

3D PRINTING AND GLOBAL INTELLECTUAL
PROPERTY

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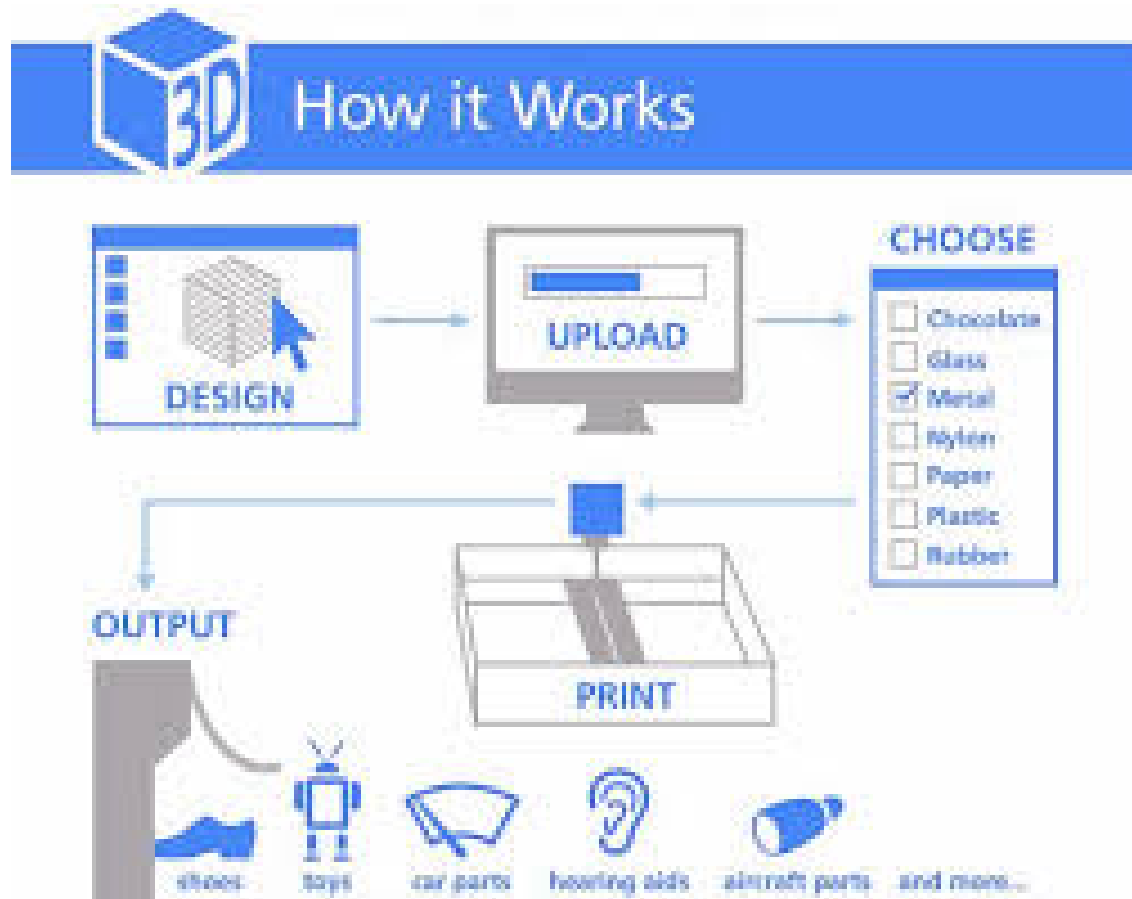
WHAT IS 3D PRINTING?



CHEAP 3DP & OUTPUT



3D PRINTING: HOW IT WORKS



3D PRINTING ECOSYSTEM/INDUSTRY (IN THE WEST)

Suppliers of raw materials



Professional/commercial equipment manufacturers



3D printing on demand stores in the 'real world'

Makers e.g. Connected Community HackerSpace



MakerBot Thingiverse

Online design repositories

Consumers/customers



Amateur/non-commercial equipment manufacturers



Libraries/educational institutions

3D PRINTING AND LAW



Intellectual property

Firearms laws

Product liability

Medical regulation

Fundamental/constitutional rights

Data privacy

FILE-SHARING AND 3D PRINTING

www.thingiverse.com

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MakerBot Thingiverse DASHBOARD EXPLORE CREATE SIGN IN / JOIN


Thingiverse Featured

3Derp's RaspBMO is based on everyone's favorite sentient game console. It runs RetroPie and supports over 20 different emulators. And, well, just look at it!

