European Parliament
2014-2019

Plenary sitting

A8-0223/2018

26.6.2018

REPORT

on three-dimensional printing, a challenge in the fields of intellectual property rights and civil liability
(2017/2007(INI))

Committee on Legal Affairs

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MOTION FOR A EUROPEAN PARLIAMENT RESOLUTION

on three-dimensional printing, a challenge in the fields of intellectual property rights and civil liability
(2017/2007(INI))

The European Parliament,

– having regard to Directive 2004/48/EC of the European Parliament and of the Council of 29 April 2004 on the enforcement of intellectual property rights,[1]

– having regard to Council Directive 85/374/EEC of 25 July 1985 on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products[2],

– having regard to the Opinion of the European Economic and Social Committee entitled 'Living tomorrow. 3D printing – a tool to empower the European economy'[3],

– having regard to the Commission communication of 29 November 2017 entitled 'A balanced IP enforcement system responding to today's societal challenges' (COM(2017)0707),

– having regard to the Commission communication of 27 November 2017 entitled 'Guidance on certain aspects of Directive 2004/48/EC of the European Parliament and of the Council on the enforcement of intellectual property rights' (COM(2017)0708),

– having regard to the Commission reflection paper of 10 May 2017 on harnessing globalisation (COM(2017)0240),

– having regard to Rule 52 of its Rules of Procedure,

– having regard to the report of the Committee on Legal Affairs (A8-0223/2018),

A. whereas three-dimensional (3D) printing became accessible to the general public when 3D printers for individuals were placed on the market and when companies arrived on the market offering both digital models and 3D printing services;

B. whereas 3D printing is viewed as one of the most prominent technologies, with regard to which Europe can play a leading role; whereas the Commission recognised the benefits of 3D printing by sponsoring 21 projects based on the technology by Horizon 2020 between 2014-2016;

C. whereas, on an experimental level, 3D printing dates back to the 1960s, and whereas, initially developed in the United States, 3D-printing technology started to break through into industry in the early 1980s;

D. whereas the market for 3D printers constitutes a sector which is experiencing rapid

[1] OJ L 195, 2.6.2004, p. 16.
[2] OJ L 210, 7.8.1985, p. 29.
[3] OJ C 332, 8.10.2015, p. 36.

growth and whereas this is expected to continue in the coming years;

E. whereas, however, the development of community spaces for 3D printing (more usually known as ‘fablabs’) and services for printing at a distance, sometimes linked to an on-line 3D file exchange, enables everyone to have 3D objects printed, which is a boon for inventors and project organisers;

F. whereas 3D printing has an enormous potential to transform supply chains in manufacturing which could help Europe increase output levels; whereas the application of this technology offers new opportunities for business development and innovation;

G. whereas the EU has made 3D printing one of the priority areas of technology; whereas the Commission referred to it, in its recent reflection paper on harnessing globalisation , as one of the main factors in bringing about industrial transformation;

H. whereas the Commission has identified 3D printing as a priority area for action offering significant economic potential, notably for small innovative enterprises; whereas many countries have already recognised the transformative potential of 3D printing and have begun to adopt, albeit in an unequal manner, various strategies to create an economic and technological ecosystem to promote its development;

I. whereas the majority of the 3D-printed products being created are currently prototypes; whereas some industries have been using final parts for a number of years already and the final parts market continues to grow at a relatively fast rate; whereas a growing proportion of the 3D-printed products being created are now more ready-to-be-used or -commercialised items than mere prototypes;

J. whereas the potential advantages of 3D printing for innovative enterprises are numerous; whereas, in particular, 3D printing allows a reduction in overall costs when developing, designing and testing new products or improving existing ones;

K. whereas the use of 3D printing is becoming more and more widespread in society, notably in the field of education, in citizens’ and start-up fora, such as ‘maker spaces’, as well as in the private sphere;

L. whereas 3D printing is becoming simpler and more accessible to all; whereas it is to be expected that the limitations as regards materials that can be used, speed, and the consumption of raw materials and energy will be significantly reduced in a short period of time;

