

Is Time on Your Side?

ROBERT BURROWS

Manufacturers have traditionally achieved competitive advantage through location, cost, scale, or innovation. It's time they considered a fifth strategy—improving “time to market.”

Robert Burrows is the president of On-Point Consulting Group, an operations management consulting firm with emphasis on manufacturing and logistics strategy for companies that are or seek to be market-driven. Mr. Burrows can be reached at rpburr@msn.com.

The Rolling Stones once performed a song with the refrain, “Time is on my side, yes it is.” With the band members in their late 50s, you might wonder if that would still be their message today, but their song sums up the essence of an essential manufacturing strategy: In this new century, manufacturing companies need to move from a supply-driven business model (using long lead times to make products then sell them) to a market-driven model based on speed to market (determining the precise demand for a product then making it quickly).

A market-driven manufacturing model will not work, however, unless a company is “time-advantaged” throughout its operations—ready to respond immediately to changes in the market, business environment, and supply chain. A truly time-advantaged manufacturer can compete with larger companies that have higher market shares because its time-to-market is much shorter.

To be time-advantaged, a company must take a different approach to the manufacturing process. Being time-advantaged means moving from traditional competitive bidding to collaborative supply chain planning with selected suppliers. It means learning to use lean inventories, with crucial components being made to order and delivered daily—and sometimes hourly. It means defining quality from the customer’s perspective—not the manufacturer’s. It also means identifying and preparing for potential problems in the supply chain so that operations are not disrupted.

The concept of time advantage is not new, but it is coming into its own as companies use sophisticated new information technology strategies to fine tune their operations. Companies that are willing to take an unbiased look at their operational structure and—more important—are willing to change to

improve response time in every function can join the ranks of the time-advantaged.

TRADITIONAL STRATEGIES

Basically, there are four traditional manufacturing strategies: (1) location-advantaged companies are literally close to customers and benefit from lower transportation costs and continuous customer access; (2) cost-advantaged companies are the lowest cost producers and can offer the lowest unit prices; (3) scale-advantaged companies have the biggest manufacturing operations and can spread operating and administrative costs across a wider base—they are usually unit volume and market share leaders; and (4) innovation-advantaged companies have structured manufacturing to support a high level of innovation and can introduce new or improved products better than other companies.

Let's examine some examples of each type of company.

Location-Advantaged. Years ago, Pfizer Corporation had a new product called precipitated calcium carbonate (PCC), which was developed at its limestone products unit. PCC is produced when calcium carbonate is precipitated from limestone into specific crystal formations designed for specific functions.

At first, Pfizer was making PCC at a central plant and shipping it to customers. However, its main customers—paper mills that often produced more than 100 tons of paper per day—needed a reliable, continuous, and local source of PCC. Mills producing printing paper use PCC as “filler” to reduce consumption of more expensive wood pulp, give the paper desirable print qualities, and to make it more environmentally friendly. As a result, Pfizer developed the concept of “satellite” PCC plants built right next to paper mills. The PCC plants were owned by Pfizer but supplied PCC exclusively under long-term contracts.

Pfizer became highly location-advantaged. In essence, it matched its manufacturing strategy with a marketing approach that met a key customer requirement. (Note: A few years ago, Pfizer spun off its PCC and other minerals-related businesses into a separate company called Specialty Minerals Technology, Inc.)

Don't simply set up supply lines and stick with them no matter what.

Cost-Advantaged. Baldor is a manufacturer of small, one-horsepower motors in Ft. Smith, Arkansas. The company dramatically changed the economics of its market by building a plant designed to be the lowest cost manufacturing operation of its kind in the world. Today, Baldor has a dominant market share due to its low-cost production. It is very difficult for other companies to compete against Baldor unless they can produce motors at nearly the same cost and develop other customer benefits.

Scale-Advantaged. Anheuser-Busch, with its flagship beer brand Budweiser, has been the U.S. market share leader for years. Several years ago, Philip Morris Companies, an expert marketing organization, purchased Miller Brewing Co. and began marketing the Miller beer brands in a highly effective way. As a result, Miller began gaining market share, alarming Anheuser-Busch. To offset the Miller offensive, Anheuser-Busch built two massive breweries that were so large and efficient that they dramatically reduced the company's marketing and advertising costs per barrel of beer. As a result, the company was able to invest more in marketing and advertising than Miller and effectively blunted the impact of Miller's campaign.

