

Design

# How 3D Printing Is Speeding Up Small Businesses

By Karen E. Klein July 10, 2014

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Since David Friedfeld took over ClearVision Optical from his father in 1985, he's seen most eyewear manufacturing move overseas. The 120-employee company, based in Hauppauge, N.Y., is bringing a small piece of it back. Last year, Friedfeld purchased an entry-level 3D printer for just under \$3,000. He still does the bulk of his manufacturing abroad, but he can now print eyeglass prototypes in-house.

The device "has taken three months off our production cycle [and] allowed us to stay closer to the market," he says. "We are able to get far more creative." He's so bullish on 3D printing that he's planning a design-it-yourself website that will allow customers to build their own frames, try them on with facial recognition software, and then click to have ClearVision print and ship them a few trial pairs.

That kind of enthusiasm seems contagious among small business owners who are trying out 3D printing technology, says Daniel Levine, a consumer trends expert and director of the Avant-Guide Institute. He's been following 3D printing closely for several years, though he says the technology only jumped into mainstream consciousness about two years ago, when the first affordable printers became available.

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"The jury is still out as far as exactly how helpful it's going to be and in what ways," Levine says. "Everybody who's looking at it feels pretty certain it's going to have a large impact, but exactly what that will be is still uncertain."

For now, early-adopting small business owners tend to use 3D printing for prototyping, creating replacement and intricate parts, and for making customized gifts, he says. The barrier to more widespread use of the printers is not cost—Levine anticipates that the cheapest 3D printers will drop from \$1,000 to \$100 within the next two years—but technical know-how.

"For now, it's engineers, jewelry makers, and architects" who are the primary small business users, Levine says. That's because they are familiar with the computer design and scanning processes that 3D printers use to churn out items.

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The engineering staff at Grid Connect, an 18-employee manufacturing company in suburban Chicago, is using its 3D printer to help develop a second version of its line of wireless home sensors. Vice President Adam Justice says it has shortened production times "in an industry that is moving very fast."

Before the company got the printer, his engineers sent specs for prototypes to a 3D printing company that charged \$600 to \$700 per piece. When the pieces arrived a week or two later, "the engineers would look at it for 10 minutes and find errors and have to send it back. We'd lose a month or two finalizing a design," Justice says. With the 3D printer he bought last year, the team can turn around designs in three or four days, and the savings has more than covered the \$3,000 investment in the machine.

But most small business owners and entrepreneurs don't have engineering teams. So why are pilot 3D printing programs being offered this year at office supply stores like Staples, the UPS Store, and PostNet?

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Those companies are targeting self-employed inventors, designers, and college students who need to build things but can't afford to buy their own printers, says Dave Thorsen, an architect who is piloting a 3D printer at his PostNet franchise in Minneapolis. Thorsen brought the idea for the pilot project to PostNet after he saw community college students working with a 3D printer. He even purchased a franchise in order to test the idea.

He is leasing a \$22,000 3D printer for \$400 a month during the six-month trial that started in April, he says. His first customer was a small, industrial designer making parts for Herman Miller chairs. "He walked in at 3:30 on a Wednesday with a jump drive and asked when he could have the part. I said, 'I don't think I can have it done by the end of the day, but I'll have it for you at 8 tomorrow morning,'" Thorsen says.

With the machine printing overnight, the part was ready by 7:15 the next morning. The designer rushed over, incredulous, to see it. "He said it was perfect. Normally he had a two-week turnaround time sending out to a printing service in Atlanta that threw him to the back of the line because it handled huge automobile and aviation clients," Thorsen says. "He came back the very next week with six more designs."

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Klein is a Los Angeles-based writer who covers entrepreneurship and small business issues.

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Richard 4 months ago We will see much more localized manufacturing in the near future. No need for massive factories in China anymore. Wall Mark will be making their own products at the store.

Rick S 4 months ago Cost-per-inch is very high, coupled with the fact it literally takes days to print something out.

Rick S 4 months ago I would be more excited for 3D printing if it was faster. 48 ##ing hours to "print" a fairly simple 4" (10 cm ) part!

Tony Morgan 4 months ago The 3D printer is more creative as compare the other printers in the market. The digital printer in these days are more in demand due to the fact that it can print on any surface and also for business point of view it's a cost saving and productivity which reduces the manual work.

Lily Chan 4 months ago They should simplify the software to run the 3D Printer.

Richard 4 months ago 3D Systems has easy software. A kid could operate it.

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