M. whereas most of today’s high-tech industries use this technology, whereas opportunities to use 3D printing have highly increased in many areas, and whereas expectations are high in many areas, for example the medical (ranging from regenerative medicine to the manufacture of prosthetics), aeronautics, aerospace, automotive, household electrical appliance, building, archaeological research, architecture, mechanical engineering, leisure and design sectors;

N. whereas the lack of regulation has limited the use of 3D printing in key industrial sectors such as, for instance, the aerospace and medical/dental sectors, and whereas regulating the use of 3D printers will help increase the use of technologies and offer

opportunities for research and development;

O. whereas the above-mentioned opinion of the European Economic and Social Committee states that, with the digital revolution as an enabler and ‘using the right advanced manufacturing technology, Europe could re-shore production from lower wage regions to spur on innovation and create sustainable growth at home’.

P. whereas 3D printing would lower both transport costs and CO_2 emissions;

Q. whereas 3D-printing technology is expected to create more new jobs for skilled labour that are in some cases less physically demanding and less dangerous (maintenance technicians, engineers, designers, etc.), and whereas with the creation of new technician positions (e.g. operators for 3D printers) new liabilities will emerge and the 3D-printing industry will need to provide appropriate training courses in order for the technicians to be at the same level as their counterparts in traditional manufacturing; whereas 3D-printing technology will also reduce production and storage costs (low-volume manufacturing, personalised manufacturing, etc.); whereas, however, the decrease in manufacturing jobs will greatly affect the economy of countries that rely on a large number of low-skill jobs;

R. whereas the economic impact of developing the 3D industry in the Member States cannot yet be accurately ascertained;

S. whereas 3D-printing might enable consumers to hit back at in-built obsolescence, as they will be able to make replacement parts for household appliances, whose lifespan is becoming increasingly shorter;

T. whereas 3D-printing technology may raise some specific legal and ethical concerns regarding all areas of intellectual property law, such as copyright, patents, designs, three-dimensional trademarks and even geographical indications, and civil liability, and whereas, moreover, those concerns fall within the remit of Parliament’s Committee on Legal Affairs;

U. whereas new technologies are able to scan objects or people and generate digital files which can subsequently be printed in 3D, and whereas this can affect image rights and the right to privacy;

V. whereas 3D-printing technology may also raise security and especially cyber-security concerns, particularly with regard to the manufacturing of weapons, explosives and drugs and any other hazardous objects, and whereas particular care should be taken with regard to production of that kind;

W. whereas, from a copyright point of view, useful distinctions should be made: for instance, between home printing for private use and printing for commercial use, and between B2B services and B2C services;

X. whereas a report drawn up by France’s Higher Council for Literary and Artistic Property on 3D printing and copyright found that ‘the democratisation of 3D printing does not appear, to date, to be causing a huge problem with copyright infringement; whereas it acknowledges that ‘the main risk of counterfeiting is with works of art’;

Y. whereas the few examples which may be envisaged now will probably become more complex as the technology evolves; whereas they raise the question as to what needs to be done to tackle the potential for counterfeiting using 3D printing technologies;

Z. whereas, as a result of the processes that it uses, 3D printing leads to what the industry has described as a kind of 'fragmentation of the act of creating' in that a work may be circulated digitally before it takes a physical form, which makes it easier to copy and complicates the fight against counterfeiting;

AA. whereas, in conclusion, legal experts are of the view that 3D printing has not fundamentally altered intellectual property rights, but files created may be considered a work and whereas, if that is the case, the work must be protected as such; whereas, in the short and medium term, and with a view to tackling counterfeiting, the main challenge will be to involve professional copyright intermediaries more closely;

AB. whereas, although the development of 3D printing makes industrial production possible, consideration should be given to the need to establish means of collective redress in order to provide compensation to consumers for damage;

AC. whereas the impact of 3D printing on consumers' rights and on consumer law in general should be carefully examined in light of the directive currently under negotiation on certain aspects of contracts for the supply of digital content;

