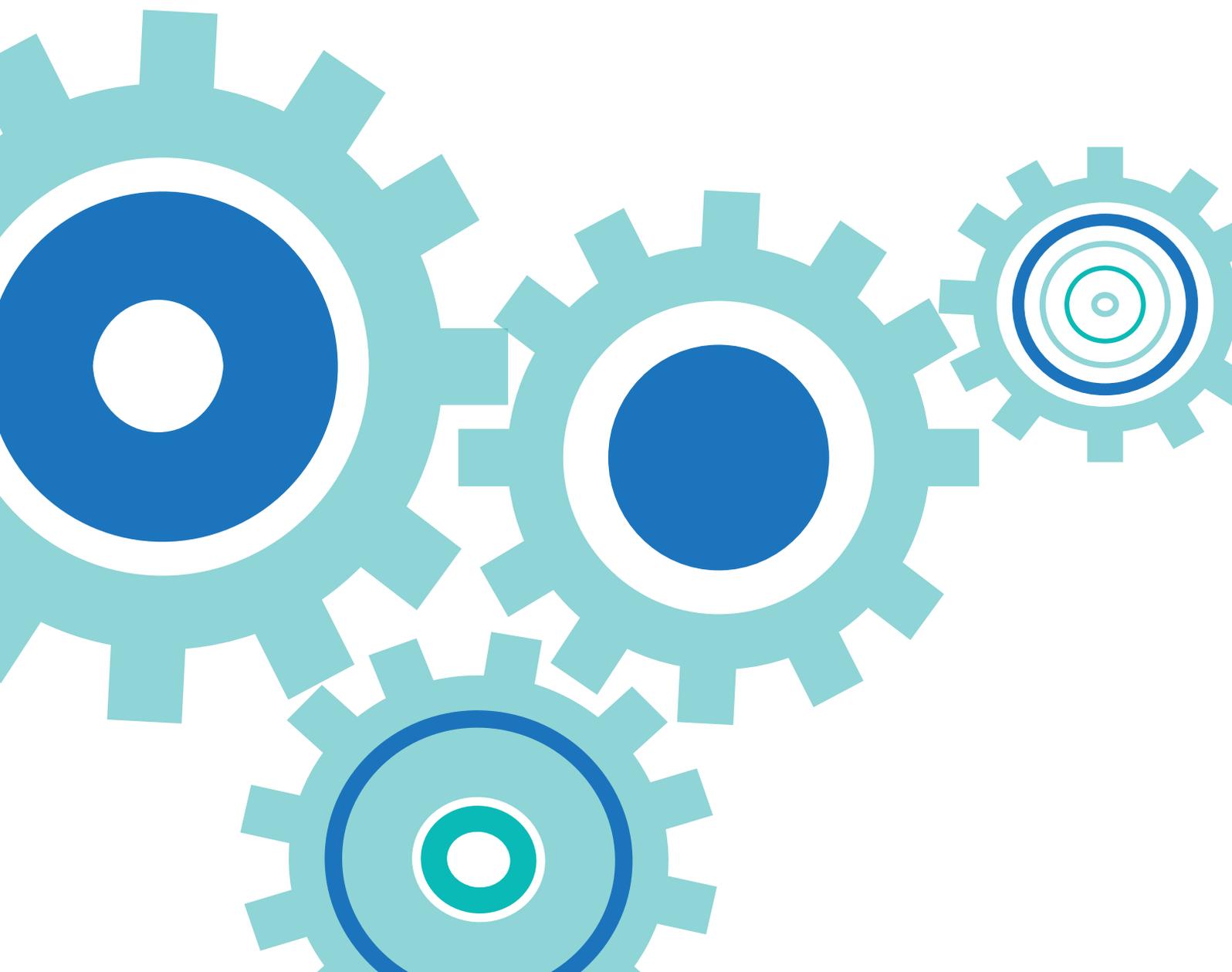




Briefs on topical intellectual property issues

April 2016





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Brief 1



By rewarding intellectual endeavour with statutory protection, society will benefit overall by encouraging new ideas, technical development and creativity.

Intellectual property – why it matters

Intellectual Property (IP) rights are legal rights that are available to inventors, authors, artists, designers and others wishing to protect the thought and effort that has gone into their work. The UK has taken a leading position in the world in many sectors that depend heavily upon IP, including pharmaceuticals, information technology, engineering, biotechnology, publishing and the music industry (the “knowledge-based” economy). The idea behind IP is that by rewarding intellectual endeavour with statutory protection against copying, society will benefit overall by encouraging new ideas, technical development and creativity.

Patents are a form of IP right that is granted for making an invention. A patent provides legal rights that can be used by its owner to prevent others from using or copying a patented invention. Patents last for up to twenty years. Protecting a new product or innovation with a patent allows the patent owner to recoup the money that it has invested in new products and technologies and to make a decent return. The benefit to the public is that it gets new, improved, products. In addition, a patent document contains a technical description of the invention that is published, allowing knowledge and technology to be shared and industry and commerce to move forward.

Brands are protected in various ways by IP rights. Brands allow consumers to repeat a purchasing experience easily: a strong Brand will stand out from the crowd and may serve to distinguish a product from other products in the marketplace.

Trade Marks and Design Rights, registered and/or unregistered, are particular forms of IP that can be used to protect a Brand. Trade Marks serve the wider public by operating as a badge of origin, guaranteeing to consumers that the Goods and/or Services that they purchase come from a particular source that they trust and that they are of a certain quality.

Design Rights can be used to protect the attractive design features of all kinds of products, ranging from mobile phones to kettles, bottles and many other common consumer items.

Copyright is an intellectual property right that arises automatically when an individual creates an original work, ranging from works of literature, songs, plays, TV scripts and so on. Copyright protection is very important to the creative and media industries, so that the commercial benefits from the exploitation of creators’ works can be protected.

Suggested further information

The IPAN website¹ at <http://www.ipaware.net> provides some general background and useful links to authoritative sources of detailed information about the different types of IP rights and how to protect them. An example is the website of the UK Intellectual Property Office, which contains much detailed information about IP rights and how they may be protected².

The websites of the Chartered Institute of Patent Attorneys (CIPA)³ and the Institute of Trade Mark Attorneys (ITMA)⁴ also provide useful guidance and an initial point of contact for those seeking professional help in protecting their IP.

The IPAN website⁵ also contains copies of other Issue Briefs on topical IP matters – viz. *the IPAN Issue Briefs*.

1 <http://www.ipaware.net>
2 <http://www.ipo.gov.uk/whyuse.htm>
3 <http://www.cipa.org.uk/>
4 <http://www.itma.org.uk/>
5 <http://www.ipaware.net/node/7>

Brief 2



When the products imported are of different quality from those normally sold in the UK under the trade mark, consumers can be deceived in what they purchase.

Cheap imports and intellectual property

Current situation

If a trade mark owner puts or consents to its goods being put on the market within the EEA (European Economic Area) then those goods can circulate freely in the EEA.

On the other hand, if the goods are put on the market outside the EEA, then they can only be imported into the EEA if the trade mark owner has consented to such import. There may be situations where the trade mark owner has not consented, for example where the specification of the goods varies from market to market or where wholesale prices differ. In cases where there is no consent, the trade mark owner should be able to stop the parallel import of these goods.

Benefits and disadvantages for society

Benefits

- Traders import goods when there is a price differential between markets. This can lead to lower prices for consumers.

Disadvantages

- The overall return for the trade mark owner is less (note that consumers are always free to buy competing branded or unbranded goods).
- The trade mark owner loses control of how the goods are sold. This can have a detrimental effect on brand image (e.g. position in the marketplace) and quality (e.g. where the supply chain does not have quality controls in place).
- When the products imported are of different quality from those normally sold in the UK under the trade mark, consumers can be deceived in what they purchase. This lowers the reputation of the product and in some cases there can be real dangers because of safety issues, for example with pharmaceuticals.

These factors can lead to companies being less likely to invest in the development of branded products. This will have an effect on the quality and variety of products available. It will also affect jobs in higher cost economies such as the EEA.

In addition, the price differential may not always be large. The importer will want to maximise his profit, meaning the price benefit to the consumer may be small or non-existent.

At the end of the day, the policy issue – rather than the interesting legal issue of what constitutes “consent” – is whether the potential benefit of cheaper (imported) products compensates for a reduction in the incentives to invest in development of branded goods and the reduced competitiveness of higher cost economies and the jobs within them.

Suggested links for further reading

- Parallel imports/Gray Market – International Trademark Association (INTA) Topic Portal⁶
- Position paper on parallel imports – International Trademark Association (INTA) – July 2007⁷
- Pharmaceutical parallel trade in the UK – Panos Kanavos and Paul Holmes: April 2005⁸
- Briefing paper: “Parallel trade – helping to make modern medicines more affordable in Europe” – European Association of Euro-pharmaceutical companies (EAEPC) – 2004
- Combating counterfeit, falsified and substandard medicines: defining the way forward – Charles Clift in a Chatham House briefing paper – Nov 2010⁹

6 <http://www.inta.org/Advocacy/Pages/ParallelImportsGrayMarket.aspx>

7 <http://www.inta.org/Advocacy/Documents/INTAParallelImports2007.pdf>

8 <http://www.civitas.org.uk/archive/pdf/ParallelTradeUK.pdf>

9 http://www.chathamhouse.org/sites/default/files/.../1110bp_counterfeit.pdf

Brief 3



The global reach of the Internet means that all countries, developed and developing, have to cope with the march of technology and the ease of copying it brings...

Can copyright survive the threat from the internet?

The Internet provides marvellous opportunities for consumers, creators and producers as well as driving economic growth. It enables music, television, film and computer software to be copied, communicated and downloaded anywhere in the world at a click of a mouse.

Some would argue that such copies made available should be “free”. But most would accept that the flow of creative products will be greater if producers, individuals or companies are able to achieve a market reward through proper control of unauthorised copying. Also, finance can be sought to fund product development if a tangible legal right exists. Copyright remains very effective legal mechanism for managing this system fairly.

So the answer to the headline question is that, if we care about the continued quality of the products obtained online, and about fairness to those who provide them, we have to ensure that copyright continues to work well in an internet-connected world.

To do this, we need to:

- maintain copyright as a strong proprietary IP right – it does not need further material reform;
- provide cost proportionate access to legal enforcement of copyright worldwide, including in non-English speaking countries;
- ensure deterrence level damages are readily available for *prima facie* infringement;
- communicate **what is permitted** under the flexibility of the exceptions regime, such as research, criticism and review or news reporting;
- close any legal loopholes, which bar use of technical measures ensuring fair reward;
- guard the ability to track infringers on an international scale by collecting evidence of infringement, which is publicly available and usually on the internet;
- seek consensual co-operation of intermediaries such as internet service providers in keeping the supply chain infringement-free and; **most important**,
- gain understanding and support from consumers that buying genuine copies and maintaining copyright is in their interests and not just those of the big producers.

The global reach of the Internet means that all countries, developed and developing, have to cope with the march of technology and the ease of copying it brings as well as the impact on intellectual property laws. Support must be given to the initiatives of the UK Intellectual Property Office (IPO), European law makers, the World Intellectual Property Organisation and World Trade Organisation to introduce workable solutions, which address the challenge of the internet, balancing the rights of producers and consumers to the greater economic good.

Suggested further reading:

Hargreaves Review of IP and Growth: Digital Opportunity – May 2011¹⁰

UK Government response to Hargreaves Review – Aug 2011¹¹

“Modernising Copyright – a modern robust and flexible framework” – UK Government response to consultation on copyright exceptions and clarifying copyright law – Dec 2012¹²

See also IPAN Brief 16 – “Copyright, unlawful file sharing and digital rights management”

10 <http://www.ipo.gov.uk/ipreview-finalreport.pdf>

11 <http://www.ipo.gov.uk/ipresponse-full.pdf>

12 <http://www.ipo.gov.uk/response-2011-copyright-final.pdf>

Brief 4



Customs witnessed a further increase in the proportion of products for daily use that would be potentially dangerous to the health and safety of consumers.

Intellectual property crime – society is the loser

The size of the problem

Across the world national economies, industries and consumers are all being threatened by the continuous growth of intellectual property crime (IP crime), or as it is more commonly known – counterfeiting and piracy.

Historically this particular form of criminality has been difficult to measure. However, over the past ten years and as far back as 2009 the OECD¹³ estimated that the international trade in counterfeiting could be as large as \$250 billion (US), which is larger than the national GDPs of 150 economies¹⁴. Since then counterfeiting across the world has been on the increase and in 2012 the International Chamber of Commerce (ICC) updated the OECD findings, forecasting increases in counterfeiting to \$770–\$960 billion in 2015, in G20 countries alone. The effect of this would result in employment losses of 2.5 million, which will have a devastating impact on G20 economies, businesses and society in general.

The most recent EU Customs figures report (2014)¹⁵, published in October 2015, show an increase in the high number of shipments violating IP rights. Over 35 million fakes were seized at EU borders, with an estimated retail value of over €617 million. Of these, Customs witnessed a further increase in the proportion of products for daily use that would be potentially dangerous to the health and safety of consumers. These accounted for almost 29% of the total goods seized and included food and beverages, body care articles, medicines, electrical household goods and toys. As many experts estimate that Customs are only able to seize around 2% of all illicit products entering the EU, we continue to face an enormous wave of fake goods, which not only threaten consumers but have broader economy-wide effects on trade, investment, employment, innovation and the environment.

¹³ Organization for Economic Cooperation and Development (OECD)

¹⁴ OECD, Magnitude of counterfeiting and piracy of tangible products – November 2009 update, <http://www.oecd.org/document/23/0,3343>.

¹⁵ http://ec.europa.eu/taxation_customs/resources/documents/customs/customs_controls/counterfeit_piracy/statistics/2015_ipr_statistics.pdf

On the copyright side, the International Chamber of Commerce estimates that digitally pirated music, movies and software accounts for between \$80 billion and \$240 billion worldwide¹⁶. The ICC predicted that these figures could have tripled by the end of 2015¹⁷, so left unchecked piracy could destroy the UK's invaluable copyright-based industries and with them our global lead in innovation and creativity. A recent reminder of just how much this could affect the UK comes in a report compiled by NetNames¹⁸, and commissioned by the Digital Citizens Alliance. The study found that the top 30 "cyberlockers" (online file storage providers) generate nearly \$100 million (£62 million) a year from stolen creative work. But perhaps the most surprising aspect is that these rogue websites are run by major credit card companies and have average profit margins of 63 per cent, which is far in excess of what companies who legally produce or distribute music, film, games or software can hope to make.

Over the years numerous other studies, from a range of international organisations, further confirm the global growth and damage that this insidious crime causes, concluding that it: significantly reduces investment and destroys jobs¹⁹; threatens the health and safety of European consumers (see EU customs above); creates serious problems for European based SMEs²⁰; results in serious tax and exchequer losses, due to undeclared sales; and is extremely attractive to organised crime due to the comparatively low risk and high profits it engenders.

Moreover, institutions such as Europol²¹, Interpol²², UNICRI²³, UNDOC²⁴ and the World Customs Organisation (WCO) have all produced evidence and reports that have acknowledged the links between counterfeiting and organised crime and, in turn, the massive profits from fake products that are being channelled into areas such as the trafficking of drugs and human beings and related financial crimes such as money laundering and corruption.

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- 16 <http://www.iccwbo.org/Advocacy-Codes-and-Rules/BASCAP/BASCAP-Research/Economic-impact/Global-Impacts-Study/>
- 17 <http://www.iccwbo.org/Advocacy-Codes-and-Rules/BASCAP/BASCAP-Research/Economic-impact/Global-Impacts-Study/>
- 18 <http://www.netnames.com/>
- 19 TERA Consultants, Building a Digital Economy: March 2010 <http://www.iccwbo.org/bascap/id35360/index.html>
- 20 Technopolis (2007), 'Effects of counterfeiting on EU SMEs', http://ec.europa.eu/enterprise/enterprise_policy/industry/doc/Counterfeiting_Main%20Report_Final.pdf
- 21 <https://www.europol.europa.eu/content/counterfeit-goods-produced-eu-rise>
- 22 <http://www.interpol.int/Crime-areas/Trafficking-in-illicit-goods-and-counterfeiting/Trafficking-in-illicit-goods-and-counterfeiting>
- 23 http://www.unicri.it/topics/counterfeiting/organized_crime/reports/
- 24 https://www.unodc.org/documents/counterfeit/FocusSheet/Counterfeit_focussheet_EN_HIRES.pdf

2015 saw the emergence of a number of new and important reports, which focused on the impact of counterfeiting in specific business sectors in the EU. The reports are part of a series, which will be produced by the European Observatory on infringements of Intellectual Property Rights²⁵ based at the Office for Harmonisation in the Internal Market (OHIM, the EU's central IP office), are the first independent studies of their kind. In brief, they aim at improving both the understanding of the importance of Intellectual Property (IP) in society today and the consequences of IP infringements (*counterfeiting and piracy*) and make a major contribution to the overall picture in Europe.

