

# Best of Times, Worst of Times

*An American renaissance in manufacturing is needed—and long overdue*

Jack McGuinn, Senior Editor

A successful Gear Expo is behind us. By most accounts it was a grand year for the gear industry. Profits are up, beefy back-orders common, capital investment on the rise.

All this despite the fact that for more than a generation, American manufacturing jobs have disappeared—“from 19.5 million in 1979 to 11.7 million today—even as the overall U.S. population has risen by nearly 40 percent,” according to a recent *USA Today* editorial. To be clear, however, let’s stipulate that many of those eight million or so lost jobs—those of the mind-numbing assembly line or modern sweat shop variety, for example—are not particularly missed.

Rather, what’s missing are more well-paying, family-nurturing, high-skills manufacturing opportunities for American workers of all ages.

But here’s the other problem—one that manufacturing hiring personnel are all too keenly aware of: a decided lack of qualified workers to fill those positions. Call it a catch-22 or chicken-and-egg dilemma: i.e., no jobs in the offing due to no workers, or no workers due to no available jobs?

How does that compute? What is wrong with this picture? In its May 19th issue, *Time* columnist Fareed Zakaria adds it up this way:

“(The) disconnect between economic recovery and employment growth is new. Since World War II, recoveries from recessions have followed a fairly stable path. After the crunch, the economy bounced back vigorously, often growing at a rate of around six percent, and employment started picking up steam. We are banking on that pattern recurring. Except that it isn’t.”

But don’t look here for any magic-bullet solutions; it took 30 years to bring us to this precarious situation. It will require culture change, and how long that will take is anybody’s guess—or hope—especially since the country in general seems to regard the problem as the crazy uncle in the attic that no one wants to talk about. But know this: time is not on our side.

The September 13 issue of *Crain’s Chicago Business* has Caterpillar CEO Doug Oberhelman lamenting, “We cannot find qualified hourly production people (or), for that matter, many technical, engineering service technicians (or) even welders. And it is hurting our manufacturing base in the United States. The education system in the United States basically has failed (students), and we have to retrain every person we hire.”

John Morehead, vice president, business development at Dunkermotoren USA Inc., responds to Zakaria and Oberhelman.

“While it’s true our education system may have failed in terms of delivering high school graduates with necessary math skills needed in today’s more automated manufacturing, very likely the biggest problem is that students over the past decade or more have perceived manufacturing careers to be about as desirable and promising as becoming a television repair man. More importantly, high school guidance counselors see (this) and risk their reputations suggesting that ‘Joe’ or ‘Sally’ may find a promising career in manufacturing.”

Here with a different take is Kyle Seymour, Xtek president, CEO and AGMA board of directors member. His is a company that has done its own

heavy lifting regarding training.

“At Xtek, we do not have this problem and do not share this view. We have invested considerably in productivity-enhancing equipment that allows us to bring in relatively untrained people and make them productive in a reasonably short period of time. We are hiring many people into the shop with varied backgrounds—from burger flippers to skilled machinists—and we have been very successful in training them as machine operators. Employment is not rebounding because hiring by the industrial sector has been offset by unprecedented reductions elsewhere (in the economy).”

Here’s another perspective, offered by Schafer Gear Works president Bipin Doshi.

“Over the years, social acceptance and respect for manufacturing jobs have decreased versus other service jobs. Manufacturers need an image-building effort that educates the new workforce of a new and challenging work environment and earning opportunities.”

Jim Vosmik, president of Drake Manufacturing Services and in fact a degreed economist who happened to choose a life in the gear industry, offers his informed—and unvarnished—perspective.

“The people we do find that are qualified are typically mid-40s or older, leaving us with an increasingly aged workforce. The government monopoly of public education is graduating functionally and technologically illiterate people.

“In a business we are faced with two types of investment choices—labor (human capital) or technology (hard capital). Technology has become relatively less expensive than labor under

the recent political climate—not in simple dollars/hour terms—but in terms of flexibility and cost certainty. All of the uncertainty surrounding the future costs of hiring people (‘Obamacare,’ potential unionization/labor rights changes, tax rates, etc.) make calculating the future costs of labor difficult. At least the costs of investments in technology are knowable.”

And of course we had to ask Joe Arvin, Arrow Gear president and co-author of *A Nation on Borrowed Time*, (Amazon paperback \$14.95) to weigh in. As those familiar with Arvin are aware, his interest in this subject is beyond passionate.

