarantee for America's continued global leadership

By Gary A. Tanel, Allegiance Capital -- 8/7/2007
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When talking with electronics manufacturing executives, it never fails. No matter where we start, we always end up focused on one topic: The future of manufacturing in America, especially electronics manufacturing.

It starts with the notion that America's innovation and entrepreneurialism have historically driven national success and leadership, as have democracy and our hard-driving work ethic. But what about today? Can America outlast Asia and Europe as they literally "re-engineer" the global economy? Can we compete in this world of low-cost electronics engineering and manufacturing? And what does it mean to our industry, the American economy, engineering salaries and the future of American engineering students?

Here's what I've heard among a variety of executives. While alarming, we must admit Reality before we can respond to it. Our response will determine America's strength as provider, manufacturer and long-term global leader.

Facing reality

Reality tells us there are no guarantees of America's continued global leadership. Some observances of late that have me facing Reality:

- American students are losing interest in technical fields, such as engineering, whereas, there is increased interest in technical fields in emerging Asian countries.
- Similar to point one, manufacturing careers have lost their luster.
- Much of America is self absorbed with consumption and a sense of entitlement.

America is America, and when tough realities approach, we confront and complete the tasks at hand.

One reality about the United States is that we have 5 percent of the world's population, but we consume 40 percent of the world's natural resources. We are becoming a nation of consumers with an entitlement attitude. In generations past, we led global manufacturing to meet demand. Today, we've become a nation willing to let others do our manufacturing for us. When was the last time you looked at a product and saw "Made in the U.S."? Rarely. As cash flows to the manufacturing centers of the world—outside of the U.S.—a massive redistribution of wealth occurs. We become just another supplier competing with other suppliers, many of whom are creating products and services that seem comparable in quality yet at a much lower cost. The result, U.S. manufacturing becomes obsolete, as do related careers.

The next reality? As high-volume manufacturing disappears, so do technical support careers. There remains a significant exodus of large factories and manufacturing from here to Asia. Why? Asia offers seemingly unlimited labor resources, a global marketplace, advanced transportation systems and very aggressive, very committed foreign governments. In comparison, U.S. government often seems to hinder and hurt domestic manufacturing with increased taxes, tariffs and costs, much of which is related to unions, executive compensation and rising health care costs. The bottom line: Americans interested in technical careers are caught in a quandary, with technical job growth booming in Asia. There are capable and hard-working engineers in Asia willing to work for far less than their American counterparts.

Equally damning is the lackluster appeal—and educational approach—of a career in manufacturing. Many American students entering college can choose a non-engineering career that pays more or as much, such as banking, marketing, advertising, finance, software development, law and more. U.S.-trained engineers, once they graduate, are placed in product design positions minus practical experience and the realities of manufacturing. In Asia and in Europe, engineers must move through the ranks of manufacturing with all the practical knowledge before they are placed in a position to design product and process for others. Being an apprentice engineer, with all the battle scars of real manufacturing experience, makes the technologist more valuable in the workplace.

I recently encountered another sobering reality: Only 30 percent of students enrolled in undergraduate electrical engineering classes at Southern Methodist University and the University of Texas are of traditional European descent. The remaining 70 percent is primarily of Oriental, Indian, or Middle-Eastern ancestry, many of whom are non-U.S citizens that return to their homeland once they graduate.

"A growing trend is the return of the trained students to their native lands as opportunities abound to contribute to their country's technological prowess and gain personal economic prosperity for their family. This is a natural phenomenon. The foreign student population is bright, motivated, and very hard working," says Dr. Viswam Puligandla, professor at the University of Texas at Arlington and retired senior technologist for Nokia.

Despite this apparent "doom and gloom," the U.S. does maintain advantage. The world still demands the best in technology training, and that's what we do really well. Also, the U.S. is still a powerhouse of invention, discovery, and entrepreneurship.

We must tap into our innovation for automation. To compete in the years ahead, we must explore, develop, and harness new technologies. We must re-engineer how we educate our engineers-to-be. And yes, we must get serious about corporate competitiveness, how executives and employees are paid, and how to stall skyrocketing health care costs and reduce government interference, taxes, and tariffs. Global growth requires it. Manufacturing and engineering excellence demand it.



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