So far the Observatory has published four reports²⁶ covering the clothing, footwear and accessories sector, the cosmetics and personal care sector, the sporting goods sector and most recently, the toys and games industry. More are to come. In parallel, OHIM has also begun to work with the OECD to update their 2009 study, which estimated the value of counterfeit goods in international trade. Alongside this OHIM will support the Joint Research Centre of the European Commission²⁷ to study infringements in the music, film and e-book industries. These reports will add considerably to the evidence landscape and it is hoped that they will be concluded and produced during 2016.

In the UK it has proved to be very difficult to put figures together on the scale and impact of counterfeiting. One of the reasons is that there is no statutory recording of offences by UK enforcement agencies. Therefore, the IP Crime Report 2014/15 (by the IP Crime Group)²⁸ centres on an annual survey of Trading Standards, which focused on consumer behaviour, and where the impact of initiatives to tackle IP crime can be measured. Research undertaken as part of Creative Content UK²⁹ on the scale and scope of online infringement, also helped to build knowledge and the Intellectual Property Office³⁰ is now funding further work on an Online Copyright Infringement Tracker and has also commissioned research into the scale and scope of designs infringement in the UK. This is due to be published in 2016.

Due to the complexities currently being faced in building a robust estimate of the scale and scope of IP crime in the UK, the IP Crime Group has used evidence based on many operational successes undertaken by law enforcement and industry groups.

25 <https://oami.europa.eu/ohimportal/en/web/observatory/about-us>

26 <https://oami.europa.eu/ohimportal/en/web/observatory/quantification-of-ipr-infringement>

27 <https://ec.europa.eu/jrc/>

28 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/461792/ip-crime-report-2014-15.pdf

29 <https://www.bpi.co.uk/home/uk-creative-industries-and-isps-partner-in-major-new-initiative-to-promote-legal-online-entertainment.aspx>

30 <https://www.gov.uk/government/organisations/intellectual-property-office>

IP crime prevention

The UK IP Crime Group concludes that IP crime is detrimental at local, national and international levels.

On a daily basis, UK Trading Standards authorities, police and Customs deal with the consequences of counterfeiting and piracy. Closures of businesses, losses of jobs, benefit fraud and potential harm from dangerous fakes are all evident in their work. In addition, strong links have been found to organised crime, drug dealing and violence. This has a tangible effect on the safety and security of communities across the UK.

Public and private sector bodies focus on numerous approaches to tackle the problem, including prevention, disruption, and enforcement and building greater public understanding.

Successful examples include the work of the National Markets Group's Real Deal initiative³¹, which has become an EU benchmark and has led to the seizure of over 30,000 counterfeit items. Almost 400 markets have signed up to the *Real Deal* Charter to commit to tackling the sale of counterfeit goods on market stalls.

In addition, Anti-Counterfeiting Group (ACG)³², which represents members that own over 2,400 multi-international brands, has worked with Trading Standards and police throughout the UK to tackle specific hot spots.

Working in partnership is a major aim for the UK, and law enforcement and industry have developed innovative partnerships of disrupting and enforcing against IP crime. The IPO enforcement team and the Police Intellectual Property Crime Unit (PIPCU)³³ are working assiduously with a range of enforcement authorities, private sector business and national anti-counterfeiting and piracy associations to deal with rogue websites and their facilitators, including advertisers. The IPO have also joined with other government authorities such as the Food Standards Agency (FSA) to deliver sustainable responses. Operation OPSON³⁴, carried out in partnership with Europol and almost 50 other countries successfully led to the removal of tons of fake and substandard food.

Moreover, national associations such as FACT³⁵ and the BPI³⁶ have had significant successes to prevent and disrupt online crime while ACG have collaborated with the National Trading Standards e-crime team³⁷ and social media platforms, such as Facebook, to disrupt new criminal business models and remove online images and sellers of counterfeits.

31 <http://www.realdealmarkets.co.uk/>

32 <http://www.a-cg.org/>

33 <https://www.cityoflondon.police.uk/advice-and-support/fraud-and-economic-crime/pipcu/Pages/default.aspx>

34 <https://www.europol.europa.eu/content/record-seizures-fake-food-and-drink-interpol-europol-operation>

35 <http://www.fact-uk.org.uk/>

36 <https://www.bpi.co.uk/default.aspx>

37 <http://www.tradingstandardsecrime.org.uk/crack-down-on-counterfeiting-and-piracy-on-social-media/>

But this operational work is supported by continual efforts to help build public understanding in the UK. As a result of industry, law enforcement and government working together there has been a continuous upsurge in awareness. The Creative Content UK³⁸ initiative and working with national businesses and associations and European and international partners to provide more robust evidence will continue to help to build a more sustainable approach in 2016.

Suggested further information:

- IP Crime – annual report 2014/15 of the UK IP Crime Group³⁹
- Counterfeiting Intelligence Bureau webpage – International Chamber of Commerce (ICC)⁴⁰
- Business Action to Stop Counterfeiting and Piracy (BASCAP) webpage – ICC⁴¹
- eBay Safety Centre advice about counterfeits webpage⁴²
- Interpol webpage about Trafficking in Illicit Goods⁴³
- Europol⁴⁴
- OHIM EU Observatory⁴⁵
- ACG⁴⁶
- UNICRI⁴⁷

38 <https://www.bpi.co.uk/home/uk-creative-industries-and-isps-partner-in-major-new-initiative-to-promote-legal-online-entertainment.aspx>

39 <https://www.gov.uk/government/publications/annual-ip-crime-report-2014-to-2015>

40 <http://www.icc-ccs.org/icc/cib>

41 <http://www.iccwbo.org/advocacy-codes-and-rules/bascap/>

42 <http://pages.ebay.co.uk/safetycentre/counterfeits.html>

43 <http://www.interpol.int/Crime-areas/Trafficking-in-illicit-goods-and-counterfeiting/Trafficking-in-illicit-goods-and-counterfeiting>

44 <https://www.europol.europa.eu/category/press-release-category/intellectual-property-crimes>

45 <https://oami.europa.eu/ohimportal/en/web/observatory/about-us>

46 <http://www.a-cg.org/>

47 http://www.unicri.it/topics/counterfeiting/organized_crime/reports/

Brief 5



The EPO, although it will be the granting authority for an EU Patent, has no jurisdiction with respect to enforcement.

The EU patent – almost here

For the last 40 years attempts have been made to construct a truly European Patent System, which would provide so-called “unitary” protection throughout the EU. During this time, unitary systems have been established for both Trade Marks and Designs, both operated via the European Union Intellectual Property Office, located in Alicante, Spain, which is an EU institution.

All EU member states are parties to the European Patent Convention (EPC). This enables a patent to be obtained in each member state via the European Patent Office (EPO). The European Patent Organisation (which runs the EPO) is not an EU institution, so the European Commission does not govern its operation. The patents which the EPO grants are not unitary and are dealt with, after grant, in the same way as patents obtained via the individual National Patent Offices, all of which continue to exist.

Having patent protection in some EU member states but not others could have a distorting effect on interstate trade, so the European Commission has wanted to provide a “Community Patent” for several decades. A convention to do this was signed in 1973, but it never came into force, and is now effectively superseded by an agreement at EU level signed in 2012, which will enable the EPO to grant a single unitary EU Patent (not a bundle of national patents as currently) which will be effective throughout the EU.

The EPO, although it will be the granting authority for an EU Patent, has no jurisdiction with respect to enforcement. This will be dealt with by way of a new institution, the Unified Patent Court (UPC), which will be headquartered in Paris but which will operate in other centres as well, including London and Munich. This means that in future a unitary patent and a unitary enforcement system will exist. What this means for Unitary EU patent owners is that both validity and enforceability will be EU-wide – if you secure an injunction to stop infringement, it will operate throughout the EU, and if your patent is declared invalid, that will also apply throughout the EU.

The agreements both for granting unitary EU patents and for EU wide enforcement, do not come into force until a sufficient number of EU member states ratify, one of which must be the UK. While it was originally hoped that an EU Patent would be available from 1st January 2014, this proved not possible because of the time needed to negotiate and settle the rules governing the operation of the UPC. Though the availability of an EU-wide unitary patent and EU-wide enforcement are now much closer than ever before, the system is unlikely to come into operation before 2017 and this could be delayed further if the UK votes for “Brexit”.

To what extent industry and inventors will trust and use the unitary EU patent system is unclear. It will not be compulsory and applicants can opt out of doing so for a fairly long transitional period – putting all your eggs in one basket may not appeal to everyone. The costs of maintaining the unitary patent are relatively small corresponding to the cost of maintaining national patents in four major EU patenting countries. The cost of using the UPC will depend on the value of the suit. At present the costs associated with securing a patent position in Europe (and possibly enforcing it) are substantial and are thought to deter SMEs from using the system. Even large users, while desirous of having a simpler, speedier and less expensive system (and less patchy in its effects) than the present one, may hesitate to use the new unitary system, or may choose to use it for only part of their portfolio of patents. Much will depend on whether the new UPC arrangements will engender confidence that it will provide a fair, usable and trustworthy system for litigating patent disputes. The training of Judges for the UPC has already commenced. The European Commission is exploring ways to assist SMEs in reducing their patenting costs.

Suggested further information

Unitary Patent webpage: http://ec.europa.eu/growth/industry/intellectual-property/patents/unitary-patent/index_en.htm

Brief 6



Poverty remains the single biggest barrier to improving healthcare in the developing world.

AIDS, developing countries and pharmaceuticals

The underlying healthcare crisis in developing countries

In spite of improvements in recent years, millions of people in developing countries still cannot access the most basic healthcare, including safe and effective medicines. This has led to a continuing healthcare crisis in these countries, many of which are those least able to cope, have to deal with the double burden of infectious diseases such as HIV/AIDS, tuberculosis and malaria and the growing problem of non-communicable diseases such as diabetes, cardiovascular disease, respiratory conditions and cancers.

Poverty remains the single biggest barrier to improving healthcare in the developing world. In many countries people do not have enough food, access to a clean water supply, hospitals or clinics in which to receive treatment, and healthcare professionals to care for them.

The AIDS epidemic

“AIDS remains one of the world’s most serious health challenges, but global solidarity in the AIDS response during the past decade continues to generate extraordinary health gains. Historic success in bringing HIV programmes to scale – combined with the emergence of powerful new tools to prevent people from becoming infected and from dying from AIDS-related causes – has enabled the foundation to be laid for the eventual end of AIDS.”

UNAIDS Report on the global AIDS epidemic 2012 – Introduction⁴⁸

The response to the epidemic has included working to provide access to appropriate medicines at little or no cost, developing new medicines to overcome disease resistance and provide simpler dose regimes for patients, giving financial and educational support to help develop the basic healthcare infrastructure within developing countries, and ensuring that transmission of the AIDS virus is minimised. Although total financial resources for HIV programmes in low- and middle-income countries rose modestly in 2012, the world’s ability to lay the foundation for an end to the AIDS epidemic continues to be undermined by a major resource gap⁴⁹. Social and cultural considerations relating to sexual behaviour in many developing countries also remain a significant factor impeding expanded success in addressing the AIDS epidemic.

48 http://www.unaids.org/sites/default/files/en/media/unaids/contentassets/documents/epidemiology/2012/gr2012/20121120_UNAIDS_Global_Report_2012_with_annexes_en.pdf

49 http://www.unaids.org/en/resources/campaigns/20121120_globalreport2012/globalreport

Rationale for patents on pharmaceuticals

Patents are granted for new pharmaceutical developments in much the same way as for other useful inventions i.e. they must be new and inventive. The availability of patent protection continues to stimulate and underpin the production and development of new improved medicines to treat diseases prevalent in developed and developing countries alike, such as non-communicable diseases. Without adequate patent protection and the ability to recoup R&D investment, companies simply would not undertake the long, risky and very expensive process required for new medicines, including extensive safety and clinical evaluation and post launch monitoring.

Only about one in between five to ten thousand candidate molecules developed from a pharmaceutical invention will ever reach the market as a successful medicine, and only one in three of those medicines will “break even” on the cost of its discovery and development. Accordingly, without patents the major source of new medicines would be cut off to the detriment of patients everywhere in the world. Nevertheless, there are those who continue to blame intellectual property, and patents in particular, for the fact that many millions of people are denied access to the medicines they need.

Comment

Focusing on patents as the barrier to access to healthcare in the developing world is misleading and unhelpful when there are other significant barriers. The access problem stems primarily from poverty and an inability to pay for even the cheapest medicines, including patent free generic medicines. There is often chronic under-investment in healthcare infrastructure resulting in lack of clinics and hospitals, inadequate distribution networks, insufficient trained healthcare providers, and high levels of patient illiteracy. Other factors impeding access are taxes and tariffs that raise prices unnecessarily, and cultural factors such as stigma and discrimination in many parts of the world, and punitive laws deterring those most at risk from seeking essential HIV services.

In fact, few patents exist in many African countries and over 95% of the 300+ drugs on the WHO Essential Drugs List are not patent protected at all. First line treatments for killer diseases like malaria and TB are available as generic products at very low cost, and yet many people are still denied access to them.

A study published in 2002 reviewed the patent position for fifteen anti-retrovirals in 53 African countries and concluded that: “patents and patent law are not a major barrier to treatment access in and of themselves”⁵⁰. Nevertheless, it is true that, unless licensed, a patent can also prevent production or sale of lower cost, generic medicines or development of novel formulations. This is particularly the situation for the more recently introduced anti-retroviral medicines and certain fixed dose combination products.

50 http://iipi.org/wp-content/uploads/2010/07/Antiretroviral_Article.pdf

The research based pharmaceutical companies, sometimes working in partnerships with their competitors, have developed new HIV/AIDS medicines including anti-retrovirals that have helped save millions of lives in the global fight against HIV/AIDS. UNAIDS has reported that in 2012 approximately 35 million people are now living with HIV/AIDS of which 1 in 20 adults are in sub-Saharan Africa accounting for 69% of people living with HIV worldwide. Further, since 1995, treatment with anti-retrovirals has added 14 million life-years in low- and middle-income countries, including 9 million in sub-Saharan Africa⁵¹.

In addressing the access problem in developing countries, the research based companies have adopted varying approaches to improve access, such as differential pricing, donations, voluntary licensing and capacity building. Some of these, such as differential pricing and capacity building, are relevant whether or not there are patents on the medicines concerned. This is often the case in least developed and low-income countries. A number of global companies have joined in patent pooling arrangements such as the Medicines Patent Pool⁵². This was set up under the auspices of UNITAID⁵³ working with a range of stake-holders to create a pool of relevant patents for sub-licensing and product development of key HIV therapies as well as fixed-dose combinations and paediatric formulations.

The independent Access to Medicines Index Foundation⁵⁴ has recently reported that: “the world’s leading pharmaceutical companies are doing increasingly more to improve access to medicine in developing countries. More companies are experimenting with innovative access-oriented business models, companies are granting more licenses for making and distributing generic versions of their products, and companies continue to improve their oversight of access policies and activities. Yet progress is uneven. The industry struggles to perform well in two important areas: companies remain conservative in their approach to patents, and all but two have been the subject of settlements or decisions relating to ethical marketing, bribery or corruption standards or competition laws in the last two years.”

