

INTELLECTUAL PROPERTY IN THE DIGITAL AGE

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As a judge born in Scotland but trained in English law presenting a paper on intellectual property in Ireland to a group of judges from the nations in which the Celtic languages were and, in some cases, are still spoken, the only place to start must be to refer to one of the earliest known copyright judgments in any language or any country. It was given in the old Irish tongue in the sixth century when a dispute arose between monks about copying the Gospels. It is the famous judgment of the High King of Tara, Diarmuid Mac Cearbhaill.

One of the monks was Columba Ó Néill. He later became Saint Columcille or Saint Columba, one of the three patron saints of Ireland, also credited with founding the abbey on Iona and spreading Christianity to Scotland. The other monk was Finnian. Finnian had lent the book to Columba and Columba had copied it without permission. Finnian alleged this amounted to theft and that the copy belonged to him. Columba said that Finnian's book was none the worse for his copying from it. The High King ruled in favour of Finnian, holding: 'le gach bó a buinin agus le gach leabhar a chóip' or 'To every cow its calf, and to every book its copy'

So the arguments about intellectual property have not changed much in a millennium and a half. Just as they did in the sixth century, claimants today use the language of property crime to characterise the act of copying. The copying is routinely said to be an act of theft. On the other hand Columba no doubt did what he did in order to help disseminate important information more widely. That is a familiar justification used before IP courts today (see for example the long running Meltwater litigation about copying news on the internet which included judgments from the UK Supreme Court, the CJEU and the UK Copyright Tribunal).

The need to strike a proper balance between these competing points of view - between freedom and monopoly - is inherent in all intellectual property. It comes up time and again. There is no simple answer to the question of where the balance lies. The appropriate balance may well shift over time as society changes. It is something which almost certainly will need to be reconsidered as technology advances.

Modern states have recognised the importance of the intellectual property rights for many years. The famous English Statute of Monopolies of 1623 was passed by Parliament because of scandalous abuses of the patent system. It limited the right of the Crown to grant monopolies and thereby laid down the foundations of modern patent law. The act declared all previous monopolies void but an exception was provided in Section 6, as follows:

‘Provided [that the provision rendering all patents void] shall not extend to any letters patent and grants of privilege for the term of fourteen years or under, hereafter to be made, of the sole working or making of any manner of new manufactures within this realm, to the true and first inventor and inventors of such manufactures which others at the time of making such letters patent and grants shall not use, so as also they be not contrary to the law or mischievous to the state, by raising prices of commodities at home, or hurt of trade, or generally inconvenient’.

In other words, to be valid a patent had to relate to ‘working or making of any manner of new manufactures within this realm’. That was the first legislative definition of an invention in the English language. Although it no longer applies in the UK, the Statute of Monopolies still applies in some former British colonies such as Australia.

An inventor’s right to obtain a patent was recognised in the US Constitution drafted in 1787. In addition to providing for Congress to have powers such as the power to collect taxes, borrow money, and declare war and many other things, Article I Section 8 also provides that Congress shall have the power: ‘To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries;’

So the idea behind patents in the USA was the promotion of technical progress, very like the concept of patents for any ‘manner of new manufactures’ in the Statute of Monopolies. Notably the clause also provides for copyright and does so on the same utilitarian basis as for patents.

Now when this clause was added to the draft of the US Constitution, one of the rival clauses proposed to address the same issue was text proposed by James Madison. His draft proposed the use of ‘proper premiums’ to encourage the ‘advancement of useful knowledge’. In other words Madison was proposing a system in which inventors would be paid prize money by the state in return for disclosing their invention. In that system the inventor would obtain no rights over the exploitation of their invention at all; anyone could use the invention and

the incentive to develop and disclose new technology would come from the prize money alone.

This debate continues today. Throughout the world there are concerns about rising healthcare costs and the price of medicines, particularly the new cancer treatments. Some say that a better way to create incentives for new drugs would be to have a prize system, paying a large reward the discoverer of the new drug but in turn opening the market to all comers immediately and thereby keeping sale prices low. The difficult questions are whether such a system would indeed be better - would it provide a sufficient incentive to inventors to develop the new medicines we want at a lower overall cost to society?

