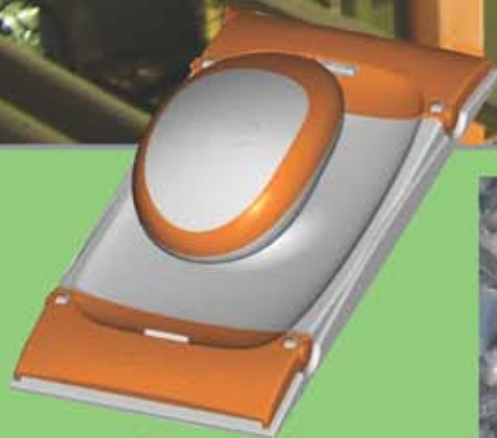
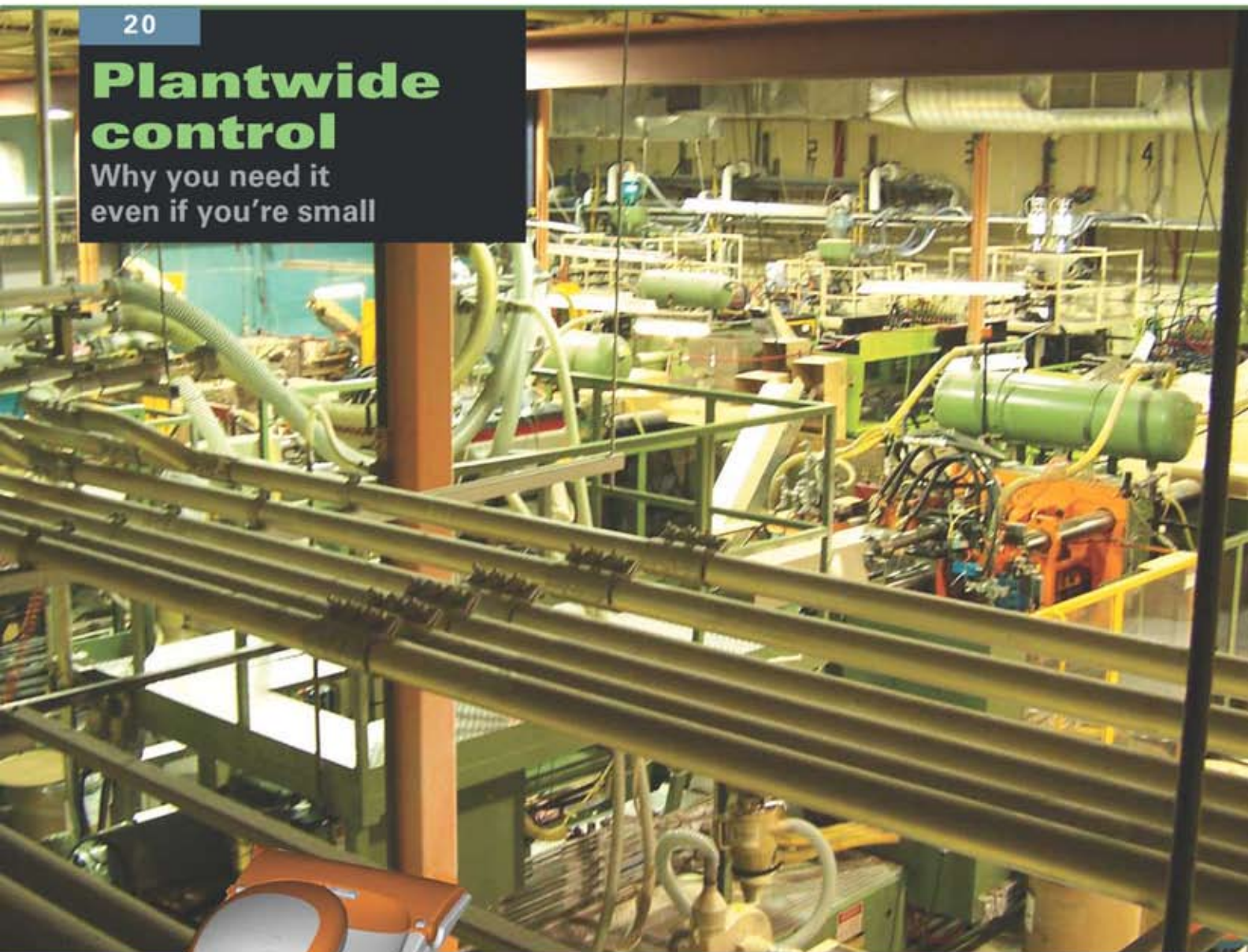


INJECTION MOLDING

20

Plantwide control

Why you need it even if you're small



46

Profitable partnerships for moldmakers in RP/RT



36

Feel the design freedom with long fibers



54

A perfectly executed material handling plan

A value-adding mold partner

Upfront engineering services provide a competitive edge, and rapid prototyping is picking up steam. For mold shops that don't have RP equipment, here's a company that will be your partner. —**Clare Goldsberry**

If molds are a commodity, what's your weapon against competition?" That was the first question Jim Mishek asked attendees at the American Mold Builders Assn. convention in Maui, HI earlier this year. Mishek, president of Vista Technologies Inc. (Vadnais Heights, MN), told the more than 150 attendees that value-add has to be the key differentiator when it comes to the business of building molds.

