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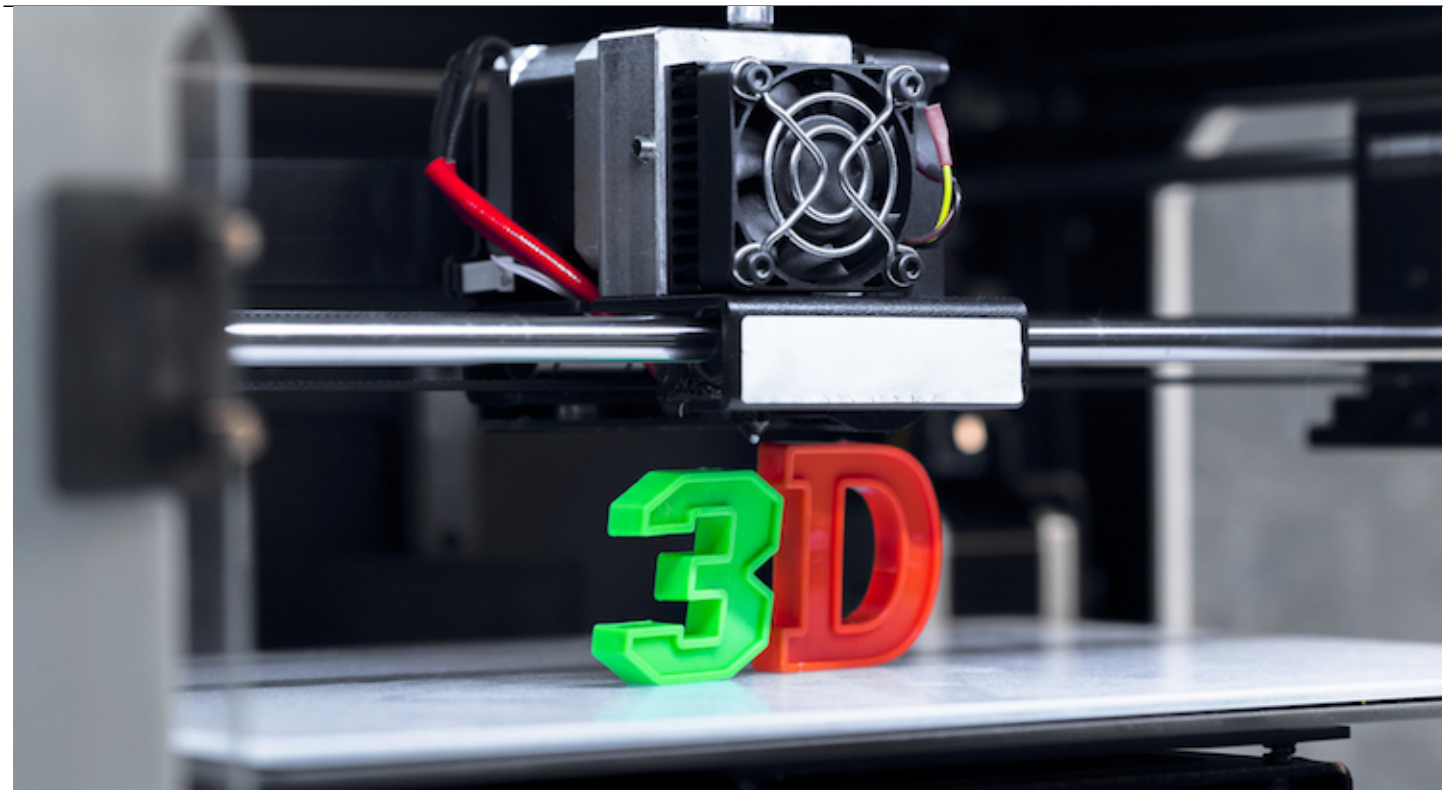
3 Legal Dimensions of 3D Printing

Technology, Privacy, and eCommerce



For every new technology, there's a particular moment when something resembling a science fiction movie gadget becomes a part of our daily lives; whether it's because the technology becomes accessible (e.g., the affordability of personal computers), the market is finally ready to embrace it (e.g., the success of Tesla's electric cars), or myriad other reasons. Perhaps one of the most interesting concerns for in-house counsel nowadays is guiding companies through technological transitions as an emerging technology becomes mainstream.

With this in mind, we have been actively watching the growing use of 3D printing. Although this technology hasn't quite found its way into every office and home, it's well on its way to becoming mainstream and, from a legal perspective, is quite interesting because it's moving faster than the laws that govern it.

3D printing has implications on industries from medicine to consumer products and everything else in between. Pivotal 3D printing issues may differ from one industry to another, and it's unlikely that one "key" issue will emerge. Generally, however, major 3D printing legal considerations will likely fall in the following three categories: intellectual property, regulatory compliance/safety, and product liability. Underlying these three key issues are enforcement concerns and implications for privacy and constitutional rights. For example, how can we effectively stop people from improperly 3D printing dangerous or counterfeit products in their homes, without jeopardizing constitutional liberties?

