TECHNICAL ARTICLE

New strategies for a new century

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Many US manufacturers struggle to compete and grow at home while foreign competitors take more and more of their market share in major industries. With change taking place at such a fast pace, companies are finding it hard to keep up. But wasn't globalization an American idea in the first place? Everybody wins, right? Not so for some companies. This article explains why the old organizational models don't work anymore in today's economy and why some companies have faltered. It then presents a new model and gives 10 strategies that successful companies follow to grow and win. Your company can also succeed in today's world—if you adapt and change with it.

From the beginning of the twentieth century to the mid-1970s, American machine tool manufacturers had 28 percent share of the world market and 95 percent of the domestic market. But by 1986, "the U.S. share of the world market was less than 10 percent and their share of the domestic market had dropped from 95 to 49 percent. In five short years, from 1981 to 1986, the number of U.S. machine tool plants shriveled by one-third because of bankruptcies, takeovers, and reductions in capacity," according to Max Holland in *When the Machine Stopped: A Cautionary Tale from Industrial America*[1].

While America was losing most of its machine tool industry to foreign companies, job-shop owner Gene Haas couldn't get what he needed as a machine tool customer and started his own machine tool manufacturing business. He designed and displayed his first CNC (computer numerical control) machining center in 1988 at the International Manufacturing Technology Show (IMTS). Today, California-based Haas Automation is the largest volume producer of machine tools in the world.

Even with the decline of US manufacturing, there are still opportunities to grow, create new products, access new markets, and create jobs.

This example makes a key point. The original manufacturers who dominated the machine tool industry (and many other industries) couldn't make the changes necessary to compete against their Japanese competitors. It took a small entrepreneurial manufacturer with a completely different organization and approach to compete and dominate the machine tool industry.

We can compete

American manufacturers are again threatened by Asian competitors. The problem is characterized by price discounts, margin erosions, customer outsourcing, customer plant closings, industry declines, and supply chains that are one-sided relationships. As in the 1980s, it's going to take new strategies and new organizations to compete. So how do we do that? Here are four key points:

Cost reduction and growth. In recent years, efforts have focused on cost reduction with programs like Six Sigma and Lean Manufacturing. Each one of these programs has delivered successes, but none is the universal answer to all of the problems created by globalization. As important as cost reduction and improving process efficiencies are, they won't in and of themselves lead to growth.

Focusing on external strategies. My book *Saving American Manufacturing*[2] makes the case that to compete and grow in the future, the focus needs to shift from internal processes to external strategies, such as finding new customers and markets on a continuous basis, developing new products and services, educating and training workers with the advanced skills needed to compete, and developing a new type of organization that can prospect for new opportunities.

New opportunities being created by globalization. Even with the decline of US manufacturing, there are

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New industries are emerging and evolving that will provide new opportunities such as biomedical devices, nanotechnology, nano-manufacturing, informatics, biotechnology, analytical instrumentation, and optoelectronics.

We also can't forget that the huge traditional industries aren't going to go away. Although growth isn't spectacular in these industries, most will continue to grow and continue to change to be more competitive.

Manufacturers also need to understand that the Chinese aren't invincible. They already have problems with energy, resources, banking, and litigation. They are a hot economy that might implode and end up slipping like the Japanese economy.

Companies will also find out that close proximity to the customer is more important than unit costs. This is partly why Japan and other nations build manufacturing plants in the US to serve our markets. We have a proximity advantage.

Learning from successful small and mid-size manufacturers (SMMs). There are many examples of SMMs who (like Haas Automation) are not only surviving but also flourishing in this era of change. These companies always stand out because they're usually innovative, good at monitoring customers, quick to adapt to the market changes, and more profitable than their competition.

These progressive companies can be found in declining or stagnant industries and most are leaders in their markets. They accept the changes brought on by globalization and aren't hoping or waiting to return to the good old days. These progressive manufacturers are transforming their companies to adapt to the changes in their markets and differ from the typical SMM in many ways.

We can adapt to changes in the market

Progressive companies who are competing (and winning) in today's economy share 10 key success factors.

1. Progressive companies use Lean Manufacturing methods and continuous improvement.

All progressive manufacturers are using some kind of Lean Manufacturing methods to do something about cost reduction and waste. A good example is Dave Graham of the Epson Portland plant in Hillsboro, Ore. He had to find a way to keep the printer cartridge business from being outsourced from Asia. He reasoned that he could offset the low costs of labor in Asia by focusing on automation, throughput, and production efficiency. Under Graham, the defect rate at the plant plunged to 300 per million. The cartridges per employee increased about 40 percent (slightly better than other plants in the world). The Portland operation now manufactures more than 50 kinds of cartridges—and production is up 200 percent from 2001 levels.

