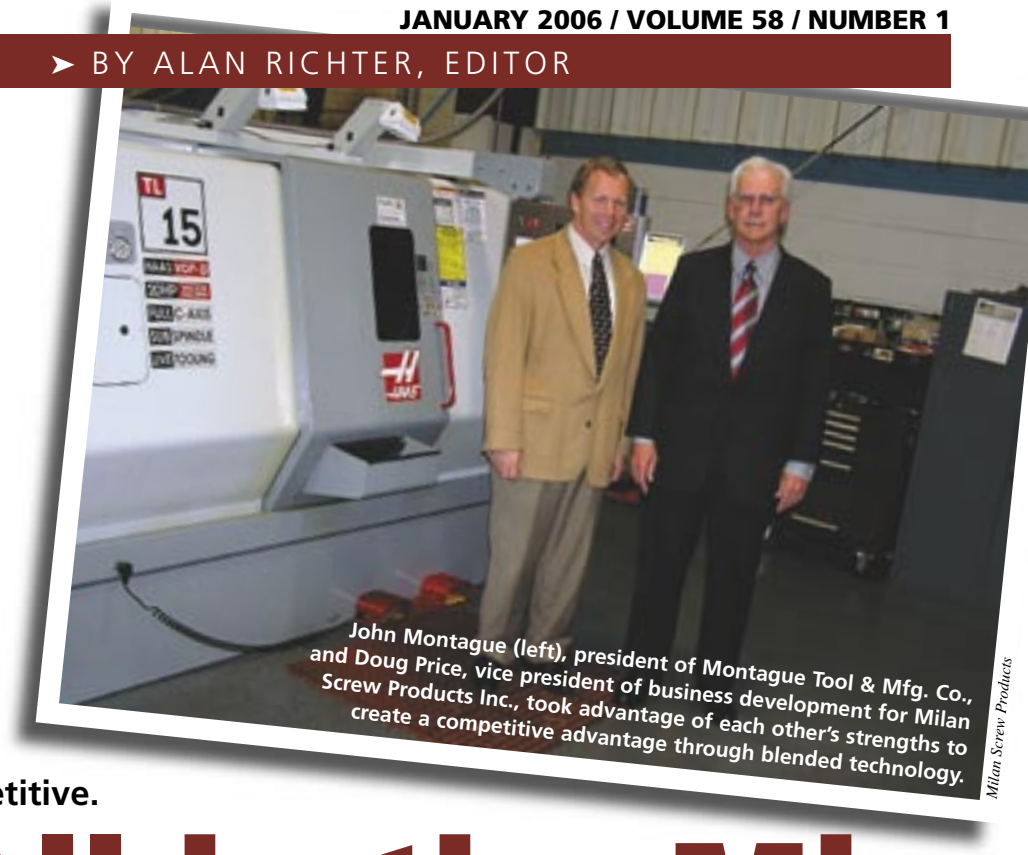
➤ BY ALAN RICHTER, EDITOR



John Montague (left), president of Montague Tool & Mfg. Co., and Doug Price, vice president of business development for Milan Screw Products Inc., took advantage of each other's strengths to create a competitive advantage through blended technology.

Milan Screw Products

By focusing on their areas of expertise, two job shops were able to implement the concept of 'blended technology' and become more competitive.

It's All in the Mix

It's no secret that the U.S. screw machine industry has experienced better days. "We are really being clobbered by global outsourcing," said Doug Price, vice president of business development for Milan (Mich.) Screw Products Inc. (MSP). "A lot of the products our industry produces are being moved offshore. The only thing that has slowed the flow is the lack of offshore technical expertise, but history teaches us that problem will be solved."

A. Richter

For their initial blended-technology collaboration, Milan Screw Products blanked the part (right) on a 6-spindle screw machine before sending it to Montague Tool & Manufacturing, which performed the required milling operations.

