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Let's look closer at 3D printing and IP issues

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It is estimated that 3D printing will result in the global loss of at least \$100 billion per year in intellectual property by 2018. Gartner Reveals Top Predictions for IT Organizations and Users for 2014 and Beyond, (Oct. 8, 2013), <http://www.gartner.com/newsroom/id/2603215>. What will you do to protect your company's IP?

As noted in my overview article: The, I described 3D printing as the revolutionary technology that is turning traditional manufacturing and supply chains on their head, which, in turn, significantly impacts IP rights. 3D printing turns a 3D digital model created on a computer or with a scanner into a physical object, letting users "print" almost anything. Its use is on the rise; in fact, 3D printing is expected to be a \$20 billion industry by 2020. 2015 Roundup of 3D Printing Market Forecasts and Estimates. (Mar. 31, 2015), <http://www.forbes.com/sites/louiscolumnbus/2015/03/31/2015-roundup-of-3d-printing-market-forecasts-and-estimates/#2715e4857a0b332d45791dc6>.

Under a traditional manufacturing and supply chain model, products are manufactured in large factories, often abroad. They are shipped to the U.S., and then delivered to retail outlets for sale to consumers. Consumers then either order the products online or purchase them at bricks-and-mortar locations. This traditional manufacturing and supply chain gives manufacturers extensive control over their products' manufacturing and distribution and, thus, the use of their intellectual property.

All of that changes with 3D printing. There are numerous existing and expected 3D printing manufacturing and supply chains, many of them creating risks for IP. Examples include:

- Personal Use Manufacturing/Supply Chain: Consumers with personal 3D printers, or with access to 3D printers at local print shops, can access CAD files online — some placed there with permission and others not — with which to 3D print products.
- Replacement Parts Manufacturing/Supply Chain: Consumers seeking to obtain replacement parts will be able to obtain — either with permission or without — CAD files for the parts and print them at home, at local print shops, or at retailer locations.
- Counterfeiters' Manufacturing/Supply Chain: Counterfeiters who obtain pirated copies of CAD files will 3D print various products and sell them directly to consumers or through unknowing third parties (online or bricks-and-mortar retailers).

Each of these manufacturing and supply chains raise numerous IP risks. In each scenario, IP rights holders lose control of their IP, whether copyright, trademark or patent. But steps can be taken to protect and enforce those IP rights.

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Copyright

CAD files used to 3D print products have become extremely valuable pieces of intellectual property. They typically are protected by copyright law, generally meaning that third parties need permission to copy, modify, distribute, and create derivatives of the original works. Yet, digital files are easily transferable and accessible. Indeed, The Pirate Bay, a notorious but popular torrent site, has a category for 3D-printable files that it calls "physibles." Users can anonymously upload other's files onto the file-sharing site, while others can easily download the files and print items on 3D printers.

The Digital Millennium Copyright Act's ("DMCA") anti-circumvention provisions provide copyright owners one method for addressing this issue. Copyright owners should employ technological measures to prevent access to their 3D printing software files. Anyone who circumvents those technological measures can be subject to civil and criminal remedies.

Also at stake with 3D printing are copyrighted designs. Just look at www.thingiverse.com, which hosts more than 700 downloadable digital blueprints for 3D printing Star Wars-related items and more than 330 for 3D printing Disney-related items. The DMCA is useful here, too, as it can be used to remove 3D printing CAD files improperly made available online. HBO successfully used the DMCA to remove a file for 3D printed phone chargers modeled after the Iron Throne from the popular show Game of Thrones. Similarly, Moulinart successfully used the DMCA to remove a thingiverse.com file for a mushroom based on the comic "Tintin," and Games Workshop used it to remove files for figurines based on its Warhammer game.

DMCA take down notices should be sent quickly when infringing files are found on them. This, of course, requires constant policing of your company's copyrights, and various defenses, i.e. useful object, fair use, could be asserted.

Trademark

3D printing presents a host of issues for trademark holders. Imagine: Unauthorized copies of your company's products now can be printed on home 3D printers, or by sophisticated counterfeiters, with your company's brand name, logos and specialized designs on them and passed off as authentic. If you are a manufacturer of any smaller product, whether clothing, toys, accessories, component parts, or replacement parts: if it was challenging to protect your brand before, it now will be doubly difficult.

Trademark holders must have an actively pursued brand protection monitoring program. Additionally, they should ensure that all products — and all aspects of products — placed on the market are fully protected with trademark registrations. This means protection of more than just brand names and logos, but also distinctive characters of your products, their external appearance, and their packaging.

Patent

Unfortunately, the patent system is relatively ill-equipped to deal with 3D printing because it allows common consumers — let alone sophisticated counterfeiters — to easily evade patents. Enforcement requires that patent holders be aware every time a consumer 3D prints an item that infringes their patent(s). It would be virtually impossible to gain such knowledge. Moreover, enforcement can be a costly endeavor and likely is not feasible when dealing with individual consumers who 3D print items.

Enforcement may be equally difficult against file-sharing sites or others who provide CAD files used for 3D printing patented items. While those sites could be pursued for inducing patent infringement, induced infringement requires knowledge of the relevant patent. Knowledge is difficult to prove in everyday patent litigation, let alone patent litigation involving 3D printing, as one must prove knowledge of the specific patent at issue, not merely knowledge that the 3D printed product may be covered by various patents.

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So, what is the solution? The likely solution is for your company to actively monitor and enforce its rights, and to do it efficiently and strategically. Additionally, the ultimate solution may be to adapt to a business model that embraces 3D printing. Considering its expected growth, savvy brand owners and manufacturers should consider providing their customers with 3D printing options, at least for product accessories and replacement parts.

Maya Eckstein is a partner at Hunton & Williams LLP. She focuses on patent and intellectual property litigation. As head of the firm's intellectual property practice group, Eckstein advises companies and organizations on how to protect their valuable intellectual property rights. She represents plaintiffs and defendants in patent infringement disputes and has significant experience planning, coordinating and executing the defense of complex litigation involving multiple defendants and jurisdictions. She may be reached at (804) 788-8788 or meckstein@hunton.com.