“The main reason for employment not picking up is because we are no longer an exporting country, but an importing country. The major international corporations are placing jobs off-shore and say they have to do this in order to remain competitive in the world marketplace and they have a responsibility to their stockholders. The shame here is that their off-shore plants typically have the newest automated equipment and are utilizing lean manufacturing practices, while their U.S. plants do not. There must be no tax breaks for new equipment purchased for off-shore plants (including Canada and Mexico) and no government funds or tax write-offs for R&D expenses where the R&D activity is also done off-shore.”

Some good news is that in fact there exist—although in most cases below the radar—a number of grassroots organizations, associations and, yes, unions, working to change the tide. One of them is the Alliance for American Manufacturing (*american-manufacturing.org*). Scott Paul, its founding executive director, offers this:

“The (reason for the ‘disconnect’) is simple: our trade deficit. We over-consume and under-produce. The past two recessions—2001–2002 and the most recent one—have both exhibited this disconnect. In past recessions we did not run enormous trade deficits, and when consumption picked back up it meant that people were buying American-made goods. That simply is not the case today.

“The skills gap is real,” Paul continues, “but pointing fingers will do no

good. Manufacturers—especially those the size of Caterpillar—must be willing to invest more and develop partnerships with high schools and community colleges to help fill the gap. Taxpayers must be willing to invest in education to improve outcomes and opportunities. But let’s also be realistic—as long as the real money to be made is in finance, and not the productive sector of the economy, that is where the talent will head.”

Joining the discussion is Emily Stover DeRocco, president of the DC-based Manufacturing Institute (MI) (*manufacturinginstitute.org*).

“Our recent skills gap report (available on the MI website) shows that 83 percent of manufacturers report a moderate or serious shortage of skilled production talent; and 74 percent of manufacturers say that this lack of talent is affecting their ability to expand operations. I strongly agree that the education system in the United States has failed in terms of providing adequate educational pathways—particularly in high schools—that focus on applied or project-based learning so necessary to producing the technical workforce manufacturers and many other business sectors need.”

Next up, Dan Swinney—a founder and executive director of the Chicago Manufacturing Renaissance Council (*chicagomanufacturing.org*) and another individual looking for saffron among those grass roots.

“This reality—the complete break in the linkage between modern manufacturing and our education system—has been developing over the last 30 years.

We did a full report on this reality ten years ago. Then it was a crisis; now it is a state of emergency. We need fundamental reform of our entire education system (K-20), returning integrity to the linkage of education with work, production and innovation. Our (Chicago public school)—Austin Polytechnical Academy (*www.austinpolytech.org*)—is an example of what can be done through a private/public partnership to begin to address this crisis.”

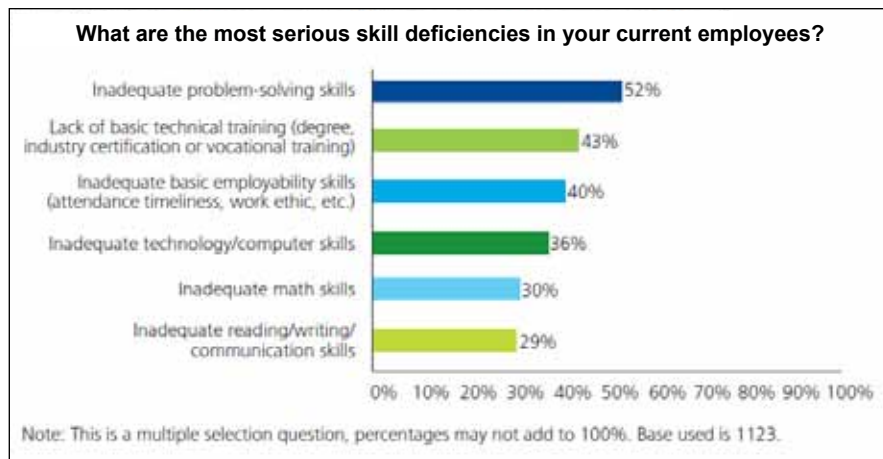
Yet another conundrum is the fact that it is this country’s traditionally robust productivity levels that help exacerbate the employment landscape. More is being done with fewer workers—a direct result of American innovation and ongoing advances in robotics and other automation technologies. Of course, those automation capabilities are a must for just about any manufacturing entity hoping to survive and thrive. What to do?