How did those drafting the US Constitution choose between these two very different proposals? Well history does not relate in terms, but what we do know is this much. The rival clauses were reported to the Constitutional Convention on 18th August 1787 and within three weeks, by 5th September, the Committee of Detail reported back supporting the current clause, providing for private intellectual property rights to be held by the inventor. What we also know is that in the meantime on 22nd August 1787 the very same people – the delegates of the Constitutional Convention - witnessed an inventor's first successful trial run of what was then a critical piece of internationally vital high technology. It was a steam powered river boat.

Remember in those days there were no cars and no railways. Rivers were important trade routes but there was no easy way of travelling upstream, against the flow of the current. The fledgling United States of America had a number of large river systems but no effective means to exploit them. The first steam powered boat in the world was built in France by Claude de Jouffroy. His craft, the *Pyroscaphe*, was demonstrated as being able to travel upstream on the River Saône in 1783. John Fitch was an American inventor. John Fitch understood the potential value of the latest technology applied to river transport. The cutting edge technology of the day was James Watt's steam engine. One of its critical advantages over the prior art Newcomen steam engine used for pumping out mine shafts, was that the Watt engine was more compact. Small enough to fit on a boat. However Great Britain refused to allow the export of this sort of strategically important new technology. There were no such steam engines in the USA at the time.

John Fitch wanted to build one but had limited resources. He obtained patents on his ideas from the legislatures of various American states. He used those patents to secure funding from investors to build a prototype. Fitch then built his own version of the Watt steam engine and used it to power a river boat, the *Perseverance*. What the Constitutional Convention saw on 22nd August was the

first successful trial of this invention in their country. What they also witnessed was the advancement of local technology funded by private investment secured on the existence of private property rights.

The first US patent statute was enacted in 1790 and John Fitch was one of the first to obtain a US patent. This aspect of the patent system is as significant today as it was then. In *Human Genome Sciences v Eli Lilly*,¹ the UK Supreme Court recognised that a balance has to be found in requiring the inventors to disclose the invention properly in a patent while on the other hand being able to raise finance for the development of the invention. In a patent the inventor must show that the invention is capable of industrial application and must be sufficiently disclosed. At paragraph 143 Lord Neuberger said:

‘The bioscience industry is particularly dependent, however, on funding for long term research and development. It is commonplace for those who need money for these activities to have to look to other organisations to provide it. The tests that must be applied are necessarily very rigorous, and it may require many years of investment before a product can be declared safe for use in the promotion of health in humans. The gap between the point of initial research and the point where the discovery is ready to be developed by the pharmaceutical industry can be very wide. Various steps along this uncertain road can be identified in the present case. First, there is the inventive step itself. In this case it revealed the existence of [the invention], a previously unknown member of the TNF ligand superfamily. The characteristics of the newly discovered protein had then to be examined and analysed. In this case the task was to determine whether the [molecule which was the invention] had characteristics that offered the prospect of influencing biological mechanisms in the same way as other members of the superfamily. If that could be achieved, there would then have to follow a large amount of research and development before the molecule could be deployed therapeutically. The question that this case raises is how far along that road the process must go before the invention can be held to be susceptible of industrial application and patented.’

Turning to copyright, the United Kingdom had enacted the Statute of Anne in 1709 to protect the book printing trade. The passage in the US Constitution referred to above also provides for copyright. The experience in France was different. The regulation of printing in pre-revolutionary France had led to the imprisonment in the Bastille of large numbers of people in the book trade. Perhaps not surprisingly therefore, in the Declaration of the Rights of Man of 1789, Article XI is as follows:

¹ [2011] UKSC 51

‘The free communication of thoughts and of opinions is one of the most precious rights of man: any citizen thus may speak, write, print freely, except to respond to the abuse of this liberty, in the cases determined by the law.’