“There is a fundamental truth about AIDS – new medicines and vaccines are needed. We do not yet have a cure for AIDS. We do not have a vaccine for AIDS. Existing medicines are less and less effective as resistance to them grows. Patent protection is of critical importance to the research based industry. If there is no patent protection, there will be no R&D. And if there is no R&D, there will be no new medicines and vaccines.” – **public policy statements: GlaxoSmithKline**⁵⁵

51 http://www.unaids.org/sites/default/files/en/media/unaids/contentassets/documents/epidemiology/2012/gr2012/20121120_UNAIDS_Global_Report_2012_with_annexes_en.pdf

52 <http://www.medicinespatentpool.org/>

53 <http://www.unitaid.eu/en/>

54 <http://www.accesstomedicineindex.org/index-publications>

55 <http://www.gsk.com/media/280860/ip-atm-developing-countries-policy.pdf>

Suggested further reading:

- “Developing world health partnerships”: International Federation of Pharmaceutical Manufacturers & Associations (IFPMA) – 2012⁵⁶
- “Towards zero infections” – UK position paper on HIV in the developing world – Department for International Development (DfID) – May 2011⁵⁷
- “Patents versus patients: five years after the Doha declaration” – OXFAM paper – Nov 2006⁵⁸
- “Evidence on access to essential medicines for the treatment of HIV/AIDS” – Charles River Associates summary paper – 2013⁵⁹
- UNAIDS reports on the global AIDS epidemic – 2012, 2013⁶⁰
- IFPMA policy position – patent licensing – Feb 2015
- Intellectual Property & Access to Medicines in Developing Countries – Public policy statements – GlaxoSmithKline⁵⁵
- “Access to medicines is a global problem” – Pharmaceutical Journal editorial – 2 Oct 2014⁶¹

56 <http://partnerships.ifpma.org/pages/>

57 <http://www.dfid.gov.uk/Documents/publications1/twds-zero-infs-pos-paper-hiv-dev-wrld.pdf>

58 <http://www.oxfam.org/sites/www.oxfam.org/files/Patents%20vs.%20Patients.pdf>

59 http://www.ifpma.org/fileadmin/content/Publication/2013/web_Brochure_CRA_IFPMA.pdf

60 http://www.unaids.org/en/resources/campaigns/20121120_globalreport2012/globalreport

61 <http://www.pharmaceutical-journal.com/opinion/editorial/access-to-medicines-is-a-global-struggle/20066682.article>

Brief 7



Increasingly, as technology advances, products and processes – from washing machines to telecommunications systems – owe their novel characteristics to a controlling program in a microprocessor or computer.

Patents and software in Europe

Background

Patents are exclusive rights granted for the protection of an invention that offers a new and inventive technical solution or way of doing something.

Increasingly, as technology advances, products and processes – from washing machines to telecommunications systems – owe their novel characteristics to a controlling program in a microprocessor or computer. The European Patent Office (the EPO) and the UK Intellectual Property Office (IPO) have established positions that when an invention has the necessary technical character it is patentable even if it involves a computer program in its implementation.

Under the Art 52(2) of the European Patent Convention and the equivalent s. 1(2) of the UK Patents Act, programs for computers are not regarded as inventions if claimed “as such” in a patent application. However, at the EPO, this exclusion is not as restrictive as it first appears because a computer program is not excluded from patentability if, **when running on a computer**, it causes a further technical effect going beyond the “normal” physical interaction between the program (software) and the computer (hardware).⁶² An example of a further technical effect is where the program serves to control a technical process or governs the operation of a technical device. The internal functioning of the computer itself under the influence of the program could also bring about such an effect. If the computer program itself is not excluded, it is immaterial whether the program is claimed by itself, as a data medium storing the program, as a method or as part of a computer system. So it is important to note that computer programs are not automatically excluded from patentability.

In the UK, the situation differs from the EPO approach. The IPO is bound to follow the decisions of UK courts, as per the English common law doctrine of binding precedent. The England and Wales Court of Appeal adopted a 4-step approach to interpreting Article 52(2) of the European Patent Convention.⁶³ This was criticised by the EPO as being irreconcilable with the European Patent Convention because it presupposes that novel and inventive purely excluded matter does not count as a ‘technical contribution’.⁶⁴ The England and Wales Court of Appeal said subsequently that it believed that the difference between the approaches of the IPO and the EPO are resolvable in most cases and that, where they were not resolvable, the UK should not simply adopt the EPO approach.⁶⁵ The IPO is not bound to follow the practice of the EPO for the reasons outlined above. One significant source of uncertainty is the lack of a definition of what is ‘technical’. A technical field is one that is not one of the excluded fields listed in Article 52(2), such as a business method or computer program. However, because Article 52(2) sets out a non-exhaustive list, it cannot be

⁶² <https://www.epo.org/law-practice/case-law-appeals/recent/t030258ex1.html>

⁶³ <http://www.bailii.org/ew/cases/EWCA/Civ/2006/1371.html>

⁶⁴ <http://www.epo.org/law-practice/case-law-appeals/pdf/t040154ex1.pdf>

⁶⁵ <http://www.bailii.org/ew/cases/EWCA/Civ/2008/1066.html>

assumed that everything else is technical.⁶⁶ The exclusion may therefore also apply to other matters which are essentially abstract or intellectual, but which do not fall clearly into one of the categories specifically listed in Article 52(2). This creates uncertainties.

In the USA the patent statute can and has been interpreted to allow patenting in fields excluded by European law. For instance patents can be obtained for software even when there is no technical contribution. This has led to patents for pure business methods, with no technical attributes, for example where computer systems control the flow of investments between different funds and all the novelty lies in the business steps. However, this situation changed to some extent in June 2014, when the United States Supreme Court found that a computer program for a patent-ineligible abstract idea such as a method of exchanging financial obligations is not patent eligible in the USA.⁶⁷

A number of concerns have been raised about patents and, in particular, about patents on software: a) that patents are often granted on trivialities and b) that in any event patents tend to favour big business. In 2002 the European Commission proposed a Directive aimed at clarifying practice on the patentability of computer-implemented inventions within the EU. This proposed Directive was comprehensively rejected by the European Parliament in 2005.

Comment

The collapse of the European Directive does not alter the legal position on patenting of computer-implemented inventions. The EPO cannot treat such inventions any differently from other inventions. Similarly it is highly unlikely that the EPO will change its position on business methods. A Directive would have harmonised the law across the EU. The current position is unsatisfactory in that national courts can come to conflicting decisions. But differences of approach by national courts are far less important than the concerns expressed widely by MEPs and the public.

The quality of patent examination has to remain high and that the issue of patents on seemingly trivial features has now become a significant issue. Opposition of the grant of such patents may not be possible or indeed successful. It is clear that patent examiners need better access to what is publicly known in the software community and there are current initiatives to help achieve this.

Ultimately, a patented invention will only be of real value if it is commercialised and exploited. For example, the patent owner may decide to sell a product containing the patented invention or to use a patented process to make products to sell. Alternatively, the patent owner might try to find someone who wants to buy the patented invention or take a licence and is prepared to pay royalties to the patent owner in return.

⁶⁶ http://www.jakemp.co.uk/uploads/files/pdfs/Computer_Implemented_Inventions_in_Europe_28.08.13.pdf

⁶⁷ http://www.supremecourt.gov/opinions/13pdf/13-298_7lh8.pdf

Equally, patent rights are only as good as the procedures and remedies by which they are enforced. Enforcing patents can certainly be expensive but without a patent (or at least an application for one) any business has far less commercial security and bargaining power. European and UK patents continue to be granted for computer-implemented inventions (the EC stated⁶⁸ in a February 2002 press release proposing the Directive that at least 30,000 such patents had been granted since 1978), but how such patents can be obtained and the limitations involved needs to be better clarified. Small businesses in particular need to be made better aware of the opportunities which appropriate use of patents may provide them.

Alongside those advocating extending patent protection for software related inventions in Europe, it must be said that there are continuing strident calls to resist such moves from organisations such as the Foundation for a Free Information Infrastructure (FFII) (<https://www.ffii.org/>) advocating open systems and absence of patent protection.

Suggested further reading:

European Patent Office:

- Guide for Applicants, Part 1, How to get a European Patent: Patentability of Inventions⁶⁹
- Guidelines for Examination Part C, Chapter IV, 2.3.6 - Programs for computers⁷⁰
- Patents for Software? – European Law and Practice⁷¹

UK Intellectual Property Office:

- UK IPO Manual of Patent Practice Sections 1.07-1.25⁷²

The case against patenting:

- European patents continue despite 10th anniversary of EU parliament vote – FFII press release September 2013⁷³

68 http://europa.eu/rapid/press-release_MEMO-02-32_en.htm?locale=en

69 <http://www.epo.org/applying/european/Guide-for-applicants/html/e/index.html>

70 http://www.epo.org/law-practice/legal-texts/html/guidelines/e/g_ii_3_6.htm

71 <https://www.epo.org/news-issues/issues/software.html>

72 <https://www.gov.uk/guidance/manual-of-patent-practice-mopp/section-1-patentability#c>

73 <http://press.ffii.org/Press%20releases/EPO%20software%20patents%20continue%20despite%20the%20european%20parliament%20vote>

Brief 8



There is no general system for recognising the contribution of TK to modern developments...

Genetic resources and traditional knowledge – the key IP issues

Background

Intellectual property law is largely a creature of the industrial West. Patents and trade secrets can protect new inventions; trade marks protect the reputations of traders and their goods; copyright protects the creative output of authors, artists and musicians (and their publishers). But not all valuable intellectual creations can be protected. One class of creation, which is (in general) not capable of such protection is the indigenous knowledge of traditional societies, frequently referred to as “traditional knowledge” (“TK”).

Western science tends to be disdainful of such knowledge: as at best unsystematic and unproven, at worst mere superstition (“old wives’ tales”). Nevertheless such knowledge has formed the basis of numerous advances that have been of value to the world as a whole. Many drugs are based on TK – starting with aspirin (originally a derivative of the willow tree): and more recently the new antimalarial, artemisinin, is based on a chemical derived from a traditional Chinese medicinal herb.

There is no general system for recognising the contribution of TK to modern developments, or rewarding the communities who have preserved and handed on such the knowledge on which they are based. Similarly, artistic works based on traditional folk-tunes, or stories, or traditional styles of ornamentation, are exploited without reward or even reference to the originating communities: and sometimes in ways which scandalise them (for example, misuse for commercial purposes of sacred emblems of Australian aborigines). This is seen as unjust, particularly where those communities are poor, and those who exploit the developments make substantial profits from them. The exploiters, however, see the knowledge they have used as part of “the public domain” (like a large proportion of published Western science and technology). For them, public knowledge that has not been specifically protected is (and should remain) free for all to use.

A special grievance for indigenous peoples is the patenting of indigenous knowledge. This is termed “bio-piracy”, and a number of examples are notorious: patents which feature neem⁷⁴, turmeric⁷⁵, and Basmati rice⁷⁶. The practice of patenting genes found in indigenous and other natural resources is also widespread. Indigenous people say that these patents are an unconscionable attempt to monopolise knowledge freely provided by them. The patents enrich the patentees at the expense of the indigenous people: who are at the same time deprived of the right to continue age-old practices.

74 e.g., European Patent no 405701

75 US Patent no 5,401,504

76 US Patent no 5,663,484

In reply, patentees defend the principles of patenting, even if the practice is sometimes deficient. The patents on neem and turmeric were both revoked after being challenged by the Indian government (after much time and expense). Neither patent claimed the indigenous material as such: rather, in both cases particular formulations or uses were claimed as new. These were eventually shown not to be new, and hence unpatentable. Similarly, the Basmati rice patent, upon challenge, was reduced to claiming three specific new varieties of rice of the Basmati type: but it never claimed traditional Basmati rice as such, only an allegedly new form of it. Patentees say that in principle public traditional knowledge is not patentable, because no patent can legally take out of the public domain what is already known. Whatever has been done traditionally cannot be impeded by a subsequent patent. Patents such as those cited arise only because searches carried out by Patent Offices are inherently fallible. They say, however, that inventive improvements to traditional knowledge are and must remain patentable, to encourage further development for the benefit of all (e.g. artemisinin could be crucially important in combating malaria, especially in poor countries).

How are these concerns being tackled?

Three international organisations are involved:

- The World Trade Organisation (WTO).
- The World Intellectual Property Organisation (WIPO).
- The Convention on Biological Diversity (CBD).

Each organisation has different priorities, emphases and approaches - the WTO deals with world trade, WIPO with intellectual property, and the CBD with genetic resources and the environment – but two lines are being followed in each organisation:

[A] general scheme for IP-like protection of genetic resources (GR) and indigenous or traditional knowledge (TK); and

[B] specific ‘disclosure of origin’ proposal to require patent applicants to disclose the origin of biological resources used in their inventions.

[A] general scheme

At WIPO, developing countries seek an international treaty to control access to and use of genetic resources and traditional knowledge. Their objectives are: to eliminate bio-piracy; to control use of GR and TK; and to obtain a fair return for its use. Developed countries see little need for a treaty, and are concerned about extending exclusive rights to cover subject-matter which (particularly in the case of TK) is very difficult to define, and may mean paying royalties on, or ceasing to use, materials and methods which are well-known (in the ‘public domain’).

Matters are complicated by the presence at the negotiations of numerous observer representatives of indigenous peoples, who also seek control over their TK, but not necessarily in order to recover royalties from its use: some reject the idea of an IP right on TK at large, as being inconsistent with their world-view. Also they have many disagreements with their own governments over ownership of their TK, human rights, access to tribal lands, etc.

[B] specific ‘disclosure of origin’ proposal

This is put forward for two reasons: to inhibit bio-piracy and to promote observance of the CBD. This international treaty (with over 190 country members, but so far excluding USA) has three objectives: to conserve biodiversity; to promote its sustainable use; and to share equitably the benefits of such use. Access to genetic resources is promoted, but to balance this, Benefits from such access are to be Shared (hence the acronym ‘ABS’).

To promote these objectives, Article 15 provides that each party will allow the others access to genetic resources, but only on Mutually Agreed Terms (MAT) with the Prior Informed Consent (PIC) of the party providing the resources. To support Article 15, it is proposed that any mention of genetic (or perhaps biological) resources in patent applications should require disclosure of the origin of the resource, and (in some versions) to provide evidence of PIC or MAT, or both. Similar requirements are suggested for TK (which is mentioned in Article 8j of the CBD). **THE BIODIVERSITY CONVENTION (CBD)**

It is here that most progress has been made to date. The Nagoya Protocol to the CBD was negotiated in Japan in October 2010: it came into force on 12 October 2014. It has so far (February 2016) been ratified by 71 parties. The European Union has passed a Regulation to implement it (see below).

The Nagoya Protocol develops and formalises ABS requirements. The objective is the ‘fair and equitable sharing of the benefits arising from the utilization of genetic resources’ (Article 1). ‘Utilization’ is however defined very specifically (Article 2) as “to conduct **research and development** on the genetic and/or biochemical composition of genetic resources, including through the application of biotechnology” (emphasis added). Article 5 provides that “benefits arising from the utilization of genetic resources as well as subsequent applications and commercialization shall be shared in a fair and equitable way with the Party providing such resources”. However, this applies only where the provider country is “the country of origin of such resources” or “acquired the genetic resources in accordance with the [CBD]”. The terms for the sharing are to be mutually agreed (MAT).

Access to GR is subject to PIC of the providing country (Article 6) “unless otherwise determined by that Party”. Enforcement of the Protocol is provided for in Article 15 (by “appropriate, effective and proportionate legislative, administrative or policy measures” and Article 17 requires countries to provide ‘checkpoints’ with the power to

check that ‘utilizers’ of GR conform to the Protocol. These ‘checkpoints’ might be, for example, national authorities, who fund research or authorise marketing of products; academic journals; or intellectual property offices.

It is still not clear how well these provisions will work in practice. They are designed for what is seen as the typical case – ‘bio-prospecting’. In ‘bio-prospecting’ a researcher travels to a country where novel GR abounds, collects samples and takes them home for research. In such cases, it is reasonable, proper and straightforward for the researcher to respect the laws of the country he visits. If these require MAT and PIC, he must negotiate with the country’s authorities before taking any samples, and meet fully the requirements of local law. However, ‘bio-prospecting’ is the exception rather than the rule. Most ‘utilization’ of (i.e., research on) genetic resources is done on materials that are readily available in the researcher’s home country, and (typically) not clearly associated with any specific source country. In such cases, typically, fulfilling the requirements of the Nagoya Protocol is neither reasonable nor straightforward. Nevertheless, in every case the researcher is effectively required to prove (or at least give evidence of) a negative: that the material was not accessed in breach of the rights of a ‘provider country’. The ‘country of origin’ of a genetic resource is defined in the CBD (Art. 2) as the country in which the GR is growing in in situ conditions. Alternatively, for domesticated varieties, it is the surroundings where it developed its distinctive properties. This raises both theoretical and practical difficulties. How do you find out where a GR is growing in in situ conditions? Nagoya requires permission from – and ‘sharing of benefits’ with – the ‘country providing resources’ (unless it waives its right to control such access, as several developed countries – Including UK – have done). However, this only applies where the ‘country providing resources’ is:

a member of Nagoya and either

is a ‘country of origin’ of the resources or

has ‘acquired the genetic resources in accordance with the Convention’ (Nagoya Art. 5.1). Suppose you access the material in a Nagoya member, which is clearly not (according to the CBD definition) a ‘country of origin’? How do you tell if that member obtained the material ‘in accordance with the CBD’? Indeed, as a question of law, what counts as ‘access in accordance with the CBD’? Does it require that the person from whom you receive the material has to demonstrate PIC and MAT? Suppose he has acquired it from a country (such as the UK) that does not require PIC and MAT, as visualised in Nagoya Art. 6 – or is not a member of Nagoya at all? Until clear answers are available to these questions (and others) the effect of Nagoya must be to discourage the ‘utilization’ of GR rather than promote it.