"Many mold manufacturers don't take advantage of the opportunities to add value to what they do," said Mishek. Adding value doesn't necessarily mean that mold companies need to do all value-add in-house, but he stressed that there are tremendous opportunities for partnerships with other service providers, such as his own Vista Technologies.

Vista offers a range of rapid technology services, including rapid prototyping (RP), rapid tooling (RT), metal castings, and bridge tooling. The company began 10 years ago with a goal of providing these technology services to molders, moldmakers, and OEMs to improve manufacturing and product performance.

It has three stereolithography (SLA) machines with three different resins; selected laser sintering (SLS); fuse deposition modeling (FDM); a Polyjet RP ma-



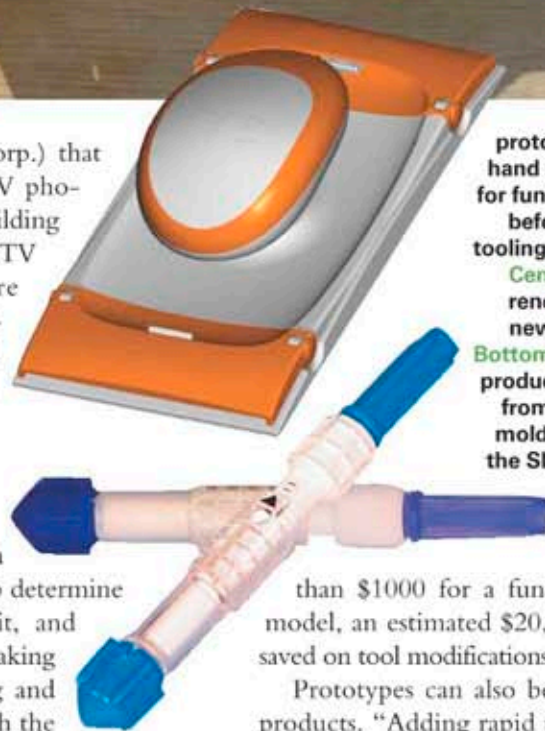
Top An FDM prototype of a new hand sander is used for functional testing before production tooling was released.

chine (Stratasys Corp.) that uses a superfine UV photopolymer for building the part in layers; RTV (room-temperature vulcanization) molding capabilities; and direct metal deposition capabilities.

The RP edge

An obvious advantage to generating a prototype is to help determine the part's form, fit, and function prior to making production tooling and parts, but is it worth the cost? "I have people say to me that prototyping is expensive," Mishek said. "I've got news—not prototyping is expensive."

For example, by using SLA patterns and FDM prototypes, 3M was able to make design changes before releasing production tooling, as opposed to making costly and time-consuming tool modifications in production tools. By spending less



Center Computer renderings for the new hand sander. **Bottom** Low-volume production parts run from an aluminum mold rest on top of the SLA prototypes.

than \$1000 for a functional FDM model, an estimated \$20,000-plus was saved on tool modifications.

Prototypes can also be used as test products. "Adding rapid prototypes to your process will greatly reduce design iteration, production, and tooling costs," Mishek noted. "Having a tangible model at the time of quoting also greatly improves a quote's accuracy."

Many prototyped parts are not made of the actual material used in production, and therefore do not always provide a true representation of how the part will behave during use. With the advance-

TOOLING

Engineer | Build | Maintain

ments made in RP over the past decade, however, there are many more materials available for prototyping such as ABS, PC, and PPS for the FDM system, or nylon (even glass-filled) for the SLS system, giving Vista's clients many alternatives for their prototypes.

With the SLA technology, Vista can make prototype parts for a variety of industries from automotive and consumer to electronics and medical. Large prototypes can be made with Vista's two SLA 5000 machines, and small, detailed parts are a good fit for Vista's highly accurate Viper (both from 3D Systems).

The RT advantage

Vista also provides quick-turn rapid tools machined from aluminum. "There are a lot of myths surrounding aluminum," said Mishek, "but it's a lot more versatile than you think, and we average three-week lead times." Lumen Biomedical was able to get its first sample production parts from an aluminum tool that was produced in a two- to three-week timeline. Once the design modifications were complete, all the mold polishing and texturing was completed for low-volume-production plastic parts.

Other forms of rapid tooling are opening up new avenues of production by permitting short-run injection molding. These molds, typically allowing up to 40,000-plus shots, give customers a cost-effective and timely method to meet their low-volume production requirements.

Adding value is key to the new business model for moldmakers. Mishek explained that Vista can form a unique cooperative partnership with clients to help them do some amazing things for their clients' customers, and help them land new business. But Mishek also stressed that moldmakers need not worry about Vista being a rival. "We're a partner, not a competitor. Building high-volume production molds is not my expertise and I don't want to do it," he said. ■

Contact information

Vista Technologies LLC
(651) 653-0400 | www.vistatek.com