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The Intellectual Property Law Issues that Arise with 3D Printing

What is 3D Printing?

3D printing isn't a new technology, but it definitely is the future. It is a rapidly growing, affordable and widely used technology in the current times. 3D printing is the production of 3-dimensional solid objects from a digital file. It has definitely made its mark, especially during the pandemic where it was used for the production of PPE kits, masks, gloves and many other products. 3D printing has shown that it's here to stay. Many fashion brands like Balenciaga have gravitated to the production of luxury shoes using 3D printing. F1 car parts are being made using this technology. This technology is also used in the medical and healthcare industry. The increase in its usage has brought about legal concerns.

Relevant intellectual property rights in the context of 3D printing:

Copyright

Copyright protects original creative work and stops others from copying your creative work without your permission. In the UK, there is no need to register your work to get copyright protection; you get copyright protection automatically. Copyright protects original literary work, dramatic, musical and artistic work, including illustration and photography. Copyright also protects original non-literary work such as software, databases, web content, 3D CAD files. It also protects broadcast, music and sound recordings, layouts of published editions of written dramatic and musical work.

<u>Type of work</u>	<u>How long copyright usually lasts</u>
Written, dramatic, musical and artistic work	70 years after the author's death
Sound and music recording	70 years from when it's first published
Films	70 years after the death of the director, screenplay author and composer
Broadcasts	50 years from when it's first broadcast
Layout of published editions of written, dramatic or musical works	25 years from when it's first published

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The term of protection will run from the end of the calendar year in which the author dies.

In the UK, there are also qualification requirements for a work to qualify for copyright protection: the author must be a British citizen or living in the UK at the time the work is created, or the work must first be published in the UK (or a country where UK copyright law applies).

Example: If an artistic design was printed onto an object using 3D printing.

Design Rights (Registered)

A closely linked intellectual property right to copyrights are design rights, which can be either registered or unregistered.

To register a design in the UK, your design must meet the eligibility criteria of being new and having “individual character”. Designs which are dictated solely by the technical function of the product in question or which are contrary to public policy or morality may not be registered.

A registered design right provides protection for up to 25 years and can be registered in the UK by application to the UK Intellectual Property Office.

Design registration does not merely protect against copying but also against anyone who independently devises or develops a later design which infringes the registered design.

Example: Graphic designs

Design Rights (Unregistered)

An unregistered design right is very similar to copyright. It protects the shape and configuration of the design of 3D objects against copying by others. Like copyright, the first owner of a UK unregistered design right is the creator of the design, unless the design is created in the process of a person’s employment in which case the owner is the employer.

UK unregistered design rights provide protection for ten years from the end of the calendar year in which articles to that design were first put on the market, or for 15 years from the end of the calendar year in which the design was recorded in a design document, whichever period expires first.

Note also that unregistered design rights are not a monopoly right - they only prevent copying of the design.

Example: CAD files

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Patent

A Patent is a monopoly right given to someone who creates a new innovation or technology capable of industrial application. In order to receive a patent, the inventor must submit a detailed patent application

in which they describe the technology or invention. If successful, the monopoly right lasts 20 years from the initial date of filing the application.

In order for an invention to be patentable, there must be some functional (i.e. technical) aspect which is new, or “novel” and inventive and which is not specifically excluded from patentability in the Patents Act. It must also: (i) be capable of industrial application; (ii) be properly specified in the patent; and (iii) not fall within a statutory exclusion.

In the UK, a novel invention is simply one that has not been publicly disclosed anywhere in the world before the filing date of the patent application seeking to protect the invention. Such public disclosure can take the form of a book, magazine, website, journal article, an earlier patent application, prior use or the like. The novel aspect of an invention is then assessed as to whether it can be considered non-obvious (i.e. inventive) in light of what is already known. This means that if an invention is novel, it still may not be considered patentable because of a lack of inventiveness, for example it might be considered obvious to modify a known process to arrive at the novel invention.

A patent is a monopoly right specific to a particular country. A UK patent provides a monopoly right in the UK and can be extended, by registration after grant, in a number of different countries. The filing of a UK patent application also secures an option to file outside of the UK for a period of twelve months. As long as an application to afford protection in overseas territories is filed within twelve months of the initial UK filing, those applications will be treated as if they had been filed on the same day as the initial UK filing.