EU regulation

The Nagoya Protocol came into force in October 2014. Currently (February 2016) it has 71 members. The EU has ratified it, and all its member states have also ratified or intend to do so. An EU Regulation giving effect to the Protocol has been passed. This requires researchers on genetic resources to demonstrate ‘due diligence’ in seeking any necessary access permissions from the ‘provider country’ of the resources they investigate, and that they have undertaken to share benefits appropriately with that country. A preferred way of doing this is by a certificate from the ‘provider country’ (if available). What will constitute ‘due diligence’ remains to be prescribed in detail⁷⁷ – it will probably differ according to circumstances (e.g. for academic or industrial research, and between various fields of study). Researchers are obliged to keep the details of their access available for 20 years after their research ceases. Declarations of ‘due diligence’, with details of any necessary permissions, must be made by researchers at two stages – when research grants are received, and when the results of the research are embodied in new products. Certain breaches of the Regulation become criminal offences.

The Regulation came into force at the same time as Nagoya in October 2014. It is not retrospective: research on GR acquired before October 2014 is not controlled. It will make future EU research on a wide range of genetic resources considerably more complicated, which will discourage such work. Whether there will be compensating effects in ensuring returns to ‘countries of origin’, leading to more effort to conserve genetic resources in those countries, remains to be seen. In late 2015 the EU Commission issued a consultation on draft ‘guidance’ on compliance with the Regulation. In February 2016 the consultation was still continuing.

An objective of the EU Regulation is to enforce the access laws of ‘countries of origin’. However, EU law is not necessarily consistent with other access laws. The EU thinks of ‘access’ in terms of possession – physical access. Several ‘countries of origin’ think ‘access’ means the legal right to do research – and they say that mere possession of GR (whether before or after Nagoya came into force) does not give this right. This divergence of views increases the risks of doing research of this kind. It is also notable that the Regulation defines ‘access’ as ‘acquisition of genetic resources ... in a party to the Nagoya protocol’ (Art.3.3). So (apparently) potentially onerous obligations imposed by the Regulation may be avoided by accessing genetic resources in non-parties to Nagoya (such as, for example, the USA).

WTO

Here the emphasis has been on the ‘specific proposal’ for disclosure of origin in patent specifications. As part of the Doha Round, Brazil and other biodiversity-rich countries have pressed this proposal. It has been resisted by several developed countries. The Doha Round is currently moribund, and so progress in this forum is stalled.

⁷⁷ The Commission’s draft advice says that if “a user takes reasonable measures in the seeking, keeping, transferring and analysing of information [relevant to source and origin, presumably] the user will be compliant with the EU ABS Regulation”

WIPO

Discussions on the protection of ‘Genetic Resources, Traditional Knowledge and Folklore’ (‘GRTKF’) have been taking place in Geneva (in an Intergovernmental Committee) since 2000. Progress has been limited and slow. The mandate of the Committee is to produce an international instrument that will ‘effectively protect’ GRTKF. But consensus between developed and developing countries is lacking. Developing countries want a binding agreement: developed countries think this is too difficult. Other major disagreements concern: term of protection (fixed or continuing indefinitely?); powers of right-owners (to forbid use? only to charge royalties? only to require attribution of authorship?) Another difficult topic is ‘public domain’. Will right-owners have the power to control TK and GR already published, perhaps already in use? There are also conflicts between representatives of indigenous peoples and their national governments, which do not make discussions easier.

One particular source of friction is the ‘specific proposal’ for disclosure of origin of GR and TK in patent specifications. This was discussed in Nagoya, but not agreed there, on the basis that IP matters were better dealt with in WIPO. Here the views of participants split on slightly different lines. Developing countries generally support such disclosure; but not all developed countries are against it in any form. While USA, Japan and South Korea (for example) remain strongly against the idea, the EU could accept a modified version (provided sanctions did not include revocation of the patent). Some European countries (e.g., Norway and Switzerland) have already amended their laws to introduce disclosure requirements.

Proponents say that such disclosure requirements would discourage illegal access to genetic resources, and inhibit the grant of patents improperly claiming TK already known. Patent applicants say that genetic resources are widely distributed, and in large part legally accessible without formality. Only for ‘bio-prospecting’ ventures do the requirements make any sense. In other situations they are neither appropriate nor effective nor proportionate (thus clashing specifically with the requirements of Nagoya Art. 15). They would discourage use of genetic resources, and do little to promote sharing of benefits from such use. It does not appear that the revised laws of Switzerland and Norway have helped developing countries to any appreciable extent. To be effective, ‘disclosure requirements’ would require amendment of the Patent Cooperation Treaty. In Autumn 2014 WIPO was unable to agree a programme for these topics, so discussions were stalled here too. However, in Autumn 2015, a further two-year programme was agreed – though the first meeting in February 2016 on GRs made little progress.

Suggested further reading:

- General background to TRIPs and the CBD – World Trade Organisation (WTO)⁷⁸
- TRIPs and the Biodiversity Convention – International Chamber of Commerce (ICC) paper⁷⁹
- IP and genetic resources, traditional knowledge and folklore – WIPO resources⁸⁰
- WTO discussion papers from the different parties to the controversy⁸¹
- Objections to ‘disclosure of origin’ in patents specifications – ICC Paper⁸²
- Access and benefit sharing – EU Regulation 511/14 to implement Nagoya Protocol – May 2014^{83*}

78 http://www.wto.org/english/tratop_e/trips_e/art27_3b_background_e.htm

79 <http://www.iccwbo.org/Advocacy-Codes-and-Rules/Document-centre/1999/TRIPS-and-the-Biodiversity-Convention--what-conflict/>

80 <http://www.wipo.int/tk/en/resources/faqs.html>

81 http://www.wto.org/english/tratop_e/trips_e/art27_3b_e.htm

82 <http://www.iccwbo.org/Advocacy-Codes-and-Rules/Document-centre/2011/Patent-disclosure-requirements-relating-to-genetic-resources--will-they-work/>

83 <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R0511&from=EN>

Brief 9



Companies are reviewing balance sheets and trying to utilise assets for pension funding purposes that are undervalued or missing.

Alternative financing and pension deficits

Background – the Pension Deficit epidemic

As reported the Pension Regulator says it has “substantial concerns about the plan” following BT’s announced intention about how it will pay off its £9bn pension deficit.

“ITV cuts pension deficit £124m... an asset backing scheme makes rapid inroads into broadcaster’s £550m pension deficit, which was seen as a takeover barrier”.

“GKN has unveiled a radical £400m plan to reduce its mounting pension deficit in the UK”.

“Cadbury pension deficit leaves a bitter taste for Kraft”.

Hardly a day passes without similar stories. The Pensions Regulator has significant and close interest in positive steps to address pension deficits through scheme funding and pension funding partnership schemes.

Rationale for Intellectual Property in the context of alternative financing and pension solutions

Despite the FTSE 350 running a combined pension deficit of about £80bn companies are concerned about committing cash contributions to their pension funds, even if they can afford to do it.

The credit crunch and recession has led to cash and credit restrictions for a large number of companies. Companies are reviewing balance sheets and trying to utilise assets for pension funding purposes that are undervalued or missing. Accounting is biased against intellectual property on corporate balance sheets.

As intellectual property is increasingly acknowledged as the dominant asset of most companies, it also becomes the primary collateral. Historically IP has rarely been used to maximum effect. IP is property just like any other asset but with more advantages, for example tax benefits following effective structuring. Commercial strategies with intellectual property have been commonplace in the area of off-shoring and IP management holding company structures.

In May 2011 Tui Travel Plc announced a measure to address the funding of its defined benefit schemes. Three schemes have been provided with a limited interest in a partnership which holds the Thomson and First Choice brands (trademarks and associated IP and intangible assets). This innovative ‘pure IP’ solution has been followed with Britvic and its brands and other large and small businesses.

Comment

Whilst the market for alternative financing solutions for pension deficits is becoming more standardised with parent company guarantee, more specialised and innovative approaches are emerging. One particular and welcome development is the use of intellectual property to provide security to pension schemes. Trustees are increasingly willing to take patents, brands and trade marks as security against pension liabilities, thus reducing the cash contribution requirement and potentially improving overall balance sheet value.

In 2014 the Pension Protection Fund which pays compensation to members of final salary schemes if their employers become insolvent proposed a stricter approach to calculating the levy it imposes on employers that use Asset Backed Contribution structures. It had noticed that increasingly employers were using intangible assets such as trade marks and other IP to lower pension scheme deficits. Following considerable discussion within the industry and more widely it was agreed that in order to be able to recognise a range of assets including intangibles it was necessary that Regulators needed to require more from the Schemes in terms of how they certify to use the valuations on insolvency. In December 2014 Guidance in relation to Asset-Backed Contributions was published confirming that intangible assets and intellectual property were an acceptable ABC asset class, however with far more stringency and demand of the intangible asset valuer, for example Registered Expert status of those performing such valuations, the Expert's ability to be able to certify the value of the intangible asset in an insolvency situation and that the PPF can rely on that valuation as third party.

Brief 10



Design is incredibly important to the UK, for every £1 invested in design business can expect over £4 in net operating profit...

Design and IP

Fact and figures – Design underpins the UK’s knowledge-based and manufacturing industries

UK Design punches well above its weight. In 2013, the design economy generated £71.7bn in gross value added (GVA), equivalent to 7.2% of total GVA (Design Council, Design Economy report 2015⁸⁴). In the period 2009-2013, GVA increased by 27.9%, compared to 18.1% across the UK economy as a whole. Approximately 580,000 people are directly employed in the UK’s design industries and a further one million designers work across the economy in non-design industries. This makes the design economy equivalent to the ninth biggest employer in the UK.

Design is incredibly important to the UK, for every £1 invested in design business can expect over £4 in net operating profit and the export of product, graphic and fashion design services increased by 76% since 2009. The UK has worldwide acclaim for its design and innovation excellence and British designers lead in socially responsible and environmentally sustainable innovation. Internationally, the UK Design sector retained its 6th place in world rankings from 2010-2015. As well as some notable household names, Britain’s design sector comprises mainly micro-enterprises or SMEs with fewer than 4 employees, many, highly innovative and world renowned.

The UK increasingly earns more from designing successful products than from manufacturing them. The design sector employs over 1.6 million people. Design is a diverse profession with over 50 separate design disciplines impacting many areas of the economy. Communications design, followed by digital and multimedia design, remains the dominant design disciplines in the UK. As well as the more obvious areas, such as advertising, architecture, art markets, audio-visual, crafts, fashion, screen, music, performing arts and publishing, design is a key element in computer and video games, engineering, software and products of all types.

The ability to protect the intellectual capital underpinning their innovation is crucial to maintaining their competitive edge. In the UK, designers rely on all intellectual property (IP) rights, but less on patents, with the majority relying on unregistered rights such as design right and copyright.

84 <http://www.ipa.gov.uk/types/hargreaves.htm>

Legislative changes 2011-2015

In May 2011, the independent review of IP and Growth by Professor Ian Hargreaves⁸⁵ (commissioned by the Prime Minister in November 2010) reported as one of its findings that design had a “very important contribution to make to growth” and that the design sector’s IP needs “had been neglected”. Following an Intellectual Property Office (IPO) evidence based assessment of the relationship between design rights and innovation, and subsequent Calls for Evidence, an IP Bill, was announced in May 2013 including reforms to both design and patent law. In October 2014 the IP Act became law and the most significant feature was the introduction of criminal provisions for the intentional infringement of a UK registered design. Individual company directors may become liable. For designers, an Opinions Service will be created and there is clarification on design ownership of commissioned work which now remains with the designer. The UK will accede to the Hague Convention, practically this will mean that when the UK joins, designers can make one single design application for the registration of up to 100 designs which will be recognised in 64 countries. A current design consultation includes recommendations to simplify UK design registration and make it more cost effective. It is now possible to register a design online. Despite improvements, design registration has remained fairly static for over a decade at between 4000 and 5000 per year.

The IP Act: Summary

- The intentional copying of a registered design is now a criminal offence and individual directors may be liable
- Design ownership: the owner of a commissioned design is now the designer and not the commissioner
- The definition of unregistered design right has been narrowed slightly
- Where someone uses a design in good faith that is subsequently registered by another person, there will be some protection from an infringement claim on prior use of a design
- There is simplification of the qualifying rules for an unregistered design right in the UK and restricting the ability to base a claim for copying on a cropped area of an unregistered design i.e., a ‘part of a part’)
- The meaning of ‘originality’ within the definition of unregistered design has been refined
- Eligibility requirements defining who may claim UK unregistered design rights have been streamlined

85 <http://www.designcouncil.org.uk/what-we-do/design-economy>

As a part of the Enterprise and Regulatory Reform Act 2013⁸⁶, the UK Government announced the repeal of section 52 of the Copyright, Designs and Patents Act (CDPA). The repeal of section 52 means the period of copyright protection for an artistic work, which has been industrially manufactured, will be extended from 25 years to the life of the artist plus 70 years. Transitional arrangements were originally recommended for a five year period but, following a legal challenge and further consultation the transitional period has been revised to 6 months from April 28 2015. Businesses which sell replica furniture could become liable to a potential fine of up to £50,000 and a custodial sentence of up to 10 years. Other EU countries had adopted this law for many years and, until recently Estonia, Romania and the UK were the only countries which did not adhere to EU law.

The difficulty in defining the design sector has itself contributed to the failure to understand the correct relevancy and focus on IP rights for design within policy making thus far. This difficulty has been compounded by the absence of any Standard Industrial Code that realistically captures 21st century design industry sectors of the 21st century.

Research on Design

Independent research⁸⁷ commissioned by the IPO examined where design activity takes place in the UK, how it is purchased and how registered rights are used. There is an analysis of the impact of registered design rights on business performance and further research has looked at the reasons for the behaviour of firms when interacting within the current IP framework for design.

A constant theme running through current evidence and research is that SMEs face a continuing problem of infringement. It is almost impossible to seek redress because of time, legal costs and scale of opponents⁸⁸. Research has identified the continuing challenge of lack of funding to deliver innovation through design – the average hourly rate for designers is between £15 and £19.

Current IP research includes work on the relationship between unregistered design rights and innovation.

86 http://www.legislation.gov.uk/ukpga/2013/24/pdfs/ukpga_20130024_en.pdf

87 Design Economics – Chapter 3 Sep 2011: <http://www.ipo.gov.uk/ipresearch-designsreport3-201109.pdf>

88 See page 3 of the Anti-Copying in Design response to the design consultation in 2012: <http://www.ipo.gov.uk/response-2012-designs-acid.pdf>

Leading Business by Design⁸⁹ is a Design Council qualitative research project that investigates the strategic use of design at senior levels in a sample of UK and global businesses. The report highlights our three key findings on how businesses can benefit from design:

1. Design is customer-centred – Benefit is greatest when design is intimately related to solving problems, especially customers’ problems
2. Design is most powerful when culturally embedded – It works best when it has strong support in the organisation, especially from senior management
3. Design can add value to any organisation – Design can benefit manufacturing and service-based organisations, small, medium or large

Awareness of “Design”

The terminology “Design” and “IP and Design policy” can often be misleading because it covers such a broad spectrum. According to the Cox Review of creativity in business⁹⁰:

“Design” is what links creativity and innovation. It shapes ideas to become practical and attractive propositions for users or customers. Design may be described as creativity deployed to a specific end.

The UK Government has recognised a need to improve awareness and understanding of the potential of design and creativity among policy makers and design customers – both private and public organisations⁹¹. There remains a disturbing tendency to undervalue professional designers, as demonstrated by the practice of “free pitching” in public and corporate procurement⁹².

Relevant legislation

In the UK the designers may rely on IP rights that arise automatically (copyright, UK and EU unregistered design right and goodwill in a trade name or get-up) or registered rights (a registered design, trade mark or perhaps a patent). UK and EU unregistered design right are relatively new and provide protection from copying for the whole of the appearance of a product rather than just the 3D elements. Colours, materials, surface patterns as well as shape can all not be protected. UK unregistered rights protect the shape and configuration of 3D objects.

