A Legal and Empirical Study into the Intellectual Property Implications of 3D Printing:

Introduction to the Project, Conclusions and Recommendations

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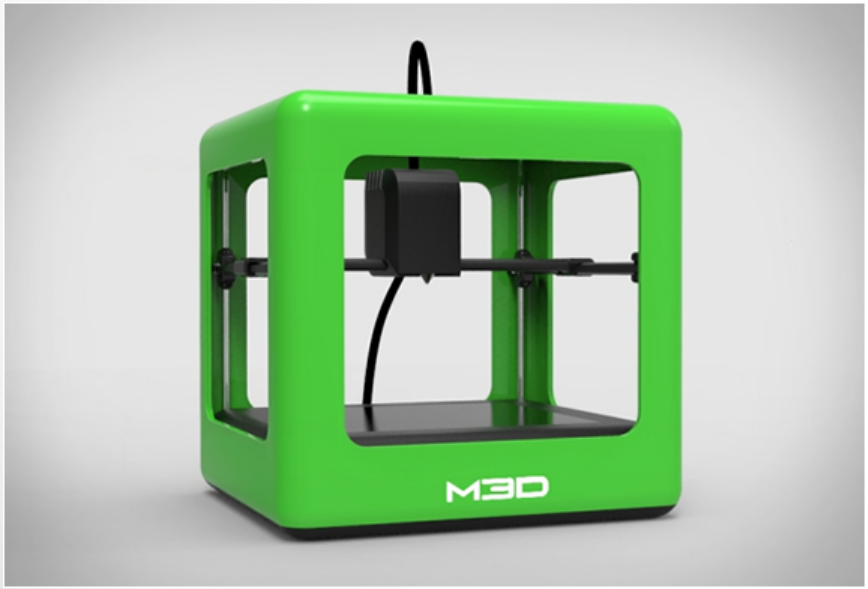
- 3D Printing is a manufacturing technology that converts digital files to physical objects
- It was first commercialised in 1987. Entry into the consumer market has raised various questions
- Machines range in price from **£200 to over £1million**



The technology is used today in the…

- **Medical industry;**
- **Toy and hobby industry;**
- **Food industry;**
- **Transport and aviation industry;**
- **Fashion industry (for example, jewellery);**
- **Computer animation industry**

To provide a few examples …..

"A 3D printer without an attached computer and a good design file is as useless as an iPod without music" – *Lipson & Kurman* (2013)

The UKIPO Tender

Intellectual Property Office

- (CT-RES-024) The Provision of Research for 3D Printing and Intellectual Property: Where Are We **Now?**
- Limited literature on the current situation; lack of empirical evidence
- A quantitative analysis of online sharing platforms dedicated to 3D Printing
- Series of case studies considering the use, adoption and impact of 3D printing in selected industrial sectors: **(1) replacement parts industry; (2) customised goods and (3) high-value small status goods**

The Project

- **Team**:
- Dr. Dinusha Mendis; Dr. Davide Secchi; Dr. Phil Reeves / Ms. Sophie Jones

- **3 Outputs:**
- Studies I and II; and
- An Executive Summary
- Reports published – March / April 2015

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A Legal and Empirical Study of 3D Printing Online Platforms and an Analysis of User Behaviour

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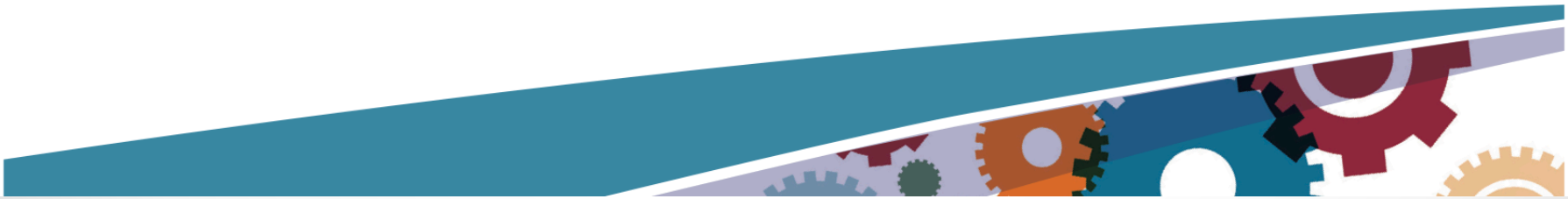
ECONOLYST THE 3D PRINTING & ADDITIVE MANUFACTURING PEOPLE

