



# Machine Tool Buying in the Internet Age

*New tools, possible pitfalls, and consistent lessons shape how shops purchase machine tools*

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**M**uch about the process of buying machine tools has changed over the last decade. And much hasn't. With the frantic pace of activity since the Great Recession slowing a bit (machine tool orders being down about 14 percent year-to-date), it's a good time to review what's changed and ask ourselves how a smart buyer would

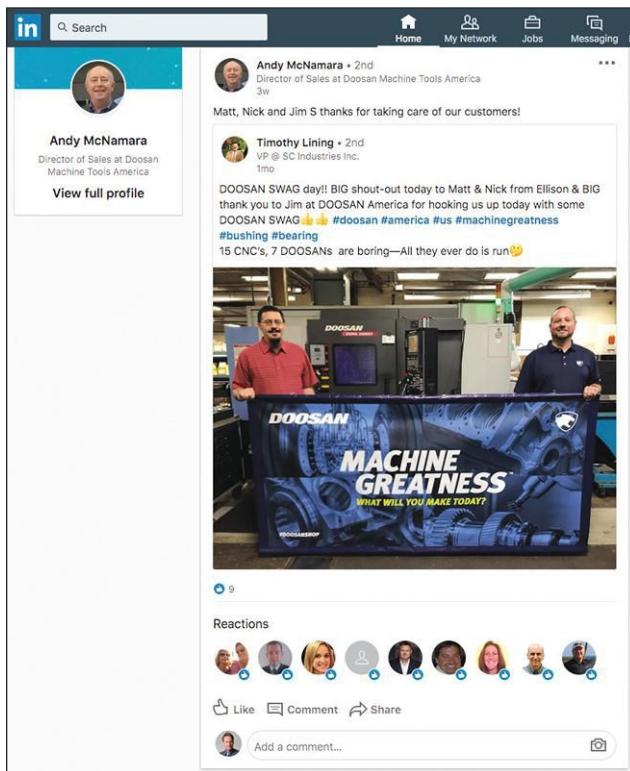
adapt to this new environment to make wise decisions going forward.

Let's start with the obvious: Everyone has a smartphone at hand and a PC on their desk (or lap) and they're both connected 24/7 to the Internet. That gives everyone instant access to every machine tool builder's website, every distributor's website, social media venues like LinkedIn and

***Most machine tools are sold, installed, tooled up, and serviced by a local distributor, like the one here being installed by Morris Group. (Provided by the Morris Group)***

Facebook (each of which have specialized sub-communities that exchange news and opinions about machine tools) and focused search sites (notably Techspex).

What's more, the content is rich and detailed, including specifications, excellent photographs, videos, and more. The great benefit, according to Chris Stine, executive vice president of the Morris Group Inc., Windsor, Conn., is speed. The Morris Group represents a wide range of products and manufacturing solutions throughout most of the Eastern U.S., and Stine offers a broad perspective on the industry.



**Doosan and other builders now use LinkedIn and other social media sites to build relationships with customers and partners. (Provided by Doosan)**

“Generally speaking,” he said, “our customers want to reach a conclusion as fast as possible. And web searching and related tools speed that process. In years past it may have taken us three visits with a customer to pass on the same amount of information he gets now with three key strokes.”

Then again, Stine said, translating lots of data into useful information is a challenge. “When you visit a customer today you find they’ve generally done an enormous amount of research upfront. So instead of spending a lot of time

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educating them, as we might have done in the past, we now spend a significant amount of time recalibrating what they've learned. Not necessarily correcting it, but cleaning it up. Filling in the blanks. Making it relevant to the customer's real needs."

### Closing the Deal

The team at Doosan Machine Tools America, Pine Brook, N.J., likewise feels that the web has been a boon to getting lots of information out there, while it still takes a strong distribution network to close the deal. Andy McNamara, Doosan's director of sales, observed that when he last checked UCC filings there were over 120 milling machine manufacturers represented in the U.S. machining market. And most buyers, he reasonably surmised, don't want to spend much time figuring out if any given builder can meet their needs. So a web presence that makes it easy to figure out what you offer is a key consideration for any builder.