89 <http://www.designcouncil.org.uk/resources/report/leading-business-design>

90 In the Cox review of creativity in business, prepared for HM Treasury, November 2005: http://webarchive.nationalarchives.gov.uk/+http://www.hm-treasury.gov.uk/coxreview_index.htm

91 For example, see Chapter 4 of the Cox review above and the IP Awareness Survey for the IPO in 2006 Dr Robert Pitkethly: <http://www.ipo.gov.uk/ipsurvey.pdf>

92 See <http://www.dba.org.uk/guides/client.asp>

Broader applications of Design

Recent research⁹³ carried out by the Design Council and Warwick Business School has found that Design is now firmly on the business agenda:

- Design is customer-centred – benefit is greatest when design is intimately related to solving problems, especially customers’ problems and most powerful when culturally embedded and confirmed that it adds value to any organisation
- Design is most powerful when carefully embedded – it works best when it has strong support in the organisation, especially from senior management
- Design Can add value to any organisation – Design can benefit manufacturing and service-based organisations, small, medium or large

The Design Council has also shown how “Design” can be more broadly applied to convert national and global challenges into opportunities for innovation. Their approach partners, designers with business decision-makers, policy-makers, educators and architects to engage with the latest thinking and insight into design and innovation and apply it to tackle big challenges and improve everyday life. This has stimulated different ways of tackling challenges such as those within the Health Service by bringing together a range of experts such as technology and materials specialists and manufacturers – examples include:

Design Bugs Out project⁹⁴ which designed new furniture and equipment to help combat the spread of MRSA and *C. difficile* and

Design for Patient Dignity project⁹⁵, which developed innovative new designs showing how different privacy and dignity issues could be solved

Further reading:

Government Guidelines on the Changes to Design Law have been produced by the Intellectual Property Office https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/323145/changes-to-designs-law.pdf

93 <http://www.designcouncil.org.uk/knowledge-resources/leading-business-design>

94 <http://www.designcouncil.org.uk/our-work/challenges/Health/Design-Bugs-Out/>

95 <http://www.designcouncil.org.uk/our-work/challenges/Health/Design-for-Patient-Dignity/>

Brief 11



Consumers love brands, whether it is their favourite Kellogg's cereal, Green & Black chocolate, Apple tablet or Nike trainers.

The importance of branding to the UK economy

What is a brand?

There are many definitions of 'brand'. Generally today a brand is understood to be a reputational asset which has been developed over time so as to embrace a set of values and attributes, resulting in a powerfully held set of beliefs by the consumer. In essence, brands rest in the minds of individuals and their strength and influence lies in inspiring the collective buying behaviour of those individuals. A product, service or company may become a strong brand if it is relevant and meaningful to its audience, both rationally and emotionally, as well as distinct from other competitors. Brands depend on intellectual property rights (trade marks, designs and copyright in particular) to stand out from the crowd. Some rely on patents to underpin their superior performance.

The importance of branding

Brands play a crucial role in a number of important dimensions:

To the consumer – Consumers love brands, whether it is their favourite Kellogg's cereal, Green & Black chocolate, Apple tablet or Nike trainers. Companies invest significantly to ensure their products lead in terms of both quality and performance, and they back that superior performance with guarantees. The result inspires high levels of confidence and loyalty amongst consumers. Branded companies also constantly strive to meet consumers' needs better. The end result for the consumer is wider choice, higher quality products and, through competition, better value.

To society – A strong reputation lies at the heart of any strong brand. That means companies must not only provide excellent products, they must behave in line with society's expectations. Branding is therefore a force for responsible business. Branded innovations have also changed the way we live and work – consider how Monday washday has changed into an unattended cycle of a washing machine and dryer.

To companies – Brands are a significant source of value for companies, in some cases well exceeding 50% of the market capitalisation of the company. Brands are often a company's most valuable asset.

To the economy – The benefits of brands go beyond simple rivalry to deliver significant benefits to the economy as a whole, as identified by Westminster Business School. They:

- provide a surety that new products, ventures or markets are “safe” for consumers;
- support the quicker adoption of new technologies and ways of living and working;
- align business with society, allowing firms to offset side effects of consumption;
- provide a means of regulating large global firms with extensive influence;
- provide a spur to innovation as companies strive to maintain their reputational asset; and
- enhance the reputation of British products and services abroad, supporting exports.

Meanwhile research by the IPO identified a positive correlation between firms that register trade marks (an essential building block for brands) and: higher productivity, higher levels of employment; higher wages; greater benefits to households; and higher growth.

An alternative view is that branding is about:

- marketing smoke and mirrors (this would be to deny the functional benefits and superior performance of brands);
- charging consumers more (though some brand reputations are based on low price such as Primark and Ryanair); and
- creating barriers to entry (although it is consumer preference and aversion to risk that reduces switching, as they do not wish to purchase an inferior product).

Comment

Companies and financial markets understand the significant value of branding and those companies able to sustain their reputations over the long term often reap significant rewards. Consumers also understand brands (though the concept may be alien to most) and use them in making choices. They will have their favourites where no substitute will do. The wider economic role of branding (e.g. innovation, growth, jobs and global competitiveness) is less well understood although that is changing.

Suggested further reading:

- Trade Mark Incentives – Intellectual Property Office, 2011⁹⁶
- Brands: Reputation and Image in the Global Marketplace – World IP Organisation, 2013
- Valuing brands in the UK economy Westminster Business School, 2008⁹⁷
- Are brands good for Britain? - Tim Ambler, London Business School, Brands Lecture, 2000⁹⁸
- Posh Spice and Persil - Jeremy Bullmore, WPP Group, Brands Lecture, 2001⁹⁹

96 <http://www.ipo.gov.uk/ipresearch-tmincentives-full-201107.pdf>

97 <http://www.britishbrandsgroup.org.uk/upload/File/WBS%20VoB%20128.pdf>

98 <http://www.britishbrandsgroup.org.uk/upload/File/Lecture-1.pdf>

99 <http://www.britishbrandsgroup.org.uk/upload/File/Lecture-2.pdf>

Brief 12



Whilst the IP framework in the UK is generally accepted as being strong there are areas of ongoing concern both at home and abroad.

IP in politics: the issues facing policy makers

Intellectual property – stability for success

Intellectual Property (IP) continues to drive economic success for the UK, creating jobs and investment as well as being one of the fastest growing sectors of the economy.

Whilst the IP framework in the UK is generally accepted as being strong there are areas of ongoing concern both at home and abroad.

The Digital Single Market (DSM)¹⁰⁰ and Single Market (SM)¹⁰¹ are significant strands of the European Commission's policy agenda – there are proposals that could have a significant impact on IP creators, owners, distributors and all parts of the value chain.

The case for a strong IP framework

- The UK's Creative Industries grew by 8.9 per cent in 2014¹⁰² – almost double the growth in the UK economy as a whole. IP rights underpin the successes of the Creative Industries, allowing for UK creators and businesses to export ideas, gain investment and innovate.
- The UK's IP industries are an economic and cultural success story, and increasingly important in a highly competitive global marketplace.
- The number of jobs in the Creative Industries (including both creative and support jobs), increased by 5.5 per cent between 2013 and 2014 to 1.8 million jobs.
- Design had the largest increase in GVA between 2013 and 2014 (16.6 per cent) – this now totals £3.23bn. There are 177,000 UK design jobs in the creative economy.
- IP is also the fundamental basis for the one million employed in creating and building brands¹⁰³ and the £33 billion which companies invest annually in the UK economy and allows the UK's brand-building industries (including advertising, marketing and design agencies) to generate around £1 billion in GVA through exports alone.

100 <https://ec.europa.eu/digital-single-market/en>

101 http://ec.europa.eu/growth/tools-databases/newsroom/cf/itemdetail.cfm?item_id=8529

102 <https://www.gov.uk/government/news/creative-industries-worth-almost-10-million-an-hour-to-economy>

103 <http://www.britishbrandsgroup.org.uk/pages/the-value-of-brands>

The alternative view

For some, the current IP framework is too restrictive and limiting innovation and growth. There are calls from parts of the tech sector for loosening of legislation that is seen as the barrier to allowing small start up businesses to access the market. The current framework is seen as propping up out-dated businesses models, with an over-emphasis on protecting and enforcing IP rights.

Comment

The UK continues to be a world leader in the creation of IP and policies that support this such as the availability of tax credits for film, television or video games production are to be encouraged. The UK Government continues to express strong support for IP creators and businesses and there is good engagement with teams in the Intellectual Property Office, Department for Business, Innovation and Skills and Department for Culture Media and Sport.

However there is clear and present danger from the European Commission proposals on the DSM and the SM. Changes to the copyright framework and the way that creative content is funded and sold threaten both consumer choice and cultural diversity. The UK Government has stated that any proposed changes should be based on the best available evidence to ensure we have a copyright framework that supports economic growth, protects our creators, rewards creativity and responds to consumer needs but this evidence is yet to be presented. In the absence of such data it would seem foolhardy to risk the jobs, investment and exports that IP generates in the UK by supporting all the Commission's proposals.

In the UK the IPO continues to fund the Police Intellectual Property Crime Unit¹⁰⁴ but there is no long term funding in place. There are also grave concerns about the ability of trading standards to deliver IP enforcement on the back of funding cuts and structural changes within local councils. The IP Crime Group¹⁰⁵ brings together public and private sector bodies and is a unique forum for dissemination and sharing of best practice and partnership working.

UK brands continue to export in large numbers to new and emerging markets, flying the flag for British design and manufacturing yet counterfeiting and trade mark infringement remains a serious hindrance. The UK needs to continue to work to ensure that creators and rights holders are properly supported through legislation at local, national and international levels to provide business with confidence in their ability to trade.

¹⁰⁴ <https://www.cityoflondon.police.uk/advice-and-support/fraud-and-economic-crime/pipcu/pipcu-news/Pages/pipcu-funding-confirmed-until-2017.aspx>

¹⁰⁵ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/461792/ip-crime-report-2014-15.pdf

Suggested further reading

- Speech by Baroness Neville-Rolfe about the importance of the digital single market for consumers: <https://www.gov.uk/government/speeches/consumers-and-the-digital-single-market>
- Why Global Film/TV Industries Should Not Drop Their Guard On Europe's Digital Single Market Drive: <http://variety.com/2016/tv/global/mike-ryan-jean-prewitt-ifta-europes-digital-single-market-1201683825/>
- Completing the European single market: <http://www.aim.be/priorities/completing-the-european-single-market>
- Copyright Myths Exposed: <http://www.publishers.org.uk/policy-and-news/news-releases/2015/copyright-myths-exposed/>

Brief 13



Improved crop varieties provide the essential foundation for the UK's £103bn food production chain.

IP in plant breeding

Context

Plant breeding is the business and science of crop improvement. The industry develops new varieties of agricultural and horticultural crops with improved yield, performance and end-use quality. It is a complex, costly and skilled operation, requiring many years of upfront investment in research and development.

Improved crop varieties provide the essential foundation for the UK's £103bn food production chain. The economic benefits of plant breeding range from increased productivity at the farm level through to import substitution, export earnings and enhanced processing quality within the food and drink manufacturing sector. A study by DTZ's life sciences group found that the annual contribution of plant breeding in three key crops (wheat, barley and forage maize) exceeds £1 billion in additional value within the UK farming and food supply chain – equivalent to a 40-fold return on the annual royalty income on those three crops.

Crop genetic improvement is increasingly recognised as a key factor in delivering the sustainable increases in agricultural productivity needed to address global challenges of food security and climate change. Plant breeding also makes positive contributions to health and nutrition, sustainable use of resources, environmental protection and enhancement and the quality of life.

Commercial plant breeding provides the only route to market for such genetic improvement.

Role of IP in the plant breeding sector

Plant breeding is funded in the UK and Europe predominantly through an internationally recognised system of IP protection known as Plant Breeders' Rights (PBR) or Plant Variety Rights (PVR). PBR gives breeders limited monopoly rights over the multiplication and sale of their varieties and allows a royalty payment to be collected on the use of each protected crop variety, both as purchased (certified) seed and farm-saved seed.

The PBR system also stimulates further research and improvement across the sector, through the 'breeder's exemption', which ensures that all protected varieties are freely available for use in future breeding programmes.

For most crop species, the British Society of Plant Breeders (BSPB) licenses production and collects and distributes seed royalties on members' behalf.

Relevant legislation

Plant Breeders' Rights were first established by an international agreement – the UPOV Convention – in 1961. In the UK, Plant Breeders' Rights were first introduced with the passing into law of the 1964 Plant Varieties and Seeds Act. A UK plant breeder may hold UK Plant Breeders Rights under the Plant Varieties Act 1997 or Community Plant Variety Rights under the Community Plant Variety Rights Regulation 2100/94.

UK Plant Breeding Sector

The UK agricultural and vegetable breeding industry consists of some 60-70 enterprises, ranging from SMEs to large multinationals. The total royalty income to UK plant breeders, across all crop species, is relatively inelastic at around £50m per year. Plant breeders spend about a third of their royalty income on R&D, a much higher proportion than most industry sectors.

Key IP issues for Plant Breeders

1. Return on investment

For the major UK arable crops, a fundamental issue is the collection of royalty as a component of the seed price, effectively imposing a ceiling on royalty levels and preventing the capture or realisation of significant value added along the food chain. While our expanding knowledge of plant genetics opens up major new opportunities for crop improvement, the investment needed to exploit this new knowledge-base remains greater than commercial plant breeders can manage alone and public/private partnerships are vital. This is a matter of wider public concern. Without alternative IP models or new sources of investment, current rates of genetic yield gain deliverable from the limited royalty income available to plant breeders will fall short of the food security goals set for 2030.

2. Farm-saved seed

Plant Breeders' Rights legislation allows a farmer to use the product of his own harvest as seed when it is resown on his own holding. The farmer must declare his use of protected varieties as farm-saved seed and pay equitable remuneration which is around 50% of the royalty paid for certified seed. The UK has an effective system collecting £10m annually which is an essential funding source, at around a third of breeders' income for the main arable crops. 35-60% of the UK crop is grown from farm saved seed, depending on the crop. While the system for collecting royalties on certified seed is relatively efficient and cost-effective, the collection of payments on farm-saved seed is more difficult to achieve and to enforce. Since the UK farm saved seed payment system was introduced in 1996, the plant breeding industry has invested in a range of initiatives to improve compliance, from increased monitoring and enforcement to information campaigns such as FAIR PLAY on farm-saved seed supported by the National Farming Unions.

3. Alternative IP

Some plant breeding companies, particularly those operating in parts of the world that have embraced GM varieties protect their varieties through patents. The USA uses a system of utility patents rather than PBR. In Europe a variety cannot be the subject of a patent but traits and technologies can be patented and breeders in Europe are increasingly making use of the stronger IP protection that patents afford. The patent/PBR interface is an evolving and important issue for the global industry and legislators, seeking to find a balance between access to germplasm for breeding and the needs of rights holders to protect their investment.

4. PVR trade mark

In the UK, the PVR campaign aims to raise awareness and understanding of how IP protection within the plant breeding industry is delivered and how it sustains investment and innovation in the industry. Central to the campaign is the PVR trade mark. The trade mark may be seen on seed bags, and packaging, stationery, invoices, field boards, web sites, seed catalogues, in fact anywhere connected with the development, sale and use of high quality seeds of varieties protected by Plant Variety Rights. The mark demonstrates that the company or organisation using it supports the principles of investment in breeding innovation and its delivery through high quality seed and that the variety is the result of years of research, innovation, investment, testing and evaluation.



References for further information:

- Find out all about the science and business of plant breeding¹⁰⁶
- The British Society of Plant Breeders¹⁰⁷
- PVR trade mark¹⁰⁸
- FAIR PLAY on farm-saved seed¹⁰⁹
- Animal and Plant Health Agency Plant Variety Rights¹¹⁰
- Community Plant Variety Rights Office¹¹¹
- International Union for the Protection of New Varieties of Plants (UPOV)¹¹²

106 <http://www.plantbreedingmatters.com/>

107 <http://www.bspb.co.uk/>

108 <http://www.plantvarietyrights.org/> and on Twitter @PVR_org

109 <http://www.fairplay.org.uk>

110 <https://www.gov.uk/guidance/plant-breeders-rights>

111 <http://www.cpvo.europa.eu/>

112 <http://www.upov.int>

Brief 14



More than other intellectual property rights, copyright is relevant to all teachers, academics and students alike.

IP in education

IPAN Education Group offers a selection of providers and resources that you will find useful in the many different situations where you are looking for information on intellectual property education.

IP creators

If you are innovative, inventive or creative in your work, you create intellectual property rights and will want to learn more, or facilitate others' learning, about those rights. IPR Education helps you understand how to protect what's yours, exploit your rights commercially, and use someone else's IPR without creating a problem.

The Intellectual Property Office site <https://www.gov.uk/government/organisations/intellectual-property-office> is an ideal starting point. The self-managed 40 minute learning resource, aimed at students, with a certificate on completion is on <http://www.ipo.gov.uk/blogs/iptutor/>

The World Intellectual Property Organization has a global perspective, and interesting case studies www.wipo.org. **Creative industries resources, from Own-it www.own-it.org include IPR courses.**

Teachers and academics

Teachers and academics may be keen to know what their intellectual property rights are in respect of learning and teaching materials created in the course of their work, or in respect of journal articles or other publications.