[Learn More](#)





Global Feed

Latest Thingiverse Activity

 Lordofthekeg collected Universal cable shortener

Featured Collections

Download and print today [see more >](#)

www.thingiverse.com/thing:697480

COMPARISON TO INTERNET PIRACY

‘By democratizing the precision creation of physical objects, 3D printing may make the creation of physical objects nearly as widespread as the creation of [digitised] copyright-protectable works’

Weinberg, ‘It Will Be Awesome if They Don’t Screw It Up: 3D Printing, Intellectual Property, and the Fight Over the Next Great Disruptive Technology’ (2010) Public Knowledge White Paper

UK IPO REPORTS



Intellectual
Property
Office

Mendis & Sacchi: 3D printing file-sharing sites are ‘more expert-oriented rather than open to the masses’; ‘activity on 3D printing online platforms is [not] a mass phenomenon yet’

Reeves & Mendis: for most industries surveyed there was not a strong threat from consumer or prosumer 3D printing.

(NB I have been conducting new research on 3DP for the UK IPO, published later this year.)

OVERENFORCEMENT OF IP?



INTEGRATION OF 3DP INTO INCUMBENTS' BUSINESSES



NOT HUGE CONSUMER TAKE-UP EITHER

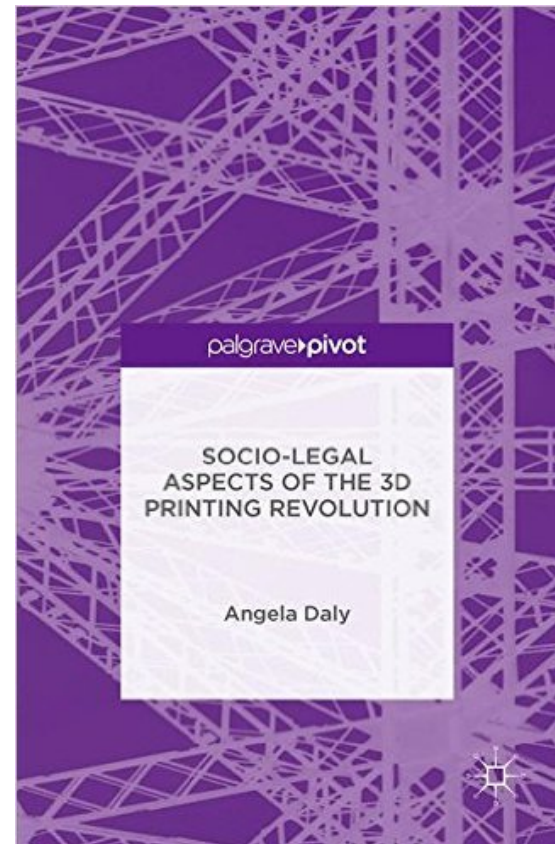


3DP AND LAW AND SOCIETY (IN THE WEST)

