

3D printing - Top 10 IP challenges

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Introduction

3D scanning and printing technology has the potential to revolutionise manufacturing, like the rise of the personal computer challenged the orthodoxy of the traditional world of computing. As the availability and ease of use 3D printing technology increases, and the price drops, the technology will gain wider use, and the prospects of disruption will increase. This poses a number of challenges for everybody in the manufacturing and distribution chain, and creates opportunities for new entrants. How we react to those challenges and opportunities will be critical to success or failure! This Top Ten discusses ten of the most important issues related to 3D printing and how in-house counsel can prepare for the changes 3D printing will bring.

1 What is 3D printing?

3D printing is a process of making a three-dimensional solid object of virtually any shape from a digital model. The process uses an additive process, where successive layers of material are laid down in different shapes, according to a digital blueprint, generated by computer aided design (CAD) or animation modelling software. By "slicing" the blueprint into digital cross-sections, the printer deposits the manufacturing material (liquid, powder, or sheet material) gradually building up layers, until complete. The virtual model and the physical article are almost identical.

The process allows for rapid prototyping, rapid manufacturing and mass customisation of products or components, and can reduce significantly new product development time, testing and costs. The technology has been used in the manufacture of jewellery, footwear, furniture, weapons, spare parts, and even food, as well as in architecture, civil engineering, construction and motor vehicle, aircraft and aerospace and dental and medical industries.

Its application is unlimited, except by our imaginations.

2 What does this mean for manufacturers and rights holders?

The ability of someone to easily, quickly, and cheaply make an identical replica of any object has significant ramifications for all, especially IP rights owners. This is particularly so for those involved in manufacture, distribution, or sale of objects that have few, if any, moving parts, or that are simple in design or operation, like spare parts, jewelry, sporting goods or toys.

We have already seen 3D printed shoes, football cleats, jewelry, fashion, furniture and iPhone adapters.

As the technology continues to develop, and innovators and entrepreneurs find more uses for the technology, the impacts will be felt throughout every industry, and at all points of the supply and distribution chain. Those businesses or industries that plan now will be best placed to respond to the challenges.

3 Do current IP laws deal with the challenges faced by this new technology?

The short answer is no!

Our current IP framework seeks to control activity at key points in the traditional manufacturing and supply chains. As seen with the introduction of other disruptive technologies that put greater control in the hands of consumers (the photocopier, the video recorder and peer-to-peer file sharing technology), IP laws struggle to keep up with dramatic shifts in process or disruption to the supply chain.

Over time, the law was able to respond to these challenges, but the response was not immediate, and in some cases (for example the Digital Millennium Copyright Act) industry and rights holders lobbied hard for new laws.

In February 2013, a panel of intellectual property specialists within the worldwide Meritas network convened a panel discussion, looking at the IP regimes as related to 3D printing in the US, the UK, South Africa and Australia.

4 Will patent law protect my products?

If your product is protected by a granted patent, such as a new form of patented mousetrap, patent law may be able to stop the distribution of unauthorised 3D printed replicas or the process to make them. However, patents protect inventions, not products as such, and they are not applicable to the vast majority of consumer goods.

5 Will copyright protect my products?

According to the Meritas IP panel, copyright protection is problematic in all four countries and will only assist in limited circumstances, particularly where articles themselves are scanned and copied.

Copyright will apply if the product is a work of artistic craftsmanship, such as decorative iron gates. However, many articles that are likely to be copied will not qualify, and there are issues where the article or parts of it are purely functional or utilitarian in nature.

A design drawing for a product may also be a copyright work and the creation of digital blueprints may infringe that copyright. But in the UK, for example, it is not an infringement of any copyright in a design document (for anything other than an artistic work) to make an article to the design or to copy an article made to the design. Similar rules apply in Australia.