The Current Status and Impact of 3D Printing within the Industrial Sector: An Analysis of Six Case Studies



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ECONOLYST THE 3D PRINTING & ADDITIVE MANUFACTURING PEOPLE

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Executive Summary

Conclusions: Study I

- Online Platforms: Interest and activity is growing every year
- **'Fashion' -** attract a higher number of views and downloads
- **'Art' and 'robot'** – marketed at higher prices
- **'Miniature' and 'art'** – leisure and hobby attractive area
- The number of downloads is unrelated to the price.
  - This could be due to a **lack of accessibility to the relevant materials** or **lack of access to more sophisticated 3D printers**; i.e., those that are capable of printing more expensive files

Conclusions: Study I

- Online platforms should explain different licence types to users and assign the most appropriate licence as a default with 'opt-out' being an option

- This is because the **vast majority of people (65%) who use these online platforms do not license their work.** The minority 35% that do license their work make their choice in accordance with the product they are uploading

- The proliferation of by-products such as mobile software applications that interact with 3D printing platforms provide the tools for the modification of design files

Conclusions: Study I

- **Nothing to indicate** that the activity on 3D printing online platforms leading to piracy / counterfeiting is a **mass phenomenon *yet***

Games Workshop Orders Takedown Of 3D Printed Warhammer Objects

It's been a while since we've thought about the copyright implications of 3D printing, but the issue hasn't gone away. Recently, Games Workshop's lawyers got involved in a case where a fan had created some Warhammer-inspired objects and put the model files up for free download on Thingiverse.

Pokémon targets 3D printed design, citing copyright infringement

Overall Conclusions – Study II

- **Over time industrial additive manufacturing will reduce in price** which will open the market for more affordable products

- **Capability of home 3D printing technologies will remain limited** for the foreseeable future (5-10 years)*

- **Consumer-level 3D scanning is currently limited and will not pose an immediate threat for businesses and IP laws**

Overall Conclusions – Study II

- There will be **little commercial impact on either the automotive or domestic appliance aftermarket within the next decade as a function of either consumer 3D printing or industrial AM (5-10 years)**

- As the technology continues to grow, steps should be taken in relation to traceability of spare parts, particularly in the car spare parts sector

Key Recommendations

- **For Government**
- "Wait and see" approach should be adopted

- Over-hasty legislation could stifle creativity and the right of manufacturers and content creators to protect their livelihoods

- It will be prudent to take steps **to cultivate a climate better suited to tackling impending IP issues** more successfully and in a manner, which takes into account the interests of all stakeholders

- **?** – how can we cultivate a better climate?

Key Recommendations – For Government

- Recommend that the **UK IPO establish a Working Group to cover the various IP rights** which may need to be tackled in the future
  - (a) Clarity on the status of CAD design files and how they can best be used in industry
  - (b) How best to tackle the traceability of 3D printed spare parts

- **? – (a)** How do you envisage a working group?
- **(b)** Are there any other concerns apart from those identified above?
- **(c)** Should the working group be led by UK IPO or by another organisation?

Key Recommendations

- **For Intermediaries (Online Platforms)**
- Recommended that **online platforms provide more awareness and understanding of the different types of licences** (rather than simply encouraging)

- As online platforms and user-numbers continue to grow it is recommended that **spin-offs and by-products offered by the online platforms be monitored**

- **?** How should these be monitored – would this be self-regulation?

