

3D Printing: Is Your Business Ready for the Next Industrial Revolution?

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Disruption displaces old business models but creates opportunities, if one has the vision. For example, it is no secret that the music industry has suffered rampant intellectual property abuse. However, because of digital technology, new distribution models, including streaming models, have emerged and music distribution has been democratized. Now any artist with a computer and an Internet connection can distribute her own music.

Manufacturing and distribution in your industry will soon be democratized with 3D printing.

3D manufacturing (also called additive manufacturing) is not a new threat. Just as there was always the threat of piracy in the music industry, there has always been the threat of knock-offs in manufacturing and consumer products industries. But “digital” is the great accelerator. 3D printing will most assuredly accelerate and amplify piracy in manufacturing and consumer products industries just as digital accelerated piracy in the music industry.

3D printing demands more proactive innovation and IP management.

Some already refer to 3D printing as the “third industrial revolution” or “fourth industrial revolution” (depending on point of view). What is clear is that the technology will cause a revolution. 3D printing will transform the future of manufacturing into a more local and customized environment. In his February 12, 2013 State of the Union address, President Obama flatly stated that 3D printing has “the potential to revolutionize the way we make everything.”

3D printing involves applying successive layers of different material, laid down in different shapes. The technology is being and will be used to create all sorts of products (including most likely parts and products that your company manufactures, distributes, or transports). Automobiles. Aerospace. Construction. Houses. Industrial design. Furniture. Defense. Medical. Clothing. Biotech. Footwear. Jewelry. All sorts of consumer products. Complex parts can be built quicker with more custom designs. Custom parts can be instantly replaced and reconstructed, more efficiently and with a smaller environmental footprint. When a minor component on a capital good or part fails, the replacement part can now be printed locally. Costs will come down. This will affect storage and distribution networks and transportation industries. No longer will companies farm out manufacturing to low-cost contractors working overseas; there will be local fabricators working from digital files. Transportation companies’ businesses will correspondingly shift from transporting finished goods to transporting raw materials. New fabricators will emerge.

In 2012, the National Additive Manufacturing Innovation Institute was established in Youngstown, Ohio, and is nationally recognized as a pioneer in this space. The organization’s mission is to

accelerate the adoption of additive manufacturing and 3D printing technologies in the U.S. manufacturing sector, and to increase domestic manufacturing competitiveness.

Here is an excellent video to learn about the technology. Then read below to learn about the business and legal ramifications.

What industries are at risk? Any industry that sells parts will be one of the first industries to be affected. And any industry that makes consumer products is also at risk.

When desktop 3D begins to flourish and anything can be created by anyone without oversight, there will be intellectual property abuse. Even in the case of large fabricators, there will be authorized fabricators and unauthorized fabricators (who will house raw materials and print any product for a price). Rogue fabricators may distribute unauthorized products on the black market, and directly to your end customer. The files for your company's products will likely get traded over the Internet just as surely as music is today. Gartner Research predicts that 3D printing will result in intellectual property losses of at least \$100 billion per year by 2018.

Indeed, a revolution is coming.

Your business will need more inventive parts created by your engineers and they must be designed to be proprietary. More patents will be required for your business's inventive parts and your lawyers must employ new patent claim strategies to not only capture functionality, but also to contemplate (1) the creation or distribution of 3D model files of the invention intended for use in 3D printing, (2) the scanning of genuine articles of the invention to create 3D model files, and (3) the importation of off-shore-origin 3D model files of the invention.

3D printing is not evil. Digital technology presents risks and opportunities for your business just as has happened in the music industry. Your business must be prepared. ***While the full impact of this technology is not yet fully appreciated, the patent claim strategies your lawyers employ today will have an impact for the next 20 years.***

Responsible strategic planning for your business must contemplate the future impact of 3D printing. This should be a bullet-point in your company's next strategic planning meeting.

Benesch has formed a 3D Printing Team because the response to this challenge requires a cross-functional approach. The team is led by Benesch's Innovations, Information Technology, and Intellectual Property Group (3iP) and is cross-functional to identify and address (1) product warranty issues, (2) product safety issues, (3) dealer relationships, (4) supplier relationships, (5) packaging/transportation, (6) patent claim strategies, (7) copyright and trademark/brand considerations, (8) reliance on trade dress protection, and (9) strategic planning counseling.

Mark Avsec is a Partner in and Vice-Chair of Benesch's Innovations, Information Technology, and Intellectual Property (3iP) Group. Mr. Avsec had a robust career in the music industry and is familiar with industry disruption because he experienced it first-hand. For almost a century the recorded music industry thrived and evolved. When disrupted by the Internet in 1999, the music industry's first response was sue the customers and try to sue the technology out of existence. That did not work. The second response was to employ digital rights management to lock up the files, which also did not slow the pace of infringement and alienated customers. Finally, the music industry recognized that all of the infringement meant that there was huge demand for its products if profitable

new ways evolved to sell them. The music industry is still paying for its initial failed strategies. Mr. Avsec believes that the lesson learned from the music industry is that a purely reactionary strategy, e.g., suing customers, to combat 3D printing's adverse effects will not be efficacious for manufacturing and consumer products businesses.

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