As a general rule, unless you have registered your design (or it is a work of artistic craftsmanship), you will not be able to prevent anyone from copying it, using a 3D digital blueprint, and selling it. You will also not be able to prevent anyone from making available a digital blueprint of the product, unless that blueprint is itself a copy of your digital blueprint, or developed from a plan. Creation and distribution of digital blueprints made from scanning your product will not be an infringement of copyright in the product (or your plans).

6 Will industrial design protection assist?

In all four jurisdictions, some form of protection for novel design features is available (with significant differences between the types of rights and terms of protection).

The sale of 3D printed copies of existing articles may infringe design rights, but reproducing a protected article is only an infringement if done commercially. Home users duplicating products for private use will not infringe design rights. Even when the activity is commercial, there are exemptions which allow for the lawful production and sale of spare and replacement parts.

In Australia, whilst the provision of a "kit" that allows a person to make a product embodying a registered design is an infringement, a digital blueprint is not a "kit" and so the provision of that blueprint (which embodies a digital copy of the article but is not an article made by the blueprint provider) is not an infringement.

7 Are 3D products counterfeit?

If a registered trademark is applied to goods without the permission of the owner of that trademark, the goods will be counterfeit, and the trademark will be infringed. A difficulty with 3D printing is that if a consumer prints the product, uses it personally, and does not seek to sell it, even if the digital blueprint reproduces a trademark on the product,

that is not trademark use. The issue is more complicated if a person creates and makes available a digital blueprint that includes a registered trademark registered for the goods. Whilst inclusion of the mark may be trademark use, the issue is whether the mark (as a digital image and part of a digital file that can be used to make the goods) is used on or in connection with the registered goods.

If the reproduced goods do not display or use the original manufacturer's marks, then the reproduction likely is not a counterfeit.

Use of a registered trademark on clearly marked "replica" goods (for example, a "replica Eames chair") may produce different results in the countries considered by the panel.

8 Are 3D printer manufacturers liable if the machines are used to make copies?

Each jurisdiction does make any person who "authorises" infringement by another liable for the other's acts. However, there are difficulties with this as the liability requires an act of direct infringement. Even if an act of direct infringement can be found it is unlikely that printer manufacturers will be liable for copying done by individual users given that the machines have legitimate applications.

9 Will the law be changed?

Manufacturers of products whose business are threatened by 3D printing will no doubt wish to see the removal of the "non-commercial" use exemptions in design law and increased rights under copyright. However, there are no changes currently planned to the non-commercial use exemptions in any jurisdiction. In Australia, given the experience with attempts by the furniture design industry to get greater protection from "knock-off" replica products, it is highly unlikely that the copyright exclusion will be removed.

It is unlikely that a levy on 3D printers will be introduced to compensate those whose products are duplicated.

As awareness increases, we are likely to see a strong push from rights holders for industry specific special exemptions from the rules and principles that make copyright protection for 3D printing of goods generally difficult to obtain under the current law.

Any push for change will require extensive work to bring the matter to the attention of the governments and to argue persuasively for the necessary changes.

10 How can we prepare for our products or market being threatened by 3D printing?

Ignoring the threat is unlikely to produce any significant commercial benefit.

Some brands are embracing 3D manufacturing of simple accessories for their products, as Nokia are doing with 3D printed phone covers. This can be used to drive up interest in sales for the smart phone itself.

However, clearly that model will be less effective when 3D printers reach the level of sophistication required to recreate the complex product itself. Some businesses, however, may fully embrace the technology and include, as part of their business model, authorised blueprints that allow users to replicate authorised copies of their products.

Other companies may focus more on the value of the brand and the services provided alongside the original product, encouraging consumers to appreciate the cache and manufacturer support that goes with owning an "original" rather than a 3D printed facsimile.

Understanding the practical reality of how infringement may occur, who may be infringing, and what types of products or markets are most likely to be threatened will serve you well. Education will help in the formulation of practical strategies to deal with the intellectual property issues better at this point than specific legal and enforcement strategies.

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