Key Recommendations

- **For Industry**
- Adopt secure streaming of 3D files: pay-per-print business model by companies such as Authentise, Secure3D, ToyFabb; Hasbro/Shapeways initiative

- Manufacturers could also consider licensing design files more widely, thereby opening up doors to a range of outlets selling 3D files

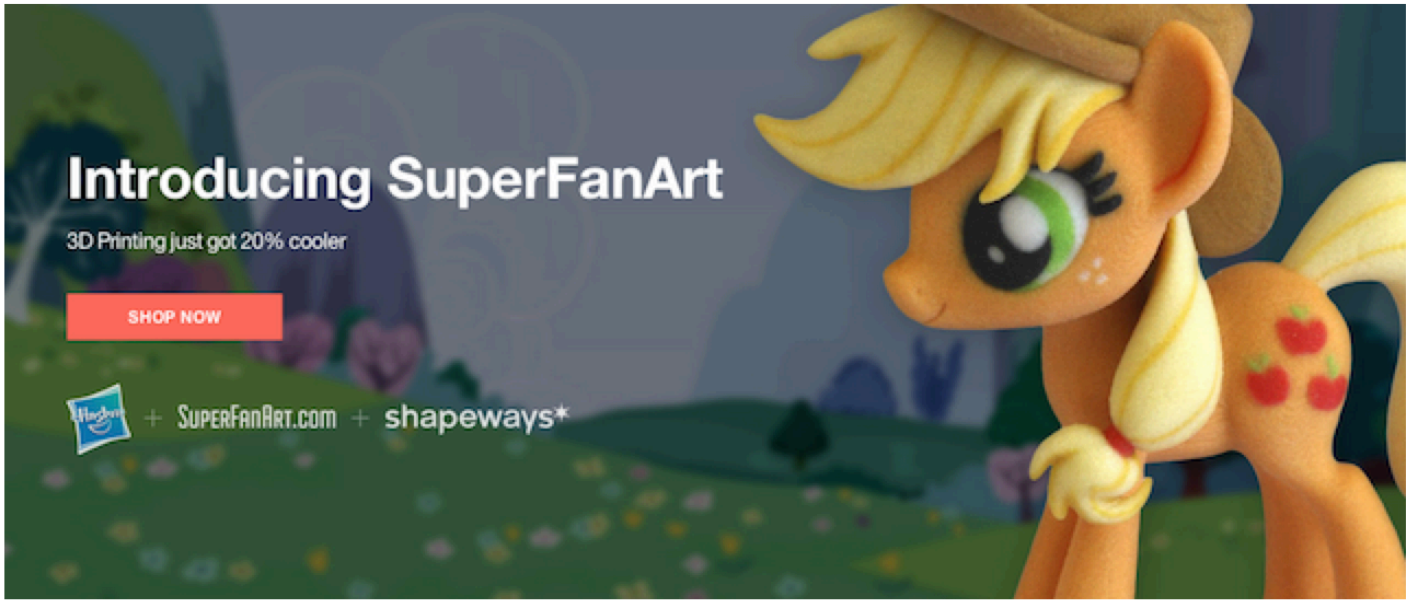
- This will avoid locking the manufacturer into an agreement through a system such as a 'one-stop-shop'

- **?** – what are the pros and cons of a one-stop-shop? In practice, how will this recommendation work?

Hasbro & Shapeways Enable 3D Printing Fan Art with SuperFanArt

Posted by Duann in 3D Printing, Community, Inspiration, Shapeways, Toys • July 21, 2014 •

For the first time, a global brand will open up its intellectual property to fan designed products using Shapeways 3D printing. We are partnering with Hasbro to launch SuperFanArt, enabling fans to 3D print and sell their own creations based on Hasbro owned content. SuperFanArt, which will debut at Comic-Con San Diego 2014, grants the passionate and talented Hasbro fan base from the Shapeways community a license to create exciting new art and product offerings. The first license is granted to a select number of 3D artists including Brandon Lee Johnson, Paul Philbin, Christophe Vidal, Melinda Rose, and Brian Harris to create artwork based on My Little Pony.



We are thrilled to work with Hasbro to be the very first entertainment brand to open up their intellectual property to their dedicated fans to legally create tangible, 3D printed products. This partnership is perfectly aligned with our mission to enable the Shapeways creative community to make exactly what they want, for themselves, to share and sell to others.

Conclusion

- The present research and the accompanying data concludes that taking into account accessibility to materials, sophisticated printing machines, costs and economics for the average user, the impact of this technology will not be felt among the general public for a few years to come.

Thank you

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