Doshi offers, “While the statistics may be true, the logic may not be. Why would any company hire more than what is absolutely required to produce safely and economically, and to meet all customer requirements? Reduction in jobs is driven by market competitiveness and not a desire to reduce jobs! With all the productivity improvement, Schafer Gear has 25 percent more employees today than last year and a 50 percent increase in sales.”

For Vosmik, the situation might be summed up as “no pain, no gain.”

“Employment is a cost. Without productivity growth there can be no

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real increase in wages. On-shoring is occurring because managers are starting to realize that there is a reason that wages are high here—because productivity is high here. *Productive* workers make an economy competitive—not a lot of workers. Yes, it is tough for the individuals that are dislocated and have to get another job, but without productivity gains there can be no real wage increases.”

“Productivity gains can only be realized by doing proportionately more in output with the same number of people, or doing the same or less output with proportionately fewer people,” Seymour believes. “In a downturn, a company focuses on the latter, and in an upturn they focus on the former.”

Says Swinney, “Too many larger companies have chosen business models based principally on cutting costs, rather than continuing to invest in the full education and training of their workforce at all levels. We need continued increases in productivity accompanied by aggressive strategies to expand our market share in the global markets associated with advanced manufacturing.”

“There is some truth to the argument that productivity in manufacturing has had an impact on employment levels needed to sustain output gains,” Paul concedes, “but there is an important caveat: productivity in manufacturing is most likely overestimated because of higher import content in goods, as economists like Michael Mandel and Susan Houseman have argued. The more important point for me is this: why have productivity and wage increases—which rose in lock-step from the end of World War II until the mid-1980s—diverged for the past 25 years?”

When things go pear-shaped, it is human nature to seek out someone or somebody to blame. Are technology and globalization the main “culprits” regarding the reduction of gear manufacturing jobs in the U.S.?

“The future growth of gear manufacturing jobs will be closely tied to innovation—either in gear production or gear designs themselves,” Morehead says. “The industry must also recognize the strong growth of the distributed drive phenomenon, where the

decreased costs of electronics make it easier and cheaper to deploy individual actuators at point-of-use rather than relying on more complicated mechanical gear drives of the past.”

“I do not think that globalization or technologies are ‘culprits,’” Doshi says. “We have enjoyed lower inflation as a result of appropriate sourcing and application of productivity improvement efforts. Unemployment may be the result of skill levels, inability to start new ventures, risk taking in manufacturing areas, etc., versus quick return in playing in the financial markets and such other reasons.”

According to Vosmik, neither productivity nor technology is the “culprit” in this drama. Indeed, they are perhaps what have kept U.S. manufacturing afloat to date.

“Yes, technology is one of the ‘culprits’ that has freed up all of those workers that used to work in agriculture, steel, carriage making, blacksmithing and other industries at subsistence levels to work in today’s industries and have two or three flat-screen televisions per home, two cars, kids in college, larger houses, cell phones, Game Boys, computers in their homes. CNC hobbers, gear grinders and turning centers are the ‘culprits’—as well as the reason—we still have a gear industry.”

Seymour believes that “Another factor is simply the shift by equipment manufacturers to offshore production, thereby reducing domestic gear demand.”

“Globalization is not inherently a bad thing,” says Paul, “but having the deck stacked against you certainly is. How do private (gear companies) compete against another country’s government (as with U.S.–China trade)? Why doesn’t our government stand up and fight unfair trade practices like piracy, intellectual property theft, subsidies, raw material export restrictions and currency manipulation? I’d argue the biggest ‘culprit’ is our government—Democrats and Republicans alike—and its failure to stand up for manufacturing jobs.”

The group was then asked to respond to the following:

“While U.S. manufacturing output is nearly 2.5 times greater than it was

in 1972, jobs have declined by more than 30 percent in that span, according to a study by Boston Consulting. But with wage rates in China growing at 15 to 20 percent a year and transportation costs climbing, the advantage is swinging back stateside, where worker productivity makes U.S. factories more efficient.” (Source: Robert Channick, Chicago Tribune, June 2011)

Could this be “the light at the end of the tunnel?”

“Yes and no,” Paul responds. “Re-shoring of work back to the United States is still the exception, not the rule. But I think other factors, such as a re-evaluation of supply chains in the aftermath of the earthquake in Japan, a weaker dollar and a surging preference for ‘Made in America’ have all made American manufacturing much more attractive.”