So the emphasis there was on freedom to communicate and, notably, freedom to print. Prof David Vaver has explained that after the revolution, ‘in the relatively short period before copyright law came back to restore ‘order’ to publishing markets there was an unprecedented democritization of the printed word’.

But copyright really got interesting internationally after another significant technological development. That was the invention of wood pulp based paper making by Friedrich Gottlob Keller of Germany and Charles Fenerty of Canada in the mid 1800s, based on the earlier ideas of the French scientist René Antoine Ferchault de Réaumur. Before this time paper was made from fibres like old linen and cotton rags. It was relatively expensive. Wood pulp technology revolutionised paper making and brought books and newspapers to the masses. It also led to widespread copying. In the USA and Britain a particular problem was the copying of each other’s author’s works. There was a common language but states in those days did not allow foreigners to have local IP rights. This led by the end of the 19th century to the signing of two international treaties by the industrialised nations, both with a view to harmonising intellectual property rights at least to the extent of ensuring that citizens of any signatory state could obtain the same rights as the nationals in any other given signatory state. These were the Berne Convention of 1886 to deal with copyright, and the Paris Convention of 1883 to deal with patents and trade marks.

The point of this history is to illustrate two points. First, that there is and always has been a dynamic balance between the idea that inventors and authors should hold property rights in their creations and the ideas of freedom to compete and freedom of expression. Second, that changes in technology are and always have been one of the factors which can alter that balance and lead to changes in these laws. The fact that recent advances in digital technology pose a challenge to our ideas of intellectual property should not be a surprise.

What are the challenges to intellectual property which are posed today by new technology? The most obvious is the ubiquity of copying machines. We know these machines as mobile telephones and computers. They work by making copies and since the devices are held by the individual, it is that individual, the consumer, who is making the copy. This is new. Until very recently you needed a printing machine to make copies of books or newspapers or a similar machine to

makes copies of musical records or films. Photocopiers have existed for years but their impact, while significant, was nothing like what has happened in the last 20 years. In the 'old world' when a consumer buys a book and reads it, no copying takes place. Today 'content' is provided electronically and on a global basis. The businesses who regarded themselves as rights holders, such as the record companies and publishers, have found it is very difficult to control dissemination of what they thought they were selling. Once music could be distributed over the internet, downloading without permission became widespread. That downloading involves copying and since it was without permission, it involves copyright infringement. It is not a co-incidence that there are so many music festivals, live concerts and jukebox musicals these days nor that many aged pop stars, who had not been seen for years, have reformed their bands and gone on tour. The reason for all this is that sales of tickets to a physical event can be controlled more easily than sales of music online.

Copyright law has long recognised that the copyright owner should have a number of rights in addition to the right to prevent copying directly. A right to stop the sale of infringing copies at least in some circumstances is an example. Since the 1970s and in response to the developments in electronic broadcasting, copyright recognised a right of communication of the work to the public by wire or by broadcasting.² This right of communication has been developed further in various further treaties and in European Directives, particularly the Information Society Directive 2006/115/EC (see art 8). In UK law it is now s20 of the 1988 Copyright Designs and Patents Act. The ambit of the right of communication has been the subject of a string of CJEU decisions as the courts try to work out the answers to novel problems presented by the World Wide Web. Of course the reason the metaphor of a 'web' is apposite is because when a user accesses a first webpage, the page provides not only cross-references to other pages elsewhere on the internet but crucially those cross-references are active links, forming a spider's web of connections. The user can travel to the new second page simply by clicking on the cross-reference.

