

## Anticipating IP Trends In 3-D Printing

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The hype surrounding 3-D printing has begun to die down and its true, disruptive impact has begun to emerge. From how manufacturers view their supply chain to how consumers understand copyright and trademark laws, 3-D printing will play a role in a wide range of conversations and conversions of existing legal, market and business rules. Understanding where those changes are most likely to occur can help those most impacted by the transformation of 3-D printing get ready for what happens next.



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### 1. Revolutionized Manufacturing Processes

While consumers have been slow to warm to 3-D printing, manufacturers worldwide have embraced its use. The technology is cost-effective and offers limitless possibilities when combined with other new technologies.[1] For example, some predict that 3-D printing paired with new robotics and open-source software will change manufacturing processes and lead to new manufacturing supply chains.[2] The resulting supply chains may well refocus production locally. Those industries dependent on the current global supply chain will need to make significant and timely adjustments.

### 2. Increased Cost of Patent Litigation

As manufacturers continue to adopt 3-D printing, more low-cost supply chains will arise. For example, a lower cost consumer printer sourced from a Chinese manufacturer is the focus of ongoing patent litigation in one U.S. district court.[3] As is the trend in patent litigation overall, the cost of patent litigation involving patent rights related to 3-D printing technologies is bound to increase. Like all other patent litigation, the outcomes of patent litigation related to alleged infringement of 3-D patents will likely become more unpredictable, especially as some of the key patents in the industry begin to expire.

In addition, 3-D printing will have some unique issues to address that will add to patent litigation expenses. Patent law has various doctrines that allow reproduction of some elements of even patent-protected objects that users of 3-D printers may invoke. For example, an owner of a patented object may have the right to preserve the useful life of that object and may be able to produce a wide range of replacement parts for the patented object, even if the replacement activity is done on a commercial scale.[4] Similarly, when a patented object consists of both patented and nonpatented elements, reproduction of the nonpatented elements of the invention is typically freely allowed.[5] Sorting this out in the realm of 3-D printing will result in additional costs for those that choose to litigate it first.

Similarly, any potential patent infringement claims against the manufacturers of the printers or providers of the CAD/CAM files used to create objects come with increased costs, especially for infringement that occurs in the consumer market under indirect infringement theories. The level of actual knowledge required to hold an entity responsible under the indirect infringement doctrines of induced and contributory infringement now potentially presents a high hurdle that may make that kind of litigation more expensive too. [6]

### **3. Greater Reliance on Trade Secret Protection**

Software drives much of the 3-D printing developments, and those creating proprietary software-based innovations want intellectual property protection. To date, many have utilized patent and trade secret protection to protect proprietary advancements. Each has advantages and limitations.

Historically, patent protection was a good option, but some say that a recent U.S. Supreme Court case sheds some doubt on whether patent protection for software-based innovations is the best option.[7] As a result of the court's decision, some say that a software creator may find a software patent too expensive and unpredictable and instead look elsewhere for protection.

Increasingly, those seeking protection have turned to trade secret protection. Software innovators who choose trade secret law rather than patent law to protect their innovations must have a strong risk tolerance. Further, they need to understand that trade secret law does not provide the protections that come standard with a patent. One example is protection against reverse engineering. But an innovator may use trade secret law to protect processes and methods and to protect against misappropriation. Those going the trade secret route may have an easier time recovering damages for misappropriation, and the damage awards tend to receive less scrutiny than patent awards. For these reasons, look to see increased use of trade secret law to protect new software involved in 3-D printing.

### **4. More Copyright Challenges**

Consumer adoption of 3-D printing has been slower than predicted, but healthy and steady. A recent review of projects listed on the crowdsourcing platform Kickstarter revealed more than 240 3-D printing projects, of which nearly 20 had garnered at least \$250,000 in consumer support.[8] A leading information technology research and advisory company predicts that widespread consumer use of 3-D printing technology is five to 10 years away.[9] Time will tell how consumers implement 3-D printing and what innovators must do to protect their rights given consumers' use. Nonetheless, as consumer adoption picks up, so will instances of copyright infringement and its attendant costs in time and money.

In particular, 3-D printing will certainly involve questions about copyright protection for functional items that are generally ineligible for copyright protection, but that also include separate design features that may be entitled to copyright protection. Copyright law uses a "separability test" to determine whether or not copyright protection may be available for some aspect of an item. Separability has no definitive test and can be expensive to prove and litigate.[10]

In addition, 3-D printing will also likely see instances where takedown notices under the Digital Millennium Copyright Act get challenged. While early takedown requests have generally been met with compliance, it is only a matter of time until a request is refused or contested and expensive litigation begins.[11]

## Conclusion

3-D printing has arrived and is here to stay, although the exact contours of its use continue to evolve. Those involved with 3-D printing, including the software innovators who drive much of the development, will have front-row seats to watch the unfolding changes in manufacturing processes, patent and trade secret protection, consumer adoption, and infringement. Stakeholders should note these predictions and pay close attention to emerging trends. Doing so will allow them to benefit from the technological advances while simultaneously choosing the best and most cost-effective ways to protect their rights.

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[1] In fact, some say 3-D printing will only increase in cost effectiveness, predicting that costs will fall by up to 79 percent within the next few years. “The new software-defined supply chain: Preparing for the disruptive transformation of Electronics design and manufacturing,” IBM Institute for Business Value, July 2013.

[2] *Id.*

[3] See *Stratasys Inc. v. Microboards Technology, LLC, d/b/a Afinia*, Case No. 13-cv-03228 (DWF-JJG) (D. Minn. Nov. 25, 2013).

[4] See *Dana Corp. v. American Precision Co.*, 827 F.2d 755, 759 (Fed. Cir. 1987). A complete reconstruction of the object is, however, likely prohibited. See, e.g., *Sandvik Aktiebolag v. E.J. Co.*, 121 F.3d 669 (Fed. Cir. 1997).

[5] See *Aro Mfg. Co. v. Convertible Top Co.*, 365 U.S. 336 (1961).

[6] See, e.g., *Global-Tech Appliances, Inc. v. SEB S.A.*, 131 S. Ct. 2060, 2067-68 (2011) (indirect infringement requires knowledge of the patent-in-suit and the direct infringement of that patent) and *Commil USA, LLC v. Cisco Systems, Inc.*, No. 2012-1042 (Fed. Cir. June 25, 2013) (good-faith belief of invalidity is evidence that may negate the specific intent required for induced infringement).

[7] See *Alice Corp. v. CLS Bank Int’l*, No 13–298, 2014 WL 2765283 (June, 19 2014).

[8] See Kickstarter 3D printing search results, [https://www.kickstarter.com/discover/advanced?term=3d+printer&category\\_id=0&woe\\_id=Earth&sort=most\\_funded](https://www.kickstarter.com/discover/advanced?term=3d+printer&category_id=0&woe_id=Earth&sort=most_funded) (last visited on February 13, 2015).

[9] Gartner Says Consumer 3D Printing Is More Than Five Years Away, *Garnter.com*, August 19, 2014, <http://www.gartner.com/newsroom/id/2825417>.

[10] See *Chosun Int'l v. Chrisha Creations*, 413 F.3d 324 (2d Cir. 2005).

[11] After another designer figured out a print plan to make the object, a designer who hoped to sell plans to print an object based on the Penrose Triangle—a famous optical illusion—retracted a takedown notice sent to Thingiverse.com following significant public pressure.

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