For a company like Doosan, with about 400 models (of which roughly 200 are offered in the U.S.), that means a website that makes sense of a very broad portfolio and a strong social media presence that keeps them "in the conversation" whatever the application. And McNamara reported that he gets sales leads directly from these sources daily, despite the fact that Doosan sells through distribution. For a niche builder, the goal would be to capture interest in its specialized discipline. And with roughly 80 percent of the unit sales going to the top ten builders, according to McNamara, there are hundreds of small players.



**When it comes to parts valued at \$5,000 or more, and the complex machines that make them (like this Doosan HFP 1540), the machine builder is usually directly involved in the sales and part manufacturing process. (Provided by Doosan)**

But, as Ruthie Brockman, a machinist at Dimension Machine, a shop in Cincinnati, observed, it's very difficult to Google a specific machine tool need or question and get perfectly targeted results. She said that even searching TechSpex for a lathe to perform a specific job produced "tons of results to go through and research."

It only becomes relatively easy when you're "already familiar with certain machine tool builders, so you can eliminate some based on what you know about their brand, like if they can handle a super precision part." But she does find web searches for machine tool accessories to be very helpful. And she pointed to the availability of videos showing different ways to cut parts as extremely useful in introducing the benefits of machine tool features she hadn't previously considered.

In a cautionary note, Stine pointed out that everything lasts forever on the Internet and what you find may no longer

## Educator Gives High Marks to Industry Suppliers

**THE SHORTAGE OF QUALIFIED PERSONNEL** is a constant complaint among the U.S. manufacturing community. So kudos to organizations like the Advanced Manufacturing Division of the Institute for Advanced Learning and Research in Danville, Va., and the manufacturing program at the nearby Danville Community College.

Troy Simpson, director of both, explained that his corner of Virginia (the Danville/Pittsylvania County region) has over 70 Haas CNC machines for hands-on training of the next generation of machinists. The machines are chosen for their relevance to the needs of the manufacturing base in the mid-Atlantic region, plus the machine tool builder's ability to provide teaching aids and support to the educational mission.

Simpson said Haas personnel from Gene Haas on down have been personally involved in the success of their mission, offering training videos, customized curricula, conferences that bring educators and technology together, and outstanding service through their local distributor, Phillips. On the welding side, Simpson said Lincoln Electric has been similarly helpful, and he lauded Sandvik Coromant for its long-term technical assistance and training material on tooling. He also recognized Mitutoyo Corp. for its role in metrology capital equipment support (CMMs), providing professional development for instructional staff, and developing curriculum support. ➔



be applicable. He himself recently thought he was getting useful insights into a certain application only to find that the video he was watching was 15 years old.

Jim Campbell, Doosan's deputy general manager for marketing, also drew a distinction between social media in the machine tool business versus the food and travel business, in which there are sites like Yelp and Trip Advisor that exist independent of the restaurants and hotels, offering the ranked opinions of hundreds of consumers.

"With machine tools, the builders are actively involved and contributing to the conversation. They're not hands-off, and everything ultimately is driving people back to the builder's website. The website tends to be integrated with social media, and a lot of things you see on social media either start out on a website or end up on a website." Whether it's a company website or something appearing in social media, Brockman summed up a common attitude when she said: "You can put anything you want on the Internet. I take it all with a grain of salt."

### Cost Important to Selection

Of course every machine tool buying journey more or less begins with a part that needs to be made. From there, Scott Walker, chairman of Mitsui Seiki USA Inc., Franklin Lakes, N.J., offered a rough guideline: If your part value is under \$500, a standard machine will suffice and you can configure one—and come close to buying it—on the Internet (Haas Automation's website being the premier example.) If your part value is between \$500 and \$5,000 you'll need a more capable machine, with features like automatic probing and automated part handling. It's the full service distributors like

the Morris Group companies, Gosiger, Dayton, Ohio, and Ellison Technologies, Santa Fe Springs, Calif., that perform this role. And if your part value exceeds \$5,000, you



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need a “really high-end machine like a Mitsui or a Yasda. These are application-specific projects with high tolerance requirements, including automation in a high-tolerance environment, and it becomes a builder’s responsibility, more than a distributor’s, to make that happen.”