One legal question posed by this technology is what happens when the cross-referenced second webpage is a site providing for downloading of copyright infringing material? The direct provider of the infringing material on the second webpage is an infringer but they are hard to get at and hard to stop. Those second direct downloading sites are also not always very easy for the public to find. They also move. Much easier to find for the public are the first websites which act like nodes, providing the links to the downloading sites and can update the links as the second sites move. So the claimants wish to move against the providers of the node sites. But are those sites infringing at all? To what extent

² E.g. Art 11bis(1) of the Berne Convention in its Paris Revision (1971), amended in 1979, which provides for a right in wire and wireless communications.

does facilitating the public's access to a direct downloading site for a particular film (for example) amount to an act of communicating that film to the public? In a series of cases the CJEU has tried to grapple with this question (see the very recent *Filmspeler* case³ and the string of previous decisions including *GS Media*,⁴ and *Svensson*.⁵ At the level of the CJEU the law is far from settled. One difficulty, I suggest, is the incomplete nature of the legislation the CJEU have to deal with. The webpage linking problem makes most sense when considered as one person doing an act which may or may not authorise or facilitate a tort committed by another. However harmonised European law does not include a concept of joint tortfeasance and the cases involve trying to meld what should be a definition of an act of primary infringement to cover an accessory.

Another important development in Europe in response to illegal downloading has been the web blocking order. Following the EU Information Society Directive Art 8(3), the UK Copyright Designs and Patents Act 1988 was amended to introduce s97A, which provided for these orders in copyright cases. The copyright owner brings an action against the internet service provider ('ISP'), such as British Telecom in the United Kingdom. Under the legislation, as long as the court is satisfied that the service provider has actual knowledge of another person using their service to infringe copyright, the court may grant an injunction against the ISP. In practice what happens is that rights holders, such as a group of film or music companies, identify websites which are making illegal downloads available to consumers. They collate a substantial dossier showing what is going on and provide it to the ISP. As a result the ISP has appropriate notice.

The ISP provides internet access to consumers. The injunction requires the ISP to use their technology to prevent the consumers from accessing the websites which are the source of the infringing material. Notably the actual infringer is not a party to the proceedings. They may not be readily identifiable at all and are probably abroad and inaccessible. These orders seem to have been relatively successful. They can be circumvented by sophisticated users but the majority of consumers do not appear to bother trying to do so. Web blocking orders raise other novel questions about human rights, such as whether there a right to access to the internet. They also raise less novel questions but in new ways, such as whether a person right to privacy is engaged by an ISP web blocking system, since that system only works by monitoring at least to the extent of identifying the web addresses the user is trying to access.

The first British case to address the issues arising from these applications was *Twentieth Century Fox Film Corp v British Telecommunications plc*⁶ and a series of cases

³ C-527/15 26th April 2017.

⁴ C-160/15 8 Sept 2016.

⁵ C-446/12 13 February 2014.

⁶ [2011] EWHC 1981 (Ch) (Arnold J).

followed. Notably authorisation and joint tortfeasance play a full role in the analysis in these cases.

The scope of web blocking orders has recently been extended in *Cartier v British Sky Broadcasting*.⁷ Here the Court of Appeal for England and Wales had to consider whether web blocking orders of this kind could or should be extended beyond cases of copyright infringement to websites selling trade mark infringing counterfeit goods. The issues traversed by the court's decision include the Charter of Fundamental Rights of the European Union, which include freedom of expression and the right to receive and impart information (Art 11), freedom to conduct business (Art 16) and the protection of intellectual property (Art 17). The Court there held that this remedy can and should be extended, as Arnold J had held in the court below. In paragraph 46 of his judgment Kitchin LJ cited an extract from the dissenting judgment of Lord Nicholls in *Mercedes Benz v Leiduck* in which Lord Nicholls said:

‘As circumstances in the world change, so must the situations in which the courts may properly exercise their jurisdiction to grant injunctions. The exercise of the jurisdiction must be principled, but the criterion is injustice. Injustice is to be viewed and decided in the light of today's conditions and standards, not those of yester-year’.⁸

This statement was made in the context of the (relatively) discretionary remedy of an injunction but the sentiments expressed apply in general terms as the law has to face up to the consequences of new technology.

Another challenge to the existing way in which intellectual property works posed by the digital age is technology standardisation. Digital technology depends on standards. Since everything is connected, the connected things must be able to communicate with each other. For that they must speak the same language. In technical terms the devices have to work accordingly to agreed protocols. This applies to the internet itself, to WiFi access, to mobile telephony and much more besides. These protocols are supposed to work all over the world. So for instance a 4G phone in one state should be able to work in any 4G phone network anywhere in the world, with network infrastructure equipment built by any manufacturer and should be able to make a phone call to any phone – whether a landline, a 2G, 3G or 4G phone anywhere else in the world.