2. Progressive companies monitor customers.

Like most progressive US manufacturers, Barry Ramsay of D8 is one of the new breed of small manufacturing companies with an understanding that the answer to finding or retaining customers is by monitoring them. D8 makes custom-built molds in Potlatch, Idaho. Ramsay makes it a point to visit all of his good customers periodically to discover their problems and needs. The tooling and mold industry has been severely hurt by foreign-built, low-priced tools and molds. D8 has survived by monitoring customers and finding niche applications.

3. Progressive companies find new markets and diversify their customer base.

The only way to avoid the problems of losing high-volume customers, price discounting, margin erosion, or simply being a victim of an industry cycle is to diversify your customer base. This means you must become a prospector organization that is designed to find and develop new customers and markets on an ongoing basis.

In the 1980s, Gene Haas saw the need to design a machine tool product for the job-shop market. He avoided the customers and markets that wanted highly specified machine tools. Haas knew that his market required a simple, compact machine at a very economical price and quick deliveries. After Haas Automation's initial success in the US, he developed four product lines and 75 models to supply hundreds of different market niches and applications. His diversification has helped Haas become the number one manufacturer of machine tools in the US.

4. Progressive companies innovate and develop new products.

Michael C. LaRocco of American Made LLC, Cambridge, Pa., is a terrific example of the new, innovative breed of SMMs. LaRocco's system for developing successful new products can be viewed in terms of three different abilities:

- The ability to envision a good idea as a solution to a specific customer problem
- The ability to find a solution by using a new or developing technology
- The ability to gather enough market, customer, and competitor information to make sure the product will have a meaningful competitive advantage and will sell in the marketplace

He has developed four successful new products in 5 years and is the fastest growing manufacturer in Pittsburgh.

5. Progressive companies offer creative new services.

Innovation is not just about new products. It's also about providing new services. A good example of a manufac-

turer who recognized the need to expand services for his customers is Harry C. Moser, chairman, Agie Charmilles, Lincolnshire, Ill. Agie Charmilles, a Swiss firm, is a leading North American supplier of wire electrical discharge machining (EDM), CNC die sinking, and high-speed milling (HSM) systems.

Moser recognized that many of his customers couldn't or wouldn't do preventive maintenance. He deduced that travel expenses like hotel, airfare, and car rental are the basis for a justification of more service people. By adding more people in territories where they can do most of the calls in their own cars, a manufacturer can reduce travel expenses, travel days, and travel on weekends. Moser's goal was to do the preventive maintenance for the customers by having the service engineers make courtesy calls on customers and audit their machines in operation. It worked. Moser increased his service sales by $3 million and helped the customers reach very high uptimes with their machines.

6. Progressive companies offer customized products and short product runs.

It's the high-volume standardized products that are being outsourced. It's often hard to compete against high-volume, low-cost suppliers. On the other hand, being able to gain a competitive advantage through customization and short production runs is something that's very difficult for foreign manufacturers to emulate.

Sexton Can, Martinsburg, W.Va., has been very successful in developing specialized products for niche markets where it could gain a competitive advantage and maintain profitability. Sexton Can's primary competitive advantages are its capabilities to manufacture a huge range of sizes in small lots and to meet accelerated delivery requirements. The company has been ingenious in designing its own proprietary hydraulic presses and processes, and can produce very high quality steel containers at very competitive prices.

7. Progressive companies decentralize organizations and lower overhead.

Ricardo Semler of Semco decided to force all decisions to the lowest levels and empower his employees. He realized there was no way to achieve empowerment in a centralized, functional organization. He wanted fewer levels of management and faster response in decision-making. So, he scrapped the pyramid shape of his organization and broke the company into smaller units. Semler said, "Even the most cynical observers were astonished to find that things were better off once we got rid of the pyramid and all its rungs and roles."[3]

Semco went even further by eliminating all types of structures, rules, manuals, and top-down policies. The company thought the overhead departments were too bureaucratic and expensive, and diverted attention from the company's real objectives.

8. Progressive companies improve costing and pricing accuracy.

Investing in a system that gives accurate cost information is as important as developing a quality or Lean Manufacturing program. In the fastener industry, Harry Brown of EBC has many customers who regularly compare his prices with foreign competitors'. He said, "You must know costs and margins to know when not to bid or when to walk away from an order." He added this advice: "Today, all small [manufacturing companies] must have good enough costing systems to protect themselves."