Universities UK www.universitiesuk.ac.uk/ and the Higher Education Academy <https://www.heacademy.ac.uk/> have addressed these issues, and have helpful information.

Copyright concerns

More than other intellectual property rights, copyright is relevant to all teachers, academics and students alike. Teachers need to understand the copyright restrictions on schoolroom resources. Copying, when it is plagiarism, is a threat to academic success. Ignorance of copyright restrictions in respect of music, film and social media can lead to serious problems. Many copyright education resources are available, but Copyright User is an ideal starting point. <http://copyrightuser.org/>

Students

Students, researchers and staff who are involved in projects will want to know more about ownership and exploitation of IPR created and used in the course of their research. University technology transfer organisations provide IPR education opportunities, including the Association for University Research and Industry Links www.auril.org.uk. Much can be learnt from the recently published guide to IP asset management <http://www.ipo.gov.uk/ipasset-management.pdf> **about managing IPR in institutions**.

National Union of Students, with IPAN and UKIPO, researched student attitudes to IP (published in 2012). Findings gave a clear picture of student enthusiasm for IP awareness, particularly as they contemplate graduation and the world of work, but showed an absence of structured approaches to IP education on campus. <http://www.nus.org.uk/PageFiles/12238/IP%20report.pdf> At the time of writing, IPAN and NUS have embarked on a second research project into ‘university intellectual property policies – perception and practice’.

The UKIPO has begun the task of working with the Higher Education Quality Assurance Agency www.qaa.ac.uk/ to get IP included in QAA subject benchmarks—engineering and enterprise, so far.

Employers and employees

Employers and employees needing to learn more about the intricacies of IPR ownership and how to make the most of intellectual property will find this <http://www.own-it.org/knowledge/i-m-an-employee-who-owns-the-ip-rights> helpful, along with the IPO website.

Potential IP advisors

If you are considering a career advising others how to protect, manage and exploit their intellectual property, you will find IPR education opportunities at many universities or through the intellectual property professional bodies, some of which are detailed below.

The Universities of Bournemouth, Brunel, Manchester, Nottingham, Queen Mary UL, have IPR research centres and postgraduate programmes accredited by the Chartered Institute of Patent Attorneys www.cipa.org.uk and Institute of Trade Mark Attorneys www.itma.org.uk. Many other universities offer Intellectual Property Rights studies as part of LLM, MSc, MBA and PhD programmes. The Intellectual Property Regulation Board www.ipreg.org.uk regulates the IP professions, and is currently consulting on a revised qualification regime for patent attorney and trade mark attorney litigators to facilitate the grant of relevant rights to registered patent and trade mark attorneys. The Licensing Executives Society www.lesi.org offers IP education opportunities for professionals engaged in IPR exploitation.

Education, learning and teaching suggestions

Teachers and academics wondering how best to introduce their students to IPR and to provide education opportunities to satisfy student curiosity about this crucial business asset may find the following suggestions useful:

UK Intellectual Property Office's Think Kit http://crackingideas.com/third_party/Think%20Kit is a rich source of lesson plans, case studies and enterprise scenarios for use in schools and colleges.

The European Patent Office Academy 'Patent Kit' provides a resource for teaching students about patents www.epo.org/learning-events/materials/kit.html.

School based intellectual property education has been the focus of research. In 2014, Mike Weatherley MP (IP Adviser to the Prime Minister) published 'Copyright Education and Awareness – a Discussion Document' <http://tinyurl.com/zac3tnm> OHIM has commissioned a major research into IP education in the school curricula of the 28 Member States. <http://tinyurl.com/hxdj4ez>

European IP educators forum – developing IPR education

The European Intellectual Property Teachers Network www.eiptn.org provides a forum for sharing and developing IPR education ideas amongst university teachers who deliver IPR programmes across disciplines and faculties.

Access to further information through IPAN

The IPAN Education Group offers the above suggestions as a starting point. Numerous opportunities to acquire IPR education have, for reasons of being concise, been omitted. IPAN knows also that intellectual property rights awareness, amongst SMEs especially, could be improved. IPAN is working to encourage professional bodies to include IP education in the accreditation requirements for new members. IPAN feels UK plc's fortunes would improve if graduates left university knowing something about intellectual property rights.

Brief 15



Greenhouse gases released into the atmosphere are the result of industrial and technological development, much of which has been incentivised and is protected by patent laws.

Patents and the environment—help or hindrance?

some activists argue that patents frustrate important social goals like protecting the environment and public health. Others, including many academics, business leaders, engineers and politicians, maintain that a strong patent system is part of the solution to a more sustainable environment – not part of the problem.

Politicians and scientists agree that climate change is one of the most pressing problems we are facing. Very few argue that man is not a principal cause of the greenhouse effect and related global warming. Greenhouse gases released into the atmosphere are the result of industrial and technological development, much of which has been incentivised and is protected by patent laws. This leads to the argument that the patent system should now play a role in protecting the environment.

There is a widespread view that strong patent protection stimulates innovation, encouraging companies to invest in research without fear of being stung by rivals. To make it easier to share information, some companies get together to form ‘patent pools’, allowing them to cross-license their technologies without losing out on royalties.

One such group is the Eco-Patent Commons, launched by IBM, Nokia, Pitney Bowes and Sony in partnership with the World Business Council for Sustainable Development (WBCSD)¹¹³.

The group is based on the premise that anyone who wants to bring environmental benefits to market can use a raft of pooled patents to protect the environment and enable collaboration between businesses that foster new innovations. The objectives of the Eco-Patent Commons are:

- To provide an avenue by which innovations and solutions may be easily shared to accelerate and facilitate implementation to protect the environment and perhaps lead to further innovation.
- To promote and encourage cooperation and collaboration between businesses that pledge patents and potential users to foster further joint innovations and the advancement and development of solutions that benefit the environment.

Since the launch of the Eco-Patent Commons in January 2008, one hundred eco-friendly patents have been pledged by a group of companies representing a variety of industries worldwide: Bosch, Dow, DuPont, Fuji-Xerox, GlaxoSmithKline, Hitachi, HP, IBM, Nokia, Pitney Bowes, Ricoh, Sony, Taisei and Xerox¹¹⁴.

113 <http://www.wbcd.org/home.aspx>

114 <http://www.wbcd.org/work-program/capacity-building/eco-patent-commons.aspx>

Several IP offices, including the European Patent Office and national offices in the UK and USA have also launched initiatives to speed up the patent process for ‘green’ patents. Launching the UK initiative in 2009, the then IP Minister David Lammy said: “Climate change affects us all and any actions we take now to improve low-carbon technology has got to be positive for both the environment and our future economic competitiveness.”

Prime Minister David Cameron reinforced the message in February 2013, speaking at the launch of the Department of Energy and Climate Change’s new Energy Efficiency Mission: “It is the countries that prioritise green energy that will secure the biggest share of jobs and growth in a global low carbon sector set to be worth \$4 trillion (£2.5 trillion) by 2015.”

Suggested further information:

- World Business Council for Sustainable Development (WBCSD) website¹¹⁵.
- Eco-Patent Commons website, launched by IBM, Nokia, Pitney Bowes and Sony in partnership with the WBCSD¹¹⁶:
- Paper by Silva et al: “World scenario of green patents: Perspectives and strategies for the development of eco-innovations” – African Journal of Business Management Vol. 7(6), pp. 472-479, 14 February, 2013¹¹⁷

115 <http://www.wbcds.org/home.aspx>

116 <http://www.wbcds.org/work-program/capacity-building/eco-patent-commons.aspx>

117 http://academicjournals.org/article/article1380806975_Silva%20et%20al.pdf

Brief 16



Digital technology used for recording of most contemporary artistic works has (often) eased the task of creating the original content (save for the idea itself)...

Copyright, unlawful file sharing and digital rights management

Copyright and digital rights management (DRM)

Copyright protects the original expression of ideas, but not the ideas themselves. It exists automatically in original creative or artistic works, and gives the owner the right to stop unauthorised copying.

Digital technology used for recording of most contemporary artistic works has (often) eased the task of creating the original content (save for the idea itself), eased the process of distributing the content and ensured the customer gets faithful reproduction of the content. But it has also meant that for little (capital, process, media and distribution – internet) cost the customer has the means to make perfect copies of the content which they can distribute to others without reward going to the creator or legitimate publisher/distributor.

The advent of relatively of low cost 3D printers and free to download Internet tools to create replication data files from space models has led to the potential to copy many products regardless of the original owner's rights, albeit possibly not to the same level of sophistication or quality.

Digital Rights Management is an access control technology(s) that can be used by hardware manufacturers, publishers, or copyright holders to limit the usage of digital content and prevent copying or its conversion to other file formats. Circumvention of Digital Rights Management means, and its dissemination, albeit unlawful, is not uncommon.

UK legislative background

Unlawful peer-to-peer (P2P) (digital) file sharing and copyright infringement through illegal downloads from the Internet (piracy) were identified in the 2006 Andrew Gowers' Review of Intellectual Property¹¹⁸ as causing significant damage to the UK's creative industry. Gowers' Recommendation 39, called upon Government to take action if no industry solution proved possible by the end of 2007. This was accepted by Government and recognised in the Department of Culture Media and Sport 'Creative Economy Strategy Paper (February 2008).

Despite industry efforts, culminating in the voluntary Memorandum of Understanding (MOU) between the Internet Service Providers (ISPs), the content industries, Government and the Office of Communications (OFCOM) signed in July 2008, no voluntary solution was finally identified for dealing with P2P file sharing, or illegal Internet downloads, although the MOU process provided much valuable information and experience.

¹¹⁸ http://www.hm-treasury.gov.uk/d/pbr06_gowers_report_755.pdf

The Government consulted on possible regulatory solutions in parallel with the MOU process. The outcome of that consultation was announced as Action 13 in the Interim Digital Britain Report¹¹⁹ in January 2009. Action 13 sets out two obligations that apply to ISPs. Firstly, ISP will be required to send notifications to subscribers who have been identified in relation to alleged copyright infringements. Secondly, ISPs will be required to maintain (anonymous) records of the number of times an individual subscriber has been so identified and to maintain lists of those most frequently identified (an aggregate of a plurality of notifications from diverse bodies). At a trigger point determined and agreed by rights holder(s) and ISP(s) the notification will be issued to the alleged infringing subscriber.

The supporting legislation is encapsulated in the Digital Economy Act 2010¹²⁰, which places obligations on rights holders (§3) to inform ISPs that a subscriber to their service has infringed copyright, and that the ISP notifies the alleged infringing subscriber and seeks remedies after a plurality of infringements (§9). The alleged infringer has rights of appeal (§13).

Copyright infringement and digital communication

The sheer scale and complexity of (digital) file sharing means that it will not be possible to trace every infringer.

Digital communication relies upon the data traffic being split into manageable packets (or frames) of data that are then inter-dispersed with other traffic streaming for onward transmission. The network paths can be global in scale with streams of traffic being split and taking multiple routes between the sender and the receiver. If attempts are made to trace data then it is most likely to be achievable at the edge of a network (where sufficient consecutive packets may exist for accurate content analysis) assuming adequate legislation is in place permitting what is essentially eavesdropping and packet inspection. There are various candidate inspection regimes but all require basic packet level inspection. This inspection filtering for all data appearing at the periphery of networks is an unimaginably huge task which is impossible to implement without a major impact upon data flow rates of many orders of magnitude even if the legal structures were in place to allow it.

Thus the current legislative proposals¹²⁵ will only work for P2P file transfers if prior substantive evidence is available to justify (and have authorised) an eavesdrop on a specific sender or receiver, or through diligent policing of Internet websites that declare illegal offerings of copyright material for download, and the monitoring of site access. The only sure way to prove receipt or ownership of illicit material is by proof of physical evidence. Whilst the material will be in some encoded form it will reside in physical medium such as a computer hard drive or non-volatile memory device such as a memory stick or CD/DVD.

119 http://webarchive.nationalarchives.gov.uk/20100511084737/http://www.culture.gov.uk/what_we_do/broadcasting/5944.aspx

120 http://www.opsi.gov.uk/acts/acts2010/ukpga_20100024_en_1

Impending copyright legislation changes

In late 2010 an independent review of how intellectual property supported innovation and growth was announced by the Prime Minister David Cameron and commissioned from Professor Ian Hargreaves. The Hargreaves Review of Intellectual Property and Growth “Digital Opportunity” was published in mid-2011 and made a number of recommendations¹²¹:

Copyright licensing

The UK should establish a cross sectorial Digital Copyright Exchange:

- Incentives and disincentives to encourage rights holders and others to participate
- Trial “Copyright Hub” created in partnership with the Digital Catapult⁵

The UK should work with the European Commission to establish a framework for cross border copyright licensing:

- Clear UK benefits as a major exporter of copyright works
- Collecting societies required by law to work to codes of practice

Orphan works access

This should be supported with legislation so they can be licensed:

- Extended collective licensing
- Clearance procedure for use of individual works
- Checking procedure to determine ‘orphan’ credentials using Digital Copyright Exchange

¹²¹ <http://www.ipo.gov.uk/ipreview-finalreport.pdf>

Copyright exceptions for the digital age

We should resist over regulation of activities, which do not conflict with copyright incentives to creators.

Realise legitimate UK opportunities for:

- Format shifting
- Text and data mining
- Parody and practice
- Non-commercial research – personal use copying
- Library archiving, education, museums

Realise at EU level rights to support text and data analytics

Provide a copyright framework which permits digital technology adaptability whilst not trading on the underlying creative and expressive purpose of the work

Ensure contracts cannot override these exceptions

The Government ran a number of public consultations and events on its proposals for implementing the Hargreaves recommendations on copyright and the setting up of a Digital Rights Exchange (DCE). These culminated in several Government Policy Statements on modernising copyright which set out their intention to legislate to:

- Allow schemes to be introduced for the commercial and non-commercial use of ‘orphan’ copyright works and voluntary extended collective licensing of copyright works, subject to a number of important safeguards.
- To create a backstop power to require collecting societies to adopt codes of conduct based on minimum standards [published in October 2012¹²²].

¹²² <http://www.ipso.gov.uk/hargreaves-minimumstandards.pdf>

Enforcement

A strategy, policy and approach to enforcement are being developed by an Intellectual property office working group to:

- Focus on all forms of on-line copyright
- Address social media usage
- Be compatible with the European Commission and wider International proposals (cross border activity)
- Educate society to respect IP

The main Government response¹²³ to the Hargreaves review was published in December 2012 and set out proposals for a copyright exceptions framework to introduce greater freedoms in copyright law to allow third parties to use copyright works for a variety of economically and/or socially valuable purposes without the need to seek permission from copyright owners. Proposals for protecting the interests of copyright owners and creators are to be built in to the revised framework.

Suggested further information:

- Gowers Report for HM Treasury¹¹⁸
- Hargreaves Review of IP and Growth¹²¹
- UK Government response to Hargreaves Review – “Modernising Copyright: a modern, robust and flexible framework”¹²³
- Intellectual Property Office webpage on Hargreaves implementation – Copyright¹²⁴
- Digital Economy Act 201¹²⁰
- See also **IPAN Issue Brief 3** – “Can copyright survive the threat of the internet?”

¹²³ <http://www.ipo.gov.uk/response-2011-copyright-final.pdf>

¹²⁴ <http://www.ipo.gov.uk/types/hargreaves/hargreaves-copyright.htm>

Brief 17



The producers of lookalikes argue that shoppers can easily tell the products apart and they are simply indicating to shoppers that their products are equivalent to branded products.

Lookalikes, copycats and parasitic trading

What are lookalikes?

Lookalikes, also known as copycats or parasitic copies, are products in packaging designs that mimic closely the packaging of familiar branded products. Distinctive features of the brand's packaging, whether shape, colour, typeface, label design, graphic features or words, are adapted by a competitor in order to create a connection in shoppers' minds between their product and the popular brand.

The aim is to enhance the appeal of the copy by 'borrowing' the reputation of the original in order to increase sales and/or prices but without infringing the brand owner's intellectual property (IP) rights. They differ from counterfeits in not copying the brand owner's trade marks.

Fair or unfair competition?

The producers of lookalikes argue that shoppers can easily tell the products apart and they are simply indicating to shoppers that their products are equivalent to branded products.

Brand owners state that lookalikes trade parasitically off the reputation of their products, duping consumers and taking unfair advantage of the investments they have made in product innovation, consistency and quality. The copies also destroy brand distinctiveness and the ability for brands to stand out on the supermarket shelf where shoppers are making decisions at speed, relying heavily on pack shape and colour to determine their choice rather than reading labels.