Note that Anheuser-Busch made the strategic changes to its manufacturing and marketing plans in a matter of months, thus gaining by being time-advantaged in its decision making at the senior executive level.

Innovation-Advantaged. Luxotica creates new eyeglass frames at a design center in Italy. It has a prototype-engineering department that develops tooling for Luxotica to produce the frames at any of their manufacturing plants around the world. The company can literally transfer production of a specific frame from one plant to the next in a

matter of days. Luxotica needs that capability because the key feature of its market is fashion: Customers want the latest and most popular designs. Very rarely do you see the same pair of eyeglass frames on two different people.

As a result, Luxotica needs continuous innovation and a manufacturing strategy flexible enough to support that innovation. With this strategy, Luxotica has taken an enormous global market share with many different brands. Companies can compete with Luxotica using smaller, nimble regional operations, but Luxotica has an overwhelming advantage in high-volume innovation that keeps it at the top of its game.

CHINKS IN THE ARMOR

While these four strategies have been successful, they are based mainly on a cost advantage—in essence, they are supply-based models. Today, that is not enough. Companies must determine and respond to customer demands faster than ever before. However, moving to a truly demand business model requires companies to become time-advantaged throughout their operations.

A time-advantaged manufacturer can compete with companies that are, for example, innovation-advantaged because its “time-to-market” is less. As customer values or tastes change, the time-advantaged company can respond faster and have products on the market well before a company that is only innovation-advantaged. A time-advantaged strategy requires change throughout the company, from product development to engineering, manufacturing, and marketing.

PLANNING AHEAD

Being time-advantaged requires companies to rethink the supply chain, planning well in advance for potential problems that might disrupt product deliveries. For example, last summer a wildfire near Los Alamos, New Mexico, damaged many homes and businesses. One of the affected businesses was a manufacturer of chips being used in new cellular phones marketed by Nokia and Ericsson.

Nokia is a time-advantaged company, and its time-to-market is very short. The company has an internal group that identifies potential supply chain problems. Even before the New Mexico

Companies must determine and respond to customer demands faster than ever.

fire, Nokia’s supply chain team had instituted changes in manufacturing methods and operations to allow this special chip to be made in other plants around the world. As a result, when the New Mexico supplier went down, Nokia never missed a beat. Ericsson, which was not time-advantaged, took too long to respond and missed several million units of production because its only supplier was down.

The lesson here is that time-advantaged companies have a different mind-set. They know that a company cannot simply set up its supply lines and stick with them no matter what. A demand-based company must have alternative supply lines to meet customer demands because, in this Internet age, customers can quickly access and switch to other companies.

Time-advantaged companies like Nokia analyze the supply chain using operational metrics from market segments and manufacturing solutions. Those metrics are based on the companies’ procedures, systems, manufacturing technology, employee skills, and organizational structures. Each metric defines value based on customer demand—not supply. Companies can then identify the specific market values and manufacturing solutions that create value for customers.

MOVING TO DEMAND-BASED QUALITY

Time advantage is based on fundamental economics. Basically, there are only three ways to create wealth: mining, manufacturing, and agriculture. Every other economic activity transfers wealth but does not create it. Manufacturing creates wealth only when it creates value for customers. And yet most manufacturers do not think about what value means to the customer, except in the most general terms.

For example, for years U.S. auto manufactur-

ers thought quality was defined by automotive engineers; they set up their manufacturing plants to produce quality based on how the product would function. Then Japanese car companies invaded the U.S. market and took huge chunks of market share with their form-based quality culture. They looked at quality from the customer's perspective, using what is now called "fit and finish." They asked questions such as "What does the finish of the car look like? Does the hood fit precisely in the middle of the car between the two fenders, or is it slightly off?" Japanese manufacturers took that information and used it in their operations to improve manufacturing reliability. They successfully defined how the steps of the manufacturing process created value for customers.

BIDDING VS. COLLABORATION

Purchasing is another key part of the time-advantage strategy. Simply put, manufacturers that want to be time-advantaged must dramatically change the way they approach the procurement process. Traditionally, companies have defined success in procurement as having the flexibility to switch suppliers quickly to get what they consider to be the lowest cost. However, in today's manufacturing environment, that technique is largely ineffective due to the time and cash costs of frequent supplier changes. The constant shifting makes suppliers unproductive as well.