### People Buy from People

What all three groups have in common is the need for people to make sure the buyer is getting the right machine under the circumstances. The distinction between the groups is a matter of how many people are involved and what companies they represent.

As Stine put it, if it’s a simple machine, the salesman might be able to handle the whole transaction. Anything more than that is a team effort. A key reason, he explained, is the fact that the average customer doesn’t buy a machine tool very often, probably not even once a year. “There’s a strong potential for a buyer to forget something if left to their own devices,” said Stine. “We all tend to get lost in the technical side of the machine,

and there’s work to be done in explaining the relevance of some specifications.”

But it’s more than that. What about the delivery of the product? What about the infrastructure that’s needed around the product? What about things like tooling, workholding, metrology, or other process considerations? Financing? “We have a staff in place to ‘concierge’ that process,” said Stine. “We call them productivity specialists, but their role is to help the buyer with their complete decision, not just selecting a machine tool.”

In short, a typical customer doesn’t buy a machine very often and distributors exist, in part, to make sure they do it well.

Another reason machine tool buying remains a person-to-person activity is the importance of the decision. In the case of a first time buyer, Doosan’s McNamara said, the investment often amounts to “his whole life. His house. That machine has got to run. It’s got to make parts every day and start generating some invoices to build on.”

The pressure might be less intense for an established shop, but it’s still there. As McNamara observed, “I’ve



**Trade shows help the machine buyer tremendously by bringing all the experts and relevant technology together in one place. (Provided by the Morris Group)**



watched machine builders fade away because they haven't kept up with the technology. We know customers need to step up to more capable technology as they compete and grow and we need to deliver."

And as noted earlier, Doosan, like most machine tool OEMs, does this through distribution. As McNamara sees it, once you've decided what part(s) you need to make and you've sorted out some possible suppliers, the next critical step is checking out the distributor, "because these are the people that are going to make or break your experience. You can have the right machine, you can give it away. But if customers can't get the support they need on those machines, they're going to stop buying them from you."

Whether it's with the builder or the distributor or both, buying a machine tool always comes back to relationships. Brockman said her father (who owns Dimension) spoke at the funeral of the Gosiger sales engineer who first introduced them to Okuma machines. She has the cell phone number of Okuma's CEO. Mitusi Seiki's Walker said people often call him asking what machine they should buy for this or that application, knowing the answer will be the unvarnished truth and quite possibly something other than a Mitsui Seiki. He went as far as saying that honesty is the single most important thing any salesperson brings to the industry, whether he stays with one builder or distributor or moves around.

"People buy from people because they trust that they will be there to support them, whether you're a distributor or a salesman or a builder," said Walker. The only distinction in this regard is that "as the level

of industrial sophistication becomes more and more complex, the responsibility shifts from the distributor to the builder." When the part is a blisk costing upwards of



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\$100,000 or a Sikorsky CH-53K helicopter component in which “the forging is half a million dollars before you start cutting,” it’s the builder on the hook.

McNamara agreed that when it comes to something like Doosan’s nearly \$2 million HFP 1540 machine, which competes with Makino in profiling aerospace structural components, Doosan has “100 percent involvement” with the process. “Especially in the beginning, because there’s such a learning curve,” he said. “The projects include a complete package, from proving the initial part in Korea,

do it at 20 cents a cubic inch.” This requires two-way trust between the builder and the customer—a relationship built over years and based on experience.

How do you get that kind of experience? “Buying a product and finding it doesn’t work,” is Walker’s rueful reply. “I see it happen continually. Over the years, by the time he’s 50, the equipment engineer has been beaten to the point where he knows how to grill the builder. He knows how to grill the salesman. He knows who he wants to work with and who he doesn’t want to work with.”



**The quality of local service is vital for efficient machine tool operation. (Provided by Doosan)**

to running it off on location, right up until production, and even then we’ll be involved. Of course, we also involve our distributors because they eventually take over. They’re always our first-line support.”