Most lookalikes are produced by retailers that wish to suggest their own label version is as good as the brand. Nevertheless the vast majority of own label products are distinctively packaged and not an issue.

What does research tell us? The UK's Intellectual Property Office commissioned a three-year study that reviewed past research and undertook its own original research. It provides robust evidence that:

- There is a lookalike effect;
- Consumers are more likely to make mistaken purchases if the packaging of products is similar;
- There is strong evidence that consumers in substantial numbers have made mistakes;
- Consumer perception of the similarity of packaging are correlated with an increased perception of common origin, to a material degree;

- Consumer perception of similarity of packaging increases their perceptions of quality.
- The lookalike effect increases consumers' propensity to buy a product in similar packaging.

So what are the implications?

For the copier, a lookalike strategy is attractive as it costs no more to design such packaging, may boost sales by anything up to 50% and may allow them to charge more.

The brand owner, on the other hand, is likely to lose revenue and faces increased costs as it endeavours to reduce shopper confusion, tackle the copy and re-assert its distinctiveness in the marketplace by re-designing its own packaging – an expensive exercise.

Shoppers, when led to think the lookalike is the same quality as the brand and/or comes from the same manufacturer when it does not, or if they buy the lookalike in error, are clearly being duped and misled.

Lookalikes are of concern in the UK as the tools to tackle them are ineffective. The lookalike is often designed to avoid infringing IP rights such as trade marks, design rights and copyright. Meanwhile the narrow interpretation of, and the evidence required to show confusion make a successful passing off action very hard to bring. Deliberately promoting a product to suggest it comes from a particular manufacturer when it does not falls foul of the Consumer Protection Regulations (CPRs) but enforcement is lacking.

Recent developments

In 2014 the UK Government's Department for Business, Innovation and Skills (BIS) launched a consultation exploring whether brand owners affected by the practice should be granted private civil rights of action under the CPRs. Brand owners have such rights in the majority of member states but not in the UK. In October 2016 a ministerial decision was taken not to grant such rights, leaving brands in the UK vulnerable to such copying.

Comment

The lookalike phenomenon generates interest as it touches on the scope of IP rights and their relationship with consumer protection law. Some also see it as a competition issue (between branded and own label products) but as the copier is unlikely to have a dominant position and cartels are not involved, competition law does not apply.

The UK's compliance with international treaties and EU Directives has also been questioned. Article 10bis and 10ter of the Paris Convention and TRIPS requires the UK to ensure nationals have effective protection against acts of unfair competition, while the Unfair Commercial Practices Directive requires the UK to provide adequate and effective remedies to unfair commercial practices.

In most other EU countries brand owners already have effective means of banning such copying (irrespective of any registered IP rights held) through provisions in unfair competition law and there is a strong case for similar tools to be available in the UK too, as long as these are reasonable and not drawn too broadly. An alternative would be to ensure consumer protection legislation is actually enforced but the prospects of that remain slim in the UK, with Trading Standards having insufficient resources to do so and brand owners denied the right to enforce themselves via civil means.

Suggested further reading:

- 2013 UK Intellectual Property Office research on the impact of lookalikes: similar packaging and fast moving consumer goods¹²⁵
- BIS call for evidence 2014¹²⁶ and Ministerial statement¹²⁷
- “I can’t believe it’s not copying”¹²⁸ – Don Edwards, British Brands, Summer 2009
- Parasitic packaging – article on the British Brands Group website¹²⁹; see also IPAN Brief 19
- Examples of similar “parasitic” packaging¹³⁰
- Hogan Lovells Final Report on Parasitic Copying for the European Commission¹³¹

125 <http://webarchive.nationalarchives.gov.uk/20140320154249/http://www.ipo.gov.uk/ipresearch-looklikes-310513.pdf>

126 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/305207/bis-14-724-call-for-evidence-review-of-enforcement-provisions-of-consumer-protection-regulations-2008-in-respect-of-copycat-packaging-revised.pdf

127 <http://www.parliament.uk/business/publications/written-questions-answers-statements/written-statement/Commons/2015-10-13/HCWS232/>

128 <http://www.britishbrandsgroup.org.uk/upload/File/27.pdf>

129 <http://www.britishbrandsgroup.org.uk/pages/parasitic-copying>

130 <http://www.britishbrandsgroup.org.uk/upload/File/Similar%20pkg%20examples%202012.pdf>

131 http://ec.europa.eu/internal_market/ipenforcement/docs/parasitic/201201-study_en.pdf

Brief 18



For the UK and internationally, IP and intangible asset finance has important implications for individual businesses and economic growth.

Intellectual property, finance and the economy

Context: the value of intellectual property for growth businesses and in the economy

Intellectual Property (IP) is now the most valuable asset class on the planet and yet the financing of IP based investments and its importance in the UK economy are not widely recognised or understood.

For the UK and internationally, IP and intangible asset finance has important implications for individual businesses and economic growth. Only by developing and adapting market based mechanisms along with risk-return based methodologies for IP and other intangibles, will it be possible to offer IP-rich businesses the financial support they need to expand their businesses and thereby improve economic growth¹³².

The Hargreaves Review, *Digital Opportunity*¹³³, highlighted a widening gap between the amounts businesses invest in intangible vs. tangible assets. In its response to the Review IPAN¹³⁴ drew attention to the funding gap faced by SMEs in financing business growth in intangible assets and intellectual property.

For quoted companies up to 80% of the value attributed to them by the stock market is not underpinned by tangible assets and is based around intangible assets. This situation was highlighted by the European Commission and was summarised as follows in *Digital Opportunity*'s predecessor, the *Gowers Report*¹³⁵ in November 2006:

The increasing importance of knowledge capital is seen in its contribution to the value of firms. In 1984 the top ten firms listed on the London Stock Exchange had a combined market value of £40 billion and net assets of the same value. Advance twenty years and the asset stock of the largest firms has doubled while their market value has increased nearly ten times. The difference in value is accounted for by intangible assets: goodwill, reputation and, most importantly, knowledge capital...

Research published in 2012 by the United States Patent and Trademark Office notes that “the entire US economy relies on some form of IP, because virtually every industry either produces or uses it”¹³⁶ The Report also values IP-intensive industries at \$5.06 trillion in terms of value added – equivalent to 34.5% of GDP. For the Asian economies a WIPO supported report highlights the growing importance of IP in the Region and in China in particular¹³⁷.

132 Intellectual Property, Finance and Economic Development WIPO Ogier J.P. IPAN Finance, Business and Economic Workgroup 2016. http://www.wipo.int/wipo_magazine/en/2016/01/article_0002.html

133 <http://www.ipo.gov.uk/ipreview-finalreport.pdf>

134 IPAN response to UK IPO internal communication 2012.

135 http://www.hm-treasury.gov.uk/d/pbr06_gowers_report_755.pdf

136 Intellectual Property and the US Economy Economics and Statistics Administration and the United States Patent and Trademark Office 2012

137 http://www.wipo.int/export/sites/www/about-ip/en/studies/pdf/wipo_unu_07_china.pdf

However if the market for intangibles does not evolve, large quantities of capital will remain tied-up in low or negative yielding assets, currently estimated at \$7 trillion of government bonds¹³⁸, while IP rich innovative companies will continue to have restricted access to capital and pay a high price for the cost capital in interest, equity and security.

UK investment In intangible assets and intellectual property

The relative value of intangible assets and intellectual property in a business means that the greater part of investment activity should now become focused on developing these assets. In 2011 the UK market sector invested £137.5bn in knowledge assets compared to £89.8bn in tangible assets¹³⁹. Since the recession of 2008 the gap has widened with investment in tangibles falling in 2008 and subsequently not increasing¹⁴⁰ while intangible investment has continued to grow. Just under half (48%), £65.6bn of knowledge based investment is protected by intellectual property rights. Traditionally patents are often perceived as the classic intellectual property investment but they represent just 9% of the IPRs with the greatest being copyright at 46% followed by unregistered designs 21% and trade marks 21%, with unregistered designs making up the balance at 3%. Other IPRs including trade secrets were not included in the study so the true value of IPR investment is likely to be significantly greater.

The funding challenge

Equity investors, from early stage funding to management buyout, have a good general appreciation of intellectual assets and regard them as a key consideration when evaluating prospective deals. However, most businesses, particularly small and medium sized enterprises (SMEs), are predominantly reliant on bank lending or asset finance to raise capital¹⁴¹.

Despite the fact that IP is acknowledged as a dominant business asset, and therefore a business's primary collateral, finance activities remain heavily concentrated on traditional assets, namely property, equipment, inventories or **receivables, as they** have been for decades. As a result, knowledge-intensive businesses with the greatest need for growth finance often struggle to obtain the funding they need. This is because they are unable to leverage the fruits of their investment in off-balance sheet IP and intangibles.

138 The World Economy Out of Ammo? The Economist 20/2/2016.

139 Estimating UK investment in intangible assets and Intellectual Property Rights 2014 Goodridge P, Haskel J, Wallis G

140 ONS tangible investment 2014.

141 Access to Finance 2007 and 2010, Office for National Statistics, October 2011- http://www.ons.gov.uk/ons/dcp171778_235461.pdf

Following Basel III, banks are even more aware of risk and its relationship to capital. They are seeking additional security, regardless of whether the Enterprise Finance Guarantee scheme is invoked. Without new solutions, it will be even harder for innovative companies in industries like software and digital media to obtain capital. These are precisely the type of high growth enterprise the Government is seeking to encourage.

Some general and specialist lending organisations are beginning to help businesses to develop a better understanding of IP issues, but most admit that they seldom (if ever) take IP specifically into account in everyday lending decisions.

Attractions of IP-backed financing

- a. **Improved security** – at present any charge placed over a business’s IP and intangibles tends to be floating rather than fixed, weakening its effect if the business gets into difficulties. Defining intellectual assets as part of a lending agreement puts a bank in a much stronger position with an administrator (the time when any security taken needs to be effective).
- b. **Potential for value appreciation** – the IP assets of a well-run business will increase in value over time, whereas most of their tangible assets will reduce in value (even some commercial property now falls into this category, as current exposures demonstrate).
- c. **A wider pool of assets** – lenders often face situations where existing good customers want to borrow more than established asset lending ratios will allow. The value contained within core intangible assets provides a means to lend more, but with increased security.
- d. **Stronger repayment incentives** – where intangibles are core to business activity, they provide a powerful incentive for borrowers to honour their repayment commitments.
- e. **Alternative to personal guarantees (PGs)** – lenders recognise the complications which arise from requesting PGs for business transactions. IP and intangibles provide an additional source of security and/or “comfort” which is directly related to the company, not an individual.

Challenges of IP-backed financing

- a. **Visibility** – despite its importance, and the amount invested in it by large and small businesses, internally generated IP is seldom represented on company balance sheets. It is therefore incumbent on a company's directors to understand and explain their IP and intangibles in language a lender will understand. If awareness is lacking in either or both parties, this acts as a barrier.
- b. **Better informed lending decisions** – obtaining insights into off-balance sheet assets (which generally include most, if not all, of a business's IP and intangibles) provides lenders with a more representative picture of a business's resources and value.
- c. **Value attribution** – unquoted companies do not have access to a market mechanism to measure and demonstrate the intangible (off-balance sheet) value attributable to their businesses.
- d. **Value realisation** – many tangible assets have a realisable disposal value, even if it is a fraction of the new (originally funded) cost. Markets for resale of IP and intangible assets exist, but are presently less formalised and offer less certainty on realisable values.
- e. **Value risk** – some intangible assets, such as brands, can be subject to rapid value changes depending on the fortunes of the companies that own them (however, as noted above, tangible asset values can also be volatile, being inherently linked to supply and demand).
- f. **Value understanding** – lenders need to gain confidence in managing the particular risk profiles associated with these assets. This involves familiarisation, training, and the adoption of recognised standards for intangible asset value management.

Activity in this area

IPAN is aware of initiatives within the IP landscape aimed at identifying and classifying intellectual assets with greater precision. There are established valuation methodologies for determining what these assets are worth, and there are specialist practitioners who are experienced in their use. For guidance the European Commission Expert Group has published a report on Intellectual Property Valuation¹⁴². Brokerage services and marketplaces to facilitate sale and purchase of IP and intangibles are also becoming available.

¹⁴² Final Report from Expert Group on Intellectual Property Valuation: European Commission 2013.

The UK government through the Business, Innovation and Skills Department and the Intellectual Property Office has commissioned research on financing innovative start-ups and SMEs and some of this research has now been reported (see below).

There are also signs that the commercial financing sector is looking to respond to the needs of knowledge-based companies:

- There have been instances where specialist lenders have entered into sale and licence-back agreements secured against IP assets, including trade marks and software copyright.
- The first transactions leveraging brand assets to address pension fund deficits have been completed. Large organisations including Philips, GKN, Costain, Diageo and TUI have adopted imaginative structures that leverage IP and/or the income streams derived from it.
- Financiers taking equity positions are also electing to take a charge over software assets, protected by escrow arrangements.

The role of Government

Leveraging IP and intangibles, already the engine of value creation for most growth businesses, can enable banks to lend more to new and existing customers with improved security.

The intangibles financing market needs more structure if innovative SMEs as a whole are to benefit. Recent initiatives in standard recognition must form the basis for Government and industry bodies to work together. This will enable maximum advantage to be leveraged from facilitating new business finance approaches in a fast changing world.

The independent report to UK government – ‘Banking on IP?’¹⁴³ – and the government’s response¹⁴⁴ highlighted the challenges faced by small and medium-sized businesses when trying to manage and protect their intellectual property. Action to address this includes:

- Creating a toolkit to help SMEs, lenders and other financiers identify, understand and make more effective use of their IP;
- Making it easier for businesses to show what IP they have when looking for funding;
- Developing templates and providing advice which help banks and others understand the cash flow and business value of IP; and
- Supporting the development of more accessible and effective IP marketplaces.

¹⁴³ <http://www.ipo.gov.uk/ipresearch-bankingip.pdf>

¹⁴⁴ Banking on IP an active response 31 March 2014.

Market based solutions

IPAN has recently highlighted the role of the City in developing products and services to meet the finance and growth needs of the SMEs and the knowledge economy. This includes the development of finance, insurance and pension based solutions for the funding of intangible assets and intellectual property¹⁴⁵. IPAN is actively involved in supporting market led solutions to the intellectual property knowledge and funding gap. It is working with insurance firms and one of its partner members ACID, has recently launched an IP insurance backed product for its membership¹⁴⁶.

Further reading and background material

General:

- Commons Library background note to Hargreaves Review¹⁴⁷
- SME Access to External Finance – UK Department Business Innovation and Skills (BIS) Economic Paper No 16, January 2012
- Boosting Finance Options for Business¹⁴⁸: BIS response to industry taskforce on alternative debt markets – March 2012
- SME access to finance schemes: measures to support small and medium-sized enterprise growth – UK government guidance – April 2013¹⁴⁹

145 Ogier J. IPAN Vice Chair at Institute Chartered Accountants England and Wales : IP Competitive Advantage and M&A in the Global Market. 26th February 2015.

146 ACID IP insured February 2015 <http://www.acid.uk.com>

147 <http://www.parliament.uk/briefing-papers/SN06430>

148 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/32231/12-669-boosting-finance-options-government-response.pdf

149 <https://www.gov.uk/government/publications/sme-access-to-finance-schemes-measures-to-support-small-and-medium-sized-enterprise-growth>

Value of intangible assets:

European Commission webpage on patent valorisation¹⁵⁰

Creating a financial market for IP rights in Europe¹⁵¹

“What Ideas Are Worth: The Value of Intellectual Property”¹⁵² : Kevin A. Hassett and Robert J. Shapiro, Sonecon llc, 2011

Valuation and Exploitation of Intellectual Property and Intangible Assets¹⁵³ – John Sykes Kelvin King 2003

IPAN Finance and Economics Group’s submission to UK Review of Intellectual Property and Growth

“Disrupted innovation – financing small innovative firms in the UK” – independent report from the Big Innovation Centre – September 2013¹⁵⁴

“Banking on IP” – independent report commissioned by the Intellectual Property Office – October 2013¹⁵⁵

150 <http://ec.europa.eu/growth/industry/intellectual-property/>

151 <http://ec.europa.eu/growth/industry/innovation/>

152 http://www.sonecon.com/docs/studies/Value_of_Intellectual_Capital_in_American_Economy.pdf

153 Valuation and Exploitation of Intellectual Property and Intangible Assets John Sykes and Kelvin King 2003 ISBN 1-85811-281-8

154 <https://www.google.com/search?client=safari&rls=en&q=Disrupted+innovation+-+financing+small+innovative+firms+in+the+UK+Big+innovation+centre&ie=UTF-8&oe=UTF-8>

155 <http://www.ipo.gov.uk/ipresearch-bankingip.pdf>

Brief 19



Controversy is likely to focus on whether plain packaging is justifiable. In other words is it necessary in order to protect public health and is it proportionate?

