

# A look at the legal frameworks concerning 3d printing

[Technology](#), [Information Technology](#)



## **M9: Assessment**

How can 3D printing cause problems in the area of intellectual property (IP)?

Content providers such as Thingiverse allow users to upload original 3D models that they have created. These models are then available for download by any person who has access to the Internet. With this process in place it is possible for a person to download another person's model, print multiple copies with a 3D printer, and then sell these copies for a profit. This particular sequence of events could be considered a violation of the original designer's intellectual property rights. The original designer is receiving no credit and no royalties for a product they designed, while someone else is making a profit from the design. Situations like these are very likely and are happening already. Legal steps are being looked at and developed to deal with situations like these but it will likely be many more years before any concrete laws are in place to protect individuals' IP for 3D data.

What are some of the dangers to making 3D copies of products? Are there conflicts that are currently happening with copyright infringement in the 3D printing area? Is this an area of concern for the future and if so why? What are other issues similar to copyright that could be problematic for the industry?

3D printing is a growing industry that is beginning to allow users to create almost any type of product from a growing number of different materials. With this growing field comes the possibility of individuals or even companies creating replicas or knockoffs of already produced and protected products.

The ability of 3D printing to create almost any product, ranging from clothes to furniture enables the possibility for name-brand products to be replicated and sold at much cheaper prices. Although this process would technically be illegal it is very possible that it will become a large problem. The reason this problem may become so relevant is that 3D printing is difficult to regulate. CAD software allows users to create original models, however this software could potentially be used to replicate any number of commercial products, which could then be printed and sold for a profit without the original commercial company ever finding out. There have already been multiple cases where online users have claimed that their designs have been copied. For example a designer by the name of Schwanitz uploaded a design for an optical illusion to be sold on Shapeways. Sometime later a different user uploaded a design for the same illusion to Thingiverse where it could be downloaded by any person with access to the Thingiverse website. Schwanitz then felt that his IP was being violated and asked Thingiverse to take down the design. Thingiverse complied with the request but community outcry forced Schwanitz to have the design be re-uploaded to Thingiverse. This case was very interesting because the illusion that was created was not an original design however; this was the first time it had been created in the 3D form. Cases such as this one and others that are ongoing are the reasons why specific copyright laws and regulations need to be set in place for 3D data and 3D printed objects. These cases will continue to be a problem in the future until laws and regulations are in place.

To what degree are issues such as fakes and replicas passing as originals a concern for rapid prototyping and 3D printing? Will the continued improvements in materials for printing likely lead to more controversy? How should digital reproductions and 3D prints be exhibited to avoid these conflicts?

Issues with knockoffs of original products will continue to be a problem as 3D technologies advance into the future. The growing number of materials that can be 3D printed will eventually allow for endless different products to be replicated. As improvements in the industry are made, knockoffs of many products will be made and commercial companies will likely attempt to crackdown on these knockoff products. Original 3D models and prints that do not copy other existing products should be allowed to be created, sold and printed without much regulation. However, if these models begin to copy other existing models and products regulation will need to be strict and specific to protect the IP of companies and individual designers and printers.

Can you think of any objects in museum collections that should not be allowed to be replicated? What if any danger is there in allowing someone to access a 3D model of an artifact or object?

Artifacts and objects that hold very specific and important cultural or historical significance should often not be allowed to be printed. For example, the killer whale hat hold very important cultural significance for a tribe that is still around today. If an individual were to download this model, print the model and proceed to desecrate or mock the use of the hat it would

be incredibly disrespectful and problematic to the tribe. It is important to respect other culture's wishes, especially when dealing with their own heritage pieces. If a situation like this were to happen and the tribe found out, they would likely look to the Smithsonian for an explanation and an apology, therefore the Smithsonian has made the right decision to not allow this piece to be downloaded. Other models such as guns and weapons should not be available for download simply in the interest of public safety. With printable gun models available on the Internet for download it is possible for an unstable person or a known criminal, who normally are denied access to guns, to print a weapon and use it as they please. This problem opens a whole new legal problem as to who provided the person with the gun model and are they to blame or be charged as an accessory to any crime that may have been committed.

What is meant by 3D printing technologies enable decentralized, mainstream piracy? What are the benefits for science, heritage preservation, and to museums to promote open access and file sharing? What are the dangers (if any) to doing this?

Decentralization and mainstream piracy refer to data being available for download off of the Internet from a non-reputable source. This could include files being shared from common pirating sites such as ThePirateBay. If pirating becomes a problem in the 3D data community there will be a need for tougher regulation and laws to be passed. For science, education and heritage preservation purposes open file sharing for 3D data could be very beneficial. This would allow researchers to have access to artifacts that they

otherwise would not be able to view. For education purposes the sharing of 3D data allows students of all ages to view artifacts and learn about the subjects they are studying in a more hands on approach. This will also generate a greater thirst for knowledge and a desire to visit museums and heritage preservation areas to view the real objects and artifacts in person. A possible downside or danger to this would be sharing culturally significant artifacts that were never meant to be shared or replicated. There are cultures in which the people have created certain items that they hold in very high regard and are not meant to be shared with or replicated by the general public.