### Projects Advance Technology

Another reason builders take the bulk of responsibility in the most challenging projects is because they amount to a fairly large degree of R&D. Walker said Mitsui Seiki often takes on a project without actually knowing how they are going to do it, like the time Boeing came to them and said it was “costing them a dollar fifty per cubic inch to machine titanium,” and asked if they could help “figure out how to

He said younger engineers and MBAs fast-tracking through the big manufacturers don’t have this knowledge and therefore make mistakes, but naturally want to grow in the business with younger engineers on the machine builder side. “The biggest challenge right now for the high-end builders is staff retention,” said Walker. The lesson for the buyer, as always, is to seek trustworthy, knowledgeable advisors, no matter how gray the hair.

### Trade Shows Rock

The death of trade shows has been predicted a number of times since the Internet seemingly revolutionized “everything.” But they remain a great help to the machine buyer.



Brockman of Dimension Machine gave the classic explanation: everyone is there in one place. “I love going to a trade show with a focus, with a goal to learn about a specific thing. Sometimes we go to the Okuma booth and ask them some questions. Then we go to the tooling booth. They give us a different idea and so we reconsider how we’re doing things. Then we go back to the Okuma booth to ask some more



**Dimension Machine's Ruthie Brockman relies on her local Okuma distributor for advice on things like how automation can be added to their machines. (Provided by Dimension Machine)**

questions. We might bounce around, but everybody is right there. You don't have to make 100 phone calls.”

McNamara said that with enough planning you can get all the right people together at the same time, eliminating the walking between booths. “We generally have meetings set up all day, every day, with people who have planned a visit to learn something, to review prints,” he explained. “That is a phenomenal use of a trade show.”

Morris Group's Stine said one thing that's changed is companies no longer hold the introduction of new technology for the next big trade show because “the need for speed doesn't allow it.” He added that Morris Group “puts a lot of emphasis on open houses and small events that are more targeted and focused. Customers appreciate being educated on a specific topic more than walking around and seeing a bunch of lights.”

Brockman also complimented smaller events hosted by Okuma as an excellent opportunity to exchange valuable information, including among fellow customers. And she specifically referred to exhibitors at shows like IMTS going overboard with things like “who has the biggest bar, or a helicopter in their booth.” Having said that, creating an attractive corporate image relies at least in part on optics, from the froufrou of the booth to the appearance of the machines. And Brockman admitted that—much as she may resist it logically— she's drawn to a sharp machine design.

### Other Modern Aids

Beyond the web, there are several computerized aids worth mentioning. For example, McNamara said, “customers expect you to be able provide 3D STP files before they'll even consider your machine. They want to be able to see how a machine will fit into their floor plan.” Prospective customers also ask questions like how a machine will handle a certain cut and ask for a quick video, rather than leave the shop to see a demo. “We can do that type of thing in literally minutes,” said McNamara. “We make sure our distributors have the equipment on their floor so they can run test parts.” And a smartphone, even in an untrained hand, can quickly create a fine video.

Stine from the Morris Group agreed that 3D modeling has emerged as a means to limit risk while speeding the buying process. “We look at it as allowing the customer to understand the complete investment,” he said. “Not just the X, Y and Z axis, but everything that goes around it. How the tool



will approach the part ... the automation ... many things that allow you to visualize where you're headed." Stine compares it to an insurance policy to make sure all necessary items are captured. "Minimizing risk was a big deal 20 years ago and it's a big deal today. This does it with speed," he said.

Using simulation software to calculate cycle times also figures into this. Brockman recounted Dimension Machine's process in deciding on an automated cell: "Gosiger Automation programmed parts for us so we could see how the robot would load parts on and off the pallet, and how we could essentially eliminate hand deburring. It was very helpful in seeing how the time savings justified the much higher investment. We were actually able to further decrease the cycle time in real life."

Do these tools eliminate the need for a runoff, or seeing and touching real equipment? Sometimes, depending on the complexity of the project and the perceived risk. Then again, machine tool people being machine tool people,

they sometimes need to see it in metal. And once again, it's generally the local dealer that makes that happen. ➔

## FYI

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