AD. whereas it should be remembered that, contrary to the concerns expressed by some actors, not all 3D-printing production of objects is automatically assumed to be illegal or infringes third-party rights, nor are all operators in the sector aiming to profit from the sale of counterfeit goods; whereas, however, counterfeited items can be produced easily;

AE. whereas Directive 85/374/EEC on liability for defective products covers all contracts; whereas it should be noted that it is progress in 3D printing among other things that has led the Commission to undertake a public consultation with the aim of assessing whether this directive is fit for purpose in relation to new technological developments;

AF. whereas general liability rules also cover the liability of intermediary service providers as defined in Articles 12 to 14 of the e-Commerce Directive; whereas a specific liability regime should be envisaged for damage caused by an object created using 3D-printing technology, as the number of stakeholders involved and the complex process used to create the finished product often make it difficult for the victim to identify the person responsible; whereas the liability could lie with the creator or vendor of the 3D file, or the producer of the 3D printer, the producer of the software used in the 3D printer, the supplier of the materials used or even the person who created the object, depending on the cause of the defect discovered;

AG. whereas for the specific use of 3D printing in a commercial setting, the liability rules are generally established in contracts between the stakeholders;

AH. whereas all elements of additive manufacturing technology must meet certain criteria and be certified to guarantee that it is possible to manufacture reproducible quality parts; whereas certification is rendered complex owing to the numerous transformations

of machinery, materials and processes, and to the absence of a database; whereas it will therefore be necessary to develop rules allowing a speedier and more cost-effective certification of all materials, processes and products;

AI. whereas 3D printing has a role to play in reducing the consumption of energy and natural resources for the purpose of combating climate change; whereas the use of 3D printing would minimise waste in the production process and prolong the lifespan of consumer products by enabling the production of replacement parts at consumer level;

1. Stresses that, to anticipate problems relating to civil liability or intellectual property infringement that 3D printing might cause in the future, the EU might have to adopt new legislation and tailor existing laws to the specific case of 3D technology, taking into account the decisions of the European Union Intellectual Property Office (EUIPO) and the relevant case law of the EU and Member State courts and after having carried out a thorough impact assessment evaluating all policy options; stresses that, in any case, the legislative response should avoid duplicating existing rules and should take into account projects that are already under way, in particular the legislation on copyright currently applicable to 2D printing; adds that innovation needs to be promoted and accompanied by law, without the law acting as a brake or a constraint;

2. Notes that due care and attention must be given to certain issues, such as the encryption and protection of files, to prevent files and protected objects from being illegally downloaded and reproduced and unlawful objects from being reproduced;

3. Considers that care should obviously be taken in the 3D-printing sector, particularly with regard to the quality of the printed product and any dangers that the product may pose to users or consumers, and that appropriate consideration should be given to including identification and traceability means so as to ensure traceability of products , as well as to facilitate observation of their further use for commercial and non-commercial purposes; considers that close cooperation between right holders and 3D manufacturers in developing such means would be beneficial; considers also that this would help to ensure traceability of the objects created and reduce counterfeiting;

4. Notes that solutions of a legal nature if necessary could make it feasible to control the legal reproduction of 3D objects protected by copyright, e.g. digital and 3D-printing providers could systematically display a notice on the need to respect intellectual property; emphasises, in this context, the importance of elements that make it possible to trace 3D objects; emphasises that, if a 3D copy constitutes a private copy, national laws governing exemptions for private copies will apply, including as regards compensation or revenue;

5. Points out that public awareness raising is needed in order to protect intellectual property rights in the field of 3D printing, and also in relation to infringements of design, trademark and patent rights;

6. Stresses, however, that technical solutions – currently underdeveloped – could be further investigated, for example, the creation of databases of encrypted and protected files, the design of printers connected to and equipped with a system capable of managing intellectual property rights or the promotion of cooperation between manufacturers and platforms to make reliable files available to professionals and

consumers; stresses also that, whichever of these measures are adopted, their implementation should not have any cost-related impact on the activities already being carried out by market players;