Example: New Inventions of 3D printing machines.

Trade mark

In the UK, a trade mark registration gives the owner the exclusive right to use the registered trade mark on those goods or services for which it is registered. A registration also gives the owner the right to stop others from using confusingly similar marks for their goods or services.

A trade mark enables the customers to identify goods or services as coming from a particular source, even though they may not know the source’s identity. Marks can be very valuable and important if properly developed by advertising, promotion and correct use on quality products or services. Thus, it is vitally important for the mark’s reputation and the producer’s reputation to protect the mark in the UK and abroad. The strongest means of protecting a mark is to register it. In the UK, the registration on a trade mark lasts for 10 years and can be renewed for additional 10-year periods.

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The following are also applicable to a trade mark's ability to be registered - it must (i) be capable of being represented in a manner enabling the competent authorities and the public to determine the clear and precise subject matter of the protection afforded to its owner; (ii) be distinctive and not merely

descriptive of the goods or services for which protection is sought (unless it has acquired distinctiveness through use), (iii) not have become customary in the trade or generic; (iv) not be a shape which results from the nature of the goods themselves, is necessary to obtain a technical result, or gives substantial value to the goods, (v) not be morally objectionable, (vi) not fall within a number of specifically excluded trade marks (for example, the Royal arms); and (vii) not conflict with earlier rights owned by third parties.

Example: Brand logo like the Nike swoosh.

Infringing Acts Related to 3D Printing:

The below summarises the different infringing acts and exceptions that come up most often right now with regard to 3D Printing. Additional concerns may arise with time.

Patent

Unauthorised commercial production of patented products constitutes an act of direct patent infringement by the users of the printers, unless the act for which this printing was carried out was for private or non-commercial purposes. It is also worth noting that a person can commit an act of "indirect" patent infringement - helping or inducing others to commit direct infringement.

In patent infringing related to 3D printing, one of the concerns and questions that has arisen is whether using a 3D printer to replace a spare part for a patented machine constitutes infringement. The law in the UK is not yet clear on this issue, although an argument can be made that replacement of a spare part of a patented unit won't constitute infringement as that involves only the replacement of the spare part and not changing or copying the whole unit.

Copyright

Copying a protected work and providing copies to the public are acts restricted to the copyright owner. Where a third party does either of these things without a licence and a defence, this will amount to infringement. Knowledge of infringement and intention are irrelevant for acts of primary infringement. Currently, there is no private copying defence under UK copyright law. Technically, a consumer who copies an artistic work by printing a replica will be liable for copyright infringement unless he or she has permission from the copyright owner.

Design Rights

Commercial reproduction using 3D printers could well amount to design right infringement. Intention and knowledge that actions amount to infringement are irrelevant. However, there will be no infringement where an act is done privately and for purposes which are not commercial. Therefore, if an object is copied by an individual in their home for their own

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personal use, there will be no infringement. The position will be different if the private individual then sells the items they have printed. This would constitute infringement.

Trade Marks

A commercial 3D printing service would be using a trade mark in the course of trade when reproducing that trade mark on a printed object. This is likely to amount to infringement. Intention and knowledge that actions amount to infringement are irrelevant. As with design law, for there to be an infringement, the trade mark must be used “in the course of trade”. Where a private individual prints an object which includes a registered trade mark, it is very unlikely that they will be doing so “in the course of trade” unless they then go on to sell what they have printed.

Conclusion

To conclude, while 3D printing is still growing and spreading its roots, finding an immediate answer to the potential intellectual property law issues is not always easy, but there will eventually be a solution to its infringing aspects. The newer problems being raised in infringement cases are helping to build laws for a future where 3D printing is going to be king in commercial production. In a few years, we can expect stricter laws and specific laws protecting the intellectual property rights issues that arise with 3D printing.

This online publication was drafted by Aishwarya H. Shinde, an LLM student participating in qLegal, the pro bono commercial law clinic at the Centre for Commercial Law Studies, Queen Mary University of London.

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