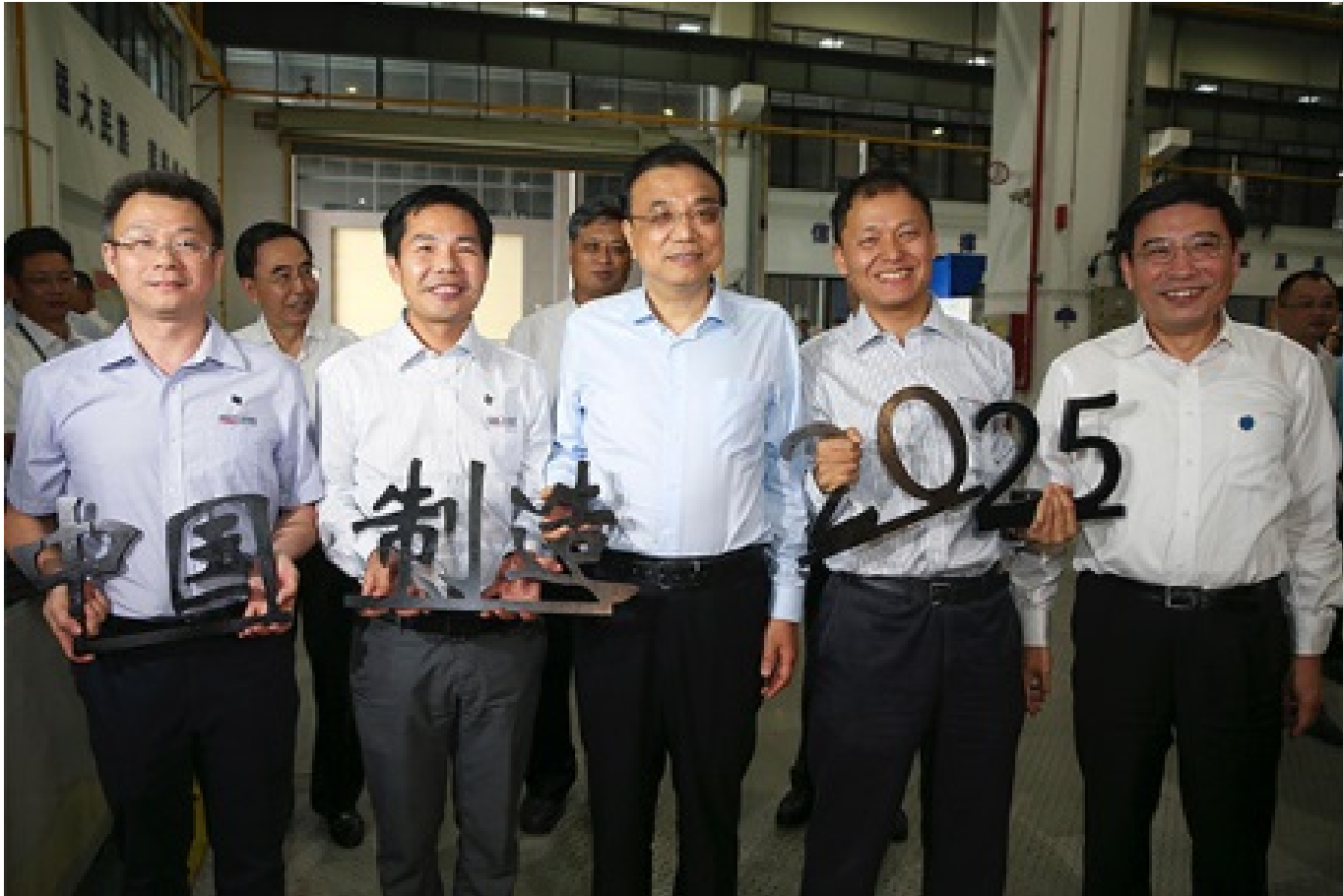
Prosumer/maker communities sharing (non-monetary exchange) their IP over design files & technical know-how – not conventional operation of IP

Disruptive to IP (and other) laws? A lot of concern about this in the West, but not really happening just yet

What about other parts of the world? WIPO posits a potentially different trajectory for 3D printing in developing economies and remote areas



MADE IN CHINA 2025 – INCLUDES 3DP

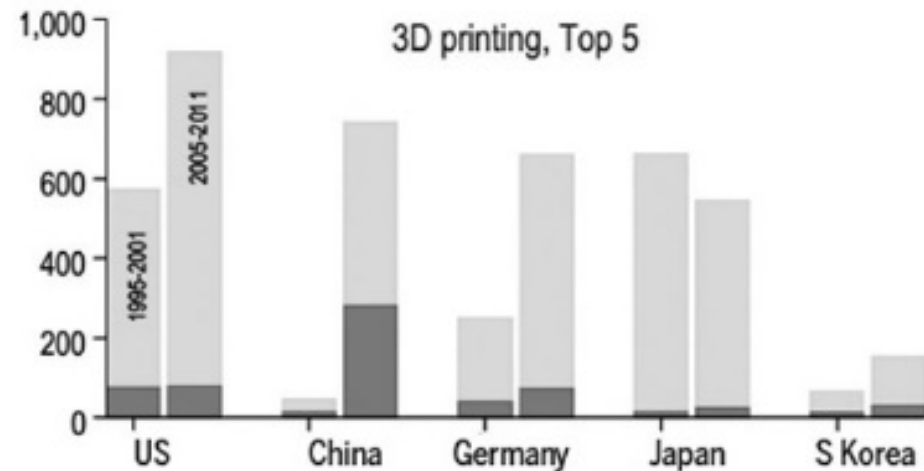


3DP IN CHINA

The world's dominant manufacturing nation: 3D printing is growing

WIPO 2015 report: China is only middle-income country coming close to advanced industrialised nations re patent filings in 3DP – many of which filed by public institutions

similar themes re infringement, IP exceptions and enforcement emerging as in the West



GLOBAL PICTURE: 3DPIP



- Some international harmonization of IP law in the form of the WIPO-administered Berne Convention and Paris Convention, and the WTO TRIPS Agreement
- On WTO matters, the Swedish Kommerskollegium (National Board of Trade) issued a report on 3D printing and trade in 2016, which included some discussion of IP rights.
- It considered that TRIPS applied to 3D printing, while acknowledging that TRIPS only provides a minimum standard of protection and domestic laws provide much of the substance of IP laws and must be assessed separately.