7. Notes that, at this stage, none of those options is wholly satisfactory on its own;

8. Criticises the fact that the Commission has not revised Directive 2004/48/EC and has instead limited itself to presenting non-binding guidelines, without providing clarifications on issues specific to 3D printing; welcomes, however, the measures announced by the Commission on 29 November 2017, which are intended to step up intellectual property protection;

9. Notes that the intellectual property rights concerning the various elements of 3D printing technology have been determined and that, consequently, the next question will be how to uphold them;

10. Calls on the Commission to give comprehensive consideration to every aspect of 3D-printing technology when taking the measures referred to in its communication (COM(2017)0707), without duplicating existing applicable measures; stresses the importance of involving all stakeholders in that endeavour, including SMEs and consumer;

11. Calls on the Commission to carefully consider the civil liability issues related to 3D-printing technology, including when it assesses the functioning of Council Directive 85/374/EEC of 25 July 1985 on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products;

12. Calls on the Commission to explore the possibility of setting up a civil liability regime for damages not covered by Directive 85/374/EEC;

13. Points out that 3D-printing technology has many economic advantages for the EU as it offers opportunities for customisation specifically meeting the requirements of European consumers, and that it could make it possible to repatriate production activities and thereby help to create new jobs that are less physically demanding and less dangerous;

14. Calls on the Commission to clearly define the various responsibilities by identifying the parties involved in making a 3D object: software designer and supplier, 3D printer manufacturer, raw materials supplier, object printer and all others involved in making the object;

15. Draws attention to the possible implications of new forms of marketing along the lines of ‘make it yourself’, supplying not the final product but only the software for download and the specifications for printing the product;

16. Stresses the importance of creating a coherent legal framework to provide a smooth transition and legal certainty for consumers and businesses in order to promote innovation in the EU;

17. Instructs its President to forward this resolution to the Council, the Commission and the Member States.

EXPLANATORY STATEMENT

On an experimental level, three-dimensional printing (‘3D printing’) dates back to the 1960s. Initially developed in the United States, 3D-printing technology started to break through into industry in the early 1980s.

Not long after the technology had been developed, 3D printers began to hit the market, with companies offering both digital models and 3D printing services.

3D printing is, in fact, a general term covering several types of technology for manufacturing physical objects in a range of materials based on a digital file and using a 3D printer. They were initially designed to make prototypes and this purpose still accounts for the largest share of the 3D technology market.
The technology became accessible to the general public with the introduction of 3D printers for individuals, but that market is still marginal and is expected to remain so in the medium term, given the limited materials available to consumers: today 99% of items are printed with the same plastic, resin and metal materials. One of the main challenges for the 3D sector will be to combine several materials.

On the other hand, the development of remote printing services, sometimes coupled with a platform for sharing 3D files online, means that anyone can print an object in 3D at a far higher quality than could be achieved with a low-end machine. The use of 3D printers in educational institutions and collaborative work spaces (‘fablabs’) also promotes universal access to the technology. Most of today’s high-tech industries use this technology because it has a positive impact on innovation and the environment.

Expectations are already high in the medical sector, where this technology could have applications in the manufacture of prosthetics, dental implants, human skin and even organs (‘bioprinting’): kidneys, for example. The same goes for the aerospace sector, where lighter components will help to reduce fuel consumption and preserve the environment and will enable savings to be made: Airbus currently has an aeroplane at the experimentation stage which has no fewer than a thousand 3D-printed components. The development of this technology is also of great interest to industries producing automotive spares, toys and household electrical appliances. Lastly, 3D printers and 3D scanners are increasingly being used in museums to restore historical objects and for research, particularly in archaeology.

The EU has made 3D printing one of its priority areas of technology. The Commission referred to it, in its recent reflection paper on harnessing globalisation (COM(2017)240), as one of the main factors in bringing about industrial transformation.

By making on-demand production possible, 3D printing could offer many advantages to businesses: it could ease the strain on their logistical chains, reduce storage and transport operations, lessen environmental impact and cut spending on goods insurance and make it possible for them to reshore jobs, should they so wish.