The screw machine was developed more than 100 years ago to produce turned precision parts efficiently. Multispindle screw machines were designed to address the need to produce high-volume parts. In most applications, a "multi" is quite efficient as a primary manufacturing process for turned products. Some multis are equipped with spindles that stop and then restart the rotation of the bar stock to allow special tooling to operate perpendicular to the axis of rotation. In "spindle stop" machines, cycle times are slowed and machine and tooling complexity are increased.

Over the past 25 years, increasingly advanced design options have been introduced to the screw machine in an attempt to accommodate users' growing demand for machines that lets them add secondary-operation value to the parts they machine for customers. The problem, though, is the cost of those machines has also grown, from $500,000 to $1 million or more, depending on the level of sophistication. The expense of new equipment coupled with the reality of ever increasing labor and overhead burdens have pushed prices to a level that makes competing with many offshore suppliers difficult.

To find a way to help MSP become more competitive and diversify its customer base, Price began to explore how to add more value to MSP's product mix. The possibility of purchasing new screw machines equipped with special attachments, spindle-stop capability and CNC programmability was eliminated based on the high level of capital investment required. Also under consideration was the addition of traditional CNC machines to complement MSP's screw machines. However, it became clear that this option not only required a substantial capital investment, but also several years to build the

necessary technical competence. As Price and Chuck Tellas, president of MSP, evaluated the advisability of making the necessary capital investment, they became concerned that changes in the marketplace were occurring so quickly that there would not be enough time to master the learning curve.

Price said it was a real shock when they began to understand that "we could easily be out of business before everything was in place, let alone paid for!"

A New Approach

In an effort to find a solution, MSP shifted the focus outside of the company and began a series of conversations with Montague Tool & Manufacturing Co., Clio, Mich. According to John Montague, president of Montague Tool: "There was an excellent relationship between the principals of both companies going back decades. The relationship laid the foundation to openly explore ways to take advantage of complementary niche capabilities and create a competitive advantage by blending technology. [This is] the idea of being able to figure out what you're good at doing, joining forces with others who have complementary skills and working together to create more value for the customer."

One part Montague Tool has been making for years is a cylindrical component for a shock absorber. MSP suggested doing the initial metal removal, shaping and tapping operations using one of its 6-spindle screw machines. MSP then proposed sending the "blanked" workpieces to Montague Tool for the more-complex, higher-value CNC milling operations. The intention was to use the efficiency of the multispindle screw machine to do those operations that took a lot more time when using Montague's single-spindle CNC lathe.

Montague Tool was able to use an efficient hydraulic workholding system designed by its PAWS Workholding division to "supercharge" the efficiency of the CNC milling operation (see sidebar, page 70). Engineers from the three companies worked together to maximize the efficiency of each operation. The result was that Montague Tool was able to reduce the price of the part by 15 percent on a small run of 2,500 parts, and, at the same time, all three companies were able to achieve their targeted profit margins. When estimates for production quantities were increased to 100,000 parts, the price reduction increased to 22 percent.

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Price pointed out: "The concept of blended technology is built on a rollup of technical capability when companies agree to put literally everything they can contribute on the table for consideration. It becomes all about collaborating and cooperating rather than competing. For the concept to really have an impact, there must be a shift in how business owners currently view sharing their process expertise."

Price described what he calls a "hide and hold" mentality at the center of today's competitively driven strategies. "Companies are convinced they can secure their future by finding a niche and holding on to it by hiding it for as long as possible so nobody can steal it," he explained. Price and Montague agree this mentality prevents cooperation and creates excess investment in several expensive resources.

One of the reasons MSP, PAWS and Montague Tool were able to significantly reduce the cost of the shock absorber part is because they were willing to take advantage of idle capacity. "The use of excess capacity really involves productively engaging capital investments already made," Price said. Each company, and the customer, benefited without an additional dollar invested in capital equipment.

