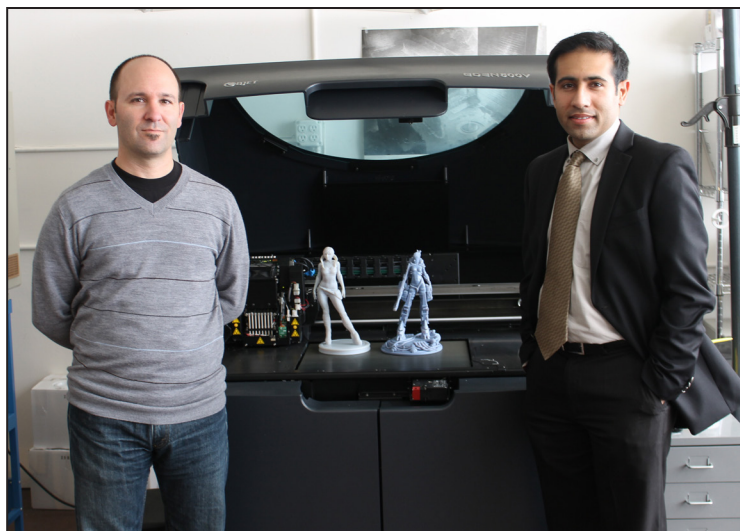


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COVER STORY

3-D printers raising hackles and a range of legal disputes



Joshua Sebold / Daily Journal

John Vegher, owner of San Francisco's 3-D print shop Moddler, and Paven Malhotra, a litigation partner at Kecker & Van Nest LLP, next to plastic artwork printed on a 3-D printer at the company.

By Joshua Sebold / Daily Journal Staff Writer

SAN FRANCISCO — After long being relegated to the world of hobbyists and engineers, 3-D printers are beginning to seep into the mainstream consciousness. A rapid drop in the price of the technology is making small-scale manufacturing processes available to small businesses and individual consumers, while raising all sorts of legal questions. Various companies are currently battling over patents related to the technology itself, and copyright questions loom as users gain an unprecedented ability to create knockoffs of intellectual property. Meanwhile, the recent posting of schematics for a 3-D printed gun spurred an emotional outcry by the public and government leaders.

Large corporations have used the technology on a variety of scales since the 1980s, but drops in prices are bringing it to Main Street, with Staples Inc. announcing plans to offer the Cube, designed by 3D Systems Inc., in its stores with a starting price of \$1,300 starting in June. The printer can already be purchased on Staples' website.

The opposite of carving or sculpting, 3-D printing is an additive manufacturing process more akin to the creation of silicon wafers — the printer applies layers of plastic on top of one another to create a three-dimensional form.

Paven Malhotra, who litigates intellectual property cases for Kecker & Van Nest LLP, said plastic as a medium is just the tip of the iceberg.

"Researchers are trying to use 3-D printers for all sorts of unique products and services — to build human cells, to

build food, to build reefs using concrete around the Great Barrier Reef," he said. "3-D printing has the potential to be the next great disruptive technology."

In San Francisco, a company is already offering the service to the public in the way that FedEx Office does for 2-D printing. John Vegher, who owns the 3-D printing shop Moddler, said he uses machines from two different 3-D printer makers.

Competition among 3-D printer companies has already led to consolidation in the industry and patent infringement lawsuits.

3D Systems sued competitor Formlabs and one of its financiers, Kickstarter Inc., in federal court in South Carolina last November for alleged patent infringement. The case pits Greenville, S.C. firm Dority & Manning PA for 3D Systems against nearby Farnsworth

Law Offices and Bingham McCutchen for Formlabs. *3D Systems v. Formlabs et al.*, 12-CV-3323 (D.S.C., filed Nov. 20, 2012).

"It will be a big area of litigation going forward," Malhotra said.

Another patent battle is brewing over the rights to 3-D printing techniques. Using the third-party challenge system set up as part of the America Invents Act, three organizations — the San Francisco-based nonprofit Electronic Frontier Foundation, Harvard's Cyberlaw Clinic and the Ask Patents section of online Q&A site Stack Exchange Inc. — are collaborating on a series of challenges to patent applications targeting 3-D printing designs.

The America Invents Act allows non-patent holders to provide prior art to the U.S. Patent and Trademark Office to demonstrate that a pending patent application is targeting a pre-existing technology. EFF and its allies have filed six challenges to 3-D printing-related patent applications.

Julie Samuels, an EFF attorney, said she was concerned that mistakenly granted or overly broad patents would tie up 3-D printing technology and stifle innovation.

She also expressed concern that 3-D printing patent disputes might follow the trend in other industries of patent holders suing not only infringing companies but also consumers. In one example, a patent holder in the Wi-Fi industry, Innovatio IP Ventures LLC, has been suing hotel chains that offer Wi-Fi to their customers.

"We'd rather see competition in the marketplace, not the courtroom," she said.

Another aspect of 3-D printing raises copyright concerns — the way people share design files that tell the printer what you want to make. The printers use computer-aided design (CAD) files similar to those used by engineers to design machined parts, such as pistons for cars. Some users like creating the files, but most will want to download pre-existing ones.

Several attorneys agreed 3-D printing makes it easier to steal ideas or violate copyrights. But they also thought it unlikely users would be allowed to patent individual CAD files. They predicted some 3-D printing companies would devise systems requiring users to enter an

authorization code to use a downloaded design file, similar to protections used in the video game industry. And copyright holders have already begun sending takedown notices to websites hosting unauthorized designs related to their intellectual property.

HBO, for one, recently got a website to take down a user's design for an iPod dock that resembled the iconic chair from the "Game of Thrones" TV series.

John D. Kinton, a patent litigator at Jones Day, said he thought some of the mediums used in 3-D printing, such as the "ink" in the machines, would potentially be patentable.

Perhaps the best known 3-D printing file is the Liberator, a plastic gun design created by Cody Wilson, founder of the website Defense Distributed and a law student at the University of Texas at Austin. The website's stated goal is to enable global access to 3-D printing of arms.

The Liberator is advertised as safe to fire once without harming the user. Design instructions tell the user to insert a metal slug into the body of the gun, ensuring metal detectors would be able to sense the gun's presence. Possessing an undetectable gun is illegal, but some observers find it unlikely that all users will decide to follow the law.

The Department of State requested earlier this month that Wilson take down the files, arguing they violated the Arms Export Control Act. Wilson has complied with the request, although he has publicly claimed that the government will eventually recognize his right to repost the materials.

It has been widely reported that more than 100,000 users downloaded the files before they were taken off the site. Sen. Charles Schumer, D-NY, has vowed to outlaw the Liberator and similar weapons on the national level, while state Sen. Leland Yee, D-San Francisco, voiced his intention to introduce similar legislation in California.

Despite the widespread distribution of the files, Kinton said he thought the 3-D gun issue was sensationalized and overblown — that it's unlikely the cost and time commitment involved in creating them would ever be less than that involved in creating a zip gun, which can be made with parts found at a hardware store. 3-D printing, he said, isn't about guns.