These systems are highly innovative and very complicated. Their development gives rise to many patentable inventions, and even more patents. These patents are known as ‘standards essential patents’ because to work the standard it is necessary to use the relevant invention. Holding a standards essential patent gives

⁷ [2016] EWCA Civ 638.

⁸ [1996] AC 284.

the patentee the possibility of enormous market power on a global basis. They could hold implementers of the standard to ransom. So the standard setting bodies, such as the European Telecommunications Standards Institute (ETSI), require holders of standards essential patents to give an undertaking to license their patents on FRAND terms. FRAND stands for fair, reasonable and non-discriminatory. The most important features of FRAND are that injunctions should not be necessary and that FRAND royalty rates should be set at an appropriate level.

A good summary of the purpose of the FRAND system is the following: 'For good faith users who are willing to pay reasonable royalties, holders of standards-essential patents should not directly refuse to grant licenses. On the one hand, it is necessary to ensure that patentees can obtain sufficient returns from their technical innovations. On the other hand, holders of standards-essential patents should be prevented from charging exorbitant royalty rates or attaching unreasonable terms by leveraging their powerful position forged by the standards. The core of the FRAND obligations lies in the determination of reasonable and non-discriminatory royalties or royalty rates.'

This passage is taken from a judgment of the Guangdong Province High People's Court in China (*Huawei v InterDigital* (2013)). It illustrates that the ETSI FRAND undertaking has been addressed in courts all over the world including the courts of the USA, and Japan as well as courts in Europe (mainly Germany) as well as the CJEU - *Huawei v ZTE*, and recently the High Court in London.

But this has presented some legal challenges to the IP system. For one thing what most cases are really about is a royalty rate. Can the courts settle terms of a licence between two parties including a royalty rate for the future? The German courts do not accept that they can but the American, Chinese, Japanese and most recently the High Court of England and Wales, have all held that they can. In the first decision on this anywhere in the world, US District Judge James Robart in *Microsoft v Motorola* set a FRAND royalty rate for a WiFi patent. But that exercise was conducted with the consent of both parties and so the jurisdiction to do so did not have to be examined. In other cases it is not agreed. What is the proper scope of such a determination? Must a court only decide FRAND issues for its own territory even though these are global questions with global implications?

The primary remedy for the patentee is an exclusionary injunction to restrain infringement but the ability to obtain this sort of remedy can sometimes place too much power in the patentee's hands – hence the FRAND undertaking. In *Huawei v ZTE* the CJEU analysed FRAND purely in terms of competition law and Art 102 TFEU (abuse of dominance). The German cases have done so on

the same basis. But competition law can be a blunt instrument and query whether all holders of standards essential patents necessarily are in a dominant position. Now the FRAND undertaking to ETSI is given in a context governed by French law. In *Unwired Planet v Huawei*, with the benefit of conflict French law expert opinions, I held that the undertaking is enforceable in the High Court at the suit of a third party such as an implementer who wanted a licence under the French law doctrine of stipulation pour autrui. On that basis the finding was that the court had jurisdiction to decide what was and was not FRAND and that this jurisdiction applied in general terms and not only to the particular territory in which the dispute had arisen.

A feature of way in which courts around the world have had to deal with digital standardisation is the lack of legislation. The whole edifice of FRAND and how to deal with standards essential patents has been built by applying existing legal principles and remedies to this new situation. In about four years what was a very unclear legal landscape and causing real commercial uncertainty has been clarified substantially. A feature has been that the courts in different countries have been reading and taking into account each other's decisions. That can only be a positive development.

So the digital age has posed major challenges for the world's intellectual property laws. The challenges arise at the level of legislation and also before the courts. When the legislation allows the courts to do so, they can meet those challenges.