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3D printing also gives rise to numerous security and public safety regulatory issues, especially in

certain industries. The ability of a 3D printer to replicate explosive devices, guns, or dangerous machinery may potentially threaten public safety and well-being. Certain regulatory bodies are already addressing this issue. For example, the city of Philadelphia was the first to ban the printing of 3D guns without a license.

Even replication of non-violent goods can be a threat, such as complicated medical devices that require specialized training to operate. Although there are laws and regulations that likely already apply, such as export controls and FDA regulations, we are certain that these will be tightened to specifically account for the emerging technology of 3D printers. After all, the prospect of receiving a counterfeit 3D printed heart valve is terrifying — especially one that ultimately fails. And these concerns aren't limited to just those who purchase 3D printed goods. A neighbor who manufactures revolvers right next door can make counterfeit goods the least of your worries.

Because 3D printing technology is rooted in physically replicating items, intellectual property — including copyright, trademark, trade dress, patents, and trade secrets — may gain new life and ultimately new case law interpretation. Numerous intellectual property issues, such as counterfeiting, file sharing, likelihood of confusion, and fair use (both in trademarks and copyrights), as well as direct, indirect, and willful infringement, may be tested with 3D printing technology. This is similar to the legal issues that arose with P2P file sharing, semiconductors, and on the internet.

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3D printing technology will certainly test the limit of intellectual property laws. On the bright side, it won't be the first time intellectual property laws have evolved to embrace new technology! The advents of radio, copy machines, file sharing, and the internet all led to new applications of intellectual property laws to technology that didn't exist when the laws were created.

In addition to navigating unchartered intellectual property battles, in-house counsel may also find themselves negotiating agreements that address some of these IP issues in creative ways. For example, in 2013 Hasbro announced a partnership with 3D printing marketplace Shapeway, allowing licenses to fans who wanted to create custom My Little Pony figures. Hasbro gets to protect their property and make money off the licenses, while allowing 3D designers to create freely — and, of course, Shapeways profits from manufacturing the designs.

Though the 3D printing industry is still trying to figure out how exactly the technology will be used by the mass market, we believe that much of 3D printer technology will be consumer-facing. Consequently, defective product, warranty, and other consumer-related issues will need to be addressed. The traditional manufacturing and purchasing models, along with their associated laws and established risk allocations, will likely be disrupted.

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For example, the ultimate consumer may no longer be buying well tested, ready-to-use, and neatly packaged products. Instead, they may be buying the raw materials, 3D printing technology, digital files, or blueprints to make certain parts or products on their own. If the final product causes property damage or bodily injury, that may be in part due to user error or unforeseen conditions such as

temperature or light intensity.

In that case, who is ultimately responsible? If the consumer/producer shares liability with the designer and/or supplier, how is the joint responsibility allocated? These new facts will most certainly push the limits of century-old contracts and torts principles. 3D printing technology will certainly challenge traditional definitions of “product,” “manufacturer,” “seller,” “reseller,” and even “ownership.”

These issues are just some examples of the kinds of problems in-house counsel will be dealing with (we haven’t even gotten into issues dealing with insurance, data privacy, environmental safety, etc.). The only thing we’re sure of is that the technology will outpace the law’s ability to regulate it, and many in-house counsel will have to make certain decisions without knowing how courts will weigh in.

While certain regulatory trends will emerge with some of the more controversial uses of 3D printers (such as weapons), much of the nuance will lie in how courts analyze the use of 3D printers by consumers in ways that we can’t even yet imagine. Few things are more exciting for in-house counsel than opportunities to be at the forefront of shaping the way laws are made. 3D printing is an amazing opportunity for the private sector to drive legislation, which makes us want to 3D print a sign that says “FUN.”

Olga V. Mack

Fellow

CodeX

Olga V. Mack is a fellow at CodeX, The Stanford Center for Legal Informatics, and a Generative AI Editor at law.MIT. Mack shares her views in her columns on ACC Docket, Newsweek, Bloomberg, VentureBeat, Above the Law, and many other publications.

Mack is also an award-winning (such as the prestigious ACC 2018 Top 10 30-Somethings and ABA 2022 Women of Legal Tech) general counsel, operations professional, startup advisor, public speaker, adjunct professor, and entrepreneur. She co-founded SunLaw, an organization dedicated to preparing women in-house attorneys to become general counsels and legal leaders, and WISE to help female law firm partners become rainmakers.

She has authored numerous books, including Get on Board: Earning Your Ticket to a Corporate Board Seat, Fundamentals of Smart Contract Security and Blockchain Value: Transforming Business Models, Society, and Communities. She is working on her next books: Visual IQ for Lawyers (ABA 2024), The Rise of Product Lawyers: An Analytical Framework to Systematically Advise Your Clients Throughout the Product Lifecycle (Globe Law and Business 2024), and Legal Operations in the Age of AI and Data (Globe Law and Business 2024).

Katia Bloom

Commercial Lawyer and Associate General Counsel

ForgeRock

Katia Bloom is a fast-paced and strategic commercial lawyer. Currently, she is the associate general counsel at ForgeRock. Previously, she headed up legal for Avira, Inc., was a founding partner at E Squared Law Group, advising many start-up clients and was in-house counsel at Anesiva. She is actively involved in the Association of Corporate Counsel and a number of organizations promoting

women in the legal profession.