“Or is that ‘light’ Vietnam, Cambodia or Myanmar?” Vosmik asks. “There will always be foolish accounting managers chasing labor arbitrage as a last-ditch effort to preserve an economically uncompetitive product/business model. But, ultimately, capital—if unhampered by artificial barriers to movement—will find the highest returns, and that means that products will be made by the most efficient companies with the lowest cost, regardless of the nominal price of an hour of a person’s time.”

“The gap between the West and China is certainly narrowing,” says Morehead, “and in the process putting sharper focus on the less-tangible elements that were lost in the pursuit of lowest-cost labor.”

Schafer’s Bipin believes that “The U.S. will be competitive by 2015 with India and China in several areas. But I am afraid that if we do not have the workforce and capital availability, we may not be able to take the full advantage of the opportunity.”

Xtek’s Seymour is also looking for smoother sailing ahead.

“At Xtek, we believe that the tide is indeed turning in favor of ‘on-shoring’ of work back to the U.S. over the next decade. The outflow of manufacturing to China in the past ten years was artificially stimulated by the currency management regime of the Chinese

**continued**

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government—a phenomenon that sustained the U.S. trade deficit well beyond what normal market economics would have allowed. That situation is no longer sustainable.”

Stover DeRocco agrees that “The productivity of U.S. workers is an attraction, but we’ve also reached a point where the real costs of doing business in China are now apparent. As the wage disparity begins to close, those other costs take on greater importance.”

Our cultural differences aside, the Zakaria column relates that the Germans “focus on technical education, technical institutes and polytechnics, as well as apprenticeship programs. They specialize in high-end, complex manufactured products that can command a premium price. Call it the BMW model.”

Would the U.S. commit to something of that scale? The responses were uniformly and uniquely—American.

“America is not Germany, nor should we become Germany,” says Paul. “But we can learn a lot from the German experience. First, we need an integrated approach to education, skills certification, training and formal apprenticeships along the lines of Germany. Second, we need closer coordination between business, labor and government to promote policies that boost domestic manufacturing. Third, we need a government willing to make manufacturing the centerpiece of the American economy, rather than finance.”

“Quite simply,” Morehead states, “it’s a change of mindset that every job has a skill requirement, and in order to meet that requirement training is necessary. In the U.S., companies must abolish the notion of hiring people off the street, having them stand beside

‘old Fred’ for a week, watching what he does, and then entering the ‘skilled’ workforce. You get what you give, and a highly skilled workforce that is compensated appropriately as professionals will out-produce at a higher quality level than the haphazard, ‘git-r-done’ alternative.”

“I believe that government encouragement, focusing where we can be good at, incentives, image building, social acceptance and a degree of risk taking may help build the manufacturing base,” says Doshi. “We are innovative and industrious people, and still have a strong manufacturing base that can be built upon. Markets are here, why not build here?”

For Vosmik, going Euro would result, he believes, in “higher taxes, a planned economy, throwing out our Constitution (and) more training programs than the 20–30 we already have that are not working.”

Seymour reasons that “The U.S. economy is far too large to ‘specialize’, as the Germans have. Our strengths are speed of innovation, abundance of risk capital and key input resources—and the promise of rich rewards to the winners.”

Stover DeRocco agrees. “The German model has been successful, but it is based on a German culture that values highly disciplined and structured systems. Rather than trying to replicate that model in the U.S., we need to create an American model that takes advantage of our cultural strengths of creativity, risk-taking and independence.”

Our lone exception—in part—on this issue is Swinney, perhaps allowing that on occasion the best idea is someone else’s. Sometimes there is an alternative to “the Chicago way”—at

least regarding education.

“In Chicago and in the National Manufacturing Renaissance Campaign we have borrowed heavily from the German and Danish models in education linked to manufacturing in our efforts in secondary and post-secondary education. Austin Polytech is a case in point, as is the NAM (National Association of Manufacturers)-endorsed Manufacturing Skills Certification System that was embraced recently by President Obama.”

And then there’s immigration—a topic that elicits raw emotions at times, despite the fact that many of this country’s greatest inventors, engineers and scientists were immigrants—or their children. It is an American Dream story that continues today in Silicon Valley and elsewhere in the nation. Again citing Zakaria: “Perhaps the single biggest boon for small companies would be to let in more skilled immigrants. We train the world’s best and brightest at our universities (often at taxpayer expense) and then, just when they will begin to file patents, make inventions, start companies and create jobs, we throw them out. Our loss is China and India’s gain.”

