Additive Potential

Making Great, Better

In its early years, 3D printing was led by rapid prototyping, with its capacity for fast, cost-effective parts. Today, 3D printing has evolved to the point where customization of end-use parts can lead production, and part quantities can be scaled to need, making zero inventory a reality. FATHOM, an Oakland, CA-based advanced manufacturing facility has been on board with 3D printing since it opened its doors in 2008, and sees unlimited potential for additive technology to disrupt the manufacturing supply chain.

> “This new Demonstrator is enabling us to look to the future where our production center could look like a 3D printing server farm, where there’s just rows and rows of Stratasys Continuous Build™ 3D Demonstrators. That’s where our minds are going because the FDM-based technology is that good from a design and cost standpoint
>
> Rich Stump
> FATHOM

stratasys

Additive Potential

With its focus on production parts, FATHOM prides itself on its manufacturing ecosystem, a blending of technologies that enable customers to go from concept to prototype to market in a way not previously possible. “The vision and focus of our business is to change the way products are designed and manufactured, thanks to additive manufacturing (AM),” said Stump. The fact that 3D printing also allows for greater part complexity, reduced costs and greater customization is no small factor.”

FATHOM’s customer-base challenges include hesitancy to make the leap to an additive technology for production parts. But those with high-value, low-volume needs today are already realizing many benefits from its “sweet spot” of 200- 400 parts, the break-even point between 3D printing and tooling up for injection molding. “Our challenge has been to get that number higher so it’s competitive for low-volume production runs,” said Stump.

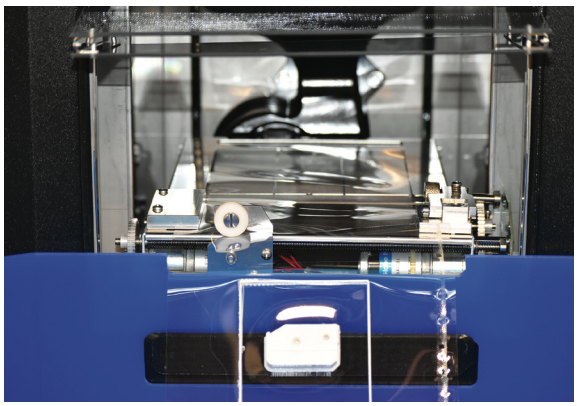
Pushing the Limits of Manufacturing

FATHOM’s early-adoption of the Stratasys Continuous BuildTM 3D Demonstrator, a modular, automated FDM® 3D manufacturing system with interconnected, high- throughput capabilities, is their solution. “This system is going to enable us to sell higher- volume FDM parts for AM application because it’s going to push the barrier of number of parts we can sell competitively,” said Stump.

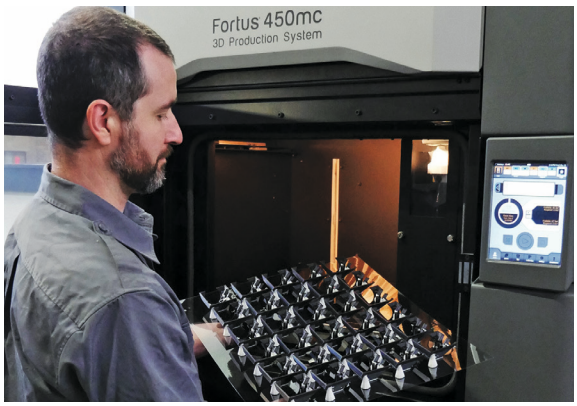
“Our opportunity here is setting up these modules for 1,000-plus parts, which I’m confident we can get to. Maybe even higher,” adds Stump. “And that’s just comparing apples to apples from a cost standpoint; that’s not taking into account designing for more function.”

The manufacturer currently has a rack of six modules in their Oakland facility and Stump says this is only the beginning. “This new Demonstrator is enabling us to look to the future where our production center could look like a 3D printing server farm, where there’s just rows and rows of Stratasys Demonstrators. That’s where our minds are going because the FDM-based technology is that good from a design and cost standpoint.”

The team at FATHOM is extremely excited about the opportunity this Continuous Build Demonstrator brings to drive scale and growth for its AM business. “It meets our customer’s demand for high-quality FDM parts in greater quantities within shorter lead times and is more cost-effective.”



A part produced with the Continuous Build Demonstrator being ejected into the catch bin



FATHOM, an advanced manufacturing facility, has utilized 3D printing since its inception

The Oakland, CA, base of FATHOM Industries

Additive Potential

Having the Demonstrator in house lets FATHOM's customers change design without penalty, tackle multiple jobs in parallel without downtime as well as automatically manage job requests.

"This Demonstrator has the ability to take what's already working at FATHOM and push the limits of additive manufacturing," said Stump. One of their customers, Intel, worked with the team of advanced manufacturing experts at FATHOM to help design and fabricate Spider Bots for their keynote address at its annual developer's conference. The complex project highlighted FATHOM's cost-effective design and manufacturing capabilities, one with many design iterations during production. In the end, the Spider

Bots produced by FATHOM were comprised of more than 9700 3D printed parts. "If we'd molded those parts it would have cost approximately $400,000 and taken a few months. With 3D printing, we were able to complete the entire project in five weeks, charging Intel just $116,000," said Stump. "The demand for tool-less manufacturing is ever-increasing. Designers and engineers want even greater design freedom and faster speeds so the opportunity with the new Demonstrator is significant."

Scalability is another factor the Demonstrator addresses for FATHOM. "With the growing adoption of direct digital manufacturing, more of our customers are placing these types of end-use orders. All it takes is a few of our customers to submit just-in-time orders at once for our machines to max out on capacity," said Stump. "The ability to be flexible with this new system, adding more as needed, is really great."

With the Continuous Build 3D Demonstrator, a total disruption of the supply chain is possible for just-in-time parts. "Customers can request what they need in their MRP system when they need it and inventory is available on time, every time, just- in-time."

Stratasys Headquarters

7665 Commerce Way,
Eden Prairie, MN 55344
+1 800 801 6491 (US Toll Free)
+1 952 937-3000 (Intl)
+1 952 937-0070 (Fax)

stratasys.com
ISO 9001:2008 Certified

1 Holtzman St., Science Park,
PO Box 2496
Rehovot 76124, Israel
+972 74 745 4000
+972 74 745 5000 (Fax)