Another factor that had a positive effect on both pricing and margins was the opportunity to leverage literally hundreds of years of combined engineering and production talent. Associated training costs were minimized,

Workholders at work

In addition to Milan Screw Products' turning proficiency and Montague Tool & Manufacturing's milling expertise, the companies took advantage of a multiple-part workholding system from PAWS Workholding, a division of Montague Tool.

The system holds numerous small round or multiple-side parts for secondary operations. It consists of a hydraulic base plate, a fixture plate, an electric-hydraulic pump and a control valve. Instead of having to secure the parts individually in the fixture plate, the machinist can secure multiple parts with a throw of the control valve lever.

Montague Tool uses the hydraulic workholding system, which can be designed to hold up to 96 parts, when milling. It lets the company achieve a high density of parts under the spindle, save time by eliminating numerous tool changes per part and reduce labor cost.

"The workholding system gives the operator an opportunity to load a machine, get it running and then he can run multiple machines," said John Montague, president of Montague Tool and Paws Workholding.

—A. Richter

PAWS Workholding/Montague Tool

This PAWS' multiple-part workholding system has 32 hydraulic vises.

wasted time normally needed to gain technical competence was eliminated and local overhead costs were only marginally impacted.

Another benefit is the ability to maximize the companies' marketing efforts. Montague explained: "Our existing customers have 'turned' applications that we do not currently bid. With MSP's ability to machine the blanks, Montague can now bid that work competitively and remain focused on value-added CNC milling. In turn, MSP is in a position to win bids that they previously had to 'no-quote.' We both have the advantage of being able to penetrate deeper into our customer's applications by cross-selling our capabilities."

While the blended-technology concept does not fit every application, its potential for economic advantage is opening opportunities to approach the market with a fresh value proposition. According to MSP and Montague Tool, their conventional sales effort is being replaced by a solutions-based engineering approach that adds value for the customer.

The Trust Card

In reality, many manufacturing companies work together supplying subcontract services. However, the relationship between competing companies willing to collaborate by blending their niche technological expertise is different. "In order to be successful with the blended-technology concept, people in organizations have to develop a special relationship that is even stronger than traditional customer-vendor relationships," Montague said. "It's a new type of relationship that needs to be developed, one built on a much higher-than-normal standard."

The following companies contributed to this report:

PAWS Workholding/Montague Tool & Manufacturing Co.
(866) 686-7297
www.pawsworkholding.com

Milan Screw Products Inc.
(734) 439-2431
www.milanscrew.com

MSP and Montague Tool have simplified their relationship by avoiding what they perceive to be the burden of formal contract language. Price said, "We drafted a clear 'letter of understanding,' which outlines how the relationship operates and what each of us expects. We are free to exit the relationship at any time, with few 'hooks.'"

Admittedly, building a high level of trust is not easy, especially in today's ultracompetitive manufacturing environment, but it is possible. If Price and Montague are right, it may be an option worth considering as U.S. industry scrambles to identify viable alternatives to current business models that are producing marginal results.

What does it take to engage blended technology as a business practice? According to Price, it's recognition by a company that the answer to intensive competition—local or foreign—is not limited to the obvious textbook options: more capital investments, deeper cost-cutting, strategic product exit or selling portions or all of a business. It takes a willingness to invest in finding and developing relationships with firms that are aligned in terms of values and practices and have compatible machining expertise.

Understanding that and choosing the right size partner is important. A firm that earns multiples of revenue more than another company may not be a good match. In addition, private ownership, flexibility, a willingness to change and a desire to not only survive but thrive are critical. "It is here that small companies have a distinct advantage over many larger business entities," Price said.

The key leaders of the firm must be committed to exploring new territory and taking a risk. The alternative is predictable.

"Suppliers who recognize that they can actually benefit from working together with one another, and who are economically encouraged to do so by their customers, will likely find ways to effectively share information, technology and innovation … perhaps even across the globe," Price said. "Many of the resources are already in place to cultivate a win-win strategy based on cooperation. The question is: Can we build on each other's strengths quickly enough to assure not only our survival, but our prosperity?" △