The logic is simple. Customers in the supply chain will continue to compare your prices with foreign suppliers' prices or will demand discounts for volume orders. Often, both happen. The pressure for lower prices and discounting isn't going to go away—it's key to their survival, too. So, having a cost system that produces accurate margins by product, job, and customer is an absolute necessity.

9. Progressive companies invest in education and training.

Most of the progressive manufacturers invest heavily in training their workers. Some manufacturers are involved in developing education and training programs in their communities. A terrific example of what is needed to train the future workforce is Seimens Energy and Automation. Since US educational programs don't instill many of the skills required for his workers, Thomas Malott, the chief executive officer in 1998, suggested that manufacturers establish their own apprenticeship programs to train their workers[4]. Structured around basic educational needs, Siemens' youth-and-adult apprenticeship programs provide specific work-related skills, hands-on training, and community college work-based learning or advanced-manufacturing training. Siemens has 13,000 apprentices in 20 countries, including 25 separate training programs at 13 US sites.

10. Progressive companies develop a growth plan.

Finding new customers and markets, developing new products, offering new services, changing sales channels, and transforming the company to a new type of organization is complicated. All of the progressive manufacturers have some kind of a business plan that details how they will grow and which strategies they will use.

We need new organizational models

The organizational model that describes most SMMs is what professors Raymond E. Miles and Charles Snow call the *defender model*[5]. Defender organizations are usually traditional, functional manufacturing organizations designed to focus on internal efficiencies to be successful. But, as most of us know all too well, the defender model isn't working very well today, except where a defender can still dominate a small market niche with little competition and stable or growing volume.

It's my belief that succeeding in the new global economy will require an organization that is some variation of what Miles and Snow call a *prospector organization*. Their definition of prospectors identifies a type of manufacturing organization that works well in a changing environment. Prospectors prime capability is that of finding and exploiting new product and market opportunities.

In my book, I make the case that small and midsize manufacturers can survive and grow in the new economy by transforming their companies to the new realities of globalization. We can do it by transforming SMMs from operations-driven companies to prospector organizations, an organization designed to go on the attack and seek out new customers and markets. This requires a highly educated and skilled workforce, new types of sales channels, new services, and new value-added products that can keep America competitive in a wide range of industries and market niches.

American manufacturers have always been unique and very resilient in the world. They've bounced back from world wars, depressions, recessions, and the threats of foreign competitors. I'm optimistic that American manufacturing is going to bounce back again. **PC**

Endnotes

1. Max Holland, *When the Machine Stopped: A Cautionary Tale from Industrial America* (Boston: Harvard Business School Press, 1989).
2. Michael Collins, *Saving American Manufacturing, Growth Planning for Small and Midsize Manufacturers* (Chicago: Vantage Press).
3. Ricardo Semler, *Maverick, The Success Story Behind the World's Most Unusual Workplace* (New York: Warner Books, 1995).
4. "Career Update, Apprenticeships help companies nurture skilled workforce," *Control Engineering* (May 1998): 21.
5. Raymond E. Miles and Charles C. Snow, *Organizational Strategy, Structure, and Process* (Palo Alto, Calif.: Stanford University Press, 2003).

Suggested reading

For more information, see *Powder Coating* magazine's Web site at [www.pcoating.com]. Click on Article Index, Subjects, where you'll find numerous case histories and technical articles on the topics covered in this article. If you would like to submit a question, click on Problem solving. Select the column that fits your question, fill out the form, and send it to us.

Michael Collins is president of MPC Management, a consulting firm that focuses on the problems and challenges of small and midsize manufacturing companies in the industrial arena. Before consulting, he gained 39 years of experience in manufacturing that included corporate positions in two divisions of Columbia Machine, Vancouver, Wash. He has also been a division manager, a sales manager, a product manager, and a salesman. Author of several books, articles, and columns about manufacturing, Collins is a speaker and trainer who holds workshops for manufacturers on a variety of topics, such as how to develop new products, how to do a turnaround plan, and how to find new customers and markets. He holds an MBA from City University, Seattle, and a BS degree from Portland State University, Portland, Ore. He can be contacted at MPC Management, 2237 NE. 203rd Ave., Fairview, OR 97024; telephone 503/669-4968; fax 503/669-4662; Web site: [www.mpcmgt.com]; or e-mail: [mpcmgt@att.net].