Dunkermotor’s Morehead offers that “A good model to follow would be Israel’s integration of post-Soviet-state immigrants in the 1990s, recognizing that a group of which 60 percent possessed tertiary education qualifications and 12 percent doctorate or engineering degrees would be an enviable stimulus to innovation and economic development.”

Speaking from a quintessentially American experience, Doshi recalls that “Maybe it happened a long time ago, but I am one of those people that



**Joe Arvin**  
President  
Arrow Gear



**Bipin Doshi**  
President  
Schafer Gear Works



**John Morehead**  
Vice President  
Dunkermotoren USA Inc.



**Kyle Seymour**  
President, CEO  
Xtek

the U.S. did not throw out! I immigrated to the U.S. in 1960, got educated and stayed. I do agree that, paranoia aside, we need to selectively recruit, welcome and retain the kind of people that built this country in the first place.”

Xtek’s Seymour believes—strongly, it would appear—that “The national paranoia about immigration is a true tragedy for our country for the reasons mentioned. Our nation was built on immigrants and should continue to embrace them. People who passionately seek to better themselves and their lives are the engines of growth and innovation.”

The MI’s Stover DeRocco points out that “Unfortunately, the issue of whether to encourage the immigration of skilled foreigners to the U.S. has been lost in the debate about how to address the illegal immigration from Mexico. Foreign talent—either students graduating from our universities or professionals seeking to come to the U.S.—brings the skills, ambition and ideas that create new jobs here in the U.S.”

Zakaria’s column also points out that “There are millions of Americans in industries like automobile parts in which lost jobs are unlikely to ever come back, certainly not at the pay they once commanded. That means people—many in their 40s or 50s—need to find new jobs. Can we create retraining programs for an entire generation of workers? Nothing we have done so far matches the scale of the problem (as did) the GI Bill, which put returning veterans through college after World War II and prepared a generation of Americans for good jobs.”

“We absolutely need education reform linked to a determination to

rebuild our modern manufacturing sector with the same scale, energy and determination that we witnessed during and after WW II,” says Swinney responds.

“Incentives are good,” says Doshi, “but we need to build a desire in people to rebuild the national base. Seems like empty words, but we need to build the national pride back!”

“The best retraining initiative should be formulated by the private sector,” Morehead says, “by working closely with educational institutions and the government and with the understanding that the private sector would be required to be an active participant in terms of creating apprenticeship opportunities and formal (not the typical on-the-job) training.”

Drake’s Vosmik indicates that fewer—not more—skills training programs and other initiatives are what we need. But ones that work.

“We have a multitude of retraining programs that do not work, based on countless research studies. Go back to the earlier question about the poorly trained and inept young workers—they are) the product of government training programs called ‘public schools’.”

“The GI bill was very successful in its time,” Seymour agrees, “but that success has actually led to part of the current problem. The predominant belief in America has become that every child needs to get a college education to be successful, and public policy drives funding for that. As a result, college education prices have soared for all, and yet there are many people who have worthless college degrees or who should never have gone to college in the first place. This phenomenon has starved trade schools and

other skill-based training institutions of talent that could be readily marketable in our evolving economy. The solution needs to include a shift of public policy that acknowledges the role and importance of technical skills training that is a viable and respectable alternative to a college education. Manufacturers can and should play a role in this, but at local levels where the training will actually be done.”

Sharing that skepticism over a public role, Stover De Rocco says that “The likelihood of creating a vast new government program in today’s fiscal environment is remote and would be foolhardy. “(We need) to focus on education and training pathways that result in industry-based credentials that would provide millions of Americans with the opportunity to gain in-demand skills.”

Weighing in for older, dislocated workers, Paul says that “The training infrastructure for mid-career and older workers is completely inadequate. Manufacturers not only should get involved with these efforts—they must get involved.”

Getting the last word, Swinney believes that “The role of advanced manufacturing in American society is the most important public policy debate of this decade. It is in the deep interests of the public to have a dynamic manufacturing sector as the foundation for our society. Manufacturers, government, labor, community and educators need to forge a true and dynamic partnership—with new responsibilities for all—to ensure that the U.S. experiences a manufacturing renaissance.”



**Emily Stover DeRocco**  
President  
Manufacturing Institute



**Scott Paul**  
Executive Director  
Alliance for American  
Manufacturing



**Jim Vosmik**  
President  
Drake Mfg. Services



**Dan Swinney**  
Executive Director  
Chicago Manufacturing  
Renaissance Council