COMPARATIVE 3DP/IP

My team and I have undertaken an analysis of UK (EU), US and China academic scholarship on 3DP/IP

Ambiguities and other problems identified in legal scholarship in all 3 jurisdictions on 3 specific aspects:

- Subsistence of copyright at different parts of the 3D printing process
- Exceptions to copyright infringement
- Intermediary liability

Results:

- US's creative-functional divide re copyright and patents seems to characterise Chinese copyright subsistence
- China moving towards US-style 'fair use' as a copyright exception – compare to closed categories of 'fair dealing' in English law
- Digital copyright intermediary liability schemes – very similar across the 3 jurisdictions – notice and takedown
- But lots of uncertainties remain about application of IP in all 3 jurisdictions, esp re patents/TMs

WHY?

China's adoption of TRIPS to join WTO in 2002

Also – WIPO Copyright Treaty 1996 – designed to address some digital era-related challenges for copyright – provisions on technical protection measures and circumvention > DMCA (US), Copyright Directive

BUT – safe harbors & notice and takedown intermediary liability schemes > ‘invented’ in US (DMCA), partially adopted in EU's E-Commerce Directive >> legal transplant; also transplanted to China

Fair use exception >> US concept also transplanted to China (but not UK/EU)



GLOBAL TECH AS LEGAL HARMONISATION?

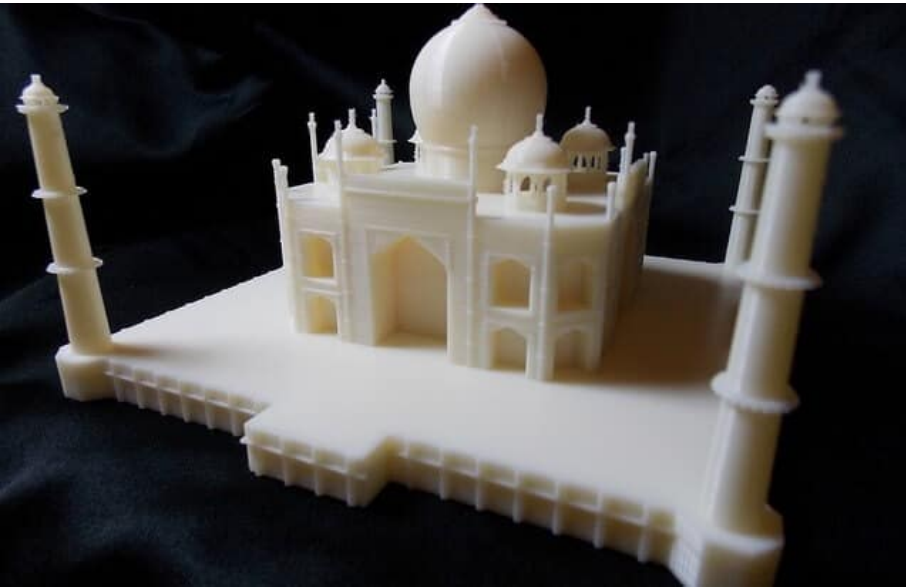
Internet, now 3D printing? Both initially US-developed technologies

Globalisation of tech encouraging a harmonised response across large jurisdictions (US, EU, China)?

Lessig's 'code' modality of regulation may encourage jurisdictions to adopt laws or for judges to decide cases in ways which acknowledge the factual state of affairs existing around a technology and its affordances, especially once that technology has already come into use.

Legal regulation becomes an ex post exercise, and is 'path dependent' on what and how technologies have already evolved, rather than an attempt to guide future technological developments

WHERE DOES THAT LEAVE IP?



Transnational approach effectively privileging US IP law?

Lack of widespread IP infringement via 3DP >>> lack of impetus to reform law even if clarifications are necessary in theory if not practice

3DPIP in China is complex – more so than Western commentators would realise

More litigation? Perhaps.

3DP is probably not going to destroy the existing IP system but, if it does become adopted in a widespread fashion, and esp if open innovation approaches are followed, then a rethink will be required.

One to watch: India.



THANK YOU !

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