Plain Packaging and IP

What is Plain Packaging?

Plain – or “standardised” – packaging involves the packaging of tobacco products in a standard format so that all products look essentially the same, bar the product name which must be in a font of standard type, colour and size located in a set place on the pack.

Such packaging has been required for all tobacco products on the Australian market since 1st December 2012 when all packs had to be the same size and shape and coloured in the same drab green. Similar measures have been considered by the European Commission via the EU Tobacco Products Directive and Member States have the option to introduce it, though not a requirement. French, Irish and UK Governments require cigarette packaging to be standardised from May 2016 and it will be illegal to sell non-standardised packs from May 2017.

The policy premise is that, by standardising pack designs, young people will be discouraged from taking up smoking, existing smokers will be encouraged to quit and lapsed smokers will be discouraged from starting again.

The IP dimension

A tobacco pack may well feature a wide range of intellectual property rights (IPRs). There will be trade marks in the product and company names, logos and potentially the pack designs themselves. The pack shape, if novel, may support registered and unregistered design rights. There will be copyright in the designs, words and layout of the pack. If an invented step has been involved in the way the pack is shaped or the way it opens, the pack may have patent protection. Finally, the whole pack representation will be protected by unregistered trade marks (the common law of passing off).

These IPRs are granted by the state and will have provided the basis for significant investment over a long period by the companies that own them. This is because the IPRs provide an important means of standing out from competitors and communicating to consumers points of difference (these may relate to quality, innovation, reputation or other rational or emotional values associated with the particular product). The IPRs are also used by consumers to inform their purchasing decisions and prompt reassurance and trust. A plain packaging policy weakens many of these IPRs and their corresponding benefits and may render some redundant.

The IP issues that arise

International treaties

A number of IPRs, and especially trade marks, are governed by international treaties, notably the Paris Convention and TRIPs. The plain packaging policy raises two particular questions:

- Would plain packaging deny the registration of trade marks or invalidate existing trade marks contrary to these international agreements?
- Would plain packaging represent an unjustifiable encumbrance on a trade mark and therefore be contrary to TRIPs?

Controversy is likely to focus on whether plain packaging is justifiable. In other words is it necessary in order to protect public health and is it proportionate?

Loss of branding

By making it hard for companies to differentiate their products, the benefits of branding will be reduced to consumers, the market and companies (see IPAN Issue Brief 11). For example:

- **Information:** Consumers will have less information on the products available and the differences between them. With all products looking the same, increasingly they will be believed to be the same.
- **Competition:** This is likely to be focused increasingly on price as differences in quality and reputation will be very difficult to signal. The benefits and necessity of competition are likely to be correspondingly reduced.
- **Innovation:** Incentives to invest in innovation will be reduced as the benefits of that innovation cannot be effectively flagged to consumers. This may lead to sclerosis in the market.
- **Reputation:** Incentives to invest in reputation will be equally reduced, for the same reason.

Counterfeiting

There are indicators that plain packaging may fuel the trade in fakes. Differentiated, complex packaging (and the frequency with which it changes) presents a barrier to counterfeiting while significantly simplifying pack designs would reduce the costs (and increase potential rewards) for the counterfeiter.

Meanwhile consumers' reduced ability to differentiate between products will affect their ability to differentiate between fake and genuine. Should purchasing decisions become more strongly price-based, this may also encourage purchases through cheaper, unregulated 'street vendor' channels (the illicit trade) which is already a significant segment of the overall tobacco market.

Any growth in fakes (whether driven by supply- or demand-side factors) would add pressure on public enforcement authorities and further reduce Government revenues from the legitimate market.

Comment

IPRs play a significant role in the functioning of markets, affecting consumer, supplier and competition dimensions. Such market effects need to be taken into account and assessed in the development of public policy if outcomes are not to have (potentially negative) unintended consequences.

Eyes have been on Australia and trends from the last three years have been seized on as supporting the case both of those who support standardised packaging and those who oppose it. A formal assessment of the policy by the Australian Government is overdue. The only safe conclusion to draw therefore at this stage is that the evidence is not yet clear either way. This suggests that, for such a significant market intervention, the outcome in terms of number of young people smoking, people giving up and lapsed smokers remaining lapsed may not be as significant as one might expect.

Suggested further reading:

The following papers focus on the IP (as opposed to the health) aspects of standardised packaging.

Consultation on the future of tobacco control – joint response from the Anti-Counterfeiting Group and British Brands Group (September 2008)¹⁵⁶;

Position papers on plain packaging in response to public consultation on possible amendment of Tobacco Products Directive 2001/37/EEC (December 2010):

- European Communities Trade Mark Association (ECTA)¹⁵⁷;
- International Trademark Association (INTA)¹⁵⁸

Plain packaging for tobacco products: some legal issues – the IPKat weblog (July 2011)¹⁵⁹.

156 <http://www.britishbrandsgroup.org.uk/upload/File/DH%20ACG%20BBG%20Plain%20P%2098.pdf>

157 http://www.ecta.org/IMG/pdf/2010_dec_15_ecta_position_paper_revision_of_tobacco_products_directive_2001-37-ec_final.pdf

158 http://www.inta.org/Advocacy/Documents/INTA_Public%20consultation%20TPD_comments%20re%20plain%20packaging.pdf

159 <http://ipkitten.blogspot.co.uk/2011/07/plain-packaging-for-tobacco-products.html>

Brief 20



In looking to the future, the question that needs answering is whether 3D printing poses an immediate threat to IP laws.

3D printing the future: the intellectual property implications of 3D printing, 3D scanning and customisation

Introduction

In 2012, the Big Innovation Centre, in their Report ‘Three Dimensional Policy: Why Britain needs a policy framework for 3D Printing’ provided a number of recommendations. A key recommendation was to review the intellectual property implications of 3D printing¹⁶⁰. Whilst a number of academics¹⁶¹, have examined the implications for intellectual property (IP) law as a result of the recent proliferation of 3D printing, there continues to be limited literature on the topic. This briefing note aims to capture the essence of some of the issues affecting IP in its application to this new technology.

3D printing or additive manufacturing refers to the process of creating a product by adding material layer-by-layer. This direct approach to part production was initially termed ‘rapid manufacturing’. However it failed to gain popularity and the American Society for Testing and Materials adopted the term ‘additive manufacturing’¹⁶² (AM), which in recent years has been referred to as 3D printing – a term which is widely used by the media and general public¹⁶³. The process is particularly powerful as it can produce products of almost any shape or level of intricacy, and is not restrained by the limitations of other more traditional manufacturing techniques.

160 *Ibid.*, see p. 33. See also, Intellectual Property Office, *3D Printing: A Patent Overview* (Newport: Intellectual Property Office; November 2013), p. 10. Available at <http://www.ipo.gov.uk/informatics-3d-printing.pdf>

161 Bradshaw S., Bowyer A., & Haufe P., The Intellectual Property Implications of Low-Cost 3D Printing (April 2010) Vol. 7, Issue 1 *Script-ed* pp. 1-31; Mendis D., Clone Wars: Episode I – The Rise of 3D Printing and its Implications for Intellectual Property Law: Learning Lessons from the Past? [2013] 35(3) *European Intellectual Property Law* pp. 155-169; Mendis D., 3D Printing Enters the Fast Lane [2014] *Intellectual Property Magazine*, pp. 39-40; Mendis D., Clone Wars: Episode II – The Next Generation: The Copyright Implications relating to 3D Printing and Computer-Aided Design (CAD) Files [2014] 6(2) *Law, Innovation and Technology* pp. 265-280; Li P., Mellor S., Griffin J., Waelde C., Hao L., & Everson R., Intellectual Property and 3D Printing: A Case Study on 3D Chocolate Printing [2014] 2 *Journal of Intellectual Property Law and Practice*, pp. 1-11; Weinberg M., *What’s the Deal with Copyright and 3D Printing* (2013) available at <https://www.publicknowledge.org/news-blog/blogs/whats-the-deal-with-copyright-and-3d-printing>

162 Hague R., and Reeves P., ‘Additive Manufacturing and 3D Printing’ (2013) 55 *Ingenia* 38, 39–40.

163 ‘Additive manufacturing’ refers to the production of end-use layer manufactured parts produced within a business-to-consumer supply chain. ‘3D printing’ is used to refer to the creation of layer-manufactured products within the home or community.

A further point about 3D printing is that its function depends on it being ‘fed’ a well-designed electronic design file, which, for example, could be a Computer-Aided Design (CAD) file, that tells it where to place the raw material. In fact, ‘a 3D printer without an attached computer and a good design file is as useless as an iPod without music’¹⁶⁴. Therefore, the importance of a good object design file or CAD file cannot be underestimated in the 3D printing sphere. The file can be created automatically by 3D scanning. Given a good input, a 3D printer can manufacture an unlimited number of copies of the product.

Online Platforms, Object Design Files and 3D Scanning

The increase in the number of online platforms dedicated to sharing 3D printing design files has implications for IP, particularly, copyright law. Online platforms such as *Thingiverse*, *123D*, *Shapeways*, *GrabCad* amongst others provide object design files, which are sometimes in breach of copyright law. To give one example, in August 2014 Pokémon targeted 3D printed designs available on online platform Shapeways, citing copyright infringement¹⁶⁵.

There is also the question of the copyright status of object design files, or CAD files, as they are more commonly known. With differing legal opinions on computer software in EU and UK, the position remains unclear and the application of these rulings to 3D printing has raised more questions than answers¹⁶⁶.

A third issue arises in relation to online platforms and 3D scanning, which allows for the use and re-use of physical objects. The ability to modify the scanned files by using online tools such as Meshmixer, MakerBotDigitizer amongst others has the potential to infringe copyright (through scanning) whilst at the same time create a new copyright by applying creative choices, such as the “intellectual creation of the author reflecting his personality and expressing his free and creative choice”¹⁶⁷ in its production.

164 Lipson H., and Kurman M., *Fabricated: The New World of 3D Printing* (John Wiley, 2013), p. 12.

165 <http://www.worldipreview.com/news/pok-mon-targets-3d-printed-design-citing-copyright-infringement-7067>

166 *Bezpečnostní Softwarová Asociace – Svaz Softwarové Ochrany v. Ministerstvo Kultury* (C-393/09) [2011] ECDR 3; *SAS Institute Inc., v. World Programming Ltd.*, (C-406/10) [2012] 3 CMLR 4 and their application in UK court in *SAS Institute Inc., v. World Programming Ltd.*, (C-406/10) [2012] 3 CMLR 4, para. 39. See also, Mendis D., Secchi D., *A Legal and Empirical Study of 3D Printing Online Platforms and an Analysis of User Behaviour* (London: UK Intellectual Property Office; 2015), pp. 7-9.

167 *Infopaq International A/S v. Danske Dagblades Forening* Case C-5/08 [2010] FSR 20. See also, Mendis D., Secchi D., *A Legal and Empirical Study of 3D Printing Online Platforms and an Analysis of User Behaviour* (London: UK Intellectual Property Office; 2015), pp. 12-15.

Customised Goods and 3D Printing

The ability to customise physical objects is one of the many advantages of 3D printing¹⁶⁸. The widespread use of web-based software tools, as mentioned above, has meant that users have the opportunity to modify/customise products challenging IP issues such as ‘authorship’ and ‘ownership’. This is particularly relevant to the customisation of jewellery, accessories, headwear and shoes, for example, which in turn has opened up the marketplace for mass-customisation¹⁶⁹. Whilst the concept of mass-customisation appears attractive providing freedom of design to consumers, from the point of view of ‘authorship’ and ‘ownership’ it is clear that designers are keen to prove themselves as the original creator, even though the consumer may have modified it¹⁷⁰. Further issues arise in relation to the authenticity and the unique nature (personal design) of the product. In responding to these issues, it may be debated whether AM-specific Technological Protection Measures (TPM) is the way forward.

Conclusion

In looking to the future, the question that needs answering is whether 3D printing poses an immediate threat to IP laws. A Commissioned Study for the UK Intellectual Property Office (UKIPO) concluded that the immediate risks are minimal – at least for the next decade – and as such there is no urgency to legislate on 3D printing at present¹⁷¹. With that said, the research findings indicate that interest and activity is growing exponentially every year¹⁷² with IP laws continually being challenged. As such and in learning lessons from the past, it will be prudent to take steps to cultivate a climate better suited to tackle impending IP issues more successfully and in a manner, which takes into account the interests of all stakeholders.

168 For advantages and disadvantages of 3D printing, see also, Lipson H., and Kurman M., *Fabricated: The New World of 3D Printing* (John Wiley, 2013), pp. 20-24.

169 Examples of companies providing customised 3D printed jewellery, accessories and shoes include Nervous System, *Jweel*, *Continuum Fashion*, *Freedom of Creation*, *Freakin’ Sweet Apps*, *Mymo* and *Electrobloom* amongst others. See also, Reeves P., & Mendis D., *The Current Status and Impact of 3D Printing Within the Industrial Sector: An Analysis of Six Case Studies* (London: UK Intellectual Property Office; 2015), p. 40.

170 *Ibid.*, at pp. 41-42.

171 Mendis D., Secchi D., & Reeves P., *A Legal and Empirical Study into the Intellectual Property Implications of 3D Printing* (Executive Summary) (London: UK Intellectual Property Office; 2015).

172 *Ibid.* See also, Lipson H., & Kurman M., *Fabricated: The New World of 3D Printing* (Indiana: John Wiley & Sons, Inc.; 2013); Hoskins S., *3D Printing for Artists, Designers and Makers* (London: Bloomsbury; 2013); Anderson C., *Makers: The New Industrial Revolution* (New York, London: Random House; 2012).

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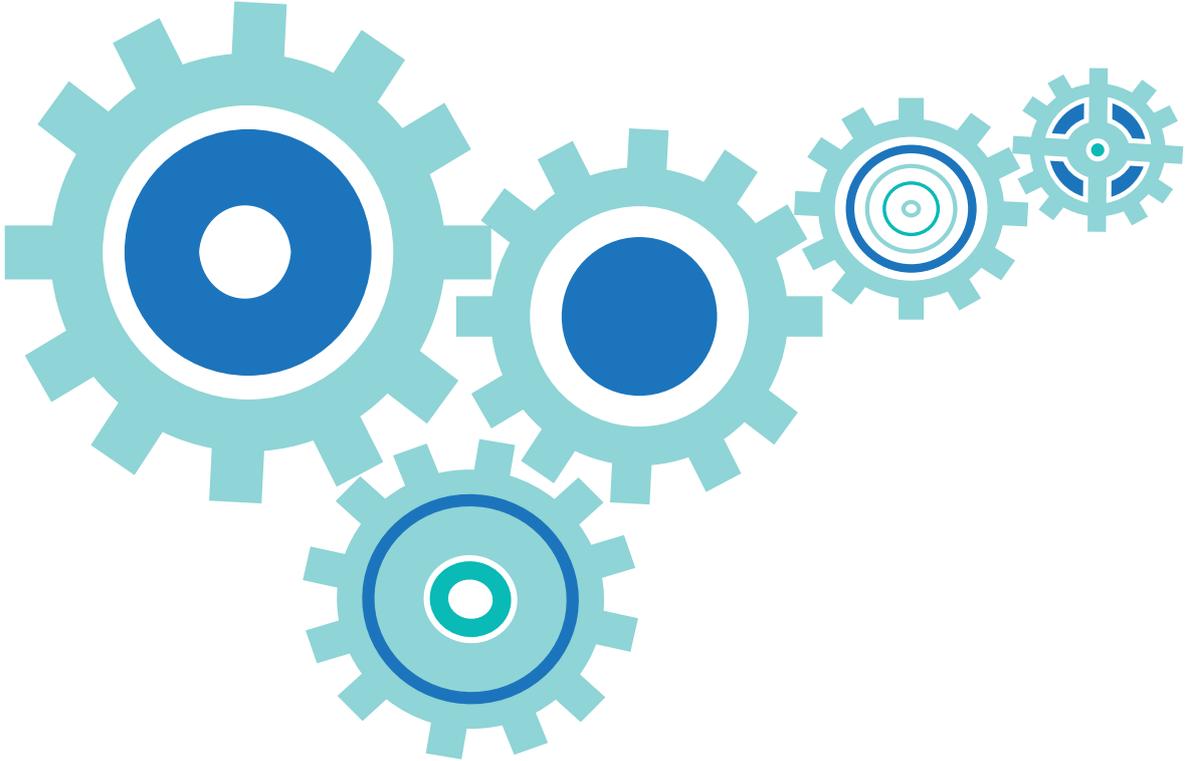
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