When a manufacturer buys components from a supplier, what it is really buying is time and capacity. A time-advantaged manufacturer finds ways to make decisions on specific components as late as possible and then move them quickly into the manufacturing process.

This is not the traditional customer/supplier relationship. For example, say a truck manufacturer is placing orders for engines. It asks for bids from four different manufacturers, including the one expected to get the business. The lead engine supplier is now forced into the position of not knowing if it will get the business or not, so it can't plan for capacity, staffing, or even raw materials until the bids are considered. When its bid is accepted, it must start from ground zero and scale up to deliver the order, which takes a great deal of time.

Purchasing is a key part of the time-advantage strategy.

Unless that supplier can get some consistency in the way it receives orders, it will always require a long lead time to fill orders. A time-advantaged company would use the opposite approach. The truck manufacturer would choose a supplier based on several criteria, including price, quality, service, and ability to meet close schedules. The truck manufacturer would tell the supplier, "We will buy 30 engines a week from you for January, February, and March. Three times each week we will call you and tell you exactly what features we need on those engines, and you will have the raw materials ready to make those 30 engines." As a result, the lead time for an order is just one day, due to the collaborative plan between the manufacturer and supplier.

The time-advantaged approach gives the supplier enough information to operate effectively without having to create large inventories. If there is a sudden demand in the market for trucks with a particular engine feature, both the truck manufacturer and the engine manufacturer can quickly and efficiently shift their production, because they are deciding on the specifics of that engine the day before it goes in the truck.

COLLABORATIVE PLANNING

The fact is that traditional competitive bidding does nothing to reduce manufacturing lead times, no matter how sophisticated the bidding process. For example, Goulds Pumps, which manufactures a wide variety of industrial pumps, took a long, hard look at its procurement process. At the time, the company was buying pump motors from three different suppliers. Every Monday morning it would bid on truckload quantities of motors it needed for the next two to three weeks ahead. Suppliers would sometimes have open capacity,

and Goulds could buy the motors less expensively. The company was very proud of its ability to have these three suppliers on a conference call to bid against each other.

Close examination revealed that one of the three suppliers had a manufacturing technology far more advanced than the others. The superior supplier bid down to a cost that was just below the other two only when it didn't have any other orders in the plant; it never gave Goulds its truly best price.

Based on this and other information, Goulds considered a collaborative planning approach to procurement that could do two things—reduce Goulds' pump motor inventory from two weeks down to one day, and get manufacturing support from the high-technology supplier in exchange for providing continuous demand. Goulds implemented this program, which worked well. Not only did Goulds dramatically reduce its standing inventory, it also benefited from the supplier—now a partner—showing Goulds how to design its pumps to use a lower cost motor while getting better performance. In addition, with the steady demand volume from Goulds, the supplier was able to invest in new technology that improved its ability to meet product requirements and further reduce product cost.

LEAN BUT FLEXIBLE INVENTORIES

As the Goulds Pumps example demonstrates, maintaining lean but flexible inventories is absolutely crucial to being a demand-based manufacturer. For example, at one time General Motors maintained parts inventories that were 10 times higher than its Japanese competitors. Although it has reduced that figure, GM's part inventories are still higher, largely because of the way it purchases parts.

Maintaining lean but flexible inventories is absolutely crucial to being a demand-based manufacturer.

In its desire to get the lowest priced bid, GM will truck in inventory from virtually anywhere in North America. At any point in time, half of its inventory may be in transit. Keep in mind that as soon as you put inventory on a truck, you have made a huge investment in transportation and time. By contrast, most suppliers to Japanese car manufacturers are close enough to the plants that they don't put their parts on trucks; they transport them to the assembly line in hand carts. The Japanese manufacturers tell their suppliers what they want each hour of the next day, while GM tells suppliers to put parts on trucks two weeks ahead of time.

Many companies have found success using the four basic manufacturing strategies. It is hard for them to imagine that they need to change the way they approach the basics of manufacturing. However, manufacturing is entering a new age, one based on customer focus and value creation. Customers not only desire dramatic increases in response time, they require them. Companies that put themselves in a position to meet those demands must become truly time-advantaged, because, to quote those graying rockers, The Rolling Stones, "Time waits for no one." ●