Intellectual property

In conclusion, legal experts consider that 3D printing has not had a dramatic impact on copyright. A 3D file would be considered a work and protected as such. However, it is fair to expect copyright problems to arise when 3D printing becomes widespread in industry. A future revision of Directive 2004/48/EC on the enforcement of intellectual property rights, which the Commission has announced for the current term, will be particularly important in this respect, all the more so if it is accompanied by soft-law action to provide information on the subject.

However, it would be wise to distinguish between home printing for private use and printing for commercial use, and between B2B services and B2C services.

Civil liability

Some distinctions are also relevant to any consideration of the civil liability aspects. For example, the question of liability for goods produced and for damage resulting from a defective file could, as regards consumers, be resolved with reference to Articles 10 and 14 of the Commission proposal 'on certain aspects of contracts for the supply of digital content'. On the other hand, Directive 85/374/EEC on liability for defective products may cover all contracts.

In general, civil liability is a matter which is not harmonised and is subject to national legislation. EU legislation is limited to more specific rules on issues such as civil liability for defective products. It can be difficult for a victim of a 3D-printed object to identify the person responsible. General liability rules can help to identify the manufacturer of the 3D printer, the producer of the software running the 3D printer and the person creating the object. The rapporteur calls on the Commission to be particularly careful on the accountability chain and identifying those accountable when determining whether the general liability regime may continue to apply or not.

It goes without saying that a cautious approach is required in the 3D-printing sector. It will take many years and a good deal of expertise before high-quality products can be made which do not pose a risk to users or consumers. Anticipating problems relating to accident liability or intellectual property infringement will require the adoption of new legislation at EU level or the tailoring of existing laws to the specific case of 3D printing.

There are a number of possible solutions already available to address the issues of intellectual property and civil liability: creating a global database of printable objects to control reproductions of copyright-protected 3D objects, introducing a legal limit on the number of private copies of 3D objects to prevent illegal reproductions, or imposing a tax on 3D printing to compensate IPR holders for the loss suffered as a result of private copies being made of objects in 3D. None is wholly satisfactory on its own.

In any case, the legislative response should avoid duplicating rules and should take into account projects that are already under way. Innovation needs to be accompanied by law, without the law acting as a brake or a constraint.

INFORMATION ON ADOPTION IN COMMITTEE RESPONSIBLE

Date adopted	20.6.2018
Result of final vote	+: 22 –: 0 0: 0
Members present for the final vote	Max Andersson, Joëlle Bergeron, Marie-Christine Boutonnet, Jean-Marie Cavada, Mady Delvaux, Rosa Estaràs Ferragut, Enrico Gasbarra, Lidia Joanna Geringer de Oedenberg, Heidi Hautala, Mary Honeyball, Sylvia-Yvonne Kaufmann, Gilles Lebreton, António Marinho e Pinto, Julia Reda, Evelyn Regner, Pavel Svoboda, József Szájer, Francis Zammit Dimech, Tadeusz Zwiefka
Substitutes present for the final vote	Sergio Gaetano Cofferati, Luis de Grandes Pascual, Geoffroy Didier, Angel Dzhambazki, Angelika Niebler

FINAL VOTE BY ROLL CALL IN COMMITTEE RESPONSIBLE

22	+
ALDE	Jean-Marie Cavada, António Marinho e Pinto
ECR	Angel Dzhambazki
EFDD	Joëlle Bergeron
ENF	Marie-Christine Boutonnet, Gilles Lebreton
PPE	Geoffroy Didier, Rosa Estaràs Ferragut, Luis de Grandes Pascual, Pavel Svoboda, József Szájer, Francis Zammit Dimech, Tadeusz Zwiefka
S&D	Sergio Gaetano Cofferati, Mady Delvaux, Enrico Gasbarra, Lidia Joanna Geringer de Oedenberg, Mary Honeyball, Evelyn Regner
VERTS/ALE	Max Andersson, Heidi Hautala, Julia Reda

0	-

0	0

Key to symbols:
+ : in favour
- : against
0 : abstention